Routledge
Taylor & Francis Group

Construction Management and Economics

ISSN: 0144-6193 (Print) 1466-433X (Online) Journal homepage: https://www.tandfonline.com/loi/rcme20

Work–family enrichment in the Australian construction industry: implications for job design

Helen Clare Lingard , Valerie Francis & Michelle Turner

To cite this article: Helen Clare Lingard , Valerie Francis & Michelle Turner (2010) Work–family enrichment in the Australian construction industry: implications for job design, Construction Management and Economics, 28:5, 467-480, DOI: 10.1080/01446190903511268

To link to this article: https://doi.org/10.1080/01446190903511268

Construction Management and Economics (May 2010) **28**, 467–480

Routledge
Taylor & Francis Group

Work–family enrichment in the Australian construction industry: implications for job design

HELEN CLARE LINGARD[1]*, VALERIE FRANCIS[2] and MICHELLE TURNER[3]

[1]*School of Property, Construction and Project Management, RMIT University, GPO Box 2476, Melbourne, Victoria 3001, Australia*
[2]*Faculty of Architecture, Building and Planning, The University of Melbourne, Melbourne, Australia*
[3]*School of Property, Construction and Project Management, RMIT University, Melbourne, Australia*

Received 2 July 2009; accepted 25 November 2009

A survey of waged and salaried, project-based construction workers was conducted. The survey measured work–family enrichment, a type of positive interaction between work and family life. A six-item work–family enrichment scale confirmed the bi-directional nature of work–family enrichment. Job-related correlates of work-to-family enrichment were identified. Flexibility, perceptions of control, time adequacy and supervisor support were all positively correlated with work-to-family enrichment. Regression analyses were performed to examine the extent to which the relationship between these job-related resources and work-to-family enrichment were mediated by perceptions of work schedule fit. Work schedule fit fully mediated the relationship between flexibility and control and work-to-family enrichment. The relationship between supervisor support and time adequacy were only partially mediated by work schedule fit, though a significant mediation effect was still observed. The research suggests that jobs may be designed to facilitate work–family enrichment in the construction industry, in particular through the provision of supervisor support, flexibility, time adequacy and control.

Keywords: Work–family enrichment, supervisor support, flexibility, job design, resources.

Introduction

Scope and purpose

Most research into the work–life experiences of construction workers has focused upon negative outcomes of the long and inflexible work hours which typify site-based work. The construction workforce is reported to experience high levels of conflict between work and family life, which is linked to burnout. The focus upon conflict between work and family life assumes that participation in one domain inevitably detracts from the quality of experience in the other domain. However, recently there has been an increasing awareness of the possibility of synergy between work and family life. This paper explores the positive side of the work–family interface in the Australian construction industry.

A survey of Australian construction workers was undertaken to explore the positive side of the work–family interface. The survey sought to test a measure of work–family enrichment and explore linkages between resources provided in the workplace and workers' perceptions that experiences in their work role improve the quality of life in their family role and vice versa. The research also examined whether job-related resources are linked to work–family enrichment directly, or whether the relationship is an indirect one that occurs through workers' perceptions of work–family 'fit'.

Work–family research

During the latter part of the 20th century significant changes in work and family life occurred. The most striking changes have been women's entry in large numbers into the workforce, and the consequent emergence of the dual-earner couple as the most prominent family form. Traditional approaches to the

*Author for correspondence. E-mail: helen.lingard@rmit.edu.au

Construction Management and Economics
ISSN 0144-6193 print/ISSN 1466-433X online © 2010 Taylor & Francis
http://www.informaworld.com
DOI: 10.1080/01446190903511268

organization of work and management of people are problematic for dual-earner couples (and other non-traditional family structures, such as same-sex couples, singles and lone parents) because the presence of a full-time 'homemaker' can no longer be assumed. In this context, work and family life can no longer be treated as 'separate spheres' because work and family lives intersect and interact with one another (Moen and Yu, 2000).

Previous work–family research in construction

Previous work–family research in the construction industry has focused on the issue of work–family conflict. The conflict concept relates to incompatibility between work and family and is based upon the scarcity hypothesis, which assumes that an individual's time and energy are finite and resources devoted to one domain are unavailable for deployment in a competing domain. Research in the Australian construction industry revealed that project-based construction workers experience high levels of work–family conflict, which is predicted by excessive job demands, including long and irregular work hours (Lingard and Francis, 2004). Another investigation into the construction industry indicated that competitive tendering and tight programming culminated in long working hours which, in turn, led to work–life stress (MacKenzie, 2008).

The Australian research also revealed that work–family conflict acts as the linking mechanism between work schedule demands and employee burnout (Lingard and Francis, 2005) and that certain job characteristics, including supervisor support moderate the relationship between work–family conflict and employee burnout (Lingard and Francis, 2006). These findings are consistent with those of researchers in other industries in which work–family conflict is reported to mediate the relationship between job stressors and indicators of wellbeing (see, for example, Bacharach *et al.*, 1991; Guerts *et al.*, 2003). Lingard and Francis' research is also consistent with the findings of Thomas and Ganster (1995) and O'Driscoll *et al.* (2003), who report that having a supportive supervisor attenuates the harmful impacts of work–family conflict in non-construction samples.

The positive side of the work–family interface

There is growing agreement that a comprehensive understanding of work–family interaction requires an analysis of the positive, in addition to the negative, aspects of this interaction (Carlson *et al.*, 2006; Stevens *et al.*, 2007). Drawing on an expansionist role theory, researchers have suggested that there might be synergies between participation in multiple roles (Barnett and Hyde, 2001). The expansionist role theory views multiple role involvement as enhancing wellbeing because access to resources and experiences developed in one role can be applied to enhance the experience of another role (Barnett and Baruch, 1985). Instead of predicting greater role strain as the individual accumulates roles, expansionist role theory hypothesizes that the consequences of multiple role engagement for individuals' wellbeing are positive. Further, empirical evidence indicates that the benefits associated with simultaneous engagement in work and family roles are distinct from work–family conflict, i.e. benefits and incompatibilities are not bi-polar opposites of the same concept (Grzywacz and Butler, 2005). Adopting an expansionist view, Marks (1977) suggests that human energy is not finite but that active engagement in one domain can re-energize an individual involved in multiple roles. Sieber (1974) argued that role accumulation (i.e. participation in multiple roles) benefits individuals and society.

Greenhaus and Powell (2006) developed a theoretical framework suggesting how work and family domains might be positively linked. This framework suggests that skills and perspectives, psychological and physical resources, social-capital resources, flexibility and material resources generated in one role improve performance directly, to the extent that these resources are directly transferable to another role (i.e. the instrumental path). Greenhaus and Powell (2006) also suggest that there might be an indirect cross-domain effect to the extent that skills and perspectives, psychological and physical resources, social-capital resources, flexibility and material resources derived from participation in one domain create a positive affect (or emotional response) that improves performance in the second domain (i.e. the affective path). Thus far there has been little empirical research into the mechanisms by which resources accessible through participation in one domain (e.g. work) enable improved effectiveness in another domain (e.g. family).

Positive work–family interaction concepts

Research has been hindered by a lack of clarity in the way in which the positive aspects of the work–family interface have been conceptualized, with concepts like work–family facilitation, enrichment and positive spillover used interchangeably. Carlson *et al.* (2006) attempt to distinguish between these related concepts. They define positive spillover as the extent to which moods, behaviours and skills in one domain are transferred to another in ways that make the two domains similar. This is consistent with the conceptualization of spillover advanced by Edwards and Rothbard (2000).

Work–family enrichment has been defined as 'the extent to which experiences in one role improve the quality of life in the other role' (Greenhaus and Powell, 2006, p. 73). Thus, enrichment implies that the transfer of moods, behaviours or skills between domains has a beneficial effect on performance in the receiving domain, i.e. someone who engages in role A is better able to perform role B by virtue of their involvement in role A. Building on this distinction, Wayne *et al.* (2007) define work–family facilitation as the positive influence of an individual's involvement in one domain on the functioning of the other *system*, e.g. the family or workgroup. Grzywacz *et al.* (2007) propose that enrichment occurs at an individual level, whereas facilitation occurs when engagement in one domain creates a system-level catalyst in the other domain which results in positive growth or change in the second domain, for example, when a workplace health promotion intervention is transferred and amplified, resulting in greater health-awareness and the adoption of healthy lifestyle behaviours in an entire family. While recognizing the potential for cross-domain improvements in the functioning of an entire system, the focus of the research presented is on the *individual*. Thus, the term 'work–family enrichment' is used to describe the dependent variable.

Why measure positive work–family interaction?

Positive work–family interaction has been linked to desirable outcomes for workers and organizations. For example, Allis and O'Driscoll (2008) report that non-work-to-work facilitation is associated with higher levels of employee wellbeing. Wayne *et al.* (2004) found that work-to-family enrichment predicted employees' effort in and satisfaction with their work and, in a follow-up study, Wayne *et al.* (2006) report that work-to-family enrichment predicted employees' organizational commitment, while family-to-work enrichment predicted turnover intentions. Haar and Bardoel (2008) report that positive spillover between work and family life was negatively associated with psychological distress and turnover intention in a sample of Australian workers. Van Steenbergeen *et al.* (2007) found work-to-family facilitation to contribute to the prediction of previously reported work–family outcomes, including work satisfaction, organizational commitment, job performance, home performance, home commitment, home satisfaction and general life satisfaction, over and above variance explained by traditional measures of work–family conflict. In a two-staged longitudinal study, Innstrand *et al.* (2008) similarly found that work-to-family facilitation at 'time one' was associated with lower levels of employee burnout at 'time two'. Thus, there is emerging evidence that the provision of jobs that support work–family interaction can benefit organizations, as well as workers.

Theoretical framework

This research draws on two theoretical frameworks to explain the interaction of work and family. First, the conservation of resources (COR) theory, which has been applied to the analysis of work–family relationships (Grandey and Cropanzano, 1999; Innstrand *et al.*, 2008). The COR theory, developed by Hobfoll (1989, 2001) focuses on the loss and gain of resources. The theory holds that people strive to obtain, build and protect resources (which can be physical objects, conditions or sources of energy) and that psychological stress arises when resources are depleted. Juggling multiple roles, such as work and family uses resources which are sometimes not replenished at the same rate as they are lost, giving rise to work–family conflict and strain. This theory has been used to describe the reciprocal effects of work–family conflict and burnout. However, another aspect of the COR theory is the contention that the possession of resources makes resource replenishment more easy. Thus, those in possession of resources are able to accumulate additional resources at a greater rate and more readily maintain balance and wellbeing. Voydanoff (2007) also explains work and family interaction with reference to the availability of resources, which she defines as 'structural or psychological assets that may be used to facilitate performance, reduce demands, or generate additional resources' (Voydanoff, 2007, p. 10). Theories of work–family enrichment focus upon the ability of resources generated in one role to be applied successfully in another role (Greenhaus and Powell, 2006) and replenishment of resources has been identified as one of the outcomes of work–family interaction (Hill *et al.*, 2007). The COR theory therefore is a useful framework for understanding the attainment and application of resources to enable positive work–family interaction.

The second theoretical framework upon which we draw is person–environment (PE) fit theory, which suggests that the degree of 'fit' between an employee's needs and an organization's supplies impacts upon employees' attitudes. There has been some criticism that PE fit is a static paradigm which seeks to make sense of a dynamic interaction between workers and their environments. However, Tinsley (2000) suggests that accumulated evidence indicates that PE fit provides a valid and useful way of thinking about the interaction between the individual and the environment and that the role played by PE fit is actually likely to be understated due to methodological weaknesses in previous research into the concept. There are various models which consider PE fit at the individual, group

or organizational level. We have drawn upon a PE fit model at the individual level, based on the notion that work–life interaction is understood to be shaped by individuals' subjective cognitive appraisals of their own situation (Moen *et al.*, 2008).

Positive attitudes towards work are likely to arise when the degree of PE fit is high, while negative attitudes will develop when perceived PE fit is low. PE fit has been used to explain experiences at the work–family interface by a number of researchers (see, for example, Kreiner, 2006). For example, Chen *et al.* (2009) report that congruence between people's preferences for work–family segmentation/integration and organizational supplies (e.g. PE fit) predicts the positive spillover of behaviours, skills or values from work to family life, indicating that PE fit is directly linked to positive work–family interactions.

Antecedents of positive work–family interaction

Positive interaction between work and family has been conceptualized as 'a developmental phenomenon enabled by resources made available in one domain of life that can be applied in another' (Butler *et al.*, 2005, p. 165). It is generally posited that the antecedents of work–family conflict are demands emanating in the work and family domains, while antecedents of positive work–family interaction are resources attained as a result of participation in the two domains. A number of different resources have been linked to positive work–family interaction, including support, autonomy, control and flexibility (Hill *et al.*, 2007). For example, Grzywacz and Marks (2000) report that receiving support, at either work or home, creates positive feelings that can improve performance in the other domain. Grzywacz and Butler (2005) found decision latitude at work was associated with a higher perception that work has a beneficial impact on family. Thompson and Prottas (2005) report that job autonomy and various informal supports, e.g. support from one's supervisor, were positively predictive of work–family facilitation. Butler *et al.* (2005) also identify perceptions of job control as a predictor of positive work–family interaction. The role of perceived control is one of interest because Thompson and Prottas (2005) noted that control mediated the relationship between other job-related resources and positive interaction between work and family.

Previous research also shows that the direction of positive work–family interaction (e.g. whether a benefit flowed from work to family or from family to work) depended upon the source of a resource. Thus, resources arising in the work domain have predicted positive work-to-family interaction whereas resources arising in the home domain give rise to positive family-to-work interaction (Voydanoff, 2004).

Work–family 'fit' as a mediator

Subsequent work by Voydanoff (2005) proposes the concept of work–family fit as a linking mechanism between the work and family domains. Voydanoff (2005) suggests that fit exists when resources in one domain (either work or family) are sufficient to meet the needs or demands in the other domain. Voydanoff argues that high levels of fit contribute to improved role performance in both work and family roles. Similarly, McFadyen *et al.* (2005) suggest that fit is a subjective assessment of the extent to which work rewards and supplies fit workers' family needs/goals. McFadyen *et al.* (2005) report that fit mediated the relationship between knowledge of available work–family supports and satisfaction with an organization's work–family programmes, concluding that work–family fit acts as a linking mechanism between resources in the workplace (e.g. knowledge of work–family programmes) and work-related attitudes. In this research, we suggest that perceptions of work–family fit are the linking mechanism between job-related resources and work–family enrichment. That is, job resources (e.g. support, flexibility, control and time adequacy) support work-to-family enrichment to the extent that they are perceived to provide a good work–family fit by workers. In particular we investigated one specific aspect of work–family fit, i.e. work schedule fit, as a linking mechanism between job-related resources and work-to-family enrichment. Work schedule fit is a direct measure of respondents' perception that their work schedule provides a good fit for themselves and their family. Work schedule fit is pertinent to the construction sample because previous research has linked long and inflexible hours of work with work–family conflict and burnout in the construction industry (Lingard and Francis, 2004, 2005). We also explored whether the mediation paths between job-related resources and work-to-family enrichment differed depending upon the nature of the job resource. For example, the resources of flexibility and control provide workers with a greater autonomy over their work arrangement. It is possible that the mediation path through work schedule fit will be stronger for resources that increase workers' autonomy.

The aims of the research were fourfold:

- to measure work–family enrichment in a sample of Australian construction workers;
- to explore the job-related resources associated with work-to-family enrichment among the sample of Australian construction workers;
- to examine whether the relationship between job-related resources and work-to-family enrichment is mediated by perceptions of work schedule fit; and

- to examine whether mediation paths between job-related resources and work-to-family enrichment vary, depending upon the nature of the resource.

Mediator variables explain how or why a predictor variable influences an outcome variable (Baron and Kenny, 1986). Thus, work schedule fit is viewed as a mechanism through which job-related resources influence work-to-family enrichment. Figure 1 depicts the hypothesis that perceptions of work schedule fit mediate the relationship between job-related resources and work-to-family enrichment.

The research context

A survey of employees at the 'West Gate Freeway Alliance' was carried out. The Alliance is engaged in the upgrade of the Monash and West Gate freeways in Melbourne, Victoria. The primary objective of the project is to decrease travel times along these corridors. The State Government of Victoria, through its roads authority VicRoads, formed a consortium with four commercial design/construction organizations to deliver the West Gate section of the project. Together with the client these organizations comprise the Alliance. The alliance delivery model has become popular in the procurement of major public-funded infrastructure projects in the Australian construction industry. Hutchinson and Gallagher (2003, p. 8) refer to project alliancing as 'a project delivery strategy where sponsor and commercial participants' objectives are aligned to maximize performance; proactively manage risk; reduce cost; and achieve outstanding results in sponsor key objectives'. The alliance delivery model seeks to overcome the adversarial relationships that have historically existed in the construction industry. Instead, alliance participants form a cohesive organization which works together towards a common goal. The alliance environment is ideally suited to the implementation of innovative approaches to support employees' work–life balance (Lingard *et al.*, 2007).

Prior to undertaking the survey, a Health and Wellbeing Committee had been operating at the project. This Committee had overseen the implementation of a number of work–life initiatives in the 12 months prior to completion of the survey. These included a limited implementation of employee choice rostering, the provision of some flexibility concerning when employees could take 'rostered days off' and informal monitoring of employees' work hours. Thus, the Alliance is characterized by a proactive culture that is generally supportive of workers' work–life balance (Turner *et al.*, 2009).

Methods

Data collection

Quantitative data were collected by means of a survey, which was administered using the 'TurningPoint' automated response system with 'KeyPad' hand-held devices. The advantages of this system include the completeness of data and minimization of human error in data entry (de Quiros *et al.*, 2008). A total of 14 sessions were held across three project site offices. All employees of the West Gate Freeway Alliance were invited to participate in a session, irrespective of occupational group. One hundred and sixty-nine participants completed the survey. The total workforce at the time was 300, including day labour hire workers and short-term contractors. Thus, relative to population size the survey response rate was 56% of all workers at the project.

Work–family enrichment was measured using six items drawn from the National Survey of Midlife Development in the United States, as cited in Grzywacz and Marks (2000). This scale was used by Wayne *et al.* (2004) and Innstrand *et al.* (2008) to measure work–family facilitation and was used by Grzywacz and Butler (2005) as a measure of positive spillover between work and family, illustrating the way in which these terms have been used interchangeably in previous research. However, the items imply a transfer of energy or behaviours that also *improve performance* in the other role (Hanson *et al.*, 2006). Thus, we refer to this as work–family enrichment in accordance with the conceptual definitions of positive work–family interaction provided by Carlson *et al.* (2006) and Wayne *et al.*

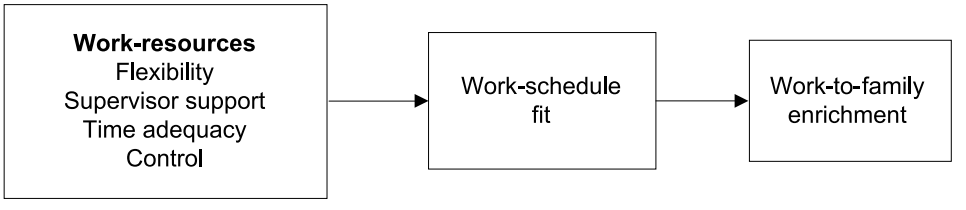

Figure 1 Proposed mediation model of job resources, schedule fit and work-to-family enrichment

(2007). Example items include 'The things I do at work help me deal with personal and practical issues at home' and 'Talking with someone at home helps me deal with problems at work'. Participants were asked to indicate how often they experienced these circumstances in the past year. The items were scored on a five-point scale ranging from one (never) to five (all of the time).

This scale has demonstrated high levels of internal consistency reliability when used in previous studies. For example, Grzywacz and Marks (2000) report Cronbach's alpha coefficients of 0.73 and 0.70, Wayne *et al*. (2004) report Cronbach's alpha coefficients of 0.72 and 0.68 and Innstrand *et al*. (2008) report Cronbach's alpha coefficients of 0.72 and 0.69 for work-to-family and family-to-work facilitation respectively. Grzywacz and Butler (2005) used the scale to measure work-to-family facilitation only and report a Cronbach's alpha of 0.73 for this subscale.

Work schedule fit was measured using two items drawn from Barnett and Brennan, as cited in Moen *et al*. (2008). Participants were asked to indicate their level of agreement with two questions: (1) 'taking into account your current work hours and schedule, how well is your work arrangement working for you?' and (2) 'taking into account your current work hours and schedule, how well is your work arrangement working for your family or personal life?' Response options ranged from one (extremely poorly) to seven (extremely well). Moen *et al*. (2008) report a Cronbach's alpha coefficient of 0.86 in their previous use of this measure of work schedule fit.

Time adequacy was measured using 12 items originally drawn from Van Horn *et al.*, as cited in Moen *et al.* (2008). Participants were asked the frequency with which they have enough time to engage in a range of non-work activities. Example items were 'please indicate the frequency with which there is enough time for you to keep in shape' and 'please indicate the frequency with which there is enough time for you to prepare or eat healthy meals'. Items were scored on a seven-point scale ranging from one (not at all) to seven (all the time). Moen *et al*. (2008) report a Cronbach's alpha coefficient of 0.89 in their previous use of this measure of time adequacy.

Control was measured using a seven-item scale developed by Thomas and Ganster (1995). Items included 'how much choice do you have over when you begin and end each workday or each workweek?' and 'to what extent can you choose to do some of your work at home instead of your usual place of employment?' Response options ranged from one (very little) to five (very great). Thomas and Ganster (1995) report a Cronbach's alpha coefficient of 0.75 in the previous use of the 14-item scale from which our seven items were drawn. The internal consistency of the reduced seven-item scale we used was also tested in the analysis and found to be acceptable (see Table 3).

Flexibility was measured using two items from a four-item scale developed by Hill *et al*. (2001). The first item asked 'how much flexibility do you have in scheduling when you do your work?' and was scored on a five-point scale ranging from one (no flexibility) to five (complete flexibility). The second item was the following statement 'I have sufficient flexibility in my job to maintain adequate work, personal and family life balance'. Participants were asked to rate their agreement/disagreement with this statement on a scale ranging from one (strongly disagree) to five (strongly agree). Hill *et al*. (2001) report a Cronbach's alpha coefficient of 0.72 in the previous use of the four-item scale from which our two items were drawn. The inter-item correlation for the two items that were used in the present study was within an acceptable range (see Table 3).

Supervisor support was measured utilizing four items drawn from two larger scales (Thomas and Ganster, 1995; Lambert, 2000). Items included were 'my immediate supervisor is concerned about me as a person' and 'my immediate supervisor would switch schedules (hours, overtime hours, vacation) to accommodate my family responsibilities'. Participants were asked to rate the frequency with which their immediate supervisor demonstrated these supportive behaviours. Items were rated on a scale ranging from one (not at all) to five (all of the time). Lambert (2000) does not report on the internal consistency reliability of the original eight-item scale from which two of our items were drawn. Thomas and Ganster (1995) report a Cronbach's alpha coefficient of 0.83 for their original nine-item support scale, from which two items used in the present study were drawn. Owing to the fact that supervisor support items were drawn from two separate sources, the internal consistency reliability of the composite scale was examined and found to be acceptable (see Table 3).

Data analysis

Data collected using multidimensional scales (e.g. work–family enrichment) were initially analysed using a principal components analysis with varimax rotation. Bi-variate Pearson product moment correlations were performed to examine the relationship between job-related resources and work-to family enrichment. Modelling procedures together with multiple regression analyses were undertaken to determine the extent to which job-related resources predicted work-to-family enrichment. Where a

significant direct effect was found, procedures described by Baron and Kenny (1986) were used to test whether perceptions of work schedule fit mediated the relationship between job-related resources and work-to-family enrichment.

Results

Table 1 shows the characteristics of the sample. The majority of respondents was male (n = 149, 88.2%). Twenty respondents (11.8%) were female. The small number of women in the sample prohibited a separate analysis of male and female respondents. However, in order to justify our decision to aggregate the data and treat male and female respondents as a single sample, we undertook independent samples t-tests comparing male and female respondents' mean scores for all of the variables of interest in this study. We found no significant differences for any of the independent variables (flexibility, supervisor support, control or time adequacy), the dependent variable (work-to-family enrichment) or the hypothesized mediator (work schedule fit).

The sample was mixed in terms of family status and age. However, older workers were not as well represented as younger workers. Forty-seven respondents (27.8%) were aged 30 or younger. Fifty-one respondents (30.2%) were between the ages of 31 and 40, while 48 respondents (28.4%) were between 41 and 50. Twenty-two respondents (13.1%) were 51 or older. One hundred and one respondents (59.8%) indicated that they were parents, while 68 (40.2%) were child-free. The majority of respondents (n = 128, 75.7%) were partnered and 41 (24.3%) were single. The modal number of children under the age of 18 was two, with 37 respondents (21.9%) indicating they have two children under the age of 18. Another 22 respondents (33%) indicated they have one dependent child. The sample was split fairly evenly between waged and salaried workers. Eighty-three respondents (49.1%) indicated they were salaried and 86 (50.9%) were waged workers. Ninety-one respondents (53.8%) indicated they work on site, and a further 67 (39.6%) indicated they are based in the site office. The majority of participants (n = 129, 76.3%) worked long hours, i.e. in excess of 45 hours per week. Only 10 respondents (5.9%) indicated they worked, on average, 40 hours a week or less.

Factor structure of work–family enrichment

When subjected to principal components analysis with varimax rotation, the work–family enrichment scale produced a clear two-factor solution, explaining 60%

Table 1 Demographic characteristics of the sample

	N	%
Sex		
Male	149	88.2
Female	20	11.8
Age		
30 and under	47	27.8
31–40	51	30.2
41–50	48	28.4
51–60	18	10.7
Over 60	4	2.4
Missing data	1	0.6
Children		
Yes	101	59.8
No	68	40.2
Relationship status		
Partnered	128	75.7
Single	41	24.3
Type of pay		
Salaried	83	49.1
Waged	86	50.9
Work location		
On site	91	53.8
Site office	67	39.6
Other	11	6.5
No. of children =>18		
1	22	13.0
2	14	8.3
3	9	5.3
4	3	1.8
>4	1	0.6
N/A	117	69.2
Missing data	3	1.8
No. of children <18		
1	22	13.0
2	37	21.9
3		
4	4	2.4
>4	2	1.2
N/A	91	53.8
Missing data	1	0.6
Hours worked per week		
<35	2	1.2
35–40	8	4.7
41–45	29	17.2
46–50	29	17.2
51–55	46	27.2
56–60	32	18.9
61–65	12	7.1
>65	10	5.9
Missing data	1	0.6

Table 2 Rotated component matrix for the positive spillover items

	Component	
	1	2
The love and respect you get at home makes you feel confident about yourself at work	0.863	0.109
Your home life helps you relax and feel ready for the next day's work	0.735	0.126
Talking with someone at home helps me deal with problems at work	0.724	0.093
The things you do at work help you deal with personal and practical issues at home	0.103	0.853
The skills you use on your job are useful for things you have to do at home	0.001	0.728
The things you do at work make you a more interesting person at home	0.280	0.639

of variance. Table 2 shows the rotated component matrix. The Cronbach's alpha scores for these components were 0.688 and 0.592 for factors one and two respectively. Pallant (2007) notes that it is common to find low Cronbach values with short scales (scales with fewer than 10 items) and suggests it may be more appropriate to report the mean inter-item correlation for the items, with the optimal range for the inter-item correlation value ranging from 0.2 to 0.4. Both factors one and two have an acceptable mean inter-item correlation value, of 0.42 and 0.32 respectively.

The scores support a bi-directional model of work–family enrichment with the first component comprising three items relating to the benefit transferred from participation in home life into the workplace, or family-to-work enrichment (F→WE). The second component relates to the benefit transferred from work activities into home life, or work-to-family enrichment (W→FE). As we are particularly interested in the work determinants of work–family enrichment the remainder of our analysis used the second component (W→FE) as the dependent variable because this is the direction more likely to be influenced by organizational influences (Chen *et al.*, 2009).

Correlates of work-to-family enrichment

Table 3 shows the bi-variate correlations between the work–family enrichment dimensions, work hours and job-related resources. W→FE was significantly and positively related to F→WE (r = 0.264, p = 0.001). Neither W→FE nor F→WE was significantly correlated with work hours, supporting the contention that resources (and not demands) are associated with work–family enrichment. Perceptions of income adequacy were significantly, positively correlated with W→FE (r = 0.194, p = 0.015) but not F→WE. F→WE was positively correlated with the job-related resources, supervisor support (r = 0.354, p = 0.000), time adequacy (r = 0.294, p = 0.000), control (r = 0.252, p 0.002) and flexibility (r = 0.340, p = 0.000). W→FE was also significantly positively correlated with supervisor support (r = 0.311, p = 0.000), time adequacy (r = 0.373, p = 0.000), control, (r = 0.262, p = 0.001) and flexibility (r = 0.348, p = 0.000). Perceptions of work schedule fit were significantly correlated with both W→FE (r = 0.404, p = 0.000) and F→WE (r = 0.306, p = 0.000).

The role of work schedule fit

In order to test whether work schedule fit mediated the relationship between job-related resources and W→FE,

Table 3 Bi-variate correlation matrix for work–family enrichment and job characteristics (resources)

	1	2	3	4	5	6	7	8	9
1. Work-to-family enrichment	0.688[a]								
2. Family-to-work enrichment	0.264**	0.592[a]							
3. Hours worked	0.016	–0.083	N/A						
4. Income adequacy	0.194*	0.116	0.120	N/A					
5. Supervisory support	0.311**	0.354**	0.004	0.099	0.809[a]				
6. Work schedule 'fit'	0.404**	0.306**	–0.142	0.238**	0.332**	0.792[b]			
7. Time adequacy	0.373**	0.294**	–0.135	0.203**	0.457**	0.569**	0.899[a]		
8. Control	0.262**	0.252**	–0.286**	0.243**	0.466**	0.430**	0.495**	0.750[a]	
9. Flexibility	0.348**	0.340**	–0.285**	0.171*	0.514**	0.609**	0.592**	0.793**	0.540[b]

Notes: [a] Cronbach's alpha (internal consistency reliability) coefficients shown on the diagonal.

[b] Inter-item correlation used for two-item scales.

** Correlation is significant at the 0.001 level (2 tailed).

* Correlation is significant at the 0.05 level (2 tailed).

procedures described by Baron and Kenny (1986) were followed. Baron and Kenny suggest that, to test for mediation, three regression equations must be estimated as follows:

- the mediator (work schedule fit) is regressed on the independent variable (job-related resources);
- the dependent variable (W→FE) is regressed on the independent variable (job-related resources); and
- the dependent variable (W→FE) is regressed on both the independent variable (job-related resources) and the mediator (work schedule fit).

To establish mediation, the independent variable must affect the mediator in the first equation; the independent variable must affect the dependent variable in the second equation; and the mediator must affect the dependent variable in the third equation. If these conditions hold, then the effect of the independent variable on the dependent variable in the third equation must be less in the third equation than in the second.

Regression analyses were undertaken to test for the mediation effect of work schedule fit in the relationship between job-related resources: (i) flexibility; (ii) supervisor support; (iii) control; and (iv) time adequacy. The results are shown in Tables 4 to 7.

As Tables 4 to 7 show, in all cases, the conditions for a mediation effect were met.

Table 4 shows that flexibility predicted work schedule fit (β = 0.609, p = 0.000). In the second equation, flexibility predicted W→FE (β = 0.348, p = 0.000). In the third equation, work schedule fit predicted W→FE (β = 0.301, p = 0.001) and the effect of flexibility on W→FE was lower in the third equation (β = 0.170, p = 0.066) than it was in the second.

Table 5 shows that supervisor support predicted work schedule fit (β = 0.332, p = 0.000). In the second equation supervisor support predicted W→FE (β = 0.311, p = 0.000). In the third equation, work schedule fit predicted W→FE (β = 0.323, p = 0.000) and the effect of supervisor support on W→FE was lower in the third equation (β = 0.208, p = 0.008) than it was in the second.

Table 6 shows that control predicted work schedule fit (β = 0.430, p = 0.000). In the second equation choice predicted W→FE (β = 0.262, p = 0.001). In the third equation, work schedule fit predicted W→FE (β = 0.348, p = 0.000) and the effect of control on W→FE was lower in the third equation (β = 0.138, p = 0.094) than it was in the second.

Table 7 shows that perceptions of time adequacy predicted work schedule fit (β = 0.569, p = 0.000). In the second equation perceptions of time adequacy predicted W→FE (β = 0.404, p = 0.000). In the third

Table 4 Regression analysis examining work schedule fit as a mediator in the flexibility–W→FE relationship

Step	Variable	B	SE	*β*	t	*p*
Equation 1: Work schedule 'fit' regressed on flexibility	Constant	1.824	0.282	–	6.477	0.000
	Flexibility	1.014	0.104	0.609	9.737	0.000
Equation 2: Work-to-family enrichment regressed on flexibility	Constant	–0.906	0.209	–	–4.332	0.000
	Flexibility	0.349	0.077	0.348	4.560	0.000
Equation 3: Work-to-family enrichment regressed on flexibility and work schedule 'fit'	Constant	–1.259	0.231	–	–5.462	0.000
	Flexibility	0.171	0.092	0.170	1.855	0.066
	Work–family 'fit'	0.183	0.056	0.301	3.278	0.001

Table 5 Regression analysis examining work schedule 'fit' as a mediator in the supervisor support–W→FE relationship

Step	Variable	B	SE	*β*	t	*p*
Equation 1: Work schedule 'fit' regressed on supervisor support	Constant	2.746	0.391		7.018	0.000
	Supervisor support	0.534	0.120	0.332	4.439	0.000
Equation 2: Work-to-family enrichment regressed on supervisor support	Constant	–0.886	0.239		–3.706	0.000
	Supervisor support	0.295	0.073	0.311	4.018	0.000
Equation 3: Work-to-family enrichment regressed on supervisor support and work schedule 'fit'	Constant	–1.437	0.266		–5.392	0.000
	Supervisor support	0.197	0.074	0.208	2.681	0.008
	Work–family 'fit'	0.191	0.046	0.323	4.173	0.000

Table 6 Regression analysis examining work schedule 'fit' as a mediator in the control–W→FE relationship

Step	Variable	B	SE	β	t	p
Equation 1: Work schedule 'fit' regressed on control	Constant	2.027	0.408		4.963	0.000
	Control	1.019	0.169	0.430	6.018	0.000
Equation 2: Work-to-family enrichment regressed on control	Constant	−0.880	0.274		−3.215	0.002
	Control	0.379	0.113	0.262	3.351	0.001
Equation 3: Work-to-family enrichment regressed on control and work schedule 'fit'	Constant	−1.423	0.282		−5.039	0.000
	Control	0.201	0.119	0.138	1.685	0.094
	Work–family 'fit'	0.214	0.050	0.348	4.255	0.000

Table 7 Regression analysis examining work schedule 'fit' as a mediator in the time adequacy-to- W→FE relationship

Step	Variable	B	SE	β	t	p
Equation 1: Work schedule 'fit' regressed on time adequacy	Constant	1.206	0.377		3.195	0.002
	Time adequacy	0.891	0.102	0.569	8.742	0.000
Equation 2: Work-to-family enrichment regressed on time adequacy	Constant	−1.103	0.212		−5.202	0.000
	Time adequacy	0.245	0.045	0.404	5.471	0.000
Equation 3: Work-to-family enrichment regressed on time adequacy and work schedule 'fit'	Constant	−1.468	0.269		−5.455	0.000
	Time adequacy	0.195	0.084	0.205	2.325	0.021
	Work–family 'fit'	0.174	0.053	0.292	3.309	0.001

equation, work schedule fit predicted W→FE (β = 0.292, p = 0.001) and the effect of choice on W→FE was lower in the third equation (β = 0.205, p = 0.021) than it was in the second.

Discussion

The possibility of work–family harmony

The results suggest that there is value in considering the positive side of the work–family interface in the construction industry. A measure of work–family enrichment previously used in other industries was tested in the Australian construction industry context. The factor analysis revealed a clear two-factor structure confirming the bi-directional nature of work–family enrichment. The inter-item correlations for these two factors were within the acceptable range.

The results also indicate some meaningful linkages between job-related resources, including supervisory support, control, time adequacy and flexibility, and work–family enrichment. All of these job resources were significantly positively linked with both directions of work-to-family enrichment. The fact that our sample consisted of approximately equal numbers of waged (blue collar) and salaried (white collar) workers and that respondents in all age groups were represented suggests that the pattern of linkages between job-related resources and work–family enrichment are broadly applicable. However, the majority of respondents did indicate that they are partnered with dependent children, which may have impacted on the nature and strength of relationships between job-related resources and work–family enrichment. As it is not possible to determine the extent to which this was the case, future research with larger samples should seek to examine whether workers' family characteristics moderate the relationship between job-related resources and work–family enrichment.

Previous work–family research has mostly been based upon the scarcity hypothesis, which suggests that active participation in more than one domain is problematic because involvement in one role inevitably makes it more difficult to participate in other roles (Greenhaus and Beutell, 1985) Adopting this premise, researchers have tended to focus on the concept of work–family conflict, i.e. a perception that work and family life are incompatible in some respects. Previous research by two of the current authors has measured work–family conflict experienced by construction industry workers and identified work-related predictors of work–family conflict. In particular, long and inflexible work hours have been a significant determinant of experienced work-to-family conflict. It is important to understand the experience of work–family conflict, as well as its sources and outcomes, because work–family conflict is consistently linked to undesirable consequences for

workers, families and organizations. Thus, in the development of work–life programmes, construction organizations should continue to reduce work–family conflict.

However, the reliance upon the scarcity hypothesis to understand experiences at the work–family interface may only provide partial insight into the nature of the relationship between work and family. In keeping with a growing interest in positive aspects of the work–family interface, recent research demonstrates that simultaneous participation in work and family domains can provide positive benefits in terms of work–family enrichment. Some have argued the need to change the metaphor of work–family 'balance', which implies that work and family are inevitably a zero-sum game, i.e. involvement in one domain is always to the detriment of involvement in the other domain. For example, Hill *et al.* (2007), in recognizing that synergies between work and family life can exist, suggest that a harmony metaphor is more appropriate to capture the nature of work–family relationships. Further, they recommend that organizations identify developmental opportunities that can help workers to achieve positive work–family interaction.

Job-related resources

The results of the current research are consistent with the premise that job-related resources predict positive interaction between work and family. However, contrary to theoretical propositions that resources arising in the work domain will predict W→FE but not F→WE, our results indicate that job-related resources of supervisor support, time adequacy, flexibility and control were positively associated with both W→FE and F→WE.

The positive association between job-related resources and work–family enrichment has important implications for construction organizations in the development of their work–life programmes. In the context of the construction industry culture of working long hours, the resources of supervisor support, time adequacy, choice and flexibility can help to facilitate work–family enrichment. These findings are consistent with previous research by Thompson and Prottas (2005), who report that perceptions of control and flexibility were important predictors of positive spillover between work and family. The importance of supervisor support, control, flexibility and time adequacy are also consistent with the findings of Behson (2002, 2005) who argues that informal work accommodations to family have a positive impact upon workers' experiences at the work–family interface. Further, Behson (2005) reports that informal work–family supports have a greater positive impact upon workers' experiences than the provision of formal work–life supports.

Our results have implications for the development of work–life programmes within construction organizations. In particular, the results suggest that reliance on formal work–life benefits (e.g. leave entitlements and organizational working time policies) may be insufficient. Rather, a great deal of benefit might be achieved through the careful design of jobs to provide resources that are linked to positive work–family interactions. Given the long hours typically worked by construction industry workers, the beneficial effect of resources, such as control, flexibility and time adequacy are of particular interest. The results of this research support the argument made by van Steenbergen *et al.* (2007) that workers act as 'time architects' who allocate and structure time in different manners according to their work and family commitments. Although time is finite, given sufficient flexibility and control, workers are able to allocate and structure time in such a way as to participate in both family and work roles effectively. Van Steenbergen *et al.* (2007) argue that spending time in one role can stimulate one to define priorities and allocate, use or plan time in other roles more effectively. For example, time spent in family activities can make it easier for workers to define priorities and set boundaries on time taken on work tasks, improving their overall efficiency and performance. Conversely, time spent at work can prompt workers to make the most of time with family, for example by making 'quality time' available for family activities.

The mediating role of work–family fit

Our results also highlight the role of perceptions of work–family fit as a linking mechanism between job-related resources and W→FE. In the case of all four job-related resources (supervisor support, time adequacy, flexibility and control) perceptions that work schedule provided a good fit with respondents' own and their family's expectations mediated the relationship between the provision of the resource and W→FE. This indicates that the beneficial impact of job-related resources can be explained to varying degrees by the impact that these resources have on perceptions of how well an individual's work schedule fits with their own and their family's expectations. In the case of both flexibility and control, a full mediation effect was found. That is, after work schedule fit was included in the regression model, the relationship between the resource and W→FE became non-significant. Both flexibility and control increase workers' autonomy relating to their work arrangements, which might explain the stronger mediation path for these two independent variables. In the case of time

adequacy and supervisor support, the mediation was partial. That is, after work schedule fit was included in the regression model, the relationship between the resource and W→FE remained significant but this significance was diminished. This suggests that the resources of time adequacy and supervisor support impact on W→FE both directly and indirectly through their positive impact upon perceptions of work schedule fit. The different mediation paths demonstrated by the independent variables indicates that organizations should consider the type of job-related resources provided when designing jobs that are supportive of W→FE.

Again, this finding has important implications for the design of organizational work–life programmes. Workers are faced with different demands in their non-work lives. Non-work demands vary according to sex, life stage and family circumstances (Moen *et al.*, 2008). Unfortunately, there were too few women in our sample to compare or contrast the linkages between job-related resources and W→FE for men and women; however, gendered division of family responsibilities might shape male and female workers' experiences of job-related resources, work–family fit and work–family enrichment. More research is recommended to test whether gender moderates the extent to which work–family fit mediates the relationship between job-related resources and W→FE.

Fit is a subjective assessment of how well the resources available to an individual fit with the demands they experience at a given point in time. Given that fit mediates the relationship between job-related resources and work–family enrichment, it is advisable that work–life programmes take into consideration the workforce profile and implement strategies (including job design) that will provide a high level of fit for workers as it is through the perception of work–family fit that much of the beneficial impact of job-related resources is experienced.

Conclusions

The results support the usefulness of both the COR and PE fit theoretical frameworks for understanding the work–family interface in the construction industry in showing that the availability of job-related resources is linked (through workers' perceptions of fit) to W→FE. In doing so, the research addresses the neglected issue of the positive side of the work–family interface in the construction context. The results of this research highlight the need to analyse the positive aspects of work–family interaction in order to answer questions about how organizations can support employees. The research also suggests that jobs may be designed to facilitate work–family enrichment in the construction industry, in particular through the provision of supervisor support, flexibility, time adequacy and control. Further research should identify other job attributes that are linked to positive work–family interactions. Finally, in identifying work schedule fit as a linking mechanism between job-related resources and W→FE, the results of this research highlight the importance of PE fit in work and family research and the need to consider workers' perceptions of fit between the resources available to them in their work and the demands they experience in their non-work lives.

Limitations and future research

The research was limited in a number of important respects. The possibility of common methods bias always exists with self-report survey data of this kind. Measures we took to mitigate the effects of common methods bias included the use of items with reversed response polarity in a number of the scales. Notwithstanding this, future research should utilize varied data collection methods to overcome this potential source of bias. The analysis focused exclusively on the workplace antecedents of work–family enrichment. Family antecedents of family-to-work enrichment were not analysed. The research was undertaken as a baseline survey in a larger research project in which work–family supports will be designed, implemented and evaluated in a number of case study construction projects. Thus, the focus was on the impact of workplace factors in shaping work–family experiences and future research should examine the role of predictors of work–family enrichment originating in the family domain. The research was also limited in the fact that we conceptualized work–family enrichment using a simple bi-directional approach. We are therefore unable to distinguish between different types of work–family interaction, for example whether the enrichment is related to the transfer of energy, time, behaviour or psychological characteristics. The measurement method we deployed for work–family enrichment involved the use of a fairly blunt measure that combined but did not discriminate between behavioural and energy transfers between the two domains. This was by necessity to maintain the brevity of the survey. Multi-faceted measures of positive work–family interaction are very long, for example van Steenbergen *et al.*'s work–family facilitation scale contains 48 items and was too long to use in this research. Future research is needed to examine the validity of more sophisticated, multi-faceted models of positive work–family interaction in the construction industry. It is important that, in the future, more fine-grained analysis of positive aspects of work and family be

undertaken to identify the relationship between different facets of positive work–family interaction and to better understand how the combination of multiple roles is experienced as positive by workers in the construction industry.

Acknowledgements

This research was funded by the Australian Research Council under Linkage Project Grant LP08820335. Grateful thanks are also extended to employees at the West Gate Freeway Alliance construction project.

References

Allis, P. and O'Driscoll, M. (2008) Positive effects of nonwork-to-work facilitation on well-being in work, family and personal domains. *Journal of Managerial Psychology,* **23**, 273–91.

Bacharach, S.B., Bamberger, P. and Conley, S. (1991) Work–home conflict among nurses and engineers: mediating the impact of role stress on burnout and satisfaction at work. *Journal of Organizational Behavior,* **12**, 39–53.

Barnett, R.C. and Baruch, G.K. (1985) Women's involvement in multiple roles and psychological distress. *Journal of Personality and Social Psychology,* **49**, 35–45.

Barnett, R.C. and Hyde, J.S. (2001) Women, men, work and family: an expansionist theory. *American Psychologist,* **56**, 781–96.

Baron, R.M. and Kenny, D.A. (1986) The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology,* **51**, 1173–82.

Behson, S.J. (2002) Coping with family-to-work conflict: the role of informal work accommodations to family. *Journal of Occupational Health Psychology,* **7**, 324–41.

Behson, S.J. (2005) The relative contribution of formal and informal organizational work–family support. *Journal of Vocational Behavior,* **66**, 487–500.

Butler, A.B., Grzywacz, J.G., Bass, B.L. and Linney, K.D. (2005) Extending the demands-control model: a daily diary study of job characteristics, work–family conflict and work–family facilitation. *Journal of Occupational and Organizational Psychology,* **78**, 155–69.

Carlson, D.S., Kacmar, K.M., Holliday Wayne, J. and Grzywacz, J.G. (2006) Measuring the positive side of the work–family interface: development and validation of a work–family enrichment scale. *Journal of Vocational Behavior,* **68**, 131–64.

Chen, Z., Powell, G. and Greenhaus, J. (2009) Work–family conflict, positive spillover and boundary management: a person–environment fit approach. *Journal of Vocational Behavior,* **74**, 82–93.

De Quiros, A.C.B., Lopez, R., Aranda-Mena, G. and Edwards, P. (2008) Human reliability as a source of error in research, in Dainty, A. (ed.) *Procs 24th Annual ARCOM Conference,* Cardiff, 1–3 September, Association of Researchers in Construction Management, Reading, pp. 687–96.

Edwards, J.R. and Rothbard, N.P. (2000) Mechanisms linking work and family: clarifying the relationship between work and family constructs. *Academy of Management Review,* **25**, 178–99.

Grandey, A.A. and Cropanzano, R. (1999) The conservation of resources model applied to work–family conflict and strain. *Journal of Vocational Behavior,* **54**, 350–70.

Greenhaus, J.H. and Beutell, N.J. (1985) Sources and conflict between work and family roles. *Academy of Management Review,* **10**, 76–88.

Greenhaus, J.H. and Powell, G.N. (2006) When work and family are allies: a theory of work–family enrichment. *Academy of Management Review,* **31**(1), 72–92.

Grzywacz, J.G. and Butler, A.B. (2005) The impact of job characteristics on work-to-family facilitation: testing a theory and distinguishing a construct. *Journal of Occupational Health Psychology,* **10**(2), 97–109.

Grzywacz, J.G., Carlson, D.S., Kacmar, K.M. and Holliday-Wayne, J. (2007) A multi-level perspective on the synergies between work and family. *Journal of Occupational and Organizational Psychology,* **80**, 559–74.

Grzywacz, J.G. and Marks, N.F. (2000) Reconceptualizing the work-family interface: an ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology,* **5**, 111–26.

Guerts, S.A.E., Kompier, M.A.J., Roxburgh, S. and Houtman, I.L.D. (2003) Does work–home interference mediate the relationship between workload and wellbeing? *Journal of Vocational Behavior,* **63**, 532–59.

Haar, J.M. and Bardoel, E.A. (2008) Positive spillover from the work–family interface: a study of Australian employees. *Asia Pacific Journal of Human Resources,* **46**, 275–87.

Hanson, G.C., Hammer, L.B. and Colton, C.L. (2006) Development and validation of a multidimensional scale of perceived work–family positive spillover. *Journal of Occupational Health Psychology,* **11**, 249–65.

Hill, E., Hawkins, A., Ferris, M. and Weitzman, M. (2001) Finding an extra day a week: the positive influence of perceived job flexibility on work and family life balance. *Family Relations,* **50**, 49–58.

Hill, E.J., Allen, S., Jacob, J., Bair, A.F., Bikhazi, S.L., Van Langeveld, A., Martinengo, G., Parker, T.T. and Walker, E. (2007) Work–family facilitation: expanding theoretical understanding through qualitative exploration. *Advances in Developing Human Resources,* **9**, 507–26.

Hobfoll, S.E. (1989) Conservation of resources: a new attempt at conceptualizing stress. *American Psychologist,* **44**, 513–24.

Hobfoll, S.E. (2001) The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory. *Applied Psychology: An International Review,* **50**, 337–421.

Hutchinson, A. and Gallagher, J. (2003) Project alliances: an overview, in Alchimie Pty Ltd and Phillips Fox (eds) *Project Alliances Overview,* Centre of Advanced Engineering Seminars, NZ.

Innstrand, S.T., Langballe, E.M., Espnes, G.A., Falkum, E. and Aasland, O.G. (2008) Positive and negative work–family interaction and burnout: a longitudinal study of reciprocal relations. *Work & Stress,* **22**, 1–15.

Kreiner, G.E. (2006) Consequences of work–home segregation or integration: a person–environment fit perspective. *Journal of Organizational Behavior,* **27**, 485–507.

Lambert, S.J. (2000) Added benefits: the links between work–life benefits and organizational citizenship behavior. *Academy of Management Journal,* **43**, 801–15.

Lingard, H. and Francis, V. (2004) The work–life experiences of office and site-based employees in the Australian construction industry. *Construction Management and Economics,* **22**, 991–1002.

Lingard, H. and Francis, V. (2005) Does work–family conflict mediate the relationship between job schedule demands and burnout in male construction professionals and managers? *Construction Management and Economics,* **23**, 733–45.

Lingard, H. and Francis, V. (2006) Does a supportive work environment moderate the relationship between work–family conflict and burnout among construction professionals? *Construction Management and Economics,* **24**, 185–94.

Lingard, H., Brown, K., Bradley, L., Bailey, C. and Townsend, K. (2007) Improving employees' work–life balance in the construction industry: project alliance case study. *Journal of Construction Engineering and Management,* **133**(10), 807–15.

MacKenzie, S. (2008) *A Close Look at Work and Life Balance/Wellbeing in the Victorian Construction Sector,* Report for the Building Industry Consultative Council, Reinventing the Image Steering Committee, Equilibrium Work–life Solutions, Melbourne.

McFadyen, J.M., Kerpelman, J.L. and Adler-Baeder, F. (2005) Examining the impact of workplace supports: work–family fit and satisfaction in the US military. *Family Relations,* **54**, 131–44.

Marks, S.R. (1977) Multiple roles and role strain: some notes on human energy, time and commitment. *American Sociological Review,* **42**, 921–36.

Moen, P. and Yu, Y. (2000) Effective work/life strategies: working couples, work conditions, gender and life quality. *Social Problems,* **47**, 291–326.

Moen, P., Kelly, E. and Huang, R. (2008) 'Fit' inside the work–family black box: an ecology of the life course, cycles of control reframing. *Journal of Occupational and Organizational Psychology,* **81**, 411–33.

O'Driscoll, M.P., Poelmans, S., Kalliath, T., Allen, T.D., Cooper, C.L. and Sanchez, J.L. (2003) Family-responsive interventions, perceived organizational and supervisor support, work–family conflict and psychological strain. *International Journal of Stress Management,* **10**, 326–44.

Pallant, J. (2007) *SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS,* 3rd edn, Allen & Unwin, Crows Nest, NSW, Australia.

Sieber, S.D. (1974) Toward a theory of role accumulation. *American Sociological Review,* **39**, 567–78.

Stevens, D.P., Minnotte, K.L., Mannon, S.E. and Kiger, G. (2007) Examining the 'neglected side of the work–family interface': antecedents of positive and negative family-to-work spillover. *Journal of Family Issues,* **28**, 242–62.

Thomas, L.T. and Ganster, D.C. (1995) Impact of family-supportive work variables on work–family conflict and strain: a control perspective. *Journal of Applied Psychology,* **80**, 6–15.

Thompson, C.A. and Prottas, D.J. (2005) Relationships among organizational family support, job autonomy, perceived control, and employee well-being. *Journal of Organizational Health Psychology,* **10**, 100–18.

Tinsley, H.E.A. (2000) The congruence myth: an analysis of the efficacy of the person–environment fit model. *Journal of Vocational Behavior,* **56**, 147–79.

Turner, M., Lingard, H. and Francis, V. (2009) Work–life balance: an exploratory study of supports and barriers in a construction project. *International Journal of Managing Projects in Business,* **2**, 94–111.

Van Steenbergen, E.F., Ellemers, N. and Mooijaart, A. (2007) How work and family can facilitate each other: distinct types of work–family facilitation and outcomes for men and women. *Journal of Occupational Health Psychology,* **12**, 279–300.

Voydanoff, P. (2004) The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Marriage and the Family,* **66**, 398–412.

Voydanoff, P. (2005) Toward a conceptualization of perceived work–family fit and balance: a demands and resources approach. *Journal of Marriage and the Family,* **67**, 822–36.

Voydanoff, P. (2007) *Work, Family, and Community: Exploring Interconnections,* Psychology Press, London.

Wayne, J.H., Musisca, N. and Fleeson, W. (2004) Considering the role of personality in the work–family experience: relationships of the Big Five to work–family conflict and facilitation. *Journal of Vocational Behavior,* **64**, 108–30.

Wayne, J.H., Randel, A.E. and Stevens, J. (2006) The role of identity and work–family support in work–family enrichment and its work-related consequences. *Journal of Vocational Behavior,* **69**, 445–61.

Wayne, J.H., Grzywacz, J.G., Carlson, D.S. and Kacmar, K.M. (2007) Work–family facilitation: a theoretical explanation and model of primary antecedents and consequences. *Human Resource Management Review,* **17**, 63–76.