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Full Length Research Paper

Developing an instrument to assess work-family pressures and resources needed by women managers in South Africa

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In the last decade, there has been a sharp increase in the employment of working mothers in the South African labour market. Work-family scholars argue that organisations must develop supporting policies and benefits to shield working mothers against work-family pressures. This article focuses on the development of the Work-Family Pressure and Support Questionnaire (W-FPSQ) as a measure to assess the pressures that working mothers experience and to identify the resources they need to balance their work and family life. A sequential mixed method design was adopted to gather the data needed to develop the questionnaire. Exploratory factor analysis and correlation designs were used to explore the internal structure of the questionnaire, as well as its validity and reliability. A total of 205 mothers occupying management and professional positions were involved in the validation of the questionnaire. A six-factor measurement model was established with good to excellent factor scores; it has very satisfactory Cronbach alpha coefficients. The individual scales were labelled, Work-family pressure, Personal development, Management support, Organisational flexibility, Time for family interaction, and Child care support. The W-FPSQ provides researchers and practitioners with a tool to evaluate working mothers' experiences in balancing work and family responsibilities, and to examine the extent to which organisations are perceived as supportive of work and family. Furthermore, the W-FPSQ can be used to generate information that management needs to develop and implement work- and family-supportive policies to help working mothers to balance work and family demands.

Key words: Women managers, job demands, job resources, work-family pressures, work and family support, South Africa.

INTRODUCTION

The increasing entry of women into the South African labour market since the inception of democracy in the country in 1994 has been described as "feminisation" of the South African labour market (Casale, 2004). This feminisation of the labour market is driven by a number of political, social and economic forces that draw women into the world of work (Whitehead and Kotze, 2003). Women's share in the broad labour force increased from 41.8% in 1994 to 48.8% in 2005 (Van der Westhuizen et al., 2006). By the last quarter of 2013, the economically

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active population in South Africa was almost evenly distributed across gender lines: working women comprised 50.84% of the 35 022 thousand employees in the 15 to 64 year age group and working men 49.16% (Statistics South Africa, 2014). Although much of this increase in women's labour participation has been in the lower paying categories, increasing numbers of women are also joining management and embarking on professional occupations (Statistics South Africa, 2014:31).

Although this feminisation of the labour market is a welcome development in South Africa, the phenomenon has exacerbated and highlighted a range of serious social and psychological problems that arise when working women struggle to balance their work and home responsibilities. The ability of working women to succeed in their homes and in economic pursuits depends, among other things, on their ability to balance work and family expectations and to sustain their psycho-social well-being (Jaga et al., 2013; Mathew and Panchanatham, 2011).

LITERATURE REVIEW

Balancing work and family roles is often a key personal and family issue for working mothers. Wortman et al. (1991) reported that over 75% of married female professionals that studied in the United States mentioned experiencing conflict between work and family responsibilities daily. These professional working women also stated that their attempt to balance work and family life often resulted in role conflict and role stress. Voydanoff and Donnelly (1989) conceptualised role stress as a person's appraisal of the level of conflict between roles and of the degree of strain experienced from attempting to meet multiple role demands. Researchers in South Africa (Brink and De la Rey, 2001; Mclellan and Uys, 2009; Van Aarde and Mostert, 2008) confirm that the conflicts women experience between their traditional roles as housewives, mothers and homemakers and their professional roles as managers and leaders can be a major source of role strain and stress in both the workplace and at home. Stress and work-family conflict are intertwined; and this kind of conflict has been documented as both cause and outcome of job stress. It can have adverse effects on a person's well-being, leading to feelings of burnout, anxiety and exhaustion, insomnia and even poor self-esteem and depression (Allen et al., 2000; Barling et al., 2005; Jaga et al., 2013; Mathew and Panchanatham, 2011). Understanding the relationship between work-family conflict and employees' well-being is therefore important in order to discover how working mothers can be supported to cope with work demands and family demands.

Work-to-home interaction and employees' well-being

Much of the debate concerning stress induced by work and family demands has focused on the multiple roles a working woman must adopt in order to carry out her responsibilities in respect of her work and family (Baxter and Alexander, 2008; Franks et al., 2006; Mclellan and Uys, 2009; Schaufeli and Bakker, 2004; Van Aarde and Mostert, 2008). Galinsky et al. (1993) show that a substantial proportion (40%) of employed parents in their sample experienced problems or conflict in balancing work and family demands, often referred to as work-to-family conflict, negative work-to-family spill-over, work-to-family strain or work-to-home interference.

Greenhaus and Beutell (1985:77) define work-to-family conflict as "a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible so that participation in one role [home] is made more difficult by participation in another role [work]". According to these authors, work-to-family conflict can take three forms: first, conflict due to an inability to satisfy family and professional role expectations in the time available (time-based conflict); second, conflict due to the sum of efforts which the person must provide in the job field and in the family field (strain-based conflict); and, third, conflict due to the incompatibility of behaviours which the person must adopt in both spheres (behaviour-based conflict).

Geurts et al. (2003) based their definition of work-to-home interference on Meijman and Mulder's (1998) Effort-Recovery model, defining work-to-home interference as an interactive process in which a worker's function in one domain (such as the home) is influenced (negatively or positively) by load reactions that have built up in the other domain (for instance, at work). Negative work-to-home interference is defined as a situation in which negative load effects build up at work and hamper functioning at home, and it is considered to be a source of stress. According to this view, work-to-home interference is an independent variable related to ill health.

In other studies, work-to-home interference has been treated as a dependent variable. From this perspective, negative work-to-home interference is often considered as an outcome of stress or a stress reaction (in other words, strain) caused by work-related stressors, particularly quantitative workload (work pressure, overload and time demands) (Baxter and Alexander, 2008; Geurts et al., 2003).

Resources that mitigate negative work-to-home interference and job stress

Considerable knowledge has been gathered on the antecedents of positive and negative work-to-home interference. The results of several empirical studies

indicate that particular job characteristics are associated with negative work-to-home interference, and that job demands and a lack of social support in the workplace and job resources could endanger the work-home balance and foster negative work-to-home interference (Bakker and Geurts, 2004; Frone, 2003; Geurts and Demerouti, 2003; Geurts et al., 2003; Kelly et al., 2011; Mathew and Panchanatham, 2011; Oldfield and Mostert, 2007). Research in South Africa by Van Aarde and Mostert (2008:8) indicates that negative work-to-home interference was best predicted by job demands (including pressure, overload and time demands) and a lack of job resources (including autonomy, supervisors' support, instrumental support and role clarity). The best predictors for positive work-to-home interference were autonomy, supervisors' support and colleagues' support. These findings are consistent with the results of prior research (Bakker and Geurts, 2004; Frone, 2003; Oldfield and Mostert, 2007). It was also found that job resources, especially autonomy and social support, have a negative relationship with negative work-to-home interference (Kossek et al., 2011). The practical implications of these findings are that working women may experience positive interactions between their work and family life if they receive sufficient resources.

Resources are defined as "those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions or energies" (Hobfoll, 1989:516), and as "structural or psychological assets that may be used to facilitate performance, reduce demands, or generate additional resources" (Voydanoff, 2005:823).

A number of work-family scholars have paid attention to the role of various resources in helping working women to meet multiple role demands successfully, coping with job stress and preventing emotional exhaustion (Bakker et al., 2005; Koekemoer and Mostert, 2006; Kelly et al., 2011; Mathew and Panchanatham, 2011; Schaufeli and Salanova, 2007; Valcour, 2007; Van Aarde and Mostert, 2008). The findings of these researchers suggest that the provision of relevant physical, psychological, social and organisational resources is an important variable in "shielding" working mothers against negative work-to-home interference and mitigating the effects of stress. In their rigorous research and assessment of job demands and job resources, they identified the following as important resources: social support from colleagues, supervisors' support, work autonomy, performance feedback, opportunities for development and growth, greater job challenges associated with job complexity, career opportunities, work flexibility and control over work time, support with child care and financial incentives and job security.

South African qualitative and quantitative research literature also offers considerable evidence that there are different situational and organisational resources which can potentially buffer negative work-family spill-over and mitigate the effects of job stress. Several authors have provided valuable information on the variables related to work-family interaction, including Coetzer (2006), De Klerk et al. (2013), Franks et al. (2006), Jaga et al. (2013), Koekemoer and Mostert (2006), Mclellan and Uys (2009), Mostert (2009), Oldfield and Mostert (2007), Van Aarde and Mostert (2008), and Van den Berg and Van Zyl (2008).

The purpose of the current study was to add to the knowledge and understanding of the resources that buffer work-family pressures experienced by working mothers. In particular this research endeavours to develop a valid and reliable measuring instrument to survey the pressures experienced by married and single mothers in management and professional occupations, and the resources available to them.

METHODOLOGY

Research design

This research was conducted using a social science approach and applying both inductive and deductive reasoning. The research design incorporated both qualitative and quantitative information gathering methods. A mixed methods approach was adopted in which a qualitative approach was sequentially followed by a quantitative approach (Figure 1). The choice of a mixed method design, which involves collecting, analysing, and integrating quantitative and qualitative data in a single or multiphase study, reflects a pragmatic epistemology (Guba and Lincoln, 1994). The associational design was employed to determine the inter-correlation between the items of a preliminary questionnaire and the contribution of each item to its related factor or behavioural domain, as suggested by Morgan and Griego (1998).

Research procedure

The chosen procedures were aligned to the research design, and were applied in three steps. In the first step, clear and exact parameters of what was to be measured were established through a comprehensive literature study and an analysis of data generated by means of 17 interviews. One-on-one semi-structured interviews were conducted with a purposive sample of ten single mothers and seven married career mothers. Each interview with each mother lasted between 40 and 60 minutes. The aim of these interviews was to gather qualitative information regarding the pressures and stressors that single and married working mothers' experience, and to collect qualitative data about the systems and resources working mothers believe will help them to cope with high job and family demands. Open-ended questions were employed in each interview to explore and probe a number of broad topics, such as the women's daily work experiences, work and family demands, work and family relationships, work-family interactions, coping mechanisms, perceived support and the type of social and work support required.

The data obtained from the literature and interviews were integrated to propose a theoretical framework of the constructs that conceptualise the women's work and family demands and to define the resources needed to mitigate these demands. The concepts identified were categorised into the following nine related themes or domains: (1) work demands and family responsibilities, (2) time

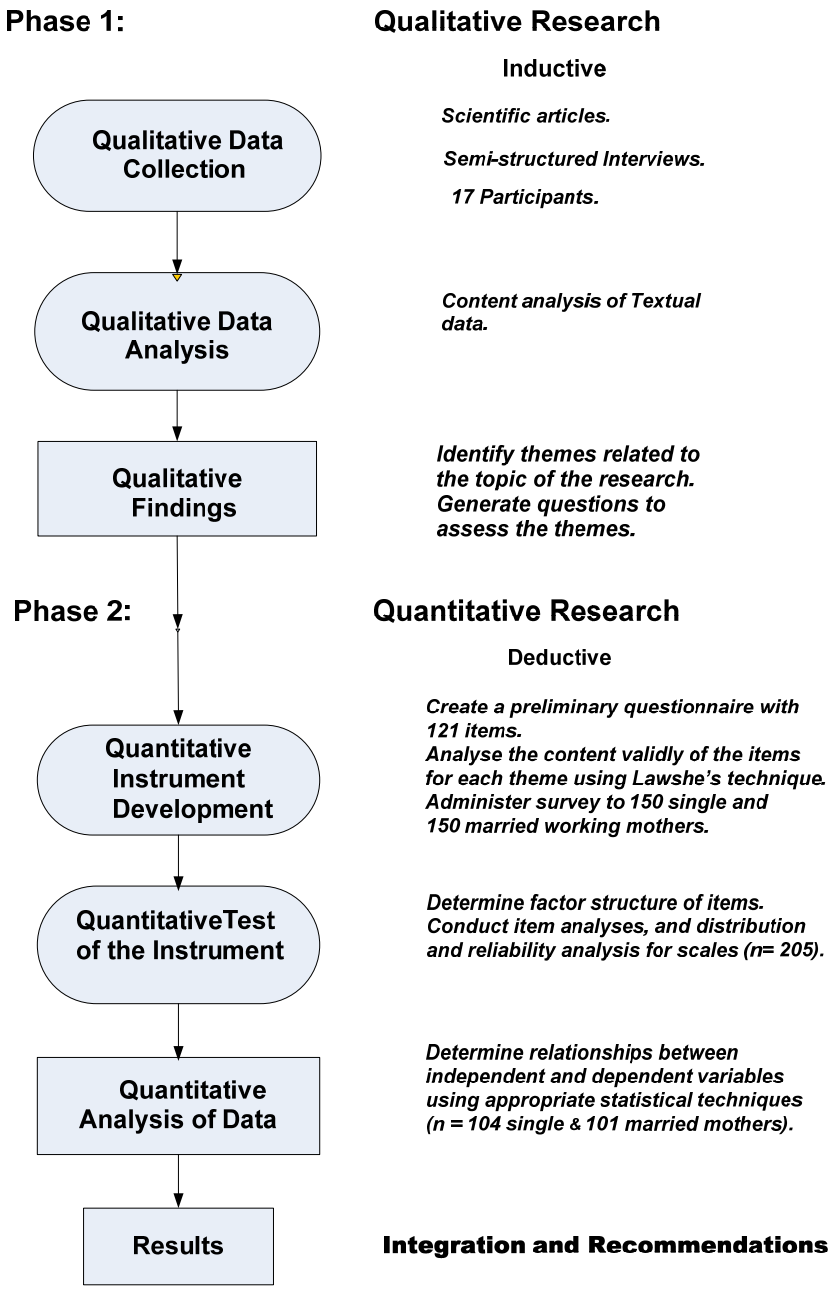

Figure 1. Mixed methods sequential explorative design. Source: Adapted from the mixed sequential dominant status design (Leech and Onwuegbuzie, 2009).

pressure, (3) financial pressure, (4) feelings of isolation, (5) child care arrangements, (6) the need to improve oneself, (7) the presence of mentors, (8) organisational support and (9) personal support. In developing a draft questionnaire, 121 items for the measurement of the behaviour related to the nine domains were formulated.

The second step included the collection of data from a content evaluation panel of 30 who served to verify the relevance and clarity of the measurement items, based on their work experience and expertise in the social and management sciences. The main purpose of this step was to test and revise the items of the draft questionnaire to enable the researchers to make changes where necessary in order to develop a preliminary questionnaire, as suggested by DeVellis (2003). To assess the relevance and content validity of each item, a three-point rating scale developed by Lawshe (1975) was used by the members of the panel to determine the extent of overlap between items in the questionnaire and the construct domains. Lawshe's content validity ratio was then calculated for each item in the questionnaire. Items were eliminated if their content validity ratio failed to meet the statistical value of 0.34 suggested by Lawshe (1975). Of the 121 items, 96 met the criterion and were retained.

In the third and final step, quantitative data were collected from a non-probability convenience and purposive sample of 300 working

mothers. The preliminary questionnaire and a cover letter were distributed electronically by means of e-mail to 150 single and 150 married working mothers. The e-mail addresses were predominantly generated by means of the snowballing technique and with the help of female interest groups. The cover letter declared the purpose of the research, its educational utility and relevance, and indicated that participation was voluntary. The respondents were assured of the researchers' intention to safeguard the data and protect the confidentiality of the respondents. The data set from 205 respondents was harnessed as the main source of information to assess the factor structure and reliability of the preliminary questionnaire that resulted from the analysis and interpretation of the first two sets of data.

Research participants

Following the guidelines proposed by Onwuegbuzie and Collins (2005), different sample sizes were used, each corresponding with the adequate sample size for the specified purpose of the mixed method phases. In the first wave of data collection, semi-structured interviews were conducted with ten single and seven married working mothers. The ages of the sample of interviewees ranged from 24 to 51 years, with a mean age of 33.9 years (SD=7.98) for the single mothers and a mean age of 34.57 years (SD=6.68) for the married mothers. Most of them (16 mothers, that is, 91.4%) were employed full-time; only one of the single mothers worked part-time. All these interviewees were in management positions, with 58.8% in middle management and 41.2% in senior management.

The 30 members of the content evaluation panel consisted of 27 women (90%) and three men (10%). Their ages ranged from 25 to 58 years, with a mean age of 35.3 years (SD=7.12). Most of the panel members (17, that is, 56.7%) were aged between 30 and 40 years. All the members of the panel were academically trained. Nine (30%) of the panel members held a first degree, ten (33.3%) held an Honours degree, seven (23.3%) held a Master's degree, and four (13.3%) held a doctorate. Of these members, 22 (73.3%) saw themselves as part of middle management and eight (26.7%) saw themselves as part of senior management.

Of the 300 self-administered questionnaires sent out electronically, 205 were returned. This represented a 68.33% return rate of usable questionnaires. This return rate is marginally higher than the average return rate on mail-administered surveys (Sheehan, 2001). The final sample included 104 single and 101 married working mothers. The number of single mothers included 76 unmarried mothers and 28 divorced mothers; this constituted 50.7% of the respondents. The married mothers made up 49.3% of the sample. The ages of the respondents ranged from 25 to 44 years. The mean age was 34.5 years (SD= 3.92). The bulk of the sample (147 respondents) fell into the age group from 31 to 38, while the younger and the older groups constituted about 15% and 14% respectively. The data show that the respondents had a 17-year range of work experience, with a mean of 5.4 years (SD=3.20). Of the respondents, 162 (79%) were permanently employed, while 39 (19%) were employed part-time.

The participants were fairly evenly divided between respondents from managerial and professional echelons, with 102 (49.7%) in management and 99 (48.3%) in professional positions. The participants were well educated: of the respondents, three (1.5%) held a certificate and five (2.4%) had a diploma. The rest had been awarded a first degree (18.5%), an Honours degree (36.2%) or a Master's degree (38.5%). Six (2.9%) held doctorates. All the respondents had children, ranging from one to six children per family unit. The average was two children, with a standard deviation of one. The average mean age of the youngest child in the sample was 6.87 years (SD= 3.74). The children's ages ranged from one to 18 years and the data show that 85 (41.5%) were between one and five years old, and 89 (43.4%) were between six and ten years old. In other words, 85% of the respondents had children aged between one and ten years. Only 31 (15.1%) had children over the age of ten years. Thus, most of the respondents' children were of primary school age, a childhood phase at which children need much attention in and out of school.

Although South Africa is a country with a diverse population with people with many different cultures and languages, it was decided not to ask the participants to classify themselves in terms of ethnicity. In post-apartheid South Africa, a person's ethnicity or race remains a sensitive topic, and the researchers did not want to offend any of the potential participants in the targeted sample. Moreover, the underlying assumption is that women of all races are more alike than different in their experiences of the family-work divide.

Measuring instrument

For this study, a preliminary questionnaire was developed to collect information on mothers' biographical details, the various problems and pressures that they face and the resources available to mitigate work and family demands. The draft questionnaire used in the development of the Work-Family Pressure and Support Questionnaire (W-FPSQ) consisted of two sections. The first section contained 15 questions on the respondents' personal information and captured the respondents' demographic information. These questions related, amongst other things, to a respondent's title, age, marital status, job classification and work arrangement. The second section included 96 statements that epitomise the nine themes or domains identified in the qualitative research phase and which met Lawshe's (1975) content validity criterion. The statements were formatted according to a Likert-type scale with item anchors ranging from 1 ("Strongly disagree") to 7 ("Strongly agree").

Statistical analysis

The main statistical analyses for the study were conducted using the Windows Statistical Programme for the Social Sciences (SPSS), Version 20.

Exploratory factor analysis was used to explore the internal structure and validity of the W-FPSQ, in line with the recommendations of Henson and Roberts (2006). To assess compliance with the distribution requirements, Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were used. In order to determine the number of significant item factors, Kaiser's criterion, Cattell's scree plot and Horn's parallel analysis were used, as suggested by Tabachnick and Fidell (2007). According to Hayton et al. (2004), Horn's (1965) parallel analysis provides the most accurate estimate of the number of true factors in a complex dataset.

The internal consistency of the W-FPSQ was assessed by calculating the Cronbach alpha coefficient for each factor. The mean inter-item correlation between the items of each factor was also calculated to examine the homogeneity and unidimensionality of the factors that were retained, as recommended by Clark and Watson (1995). The items of the W-FPSQ were also subjected to an item discrimination analysis to provide evidence that the items produced a statistically acceptable dispersion of scores. As suggested by Gregory (2004), the item-discrimination index was computed by comparing the item mean scores of the highest 25% and lowest 25% of responses for each item after factor analysis.

Student's t-test for independent groups was conducted to establish the differences between the item mean score of the highest and lowest quartiles for each item in the scales of the W-FPSQ. Frequencies and distributive statistics were also used to describe the characteristics of the sample and to analyse the distribution (mean, standard deviations, skewness and kurtosis) of the responses.

RESULTS

Exploratory factor analysis

The exploratory factor analysis was carried out by means of principal axis factoring, which allows researchers to identify the lowest number of factors that can account for the common variance in a set of variables (Garson, 2008). To estimate the internal consistency of the factor solution, the squared multiple correlations were calculated. Squared multiple correlations are "the squared multiple correlations of factor scores predicted from scores on the observed variables" (Tabachnick and Fidell, 2007:649). This index gives an indication of "the certainty with which factor axes are fixed in the variable space" (Tabachnick and Fidell, 2007:649). The factor scores of the respondents were calculated by means of the regression approach, as suggested by Tabachnick and Fidell (2007).

In the first round of exploratory factor analysis, the 96 items of the preliminary questionnaire were inter-correlated and rotated to form a simple structure by means of the varimax rotation. Owing to its size (96 X 96), the inter-correlation matrix is not included here. Based on Kaiser's criterion (Eigenvalues larger than unity), 16 factors were postulated that explained 75.30% of the variance in the factor space of the data. Next, the items included in the 16 factors were scrutinised to reduce the overall number of items. Then all items with factor loadings lower than 0.45, or which cross-loaded high on more than one factor, and items which seemed to be too similar in content were omitted, as recommended by Tabachnick and Fidell (2007). Factors with three or fewer items were also omitted.

In total, 54 items were retained, and the responses of the 205 respondents on these items were subjected to a second round of principal axis factoring, with varimax rotation. This was done to refine the factor structure of the instrument (Treiblmaier and Filzmoser, 2009). The Kaiser-Meyer-Olkin (KMO) test for measuring sampling adequacy and Bartlett's test of sphericity displayed satisfactory results. The calculated Kaiser-Meyer-Olkin value of 0.93 was greater than the required 0.7 criterion, and Bartlett's test of sphericity [χ^2 (1431) = 10718.09, $p<0.01$] confirmed that the properties of the inter-correlation matrix of the 54 items' scores were suitable for factor analysis. Based on Kaiser's criterion, eight factors with Eigenvalues greater than one were extracted. The eight rotated factors explained 69.63% of the total variance in the data.

An inspection of the scree plot, however, indicated that only seven factors had been determined. The results of a Horn's parallel analysis (Figure 2) confirmed that there are actually seven significant constructs, rather than eight. Parallel analysis indicated a break in the scree plot between roots seven and eight. The curve of the Eigenvalues of the random data set (the broken line) intersects the curve of the Eigenvalues for the real data (the solid line) at root seven (Hayton et al., 2004).

Only one item, with a factor loading of 0.48, was associated with Factor 7, and the factor loadings of all the other items were less than 0.40. According to Tabachnick and Fidell (2007:646), the interpretation of factors defined by only one or two variables is risky "in even the most exploratory of factor analyses". Factors 7 and 8 were therefore disregarded for the purposes of this study, leaving six rotated factors. The six rotated factors that were retained explained 65.29% of the total variance of the data.

The results of the principal axis factor analysis for the 54 items that were retained are summarised in Table 1. The factor loadings, corrected item-total correlations for each item, and the Eigenvalue, percentage variance after rotation and squared multiple correlation for each factor are reported. According to the results depicted in Table 1, the factor scores of the factor solution ranged from 0.49 to 0.88 (Factor 1), 0.51 to 0.84 (Factor 2), 0.67 to 0.89 (Factor 3), 0.48 to 0.76 (Factor 4), 0.48 to 0.75 (Factor 5), and 0.47 to 0.70 (Factor 6). Comrey and Lee (1992) suggest that loadings in excess of 0.71 are considered excellent, 0.63 very good, 0.55 good, 0.45 fair and 0.32 poor. In terms of these guidelines, it can be concluded that the items of the questionnaire are adequate for measuring the factors they are related to – "[t]he greater the loading, the more the variable is a pure measure of the factor" (Tabachnick and Fidell, 2007:649). The squared multiple correlations of 0.68 to 0.93 between the item scores and the factor scores indicate that the factor solution is internally consistent and that all the factors are well defined by the relevant items. Squared multiple correlation values of 0.7 and higher imply that the observed variables (item scores) account for substantial variance in the factor scores (Tabachnick and Fidell, 2007).

The corrected item-total correlation of each item on the six factors was satisfactory and complies with the criteria suggested by DeVellis (2003) and Field (2005). As Table 1 shows, the items of each factor correlate significantly (with r ranges from 0.45 to 0.90) with the total score of the relevant factor, indicating that the items are related to the constructs they signify. DeVellis (2003) sees an item with an item-correlation of more than 0.20 as generally sufficiently acceptable to be included. By contrast, Field (2005) argues that the correlation between an item and

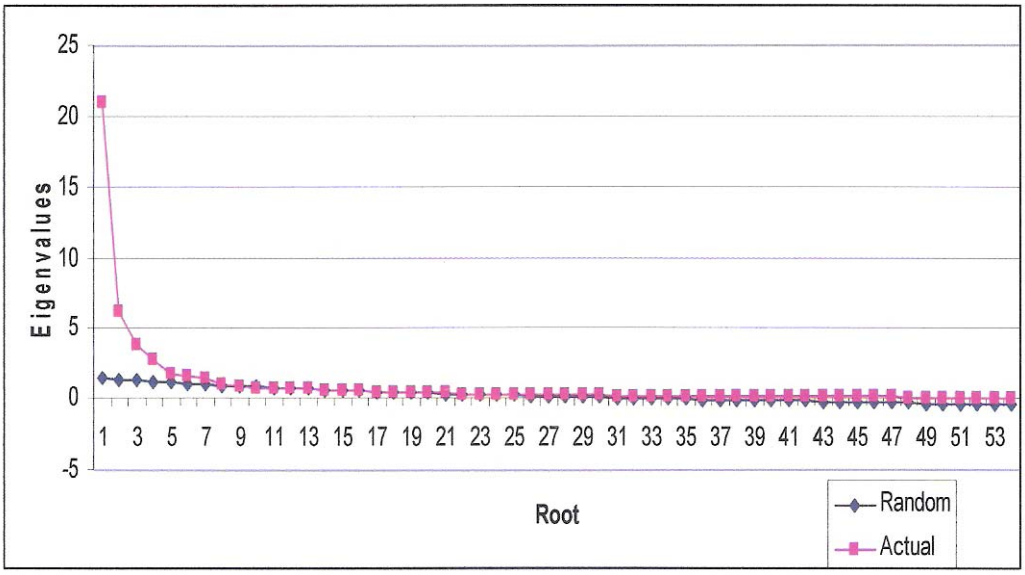

Figure 2. Scree plot of the actual and random data.

the total score on the factor should be at least 0.3 or more before an item can be considered as a variable for inclusion in a scale. In this study, the values of the corrected item-total correlation in the six factors were all above 0.3. Furthermore, removing any of the items did not increase the internal consistency of a factor.

The 54 items of the six factors were subjected to an item analysis to establish whether the items are able to discriminate between high and low scoring groups. For this purpose, the item-discrimination index was computed for each item included in the six factors, using the t-test for independent groups, as suggested by Gregory (2004). The results of the t-test show that all the items had acceptable item-discrimination index values. The results indicate that every one of the items on each factor was able to discriminate significantly ($p< 0.01$) between high- and low-scoring groups in the sample. The descriptive statistics and item-discrimination index values of the 54 items are reported in Appendix 1.

The results of the descriptive statistics of the samples scores on the factors and mean inter-item correlation and the Cronbach alpha coefficients for the six factors are set out in Table 2.

According to Table 2, the Cronbach alpha coefficients for the six factors of the questionnaire were highly satisfactory. Compared to the guideline of an alpha equal to or higher than 0.70 recommended by Nunnally and Bernstein (1994), the alpha coefficient for the six factors all yielded acceptable values (Factor 1=0.95, Factor 2=0.93, Factor 3=0.94, Factor 4=0.90, Factor 5=0.93, and Factor 6=0.91). The results also indicated that the mean inter-item correlations of the six factors were higher than the range of 0.15 to 0.50 suggested by Clark and Watson (1995). The average inter-item correlations for the six factors all yielded exceptionally high values (Factor 1=0.72, Factor 2=0.71, Factor 3=0.82, Factor 4=0.68, Factor 5=0.77, and Factor 6=0.76). The high mean inter-item correlations are probably the result of the fact that the items were previously all scrutinised and endorsed by an evaluation panel. The application of Lawshe's methodology in this study definitely enhanced the specificity of the target constructs. According to Clark and Watson (1995), a much higher average inter-item correlation can be expected when one is measuring a narrow or well-defined construct. The scores of the mean inter-item correlations on the six factors appear to satisfy the requirements of homogeneity and unidimensionality, so each item can be considered to be representative of the specific factor that it is assessing.

Based on the results reported above, all the items of the six factors were retained as separate scales to measure work-family pressure and to identify the resources needed to mitigate the work-family pressure and to support working mothers in coping with stress. For the purposes of this study, the questionnaire was named the Work-Family Pressure and Support Questionnaire (W-FPSQ). The results of the analyses of the data indicate that the psychometric properties of the W-FPSQ meet the minimum requirements and that the questionnaire is sufficiently reliable and valid to capture the present sample of working mothers' perceptions of the pressures and support they experienced.

DISCUSSION

There rapid increase in the employment of working mothers in the South African labour market in the last

Table 1. Rotated pattern matrix for the six-factor model.

Item no	Factor and relevant items	Factor loading	Corrected item-total correlation
Factor 1 : Work-family pressure			
15	I get so involved with my job that I feel a conflict of loyalty between my home and work responsibilities.	0.88	0.83
82	I feel I have to rush to get everything done each day.	0.85	0.85
25	I would love to move to a better home, but do not have sufficient funds to do so.	0.84	0.82
10	I often have too much to do in too little time.	0.81	0.78
51	My identity is based solely on being a parent.	0.78	0.76
80	I am overwhelmed with the workload I face each day.	0.77	0.79
81	The hours I work make it difficult to look after my child/children.	0.73	0.69
71	Work demands affect my relationship with my child/children negatively.	0.71	0.73
93	I worry about my child/children when I am at work.	0.65	0.69
12	I am in serious debt.	0.64	0.71
49	I feel socially isolated.	0.61	0.72
31	I often feel undervalued.	0.60	0.71
43	People at work think my family responsibilities interfere with my work.	0.55	0.66
40	There are conflicting job tasks and family demands in the role I play.	0.51	0.45
20	I feel emotionally drained when I get home from work.	0.49	0.59
Factor 2: Personal development			
67	There are opportunities for personal development in my job.	0.84	0.80
66	There is potential for career advancement in my job.	0.83	0.79
57	I feel that in my job I can develop or grow personally.	0.73	0.71
22	My work input is adequately remunerated.	0.69	0.74
21	My job improves the quality of my life.	0.67	0.73
56	My organisation tries to make my job as interesting as possible.	0.65	0.70
59	I have some influence over what happens to me at work.	0.64	0.74
68	My organisation is willing to help me when I need a special favour.	0.61	0.65
39	My fringe benefits are good.	0.55	0.67
77	My job leaves me enough time to spend with my family and friends.	0.50	0.61
47	I usually leave work on time.	0.50	0.69
Factor 3: Management support			
79	My manager encourages me to review my strategies for managing my life while pursuing my career goals.	0.89	0.88
58	My manager serves a role model for achieving balance between personal and professional life.	0.88	0.90
50	My manager gives me constructive feedback skilfully.	0.85	0.86
65	I get adequate feedback about my own performance.	0.80	0.82
70	My manager is a good listener.	0.78	0.79
60	My manager encourages me to discuss positive/negative feelings that I may have about my ability to succeed.	0.77	0.76
44	My manager is not intimidating; s/he is easy to approach at any time.	0.67	0.70
Factor 4: Organisational flexibility			
89	There is great flexibility in my organisation.	0.76	0.69
62	There is an option to work from home in my organisation.	0.69	0.70
63	A flexible work schedule is made available in my organisation.	0.66	0.73
24	My organisation takes an interest in mothers' personal lives.	0.62	0.71
86	I am in a job with a schedule flexible enough to let me meet my family responsibilities.	0.51	0.66
17	My organisation provides information on additional sources of support.	0.49	0.69

Table 1. Contd.

6	My organisation consults with mothers when making decisions about their workload.	0.48	0.62
35	Help is available from my organisation when I have a problem.	0.48	0.63
Factor 5: Time for family interaction			
3	I am able to "switch off" at home.	0.75	0.79
4	I have time to do things with the family.	0.71	0.75
2	I balance my work and family time.	0.68	0.75
9	I have enough time for myself.	0.55	0.81
18	Family demands have a favourable influence on my work.	0.52	0.78
38	I spend enough time with my family.	0.52	0.71
23	My time off matches my family members' schedules.	0.48	0.79
Factor 6: Child care support			
42	I am comfortable with the arrangements for my children while I am working.	0.70	0.80
28	I can usually get a babysitter if I want to go out in the evening.	0.70	0.76
27	Making arrangements for my children while I work does not involve lots of effort.	0.66	0.72
69	It is easy to find someone to look after my child/children when I cannot be with him/her/them.	0.57	0.81
72	I do not feel guilty about leaving my child/children when I go out to work.	0.49	0.70
52	If my child/children fall ill, there is someone who can stay home and look after him/her/them.	0.47	0.75

Factor 1: Work-family pressure: Number of items = 15; Percentage variance after rotation = 17.2; Eigenvalue = 21.01; Squared multiple correlation = 0.93. Factor 2: Personal development: Number of items = 11; Percentage variance after rotation = 12.53; Eigenvalue = 6.17; Squared multiple correlation = 0.90. Factor 3: Management support: Number of items = 7; Percentage variance after rotation = 11.596; Eigenvalue = 3.869; Squared multiple correlation = 0 .93. Factor 4: Organisational flexibility: Number of items = 8; Percentage variance after rotation = 8.95; Eigenvalue = 2.85; Squared multiple correlation = 0.83. Factor 5: Time for family interaction: Number of items = 7; Percentage variance after rotation = 8.86; Eigenvalue = 1.84; Squared multiple correlation = 0 .76. Factor 6: Child care support: Number of items = 6; Percentage variance after rotation = 6.10; Eigenvalue = 1.61; Squared multiple correlation = 0.67.
Source: calculated from survey data.

Table 2. Descriptive statistics and reliability of the factors.

Factor*	1	2	3	4	5	6
Mean	56.86	58.48	37.97	30.99	30.18	27.38
SD	27.54	15.65	11.50	14.02	13.18	10.90
Skewness	-0.10	-1.43	-1.56	0.19	-0.31	-0.43
Skewness error	0.17	0.17	0.17	0.17	0.17	0.17
Kurtosis	-1.58	1.33	1.12	-1.27	-1.38	-1.13
Kurtosis error	0.34	0.34	0.34	0.34	0.34	0.34
r (Mean)	0.72	0.71	0.82	0.68	0.77	0.76
Alpha	0.95	0.93	0.94	0.90	0.93	0.91

Source: Calculated from survey data. *Factor names; 1 Work-family pressure; 2 Personal development; 3 Management support; 4 Organisational flexibility; 5 Time for family interaction; 6 Child care support.

decade (Statistics South Africa, 2014; Van der Westhuizen et al., 2006) implies that organisations need to develop supportive policies and benefits to shield working mothers against negative work-family interactions. The objective of this study was therefore to develop a valid and reliable measuring instrument to survey the work-family pressures that mothers in professional occupations and management positions in South Africa experience, and to identify resources that can mitigate these stressors.

A questionnaire named the Work-Family Pressure and Support Questionnaire (W-FPSQ) was constructed to survey the experiences of single and married working mothers in managerial and professional positions work-

family pressure and the resources they need to cope with work-family pressure and stress. A total of 96 items was initially included in the W-FPSQ. After two applications of exploratory factor analysis, 54 of these items yielded a six-factor solution (Table 1). The six factors showed adequate factorial validity, unidimensionality and reliability. The magnitudes of the factor scores of the items in each of the six factors were all larger than 0.47, with factor scores ranging from 0.47 to 0.89. The mean inter-item correlations ranged from 0.68 to 0.81, and the alpha coefficients from 0.90 to 0.95. These results provide sufficient evidence of the psychometric adequacy of the W-FPSQ.

After studying the contents of the significant items defining each factor, they were named according to their substantive content or core. The following descriptive labels were assigned by the authors to each factor or scale: Work-family pressure, Personal development, Management support, Organisational flexibility, Time for family interaction and Child care support.

The first scale, Work-family pressure, focuses primarily on pressures associated with conflicts in balancing work and family demands. The elements of this scale include issues related to length of work hours, time pressures, workload, role overload and role conflict, and an inability to satisfy family and/or professional role expectations. This scale also includes items related to pressures associated with financial constraints, and feelings of social isolation, low self-esteem and emotional exhaustion. This factor measures the presence of time-, strain- and behaviour-based conflict and pressures experienced by working mothers. A meta-analysis by Allen et al. (2000) has shown that work-to-home pressure is particularly strongly associated with stress-related outcomes, including burnout, work-related stress and depressive complaints. Extensive conflict between work and family roles may thus impair a person's psychological well-being (Greenhaus and Parasuraman, 2002).

The content of the remaining five factors was related to resources that may be of value in supporting working mothers to deal with high job and family demands. These scales exemplify organisational efforts to support employee needs to balance work and family responsibilities and to create a family-supportive work environment (Allen, 2001; Wei et al., 2013). Each of these scales is discussed below.

Personal development refers to the opportunities that working mothers have for personal development, growth and career advancement in their jobs. This scale also includes items relating to autonomy, stimulating work, adequate remuneration and enough time to spend with family and friends. This scale measures both the intrinsic and extrinsic resources that provide support to employees at an organisational, work, social and individual level.

Management support includes items related to manager and supervisor behaviour that provides social and interpersonal support to employees in the form of both work and psychosocial assistance. The elements of this factor include managers' encouragement of working mothers to pursue their career goals, giving adequate and constructive feedback on performance, and recognition of working mothers' need to achieve a balance between their personal and professional lives. Other characteristics of management support denoted by this factor were listening, encouraging, and being approachable and open-minded.

The organisational flexibility scale refers to the role of the organisation in creating and providing a flexible work environment. This includes flexible work schedules, allowing workers to work from home, involving or consulting mothers in decisions about workload, providing information on additional sources of support and taking an interest in mothers' personal lives. The organisation is also willing to help when workers have a problem. This scale measures resources that provide support to employees at the work and family levels.

Time for family interaction is related to work-family interaction and refers to working mothers' experiences of the availability of time for family interaction and building family relations. The items of this factor are associated with employees' ability to "switch off" at home, to balance work and family time, time to do things with the family and have enough time for themselves, and time on hand to match family members' schedules. It also includes the viewpoint that positive family relations have a favourable influence on their work. This scale is related to personal and social support.

The last scale, Child care support, defines working mothers' perceptions of child care arrangements and social support with child care. The variables of this factor include working mothers' satisfaction with arrangements made for their children while working, the availability of a helper or baby sitter when mothers were absent or when their children were ill, and the ease with which working mothers can arrange for someone to look after their children.

The W-FPSQ shows promise for evaluating the perceived negative aspects of work-to-family spill-over and the resources available to support single and married mothers in balancing work and family responsibilities. The last five scales of the W-FPSQ cover a broad range of potential social, work and organisational interventions and actions that can provide supporting resources for working mothers to cope with negative work-to-home interference. The 39 items of the last five scales refer to a mix of resources that are interrelated and congruent with a range of supportive practises and benefits available to employees at different levels, namely at the personal level, the social level, the work and task level, the organisational level and family level.

Various researchers identified a number of supportive

Table 3. Supportive factors and related practices

Support factors	Description	Supportive practices and systems
Personal development	Personal development, growth and career advancement.	Opportunities to develop competencies and skills. Stimulation of personal growth, learning and development. Performance feedback and opportunities for development. (Schaufeli and Salanova, 2007; Llorens et al., 2007).
Management support	Management/supervisor behaviour that provides work-, social- and psychosocial support.	Leaders' appreciation and support. Supervisor's support and co-workers' support. On-the-job social support network. High quality relationship with supervisor. Mentoring. (Allen, 2001; Bakker et al., 2005; Kossek et al., 2011).
Organisational flexibility	Creating and providing a flexible work environment.	Job autonomy. Flexible work schedules. Flexible work time. Flexible work location. Voluntary shifts. Part-time work and job sharing. Personal control over work time. (Bakker et al., 2005; Kelly et al., 2011; Valcour, 2007).
Time for family interaction	Time for family interaction and building family relations. Time to do things with the family and have enough time for themselves/me-time.	Possibility to interrupt or reduce work to attend to family needs and emergencies. Opportunity for families to maintain relationships. Family interaction plan. (Eaton, 2003; Kelly et al., 2011; Whitehead and Kotze, 2003; Wood et al., 2003).
Child care support	Child care arrangements and social support with child care.	Availability of organised child care facilities (crèches, nurseries and pre-school facilities). Help of family, friends and domestic workers with child care. Out-of-hours childcare. Flexible carer's leave and paid maternity and paternity leave. (Franks et al., 2006; Mclellan and Uys, 2009).

practices that are closely aligned with the content and nature of the five support factors. The relevance and psychodynamics of these supportive practices in mitigating work-family pressures have also been described and discussed by these researchers such as Allen (2001), Bakker et al. (2005), Eaton (2003), Franks et al. (2006), Kelly et al. (2011), Kossek et al. (2011), Llorens et al. (2007), Mclellan and Uys (2009), Schaufeli and Salanova (2007), Valcour (2007), Whitehead and Kotze (2003) and Wood et al. (2003).

In Table 3, the association and communality between the support factors extracted in the present study and various supportive practices cited in the literature are pooled and summarized.

The data in Table 3 underscore the argument that the support practices that various organisations provide are interrelated and congruent with both work and family supportive resources. In the current study, personal development and management support signify "work supportive resources"; and time for family interaction and child care support are related to "family supportive resources". Organisational flexibility seems to bridge both the work and family supportive resources. Overall, the results of these studies demonstrate the capability of the items and related factors of the W-FPSQ to provide a representative sample of the behaviour domains under scrutiny, and provide additional evidence for the content and face validity of the instrument.

Limitations and suggestions for further research

There are some limitations to the study reported in this article and there are a number of implications for future research.

Firstly, although the findings obtained in this study indicate that the psychometric properties of the W-FPSQ are statistically robust, further study is required to examine the factor structure, reliability, and validity of the scales more fully. Because the analyses conducted in this research were exploratory, additional research is needed to confirm the factor structure of the W-FPSQ using confirmatory factor analysis.

Secondly, the sample sizes used in the study were smaller than those normally used in scale development research (Comrey and Lee, 1992). The present findings need to be replicated with larger samples of participants to confirm the results of the present study and to support the generalisation of the findings to larger populations of South African working mothers. However, it should be noted that, according to Tabachnick and Fidell (2007) a sample of 205 respondents is adequate for an exploratory factor analysis and for most multivariate statistical analyses. Therefore, the W-FPSQ has a great deal of utility in spite of the small sample sizes used so far.

Thirdly, several of the participants endorsed response options at the higher or lower end of the Likert scale used for the W-FPSQ. Consequently, the scores on the six scales were all non-normally distributed. Although assumptions on distribution do not apply to factor analysis (Tabachnick and Fidell, 2007), this finding requires the use of non-parametric statistical techniques to analyse the current data set.

Fourthly, further research needs to be conducted among a broader spectrum of cultural participants, and should include working mothers from diverse ethnic groups. It should also allow for other techniques of data collection that do not require computer or internet access.

Fifthly, it fell beyond the scope of this study to compare this instrument for measuring work-family pressure and stress with other questionnaires related to the work-family interaction. It is suggested that the W-FPSQ be compared with such measures, including their focus and applications, in a future study.

The W-FPSQ shows promise for evaluating the perceived negative aspects of work-to-family spill-over and the supportive resources available to working mothers. These scales offer the potential to

1. pro-actively identify specific strengths and weaknesses in organisations to provide effective supportive resources to working mothers;
2. identify the presence or a lack of specific resources that are important to support women in balancing work and family life;
3. get feedback from couples on the efficiency of support systems and relevance of the resources provided by management; and
4. provide a starting point for communication between management and working mothers to identify work- and family-supportive resources that will benefit both parties.

This study contributes to knowledge regarding work-family interaction and provides a tool that researchers and practitioners can use to describe and evaluate working mothers' experiences of balancing work and family responsibilities, and to examine the extent to which organisations are perceived as supporting work and family, and a balance between them. Depending on the research question to be answered, the six scales of the W-FPSQ can be used as dependent variables, or as independent variables. Finally, the W-FPSQ can be used by human resource professionals and managers in South African organisations as a diagnostic tool to develop and implement work and family-supportive policies and programmes that will be part of the organisations' human resources strategy and culture.

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Appendix 1. The Mean, Std Dev and item-discrimination of the items of the W-FPSQ.

Scales and items	Mean	Std Dev	Lowest quartile	Highest quartile	Mean difference	T-value*
Work-family pressure	**n= 205**		**n= 52/52**			
Q 10.	3.65	2.46	1.25	6.14	-4.89	-31.49
Q 12.	3.52	2.23	1.33	5.52	-4.19	-20.18
Q 15.	3.82	2.54	1.23	6.33	-5.10	-36.87
Q 20.	4.39	2.39	1.98	6.08	-4.10	-14.53
Q 25.	3.76	2.36	1.39	6.08	-4.69	-30.69
Q 31.	3.62	2.53	1.17	6.29	-5.12	-22.92
Q 40.	2.70	2.23	1.12	3.92	-2.81	-7.59
Q 43.	3.37	2.31	1.39	5.46	-4.08	-16.64
Q 49	3.70	2.32	1.40	6.00	-4.60	-21.74
Q 51.	3.85	2.36	1.52	6.06	-4.54	-23.16
Q 71.	4.07	2.53	1.42	6.11	-4.70	-18.76
Q 80.	3.97	2.51	1.23	6.27	-5.04	-29.48
Q 81.	4.37	2.46	1.98	6.42	-4.44	-18.70
Q 82.	3.94	2.48	1.44	6.42	-4.98	-37.21
Q 93	4.14	2.49	1.83	6.27	-4.44	-18.10
Number of items:		**15**				
Mean inter-item correlation:		**0.72**				
Cronbach's coefficient alpha:		**0.95**				

Scales and items	Mean	Std Dev	Lowest Quartile	Highest Quartile	Mean difference	T-value*
Personal development	**n= 205**		**n= 56/61**			
Q 21.	5.38	1.63	3.80	6.43	-2.62	-10.17
Q 22.	1.63	1.81	3.75	6.75	-3.00	-10.27
Q 39.	5.65	2.08	2.82	6.52	-3.70	-14.96
Q 47.	5.03	1.95	3.14	6.36	-3.22	-11.38
Q 56.	4.93	1.89	3.00	6.41	-3.41	-14.75
Q 57.	5.00	1.55	4.11	6.57	-2.47	-9.46
Q 59.	5.78	1.93	3.32	6.44	-3.12	-10.40
Q 66.	5.31	1.68	4.05	6.70	-2.65	-8.59
Q 67.	5.86	1.75	3.79	6.62	-2.84	-9.36
Q 68.	5.68	1.82	3.77	6.43	-2.66	-8.58
Q 77.	4.46	2.35	2.00	6.44	-4.44	-19.47
Number of items:		**11**				
Mean inter-item correlation:		**0.71**				
Cronbach's coefficient alpha:		**0.93**				

Scales and items	Mean	Std Dev	Lowest Quartile	Highest Quartile	Mean difference	T-value*
Management support	**n= 205**		**n=53/54**			
Q 44.	4.93	2.15	2.53	6.54	-4.01	-14.07
Q 50.	5.38	1.89	2.87	6.57	-3.71	-12.49
Q 58.	5.60	1.84	3.15	6.80	-3.65	-13.36
Q 60.	5.43	1.81	3.38	6.67	-3.29	-12.33
Q 65.	5.61	1.88	3.40	6.74	-3.34	-10.75

Appendix 1. Contd.

Q 70.	5.57	1.77	3.24	6.74	-3.50	-13.69
Q 79.	5.46	1.94	2.68	6.61	-3.93	-15.22
Number of items:		**7**				
Mean inter-item correlation:		**0.82**				
Cronbach's coefficient alpha:		**0.94**				

Scales and items	**Mean**	**Std Dev**	**Lowest Quartile**	**Highest Quartile**	**Mean difference**	**T-value***
Organizational flexibility	**n= 205**		**(n= 57/53)**			
Q 6.	3.02	2.35	1.28	5.47	-4.19	-14.80
Q 17.	3.45	2.42	1.44	5.98	-4.54	-23.27
Q 24.	3.71	2.37	1.46	6.19	-4.73	-25.74
Q 35.	4.89	1.98	2.84	6.60	-3.76	-16.01
Q 62.	3.52	2.38	1.56	6.34	-4.78	-23.96
Q 63	3.93	2.20	2.04	6.53	-4.49	-25.80
Q 86.	4.40	2.29	2.14	6.26	-4.12	-18.67
Q 89.	4.07	2.38	1.81	6.59	-4.78	-24.78
Number of items:		**8**				
Mean inter-item correlation:		**0.68**				
Cronbach's coefficient alpha:		**0.90**				

Scales and items	**Mean**	**Std Dev**	**Lowest Quartile**	**Highest Quartile**	**Mean difference**	**T-value***
Time for Family interaction	**n=205**		**n=52/68**			
Q 2.	3.99	2.29	1.62	6.22	-4.61	-31.57
Q 3.	4.45	2.21	1.62	6.28	-4.66	-41.46
Q 4.	4.59	2.16	2.06	6.32	-4.27	-21.53
Q 9.	4.09	2.43	1.33	6.35	-5.03	-51.61
Q 18.	3.95	2.25	1.67	6.16	-4.49	-24.96
Q 23.	4.34	2.16	1.87	6.29	-4.43	-27.30
Q 38.	4.78	2.32	2.04	6.47	-4.43	-19.30
Number of items:		**7**				
Mean inter-item correlation:		**0.77**				
Cronbach's coefficient alpha:		**0.93**				

Scales and items	**Mean**	**Std Dev**	**Lowest Quartile**	**Highest Quartile**	**Mean difference**	**T-value***
Child care arrangements	**n=205**		**n=55/69**			
Q 27	5.05	2.16	2.20	6.62	-4.42	-22.35
Q 28.	4.74	2.01	2.46	6.29	-3.84	-16.61
Q 42.	4.74	2.09	2.24	6.42	-4.18	-19.25
Q 52.	4.28	2.36	2.18	6.48	-4.30	-20.07
Q 69.	4.50	2.12	2.00	6.44	-4.43	-22.46
Q 72.	4.07	2.32	1.95	6.33	-4.39	-23.18
Number of items:		**6**				
Mean inter-item correlation:		**0.76**				
Cronbach's coefficient alpha:		**0.91**				

T-values * $p < 0.001$. Source: calculated from survey data.