The Work–Family Experiences of Australian Female Civil Engineers

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Abstract

This research investigated the work-family experiences of female civil engineers in Australia. The results indicate female engineers experience moderate levels of work-family conflict and do not perceive their organisations to be supportive of their need to balance work and personal life. However, those women who perceived their organisational culture to be supportive of employees with family responsibilities also reported lower levels of work-family conflict, a reduction in emotional exhaustion and less intention to quit their organisation. They also reported increased levels of job and life satisfaction and improved mental health. The results also show a positive relationship between organisational expectations of the employees' time commitment and work-family conflict and demonstrate the 'buffering' effect of a supportive workplace on the relationship between work-family conflict and burnout. The implications of these findings for organisations employing civil engineers are discussed.

Keywords: organisational culture, civil engineers, women, job satisfaction, burnout, life satisfaction.

Introduction

While engineering remains a male dominated profession, the number of female engineers has increased substantially over the past two decades. Engineers Australia, the professional body for engineers in Australia currently has 6,808 female members, representing 9.1% of its total membership; 5,106 of these women are under 30 years old (equivalent to 17.1% of membership under 30) (Engineers Australia 2005). A review of women's undergraduate engineering course completions reveals a flattening out in participation rates. Women constituted 4.2% of all engineering degree completions in 1984, 13.0% in 1994 and 17.1% in 2003 (Department of Education, Training and Youth Affairs 2001 and 2005). This equates to almost a 300% increase in the decade from 1984 to 1994 but less than

a 50% increase in the subsequent decade. The Australian Bureau of Statistics (ABS) census data reveals that the number of female civil engineers has risen in Australia from 426 in 1991 to 603 in 1996 to 971 in 2001 (ABS 1991; 1996; 2001). This represents an increase in female participation from 2.7% in 1991 to 6.1% in 2001.

Therefore, while engineering has become increasingly attractive to women, anecdotal evidence would indicate that those over 30 years of age are leaving the profession at greater rates than their male counterparts. It is unclear why this is occurring but it is certainly occurring at an age when family responsibilities tend to increase. While the majority of Australian men work full-time, women's employment status is highly affected by familial factors (i.e. age of youngest child, number of children etc.). Many Australian families have traditionally attempted to balance their work and non-work responsibilities through the reduced level of paid work undertaken by women (Glezer & Wolcott 2000).

While the number of workers with dependant care responsibilities has never before been so high, managers and professionals are experiencing increasing performance pressures, and hours spent at the workplace are increasing. Perhaps unsurprisingly, a recent report prepared by the Australian Bureau of Statistics (ABS) found, that despite the use of part time work by mothers, in dual income couples, 70% of all mothers reported that they always/often felt rushed or pressed for time (ABS 1999). In addition, increasing number of employees face the responsibility of dependent children and filial care simultaneously or sequentially due to the increasing trend by younger couples to delay parenting.

Many working mothers who try to fulfil both family roles of 'provider' and 'nurturer' often experience higher levels of stress and greater levels of work-family conflict as the roles are inherently incompatible (Cooper 2000). Many employers assume their female employees, with dependants, will take advantage of available work-family policies and make career adjustments to care for children (Glezer & Wolcott 2000); however women in male dominated workplaces such as engineering may face criticism if they do not demonstrate the 'ideal' masculine characteristics of their co-workers. This in turn can affect workplace perceptions of them possessing 'ideal' worker characteristics (loyalty, etc.).

The traditional model of work that assumes employees' work domain to be totally separate from their family domain remains the basis of many management practices, and thus deeply embedded in many organizational cultures. This ethos, which promotes full-time participation and less flexible work practices, has been challenged in some industries. However, as female employees and their managers have typically driven this process of change (Bourke 2000), it would perhaps be not surprising that reform within the engineering profession would not be as evident as in other professions, given the low numbers of women employed.

Why should organisations be concerned?

Legal requirements and organisational performance issues appear to be at the core of the many arguments put forward for supporting employees' lives outside of work. Legislation that stems from a social justice base presents a strong motive for companies to address the concerns of their employees with family responsibilities. Along with most industrialised countries Australia has adopted equal opportunity legislation promoting equal work conditions for men and women. In 1990, Australia ratified International Labor Organisation (ILO) Convention 156, addressing workers and their family responsibilities. Consequently legislative and industrial reforms have flowed through, prohibiting dismissal on the basis of family responsibility, and improving working conditions (Bourke 2000).

Organisations are also increasingly recognising the positive benefits of work-family initiatives. Decreased levels of work-life strain have been found to result in increased job satisfaction, decreased employee turnover and improved levels of organisational commitment (Allen 2001). Organisational variables such as schedule flexibility, supervisor support and time overload (Francis & Lingard 2004; Parasuraman et al. 1996; Thomas & Ganster 1995), and family-related variables such as parenting overload, spousal and familial support, and family distress (Frone, Yardley & Markel 1997; Parasuraman et al. 1996) have been found to directly influence family relationships, work-family conflict and intent to leave the workplace

(Crouter et al. 2001). Support from supervisor, spouse and family, have been shown to reduce work-family conflict through their impact on role overload and work distress (Frone, Yardley & Markel 1997; Lingard & Francis 2005).

Burnout is also associated with increased work-family conflict, as well greater levels of absenteeism and turnover, and reduced organisational effectiveness and job satisfaction (Lingard 2004; Maslach, Jackson & Leiter 1996; Wright & Bonnett 1997). At an individual level, burnout has been associated with anxiety, depression, reduced self-esteem and substance abuse (Maslach, Schaufeli & Leiter 2001).

Supportive organisational culture

Grover and Crooker (1995) found that employees in companies with family-supportive benefits had higher levels of affective commitment to the organisation and expressed lower turnover intentions, regardless of whether the employee individually benefited from the policy. They postulated that work-family benefits had a positive influence on employees' attachment to the organisation because they signified corporate concerns for employee well-being. However while providing work-family policies and initiatives is important, it is imperative to recognise that these will have very little worth, and employees will not feel secure in utilising them, unless their value is entrenched within the culture of the organisation (Lewis 2001).

Denison defined organisational culture as 'the deep structure of organisations, which is rooted in values, beliefs, and assumptions held by organisational members' (Denison 1996, 624). Bailyn (1997) outlined three characteristics identifiable in a family-friendly work culture: flexible work scheduling, flexible work processes and an understanding by organisational leadership that family needs are important. Warren and Johnson (1995, 163) consider a culture can be classified as family friendly when 'its overarching philosophy or belief structure is sensitive to the family needs of its employees'. Thompson, Beauvais and Lyness (1999, 394) expanded the understanding of work-family culture to include the 'shared assumptions,

beliefs, and values regarding the extent to which an organisation supports the values and integration of employees' work and family lives'. They consider a negative work-family culture to have at least three components: organisational time demands or expectations that employees prioritise work over family, negative career consequences associated with utilising work-family benefits, and lack of managerial support and sensitivity to employees' family responsibilities. Research has shown that supervisors play a key role in the effectiveness of both the implementation and utilisation of work-family policies and those employees whose supervisor supported their efforts to balance work and family were less likely to experience work-family conflict (Thomas & Ganster 1995). Supervisor support is also an important buffering factor in the relationship between work-family conflict and burnout (Francis & Lingard 2004).

Research objectives

This research investigated how supportive towards work-family issues female civil engineers perceived their workplaces to be. As women have been the prime instigators of work-family policies being adopted by organisations (Bourke 2000), much of the research in this field has focused on female dominated industries and professions. Many job and organisational factors found to impact negatively on family and non-work life are pertinent to civil engineers. These include long and irregular work hours, schedule inflexibility, high job demands, job insecurity and frequent relocation (Hughes, Galinsky & Morris 1992; Parasuraman et al. 1996; Shaffer et al. 2001; Williams & Alliger 1994). No known research to date has specifically focused on the supportiveness, or otherwise, of the organisations employing female civil engineers.

This research will determine the prevalence of supportive organisational values and the level of work-family conflict perceived by female civil engineers, as well as testing several hypotheses regarding influences of, and on the following: supportiveness, work-family conflict and emotional exhaustion. The hypotheses which will be considered are as follows:

H1: Respondents who consider their workplace to be supportive of a balance between work and non-work responsibilities will also report lower levels of work to family conflict and burnout, greater levels of job and life satisfaction, lower intention to quit and improved mental health.

H2: Organisational time demands will have a main effect on work-family conflict (WFC).

H3: There will be a positive relationship between work-family conflict (WFC) and emotional exhaustion (EE).

H4: Managerial support will moderate the relationship between work-family conflict (WFC) and emotional exhaustion (EE).

The sample

The sample was recruited with the help of an Australian professional organisation for engineers. Data were collected using a self-administered questionnaire sent to 500 female civil engineers aged between 25 to 55 years. Questionnaires were completed anonymously and returned in a reply paid envelope. Of these, 113 participants returned completed questionnaires, and taking into account surveys that could not be delivered the return rate was 23.2%. Because of financial restrictions reminder letters were not issued and given the length of the survey and the random selection of the sample the response rate of nearly 25%, while low, was considered sufficient. Upon analysis, one participant was excluded as she no longer identify herself with the civil engineering profession. The final sample consisted of 112 female civil engineers, 75% who were partnered and 40.2% who had children. The sample had an average age of 34.2 years ($\underline{SD}$ = 7.0), and an average working week of 42.8 hours ($\underline{SD}$ = 10.7). The mothers in the sample worked on average 37.8 hours (ranging from 29 to 60) while those without children worked 46.2 hours (ranging from 20 to 91). Respondent's employment within the public sector was 37.5%, with 62.5% of respondents indicating they were employed within the private sector. Most respondents (77.7%) were full-time salaried employees, with only 8.9% part time salaried, 1.8% self employed and 9.8% hourly contract employees. Further information on the sample can be found in Table 1 below.

Table 1. Demographic characteristics of the sample

	N	%		N	%
Age			**No. of employees in organisation**		
25 – 34 years	71	64	1 – 49	30	27.2
35 – 44 years	27	24.3	50 – 199	13	11.9
45 – 54 years	13	11.7	200 – 999	29	26.3
			1000 or more	38	34.5
Family structure			**Work hours per week**		
Couple with dependent children	40	35.7	20 hours or less	4	3.8
			21 – 35 hours	14	13.2
Couple with non-dependent children	5	4.5	36 – 45 hours	60	56.6
Single parent	3	2.7	46 – 55 hours	28	26.4
Couple without children	36	32.1			
Single person	28	25.0			

Measures

The survey consisted of questions concerning demographic, organizational, professional, and familial factors. Most measures had been used in previous studies and were adopted because of their known high levels of internal consistency. The ones relating to this paper are discussed below.

Work-family culture was measured via a 20-item scale (Thompson et al. 1999) that investigated three main areas: managerial support, negative career consequences, and organisational time demands. The alpha reliability for each sub-construct was .91, .85 and .85 respectively. Respondents were asked to decide to *what extent the statements characterised their current*

organisation using a scale ranging from strongly disagree (1) to strongly agree (7). It included items such as 'In the event of a conflict, managers are understanding when employees have to put their family first'.

Work-family conflict was measured using a 5-item, 7-point scale ranging from 1 (for strongly disagree) to 7 (for strongly agree), developed by Netemeyer, Boles and McMurrian (1996). The alpha reliability for work-family conflict was .92. Items for each subscale were summed and high scores indicated a higher level of conflict. A sample item was 'The demands of my work interfere with my home and family life'.

Work hours was measured using a single item asking respondents how many hours they worked per week.

Job satisfaction was measured via a 14-item scale developed by Hackman and Oldham (1975). The scale tapped into specific facets of the participant's employment such as their satisfaction with their pay, job security, social, supervisory and growth. Respondents were asked how satisfied or dissatisfied they were with different aspects of their job (1 for extremely dissatisfied to 7 for extremely satisfied). A sample item was 'The amount of support and guidance I receive from my supervisor'.

Turnover intentions were measured via the two items on a scale ranging from 1 (for strongly disagree) to 7 (for strongly agree). A sample item was 'I often think about quitting'. A higher score reflected a higher likelihood of a person leaving their job. The alpha reliability for the sample was .79.

Burnout was measured using the 16-item Maslach Burnout Inventory (MBI) due to its brevity and proven reliability and validity of results. The MBI comprises three sub-scales evaluating emotional exhaustion ('I feel emotionally drained from my work'), cynicism ('I have become less interested in my work since I started this job') and professional efficacy ('At work, I feel confident that I am effective at getting things done') (Maslach, Jackson & Leiter 1986). The items for the third dimension of burnout are framed in positive terms and thus a low score reflects a low sense of professional efficacy. Items were rated on a seven point Likert scale where 0 = never; 1 = A few times a year or less; 2 = Once a month or less; 3 = A few times a month; 4 = Once a week; 5 = a few times a week; and 6 = Every day.

Life satisfaction, which assesses an individual's perception of their quality of life in general, was measured using a five-item scale ranging

from 1 (for strongly disagree) to 7 (for strongly agree) developed by Diener et al. (1985). A sample item from this scale is 'I am satisfied with my life'. The scale's alpha reliability for the sample was .90.

Well-being or mental health was measured using the General Health Questionnaire (GHQ-12) that was developed to detect minor psychiatric illnesses in the community (Goldberg 1972). The general scoring method was deemed most appropriate for the sample being studied, so scores of 0 to 3 were assigned to item responses, then summed to give a final score (ranging from 0 to 36)—a higher score is indicative of lower mental health. The alpha reliability was .83.
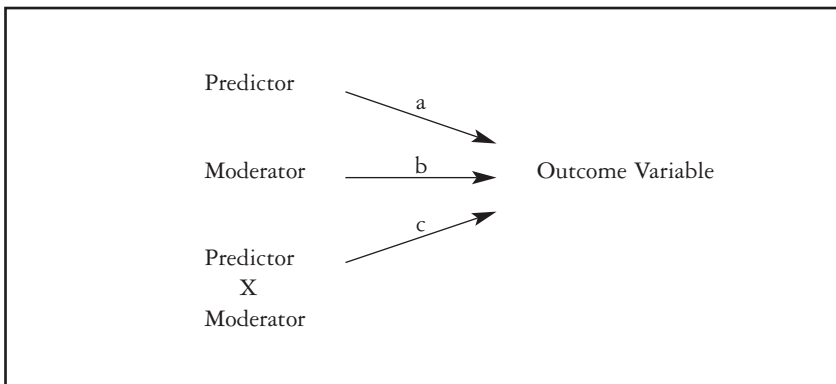
Results

Statistical techniques

Data were analysed using SPSS for Windows (version 13.0) and the results are presented in Tables 2 to 6. Factor analyses were conducted on two of the scales as they were known to be multi-dimensional. The factorial model for burnout was consistent with the Maslach Burnout Inventory yielding three factors: 'emotional exhaustion (EE)', 'professional efficacy (PE)' and 'cynicism (CY)'. These were retained and have been considered separately in further analyses. A three-factor work-family culture was found to be sustainable under confirmatory factor analyses, however five of the twenty items loaded more heavily on a different factor than that found by Thompson et al. (1999) when developing the scale. This original study's results did provide strong evidence that some sub-constructs were measuring part of the same underlying dimension, which was confirmed in this study. It was therefore decided to use the same items for the factors as used by Thompson and her colleagues. These were 'Managerial support (MS)', 'Career consequences (CC)' and 'Organisational time demand (OTD)'. The alpha co-efficient for each was found to be greater than .8 indicating a good level of internal consistency of items used within the sub-constructs.

Bi-variate correlation analyses were conducted to assess the degree to which one variable is linearly related to another, thereby determining the direction and strength of linkages between variables. Multiple

regression analyses were used to determine the main effects, in hypotheses H2 and H3, and whether factors suggested in hypothesis H4 and H5 were moderator variables. Moderator variables affect the 'direction and/or strength of the relation between an independent or predictor variable and dependent or criterion variable' (Baron & Kenny 1986, 1174). This is illustrated in Figure 1 below. The moderator hypothesis is supported if the interaction (path c) is significant while the predictor and moderator variables are controlled. Procedures described by Baron and Kenny (1986) were used to test for moderation effects. Prior to conducting any tests for moderation effects, all continuously measured variables were centred. This is achieved by subtracting the mean value for a variable from each score for that variable and eliminates problems associated with multi-collinearity.

Figure 1. Moderator model (Baron & Kenny 1986, 1174)

Descriptive statistics and bi-variate correlations

The results in Table 2 indicate that civil engineers perceive their organisations to be only very slightly supportive of employees with family needs with a mean item value of 4.70 for managerial support (MS), 4.36 for career consequences (CC) and 4.23 for organisational time demands (OTD). This represents a mean overall score of 4.52 (neutral was 4, slightly agree was 5).

Table 2. Work–family culture

	No. of items	Possible Range	Mean value *(scale)*	Std. deviation *(scale)*	Mean value *(item)*
Work-family culture					
Managerial support	11	11 – 77	51.65	11.62	4.70
Career consequences	5	5 – 35	21.78	6.20	4.36
Organisational time demands	4	4 – 28	16.93	6.02	4.23

Work-family conflict (WFC) had a mean value of 21.80 which represents a mean item value of 4.35 (refer Table 3). This indicates that, in general, civil engineers feel they have a moderate level of work-family conflict with the mean score for WFC being above the mid point mark of 4.

Table 3 provides the mean and standard deviations of the study variables as well as the bi-variate correlations between the variables.

As hypothesised (H1) civil engineers reporting organisational values which were supportive of their work and family also reported lower levels of work-family conflict (r = -.446, r = -.392 and r = -.564; $p \leq .01$), greater levels of job satisfaction (r = .476, r = .379 and r = .332; $p \leq .01$), greater levels of life satisfaction (r = .361, r =.322 and r =.423; $p \leq .01$) and lower intentions to leave their organisations (r = -.346, r = -.293 and r = -.347; $p \leq .01$). In addition those that reported a more supportive culture also reported lower levels of emotional exhaustion (r = -.458, r = -.428 and r = -.562; $p \leq .01$) and improved mental health (r = -.197, r = -.189 and r = -.357; $p \leq .05$) .

It should be noted that many of the measures of organisational experiences, satisfactions and well-being are themselves correlated (i.e. life satisfaction and burnout, life satisfaction and job satisfaction, etc.).

Table 3. Correlations of work–family culture and other variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. WF Culture: MS	4.70	1.06	1										
2. WF Culture: CC	4.36	1.24	.756(**)	1									
3. WF Culture: OTD	4.23	1.51	.728(**)	.726(**)	1								
4. Work-family conflict	21.80	7.25	-.446(**)	-.392(**)	-.564(**)	1							
5. Work hours per week	42.83	10.74	-.283(**)	-.223(*)	-.339(**)	.297(**)	1						
6. Job satisfaction	5.30	.87	.476(**)	.397(**)	.332(**)	-.316(**)	-.025	1					

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
7. Turnover intentions	3.50	1.88	-.346(**)	-.293(**)	-.347(**)	.404(**)	.138	-.528(**)	1					
8. Burnout: EE	2.81	1.42	-.458(**)	-.428(**)	-.562(**)	.599(**)	.232(**)	-.340(**)	.367(**)	1				
9. Burnout: CY	1.76	1.31	-.407(**)	-.337(**)	-.356(**)	.386(**)	.100	-.578(**)	.521(**)	.528(**)	1			
10. Burnout: PE	4.30	1.12	.142	.156	.124	-.017	.078	.452(**)	-.249(**)	-.143	-.400(**)	1		
11. Life satisfaction	23.11	6.66	.361(**)	.322(**)	.423(**)	-.396(**)	-.124	.554(**)	-.427(**)	-.393(**)	-.419(**)	.208(**)	1	
12. Mental health	12.61	5.00	.197(*)	-.189(*)	-.357(**)	.319(**)	.024	-.187(*)	.298(**)	.476(**)	.430(**)	-.286(**)	-.341(**)	

** Correlation is significant at the 0.01 level (2-tailed).

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

Tests for direct effects and moderating variables

To test hypotheses H2 to H4 a series of regressions were used. To test for moderating effects in H4 the independent variables were first entered in the regression and then the interaction of interest was added. The dependent variable of emotional exhaustion was first tested to ensure it did not differ by industry sector, age or gender. As no significant differences existed none of these variables were included in the regression analysis as controls.

Table 4 shows a main effect of organisational time demands (OTD) on work-family conflict supporting hypothesis H2.

Table 4. Multiple regression for work load and organisational time demands as predictors of work–family conflict

	R^2	F	β
Independent variables			
Organisational time demands (OTD)	.319	51.44	-.564***
*$p=<.05$, **$p=<.01$, ***$p=<.001$			

The model explained 32 per cent of the variance in work-family conflict.

Table 5. Multiple regression for WFC and MS as predictors of EE female engineers

Step	ΔR^2	F Change	β
1. Independent variables			
Work-family conflict (WFC)	.404	36.993	.493**
Managerial support (MS)			-.238*
2. Interaction			
WFC X MS	.032	6.047	-.186*
*$p=<.05$, **$p=<.01$, ***$p=<.001$			

Table 5 shows a main effect of work-family conflict on emotional exhaustion in the expected direction. Thus, hypothesis H3 was supported. The interaction between work-family conflict and managerial support (MS) had a significant effect on emotional exhaustion, indicating that managerial support does moderate the relationship between work-to-family conflict and emotional exhaustion. This is also shown in Table 5 and thus hypothesis H4 was confirmed.

Discussion and conclusions

The research found that female civil engineers do experience moderate levels of work-family conflict and in general work in organisations that they do not perceive to be very supportive of employees' need to balance work and family demands. The profession appears to suffer a 'cultural lag' with traditional values being considered the norm and consequently being the ones rewarded (e.g. long work hours, full-time working). In this study 82.1% of women worked 37.5 hours per week or more. However while 59.8% were happy with the hours they worked 38.4% would prefer to work less hours per week. Only 1.8% wished they could work more hours. The study did not, however, support a preference for part-time work options. This may be related to the samples low level of satisfaction with their current pay and benefits, compared to other facets of job satisfaction measured. Being professionals they are typically not paid for any overtime carried out and their average working hours per week is substantial more than a standard 37.5 hour week. Perhaps the desire to work less, but not part-time, is indicative of a desire to reduce work hours while maintaining a reasonable salary level.

The paper also examined the relationship between perceptions of a supportive work-family culture and work-family conflict, job satisfaction, turnover intent as well as burnout, life satisfaction and mental health. The data indicates strong positive correlations between a supportive work culture and job satisfaction. Job satisfaction is closely linked to affective organisational commitment, which has been associated with higher productivity (Meyer et al. 1989) and a more positive work attitude. The data

also show that if an organisation is perceived by employees to be unsup-portive of work-family balance then turnover intent increases. Organisations must therefore be cognisant of the expectations they place on employees if they wish to retain staff. Staff turnover has specific expenses in terms of costs relating to retraining, recruitment and lost productivity and the civil engineering profession must be careful that its members do not leave it in order to pursue careers that provide greater benefits. Already civil engineering is dropping in career appeal and in the 1999 edition of the American Jobs Rated Almanac, civil engineering fell from 18th to 70th position in expressed job preference.

At a personal level those reporting a supportive culture also reported reduced levels of emotional exhaustion and cynicism about work as well as higher levels of life satisfaction and better levels of mental health. So from an occupational health perspective as well as from an organisational performance viewpoint the data provides evidence of the benefits of a supportive work culture.

The results also demonstrate the importance of a supportive work environment. Work-family conflict demonstrated significant main effects on the emotional exhaustion dimension of employee burnout and managerial support was found to moderate this relationship. Burnout has been found to be associated with main negative organisational and personal measures. Organisational time demands also had a main effect on work-family conflict and predicted 32 per cent of the variance in work-family conflict. This result suggests that perceived organisational expectations of the time employees should commit to the workplace, have the potential to indirectly influence emotional exhaustion through their effect on work-family conflict.

These findings have important implications for management. Organisations need to consider the introduction of work-family benefits that are known to reduce work-family conflict. The results show that work-family conflict leads to emotional exhaustion. The results also show that managers, who provide emotional and practical support to their subordinates, are critical in reducing the burnout caused by work-family conflict. They provide strong evidence for the introduction of sensitivity training for management in organisations employing engineers.

In order to achieve a supportive culture, change must be driven from the top down and training for middle managers and supervisors may also be required (Lewis 2001; Thomas & Ganster 1995; Thompson et al. 1999). The provision of benefits delivered through human resources policies is not sufficient in itself and a workplace culture must exist within which employees feel comfortable taking advantage of alternative workplace policies (Lewis 2001; Thompson et al. 1999). While the benefits to employees with dependants are clear, one could wonder whether employees without partners or dependants feel disadvantaged. However Grover and Crooker (1995) found employees, regardless of whether they individually benefited from a work-family policy or not, had higher levels of affective commitment to their organisation and postulated that the provision of benefits had a positive influence on all employees.

Yet the change needed in engineering may not come easily. Indeed, however accepting of change they may be at the start of their career, male entrants inadvertently reinforce current attitudes and practices by emulating the behaviour of the managers who influenced their own career development (Dainty, Neale & Bagilhole 2000). Fielden et al. (2000) found that in the construction industry, a major employer of civil engineers, a lack of compliance with cultural norms, such as refusing to undertake long hours, can adversely affect the promotion prospects of employees and even their job security.

It is important that women in non-traditional professions receive research consideration in the work-family area. Stereotyped expectations of career and personal priorities can render the combination of a fulfilling family life and a successful career impossible. Identifying benefits for men from supportive organisational values may also encourage engineering firms to examine their values on these issues. Considering the low percentage of female engineers, and the fact that women have been the prime instigators of change in these policy areas, finding advantages for male engineers may well have a greater impact on the engineering profession than attempting to create change from an equity perspective.

It should be noted that while this study has revealed associations between work and family variables, being a cross-sectional study it is limited in its ability to determine causal relationships. Further analysis

of the full dataset will be carried out to examine the effect of work role orientation and family structure and investigate the presence and effect of work-life benefits currently available to civil engineers. It is hoped that this work will inform companies on these issues so they can develop policies that are suitable for their different employees.

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