

Toward the assessment of the work–family interface: Validation of the Slovenian versions of work–family conflict and work–family enrichment scales

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Abstract: Research on the work–family interface has gained importance especially because of the changing composition of the working population and the rapidly changing working environment worldwide. However, there are no appropriate questionnaires available that would address negative and positive experiences of the work–family interface. Therefore, a study has been conducted in order to validate two existing scales measuring work–family conflict and work–family enrichment. The dimensionality, item adequacy, reliability, and construct validity were addressed by means of a sample of 214 employees from Slovenian enterprises and institutions. The results for the Slovenian scales confirmed the multiple dimensions of the original versions. Support was also found for acceptable reliability and construct validity of the two scales. Although some limitations were noticed, the scales represent an important step in examining the work–family interface of the Slovenian workforce.

Keywords: work, family, conflicts, test validity, psychological testing

Merjenje usklajevanja dela in družinskega življenja: Validacija slovenskih verzij vprašalnikov konflikta in obogatitve med delom in družino

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Povzetek: Raziskave s področja usklajevanja dela in družine so pridobile na pomembnosti predvsem zaradi spremenjene sestave delovne populacije in spremenjenih delovnih pogojev. Kljub temu pa trenutno ni na voljo vprašalnikov, ki bi zajeli različne negativne in pozitivne vidike usklajevanja. Zato smo izvedli raziskavo, s katero smo želeli preveriti merske karakteristike vprašalnikov konflikta in obogatitve med delom in družino. Na vzorcu 214 zaposlenih iz različnih slovenskih podjetij in institucij smo preverili dimenzionalnost, primernost postavk, zanesljivost in konstruktno veljavnost omenjenih vprašalnikov. Rezultati slovenskega vzorca so potrdili dimenzionalnost izvirmikov. Tudi zanesljivost

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in konstruktna veljavnost sta bili zadovoljivi. Kljub nekaterim omejitvam, vprašalnika predstavljata pomemben korak pri proučevanju usklajevanja dela in družine med slovensko delovno populacijo.

Ključne besede: delo, družina, konflikti, veljavnost, psihološko testiranje

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Interest in the challenge of participating in work and family life has been growing ever since an increase in women's employment rates and substantially changed working conditions (e.g. rising job insecurity and higher mobility demands) were reported worldwide (e.g. Eby, Casper, Lockwood, Bordeaux & Brinley, 2005; Wiese, 2007). Research traditionally focused on the negative experiences of the work–family interface. According to this notion, resources such as time, energy and attention cannot be invested equally in the work and family domains (Greenhaus & Beutell, 1985). Time devoted to the job, for instance, may keep someone from fulfilling his or her family responsibilities. These negative experiences have mostly been described with work–family conflict which occurs when the participation in the work (family) domain is hindered because of the participation in the family (work) domain (Greenhaus & Beutell, 1985).

In contrast, more recent research has suggested that the positive experiences also need to be addressed when we try to understand the work–family interface (Frone, 2003; Grzywacz & Butler, 2005; Grzywacz & Marks, 2000; Van Steenbergen, Ellemers & Mooijaart, 2007). Authors also claim that resources are expandable rather than fixed (Greenhaus & Powell, 2006). Therefore, combining work and family activities can also be experienced in a positive way. For instance, knowing that family activities are planned for the afternoon could stimulate the attention to a work task during work hours. These positive experiences of the work–family interface have mostly been encompassed by the definition of work–family enrichment (Carlson, Kacmar, Wayne & Grzywacz, 2006; Greenhaus & Powell, 2006). Enrichment is defined as the extent to which participation in one domain improves the quality of life in the other domain (Greenhaus & Powell, 2006). With work–family conflict, in contrast, the quality of life in the other domain deteriorates.

In the last two decades ample studies have investigated the nature of work–family conflict and enrichment along with their antecedents and outcomes (Allen, Herst, Bruck & Sutton, 2000; Byron, 2005; Eby et al., 2005). Researchers have also strived to develop theoretically sound measures of both concepts. The measurement of work–family conflict followed the call for applying a multidimensional approach (Carlson, Kacmar & Williams, 2000; Kossek & Ozeki, 1998). Work–family enrichment measures developed in a similar vein.

The measurement of work–family conflict

According to definition, family functioning may be limited because of work responsibilities (i.e. work-to-family conflict; WFC) or vice versa (i.e. family-to-work conflict; FWC) (Carlson et al., 2000; Mesmer-Magnus & Viswesvaran, 2005). However, older measures of work–family conflict did not embody this bi-directional nature of work–family conflict (see Carlson et al., 2000; Netemeyer, Boles & McMurrian, 1996). Furthermore, work–family conflict may take three forms. Work and family may compete for a person’s time (i.e. time-based work–family conflict) and energy (i.e. strain-based work–family conflict) or may be creating incompatible behaviors (i.e. behavior-based work–family conflict) (Carlson et al., 2000; Greenhaus & Beutell, 1985). Time-based conflict occurs when time demands in one domain prevent activities in the other domain. Strain-based conflict reflects the exhaustion resulting in one domain (e.g. work) and affecting the other one (e.g. family). The third conflict form, behavior-based conflict, results from incompatible behavior expectations in the work and family domains. Although this distinction is widely accepted, it received little measurement attention (see Carlson et al., 2000; Kelloway, Gottlieb & Barham, 1999; Stephens & Sommer, 1996).

The only measure fully considering the mentioned theoretical perspectives is the work–family conflict scale developed by Carlson et al. (2000). The scale underwent an extensive development and validation procedure on five different samples. The results confirmed six distinct dimensions (WFC–time, WFC–strain, WFC–behavior, FWC–time, FWC–strain, FWC–behavior) which include both directions of work–family conflict (i.e. WFC, FWC) and the three forms (i.e. time, strain and behavior). The scale is eighteen items long with three items for each dimension. All the items from the work-to-family direction reflect more difficult participation (lack of time, strain or incompatible behavior) in the family domain because of work responsibilities. All the items from the family-to-work direction, on the other hand, represent depleted functioning in the work domain because of activities and responsibilities in the family domain. Furthermore, Carlson et al. (2000) found replicated relationships between work–family conflict and known antecedents and outcomes using the work–family conflict scale. Work or family demands such as higher role involvement or role ambiguity were found to increase work–family conflict. Resources from work and family domains such as work or family support, on the other hand, prevented work–family conflict. Work–family conflict was also found to lead to different work and family outcomes. Job, family and life satisfaction in particular were negatively affected by increased work–family conflict. Support was also found for gender differences, which are commonly reported in the work–family literature (e.g. Eby et al., 2005). Women experienced significantly higher work–family conflict on four out of the six dimensions (i.e. WFC–strain, FWC–time, FWC–strain and FWC–behavior). In summary, the scale showed satisfactory metric characteristics. The full version of the scale (or single

dimensions of the scale) has been used in several studies to date (e.g. Bruck, Allen & Spector, 2002; Lapierre et al., 2008; Premeaux, Adkins & Mossholder, 2007). Most recently even an abbreviated six-item version of the scale has been developed and validated (Matthews, Kath & Barnes-Farrell, 2010).

The measurement of work–family enrichment

Work–family enrichment is seen as a conceptual counterpart of work–family conflict. Similarly, enrichment may take two directions (i.e. work-to-family enrichment, WFE; family-to-work enrichment, FWE). The positive experiences in the work domain may improve the quality of life in the family domain or vice versa. Several measures of enrichment-like constructs recognized this two-fold distinction (e.g. Aryee, Srinivas & Tan, 2005, work–family facilitation; Grzywacz & Marks, 2000, positive spillover). However, most measures were developed only for the purposes of the particular study (e.g. Grzywacz & Marks, 2000). In addition, they did not fully address the improvement of the quality of life and performance in one domain because of the other.

Carlson et al. (2006) indicated that enrichment may derive from several positive experiences in the work and family domains. Therefore, work–family enrichment measures should also reflect these gained resources. Work experiences may improve the quality of life in the family domain because of security, confidence or self-fulfillment (i.e. work-to-family capital), a positive emotional state or attitude (i.e. work-to-family affect) and the acquisition of skills and knowledge (i.e. work-to-family development). In the family domain, however, the positive experiences and gained resources may be different. The family domain may put someone in a better mood or provide new skills (i.e. family-to-work affect and development) but in addition it may provide a sense of focus, improving concentration at work (i.e. family-to-work efficiency).

The most recent understanding of enrichment has been captured only in one measure. Carlson et al. (2006) developed and validated the work–family enrichment scale by means of five different samples from various occupations. The eighteen-item scale included six dimensions (WFE–development, WFE–affect, WFE–capital, FWE–development, FWE–affect, FWE–efficiency) with three forms (development, affect, capital or efficiency) within each direction (WFE, FWE). All the items from the work-to-family direction demonstrate a better quality of life in the family domain because the work domain provides new knowledge or positive affect or improves the sense of security. In contrast, the family-to-work items reflect a better quality of life in the work domain because of resources gained in the family domain (new knowledge and perspectives, a positive mood, a better sense of urgency or focus). Carlson et al. (2006) found comparable correlations between work–family enrichment and antecedents and outcomes previously reported in work–family studies. However, only resources were addressed because antecedents of enrichment derive from a

resource rich-environment. Work and family resources, such as quality relationships with family or supervisor and work autonomy were found to foster enrichment. Some support was found for work antecedents to be more strongly related to enrichment deriving from the corresponding domain (WFE). Enrichment also enhanced the job and family satisfaction as well as the individual's well-being. In short, the work–family enrichment scale was demonstrated to be a valid and reliable measure of enrichment. However, it has not been widely applied to date (see Carlson, Grzywacz & Zivnuska, 2009).

Validation of the Slovenian versions of the work–family conflict/enrichment scales

In Slovenia no attempt has been made so far to capture fully employees' work–family conflict and enrichment. Studies have mostly addressed the implementation of family-friendly policies (e.g. the certificate “family-friendly” company) and benefits (e.g. flexible work schedule) (Kanjuo Mrčela & Černigoj Sadar, 2007a). Furthermore, only single-item measures regarding employees' difficulties in combining work and family responsibilities (e.g. limited promotion opportunities) were considered (Kanjuo Mrčela & Černigoj Sadar, 2006). Since changes in the work and family domains have been also affecting the Slovenian working population (e.g. Kanjua Marčela & Černigoj Sadar, 2007b), further research examining the work–family interface may be particularly relevant. However, a finer-grained measurement of the negative as well as the positive experiences is needed.

In our study we strived to fill this void by examining the metric characteristics of the work–family conflict (Carlson et al., 2000) and work–family enrichment scales (Carlson et al., 2006). We translated the scales from English to Slovenian and tested them for dimensionality, item adequacy, reliability and several construct validity aspects (i.e. discriminant validity and differential relationships with other constructs). We presumed that both scales would show an equivalent number of dimensions (i.e. six dimensions) and items (i.e. eighteen items) to the English original. In addition, we tested whether the scale dimensions of each scale really represent distinct dimensions (discriminant validity) and show comparable correlation patterns to some known antecedents and outcomes. We used similar antecedents and outcomes to Carlson et al. (2000) and Carlson et al. (2006). However, we added some additional ones commonly found in the literature (e.g. Boyar, Carr, Mosley & Carson, 2007, workload/family load; Grzywacz & Butler, 2005, job variety; Grzywacz & Marks, 2000, marital status). For work–family conflict we predicted positive correlations with work and family demands and negative with resources deriving from both domains. Since previous literature demonstrated stronger relationships between domain-specific work–family conflict and antecedents from the corresponding domain (Byron, 2005), we expected work antecedents to correlate higher with WFC than FWC dimensions.

For family antecedents higher correlations with FWC were presumed. In addition, negative correlations were also expected between three outcomes (i.e. job, family and life satisfaction) and all the work–family conflict dimensions. Since gender is a particularly salient variable in almost every work–family study, gender differences were also examined. In line with previous findings (Carlson et al., 2000; Eby et al., 2005), we expected women to be experiencing more work–family conflict in general. A similar approach was used for testing the construct validity of the work–family enrichment scale. We predicted positive relationships between all the antecedents (i.e. resources only) and outcomes and work–family enrichment. Again, it was expected that domain-specific relationships would be stronger (e.g. work resources and work-to-family enrichment). Since women also tend to report more positive experiences of the work–family interface (e.g. Grzywacz & Marks, 2000; Van Steenbergen et al., 2007), we expected the same also for our study. In addition, we tested whether work–family conflict and enrichment in fact represent distinct aspects of the work–family interface. Therefore, we expected correlations to be minimal.

Method

Scale translation

The first step in the validation of the work–family conflict (Carlson et al., 2000) and work–family enrichment scales (Carlson et al., 2006) was the translation from English to the Slovenian language. Both questionnaires were translated by a professional translator. Afterwards it was checked whether items from the Slovenian versions represented the dimensions of work–family conflict and enrichment semantically. In the second step the Slovenian versions of the questionnaires were given to another English-speaking expert who performed the back-translation. The original English and the back-translated version were compared and discrepancies were corrected in the Slovenian versions. Finally, the items from the Slovenian versions were examined for redundant or incomprehensible words. In addition, it was once again checked whether items reflected the two directions and multiple dimensions of work–family conflict and enrichment appropriately.

Although content changes were not performed, the item format was slightly different for the work–family enrichment scale. The original English scale items were formulated as follows: “My involvement in my work/family _____” (Carlson et al., 2006). The participants had to fill in the blank space with the remainder of the item (e.g. helps me to gain knowledge and this help me be a better family member/worker). In the Slovenian version such a formulation was not used, since the Slovenian items were comprehensive enough without. All items were written as a full sentence. Similarly, for both the original and the Slovenian work–family conflict scale full sentences were used to represent each item.

In the translation process special attention was also given to the “double-barreled” nature of the items. Although including more than one idea in an item can be potentially questionable (DeVellis, 2003), the authors of the questionnaire showed otherwise via a comparison of different response formats (Carlson et al., 2006). Furthermore, the authors claim that double-content items are the best way to address the work–family interface. Therefore, we also carefully checked whether items in the Slovenian versions reflected both “causes” (e.g. being emotionally drained, having a packed work schedule, being in a good mood, gaining knowledge) and depleted (work–family conflict) or enhanced (work–family enrichment) functioning as a “consequence”. To report about work–family conflict, for instance, it was necessary that the participant agreed with devoting time to the job and not being able to participate equally in family activities.

Scale validation

Procedure and sample

Participants in the validation study were 214 employees from two enterprises and two institutions from the public sector, specifically from the healthcare ($n_1 = 34$), education ($n_2 = 30$) and the power supply fields ($n_3 = 130$; $n_4 = 20$). The sample was selected to represent a wide range of different occupations (e.g. administrative workers, teachers, engineers). The approach and the distribution of the questionnaire were somewhat different for each enterprise and institution. The enterprises were contacted through the manager. The questionnaires were then distributed via the HR department enclosed with a letter from the management. The HR department also collected the questionnaires which were returned in a sealed envelope. The two public institutions were approached through two employees who both distributed and collected the questionnaires. All questionnaires included a description of the aim of the study and a confidentiality statement. They were distributed and returned in envelopes.

The participants (59.8% male) worked on average for 40.5 hours per week ($SD = 4.4$). The vast majority of the participants held a permanent job contract (93.4%) and indicated having no supervisory job position (84.5%), no shift work (89.9%) and no part-time work (96.7%). About half of the participants (56.6%) reported an organizational tenure of over 20 years, 19.8% reported a tenure of ten to twenty years, 9.4% a tenure of five to ten years and 8.5% reported tenure of one to five years, the rest reporting an organizational tenure of less than one year. 57.3% of the participants completed high school or lower vocational education, others had received a higher educational degree (16.4%) or a university degree and higher (26.3%). A large number of the participants (71.9%) was aged over 40, 18.8% were aged from 30 to 40 and others were younger than 30.

Participants also indicated their family status and caregiving responsibilities:

81.2% of the participants were either married or in a relationship, 51.9% of the participants were parents and had children still living at home, 5.2% indicated having only elder care responsibilities (and no children or children not living at home) and 16.0% had dependent children and elder care responsibilities simultaneously.

Analysis

In order to determine the dimensionality of the Slovenian versions of the work–family conflict and enrichment scales first a confirmatory factor analysis using Amos 17.0 (Arbuckle, 2008) was conducted for each scale separately. The same approach was applied for verifying the adequacy of the items. Reliability of the two scales was examined through internal consistency for each dimension of the two scales. Several construct validity aspects of the two scales were examined as well. First, the discriminant validity of each scale was examined by means of the correlations between factors in the confirmatory factor analysis. Second, work–family conflict and enrichment were correlated with several work and family antecedents and outcomes in order to demonstrate differential relationships. Third, a MANOVA and univariate ANOVAs have been conducted to examine gender differences. Finally, following the approach used by Carlson et al. (2006), correlations between dimensions of work–family conflict and enrichment served as indicators for two conceptually different constructs.

Instruments

Work antecedents. Quantitative workload was represented by weekly work hours which were measured by the question “How many hours per week do you work on average?” Qualitative workload was measured by a translated five-item scale addressing the individual’s subjective perspective of her or his work responsibilities or demands (Boyar et al., 2007). An example is “My job requires all of my attention.” The Cronbach α in this study was .86. The authors report an alpha of .83 (Boyar et al., 2007).

Autonomy was measured by a self-constructed three-item scale. Items addressed the overall decision freedom in a job and the freedom to decide how and which work tasks to execute. Items were similar to the decision authority scale of the Job Content Questionnaire (Karasek et al., 1998). A sample item from this scale is “My job allows me to make many decisions on my own.” The Cronbach α for participants in this study was .84.

For the purposes of the study a two-item measure of the level to which someone’s job is diverse and requires acquisition of new knowledge was also constructed. The variety scale was also adapted from the Job Content Questionnaire (Karasek et al., 1998). Originally it included one more item addressing the presence of repetitious work. Owing, however, to inappropriate internal consistency, only two items were

included in further analysis. An example is “My job requires learning new things.” Cronbach α for this study was .72.

Support from co-workers and supervisors was measured by two self-constructed four-item scales. Participants indicated the degree to which co-workers and supervisors were helpful, willing to take over work responsibilities (i.e. instrumental support), willing to listen to problems and understanding (i.e. socio-emotional support) (Karasek et al., 1998; van Daalen, Willemsen & Sanders, 2006). Examples are “My co-workers are helpful” and “My supervisor is willing to listen to my problems.” Cronbach alphas for the co-worker and supervisor scales were .83 and .86, respectively.

Family antecedents. In order to measure a potential resource-rich or demanding family environment participants were asked to indicate whether they were married or in a committed relationship (0 = *single, divorced, widowed*; 1 = *married, in a committed relationship*) and whether they had children and/or elder care responsibilities (0 = *no responsibilities*; 1 = *child and/or elder care responsibilities*). Subjective perceptions of an individual’s family demands or responsibilities were measured by a four-item family load scale (Boyar et al., 2007). The scale was translated into Slovenian as well. An example is “I have a lot of responsibility in my family.” Cronbach α for this study was .85. The authors report an α of .74 (Boyar et al., 2007).

Support from family members was measured by the same four support items as co-worker and supervisor support but adjusted for the family domain. A sample item is “Family members are sometimes willing to take over some of my family responsibilities.” Cronbach α for this study was .90.

Outcomes. Job satisfaction was addressed via a composite approach using multiple aspects of the job. It was measured by a 15-item scale (Pogačnik, 2003). The participants had to indicate the extent to which they were satisfied with aspects such as working conditions, promotion opportunities, pay, supervision and job security. Cronbach α in this study was .90. The author reports alphas of .78 and .81 (Pogačnik, 2003).

Satisfaction with family functioning was measured by the 10-item Slovenian version of the FACES IV family satisfaction scale (Olson & Gorall, 2003). Participants had to indicate their level of satisfaction with several aspects of family relationships. Some aspects of family satisfaction were the degree of closeness, the family’s flexibility or the quality of communication. Cronbach α in this study was .94. The authors report an α of .93 (Olson & Gorall, 2003).

Life satisfaction, which refers to the individual’s evaluations of the quality of life in general, was measured by the Slovenian version of the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985). The five-item scale includes items such as “In most ways my life is close to my ideal.” The Cronbach α for participants in this study was 0.88. Others report internal consistency reliabilities between .79 and .89 (Pavot & Diener, 1993 for review).

All scales, except the Satisfaction with Life Scale (Diener et al., 1985), were measured on a five-point Likert response format (1 = *strongly disagree, very dissatisfied* and 5 = *strongly agree, extremely satisfied*). The Satisfaction with Life Scale included a seven-point Likert response format (1 = *strongly disagree* and 7 = *strongly agree*).

Results and discussion

Work–family conflict

Dimensionality and item adequacy. As suggested by Carlson et al. (2000) the structure of the work–family conflict scale was examined with a six-factor model with the dimensions time-, strain- and behavior-based conflict each in both directions (i.e. WFC and FWC) as an optimal solution against which three other models were tested.¹ The one-factor model represented a general work–family conflict with all items loading only on one factor. The two-factor model distinguished between the two directions of work–family conflict, with WFC items loading on one factor and FWC items loading on the other. The final comparison model included only the three dimensions of work–family conflict with no reference to the directions. In each model factor correlations were also included.

The overall model fit for all four models was examined through several fit indices which are presented in Table 1. For the six-factor model the χ^2/df ratio showed an acceptable 2:1 ratio, the CFI was close to one and RMSEA was lower than the acceptable value of .08 (Brown, 2006; McDonald & Ho, 2002). The upper bound of the 90% confidence interval of the RMSEA was also below .08, additionally supporting the six-factor model (Brown, 2006). Furthermore, the fit indices showed the six-factor model was the best model in comparison with other presumed models. Similar results were also reported for the original English scale (e.g. RMSEA = .06; Carlson et al., 2000) and for the German adaptation (e.g. RMSEA = .08; Wolff & Rieger, 2009). Therefore, we can conclude that the six-factor model exhibits an adequate fit and is the best-fitting model. In addition, the fit of the six-factor model in the Slovenian version is comparable to the fit of the six-factor models in other scale versions.

The adequacy of the model (and the items) was also supported by the standardized factor loadings for the items (Figure 1). All the factor loadings were significant and some way above the suggested value of .50 (DeVellis, 2003) with the lowest value being .71. Furthermore, we examined whether each item has the strongest association with the factor on which it supposed to load. The modification indices showed no noteworthy drop in χ^2 if cross-loadings between factors were freely

¹The Slovenian version of the work–family conflict scale as well the means, standard deviations and inter-item correlations from this study are available from the authors.

estimated (values were not substantially greater than 4.00; Brown, 2006). Thus, no salient cross-loadings between factors occurred.

Table 1. *Fit indices for possible models of work–family conflict with ML estimation*

Model ^a				Comparative	Root mean square
	χ^2	<i>df</i>	<i>p</i>	fit index (CFI)	error of approximation (RMSEA)
One-factor model	1532.62	135	.00	.48	.23
Two-factor model	1452.50	134	.00	.51	.22
Three-factor model	733.33	132	.00	.78	.15
Six-factor model	220.90	120	.00	.96	.07

Note. ^a *N* = 200; listwise deletion.

Reliability. The reliability of the work–family conflict scale was examined by calculating the internal consistency by means of the Cronbach alpha coefficient. Alphas for each of the six dimensions were as follows: WFC–time = .90, WFC–strain = .85, WFC–behavior = .87, FWC–time = .83, FWC–strain = .89, FWC–behavior = .91. Thus, internal consistencies for all six dimensions were acceptably high and above the suggested minimally acceptable range between .65 and .70 (DeVellis, 2003).

Construct validity. First, we addressed the discriminant validity of the work–family conflict scale. Correlations between work–family conflict factors in the confirmatory factor analysis were used as an indicator of sufficient uniqueness of a factor. The correlations are shown in Figure 1. One correlation was above the value .85, which demonstrates poor discriminant validity between the two factors (Brown, 2006; Kline, 2005). Despite the fact a similar correlation was also found in the English original ($r = .83$) and in the German adaptation ($r = .83$), the very high correlation between WFC–behavior and FWC–behavior seems especially problematic ($r = .94$). Therefore, we ran the confirmatory factor analysis with the high correlated factors as combined factors again. The collapsed factor may indicate that the items of the two dimensions merely reflect the inability to adjust different behaviors from work and family without any reference to the domain of origin (Carlson et al., 2000). After examining the item content once more, however, we could not find support for the collapsed factor. The results of the confirmatory factor analysis also showed that for the collapsed factor model the fit was significantly worse ($\chi^2_{\text{diff}}(5) = 14.52$, $p < .05$). Therefore, the six-factor solution may be theoretically well as empirically superior to other solutions after all.

The second aspect of construct validity that we addressed were the theory-based differential relationships between the focal construct and other known constructs (DeVellis, 2003). In our study the correlations between work–family conflict, work and family antecedents and outcomes were used (Table 3). Because a high number of

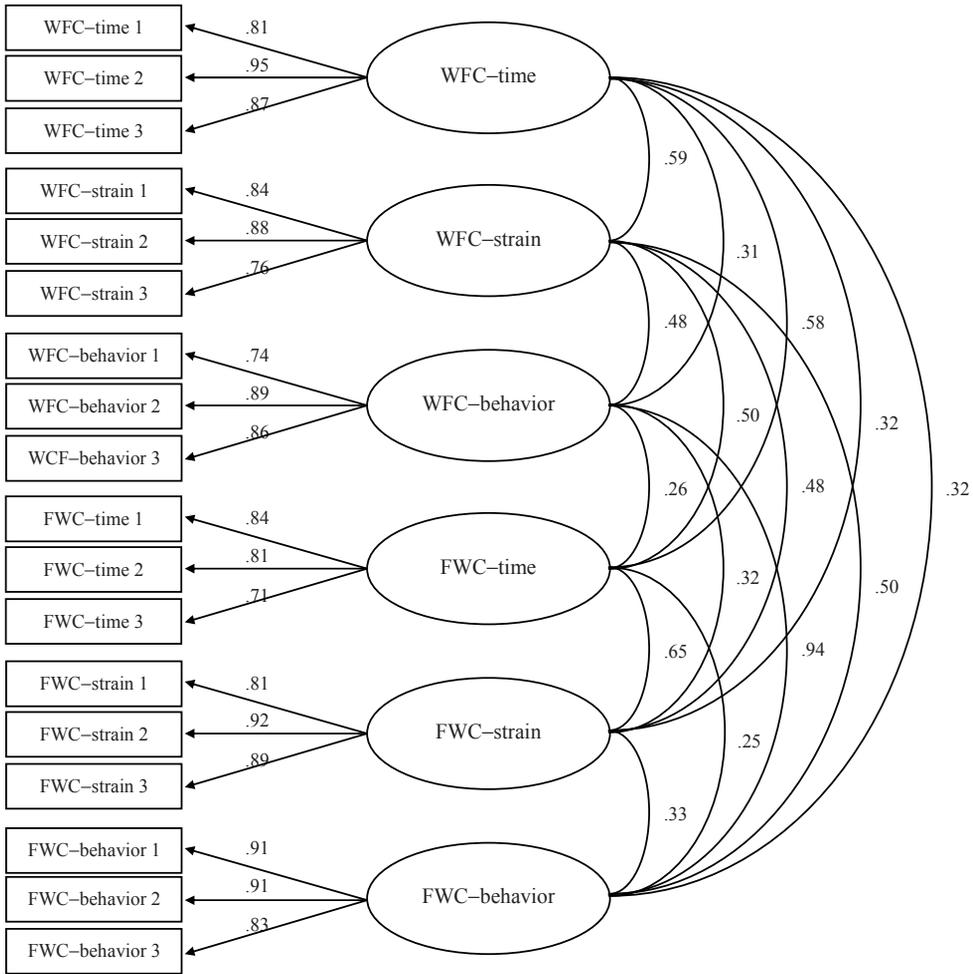


Figure 1. Standardized factor loadings and factor correlations for the six-factor model.

correlations (60) was examined, we decided that a control of the Type I error would be pertinent. However, the Bonferroni correction in our case would be too restrictive (i.e. would increase the Type II error). Therefore, we applied a criterion of $p < .001$, which was also previously used in a similar research context (Matthews et al., 2010). Although most correlations were not statistically significant, some support was found for a domain-specific correlation pattern. Work antecedents (workload, co-worker support) correlated only with the WFC dimensions. Furthermore, work demands were related to more WFC and work resources to less. For the family domain, however, the correlations were not completely as predicted. Significant correlations were found only for load from family work and family support. Family load correlated significantly only with WFC. WFC, however, is in general more often reported than FWC (Eby et

al., 2005). It is possible that extensive family responsibilities are more likely to lead to the perception that “work keeps one more from family activities than one would like” (WFC item). Therefore, such a correlation may not necessarily undermine the construct validity. Additional support was found from the correlation between family support and FWC. However, a rather weak evidence for construct validity provided the correlations between work–family conflict and outcomes. Work–family conflict was related only to less family satisfaction. Other correlations were also negative in sign but not significant. Interestingly, Carlson et al. (2000) also reported comparably low correlations with job, family and life satisfaction. In addition, a topic related meta-analysis observed the following weighted mean correlations across studies: -.24 with job satisfaction, -.17 with family satisfaction and -.28 with life satisfaction (Allen et al., 2000). Therefore, our results may not contradict the findings from other studies but simply reflect the more conservative significance level.

Table 2. *Correlations between the dimensions of work–family conflict and work/family antecedents/outcomes*

	WFC– time	WFC– strain	WFC– behavior	FWC– time	FWC– strain	FWC– behavior
<i>Work antecedents</i>						
Work hours - weekly	.19	.15	.07	.01	.01	.01
Workload	.32*	.29*	.17	.02	.01	.16
Co-worker support	-.20	-.26*	-.14	-.10	-.05	-.09
Supervisor support	.01	-.11	-.04	.07	.07	-.06
<i>Family antecedents</i>						
Child and/or elder responsibility	.20	.15	.07	.15	.05	.09
Family load	.24*	.14	.16	.16	.09	.05
Family support	-.02	-.12	-.07	-.19	-.34*	-.12
<i>Outcomes</i>						
Job satisfaction	-.12	-.17	-.08	-.03	-.10	-.07
Family satisfaction	-.10	-.20	-.15	-.15	-.33*	-.15
Life satisfaction	-.09	-.15	-.18	.03	-.16	-.17

* $p < .001$, one-sided.

Gender differences also provided support for the construct validity. The results from the MANOVA showed statistically significant differences between men and women in the work–family dimensions ($F(6, 193) = 2.17, p < .05$; Wilks' Lambda = .94; $\eta^2 = .06$). Although women reported more work–family conflict on all dimensions (WFC–time: $M_{\text{men}} = 7.88, SD = 3.29$; $M_{\text{women}} = 8.38, SD = 3.37$;

WFC-behavior: $M_{\text{men}} = 7.96, SD = 3.29$; $M_{\text{women}} = 8.91, SD = 3.62$; FWC-time: $M_{\text{men}} = 5.76, SD = 2.72$; $M_{\text{women}} = 5.62, SD = 2.90$; FWC-strain: $M_{\text{men}} = 5.13, SD = 2.55$; $M_{\text{women}} = 5.61, SD = 2.89$; FWC-behavior: $M_{\text{men}} = 7.64, SD = 3.02$; $M_{\text{women}} = 8.60, SD = 3.64$), they significantly differed from men only on WFC-strain ($M_{\text{men}} = 7.46, SD = 2.96$; $M_{\text{women}} = 8.73, SD = 3.33$; $F(1, 198) = 8.07, p < .008$).² Several authors have come to similar conclusions. Gender differences exist but they may not be as great as presumed (Eby et al., 2005).

Work-family enrichment

Dimensionality and item adequacy. We examined the dimensionality of the work-family enrichment scale following the procedure of Carlson et al. (2006). Again, the six-factor model was compared with three other models. The one-factor model represented a general enrichment factor. The two-factor model included the two directions of work-family enrichment with all WFE items loading on one factor and all FWE items loading on the other. The four-factor model discriminated only between the four different dimensions (i.e. development, affect, WFE-capital, FWE-efficiency). In all four models factor correlations were also considered.³

The three fit indices for the four models are presented in Table 5. The six-factor model was the best-fitting model with an overall acceptable χ^2/df ratio and CFI. The value of the RMSEA, however, was not satisfactory. The upper bound of the 90% confidence interval of the RMSEA was about .10, indicating that the model should be rejected (Brown, 2006). In addition, the examination of the modification indices showed also that some changes would noticeably improve the overall model fit. Especially salient (modification index = 80.61) was the suggested correlation between error terms of two WFE-capital items. The examination of the item content revealed a high degree of content overlap of the two items (i.e. WFE-capital 2 and WFE-capital 3).⁴ Therefore, we decided that calculating another confirmatory factor analysis with consideration of the correlated error terms would be sensible. The fit of the six-factor model improved substantially and was acceptable overall (Table 5). The χ^2 and the RMSEA dropped to 234.67 and .07 (the upper bound of the 90% confidence interval < .08), respectively. The RMSEA of the English version of the scale was also approximately the same (.06). The CFI was also improved. In summary, the six-factor model was acceptable when the correlated error terms between two

² A Bonferroni correction has been applied to control for the increase in Type I error. A more restricted significance level of $p < .008$ was used.

³ The Slovenian version of the work-family enrichment scale as well the means, standard deviations and inter-item correlations from this study are available from the authors.

⁴ The two items were "My involvement in my work provides me with a sense of accomplishment and this helps me to be a better family member" and "My involvement in my work provides me with a sense of success and this helps me to be a better family member."

items were considered. The correlated error terms, however, indicate that content changes of the two items should be taken into consideration.

Item adequacy was addressed with the standardized factor loadings for the items (Figure 2). All the factor loadings were very high with the lowest value being .74. Since the cut-off value .50 was used to determine the importance of an item, we concluded that all items were adequate. Factor loadings for each item were also significant. Moreover, no noteworthy cross-loadings between factors were observed.

Table 3. *Fit indices for possible models of work–family enrichment using ML estimation*

Model ^a	χ^2	df	<i>p</i>	Comparative fit index (CFI)	Root mean square error of approximation (RMSEA)
One-factor model	2246.44	135	.00	.54	.28
Two-factor model	1068.34	134	.00	.80	.19
Four-factor model	1502.70	129	.00	.70	.23
Six-factor model (initial)	336.02	120	.00	.95	.09
Six-factor model (correlated error terms)	234.67	119	.00	.98	.07

Note. ^a *N* = 205; listwise deletion.

Reliability. The reliability of the work–family enrichment scale (Carlson et al., 2006) was examined by calculating the internal consistency as well. Alphas for the six dimensions were as follows: WFE–development = .89, WFE–affect = .95, WFE–capital = .95, FWE–development = .94, FWE–affect = .96, FWE–efficiency = .93. All internal consistencies were very high and far above the suggested minimally acceptable range between .65 and .70 (DeVellis, 2003).

Construct validity. Following the approach used for the work–family conflict scale, correlations between factors from the confirmatory factor analysis were used to determine the discriminant validity. The correlations, which are shown in Figure 2, ranged between .43 and .94. Two correlations were above the suggested cut-off value of .85, suggesting poor discriminant validity (Brown, 2006; Kline, 2005). One was the correlation between WFE–capital and WFE–affect ($r = .94$), the other the correlation between FWE–efficiency and FWE–affect ($r = .88$). Apparently some work–family enrichment dimensions did not exhibit the desired discriminant validity. Therefore, we again conducted a confirmatory factor analysis. The two pairs of highly correlated factors were combined to two factors. However, the collapsed factors were not theoretically meaningful. The results of the confirmatory factor analysis also provided empirical support for the superiority of the six factor solution ($\chi^2_{\text{diff}}(8) = 75.26, p < .01$).

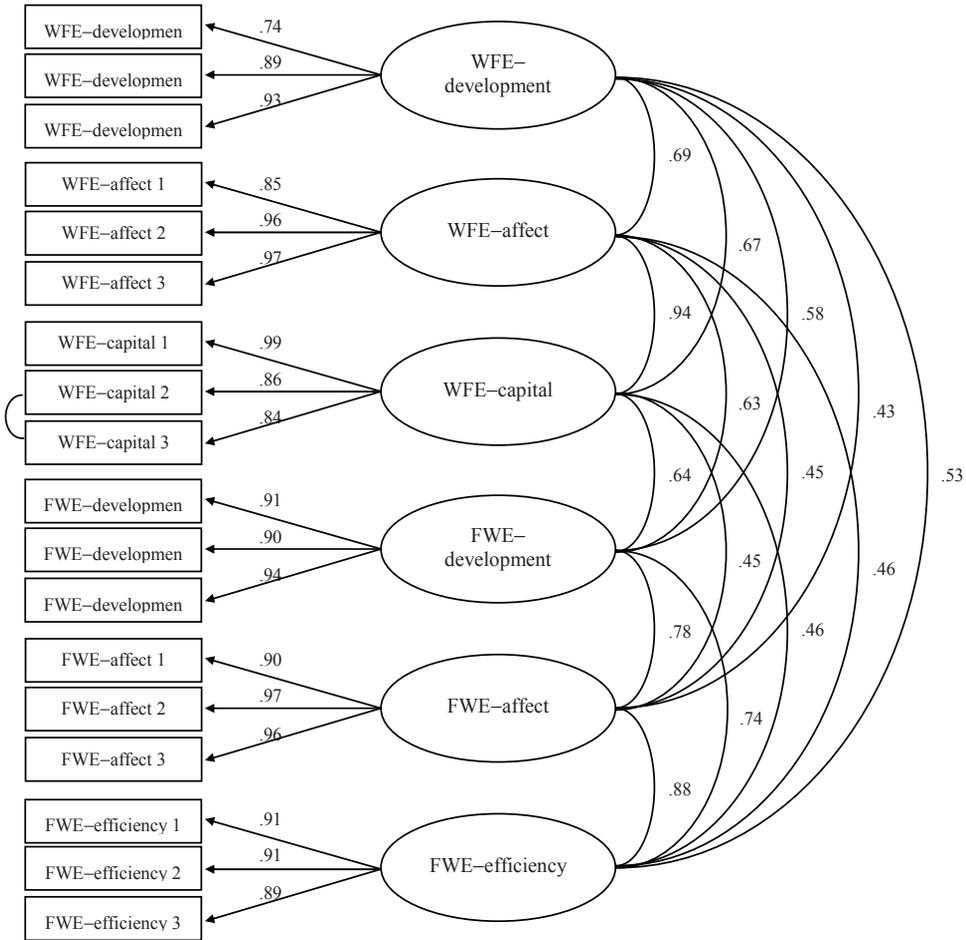


Figure 2. Standardized factor loadings and factor correlations for the six-factor model (with correlated error terms).

Support for construct validity was also found from the correlations between work–family enrichment dimensions and antecedents. All work antecedents (except job variety) correlated statistically significant with WFE. Although significant positive correlations appeared also for FWE, correlations between work antecedents and WFE were generally higher (Table 4). The highest correlations were observed for autonomy and supervisor support which were in the same range as for the English original (Carlson et al., 2006). Family antecedents, specifically family support, correlated significantly only with FWE dimensions. Correlations between family support and WFE dimensions were very low. Interestingly, marital status did not operate as a resource in our sample. None of the correlations was significant. Furthermore, correlations between outcomes and work–family enrichment dimensions also

underpin the construct validity. The correlations were mostly significant and positive in sign. The highest correlations were observed between job satisfaction and all work–family enrichment dimensions. Similar results were also reported by the authors of the English original (Carlson et al., 2006).

Table 4. Correlations between the dimensions of work–family enrichment and work/family antecedents/outcomes

	WFE– develop.	WFE– affect	WFE– capital	FWE– develop.	FWE– affect	FWE– efficiency
<i>Work antecedents</i>						
Variety	.07	.11	.18	.18	.17	.11
Autonomy	.30*	.28*	.28*	.18	.19	.15
Co-worker support	.25*	.31*	.26*	.22	.16	.11
Supervisor support	.41*	.41*	.39*	.27*	.23*	.16
<i>Family antecedents</i>						
Marital status	-.12	-.11	-.10	-.12	-.09	-.06
Family support	.09	.06	.05	.26*	.33*	.24*
<i>Outcomes</i>						
Job satisfaction	.42*	.56*	.62*	.44*	.37*	.33*
Family satisfaction	.13	.06	.03	.28*	.36*	.27*
Life satisfaction	.23*	.20	.20	.24*	.21	.12

Note: develop. = development

* $p < .001$, one-sided.

In contrast, gender differences did not support the construct validity. The results from the MANOVA did not indicate significant differences between men and women in the work–family enrichment dimensions ($F(6, 198) = 1.77, ns.$; Wilks' Lambda = .95; $\eta^2 = .05$). The mean values for men and women indicate rather small differences in each of the work–family enrichment dimensions (WFE–development: $M_{men} = 9.31, SD = 2.86$; $M_{women} = 9.33, SD = 3.14$; WFE–affect: $M_{men} = 8.93, SD = 3.17$; $M_{women} = 8.78, SD = 3.36$; WFE–capital: $M_{men} = 8.98, SD = 3.32$; $M_{women} = 9.06, SD = 3.35$; FWE–development: $M_{men} = 9.81, SD = 2.93$; $M_{women} = 10.65, SD = 2.86$; FWE–affect: $M_{men} = 10.69, SD = 2.82$; $M_{women} = 11.43, SD = 2.63$; FWE–efficiency: $M_{men} = 10.54, SD = 2.85$; $M_{women} = 10.83, SD = 2.74$). Therefore, future studies should continue to address gender differences in work–family enrichment and test the robustness of the results from this study.

Finally, we examined correlations between work–family conflict and work–family enrichment in order to determine whether the constructs in fact differ from each other. Results, which are presented in Table 5, provided support for

our expectations. None of the correlations was significant. The highest observed correlation was .18. Thus, the distinctiveness of work–family conflict and enrichment was confirmed.

Table 5. *Correlations between the dimensions of work–family conflict and work–family enrichment*

	WFE– develop.	WFE– affect	WFE– capital	FWE– develop.	FWE– affect	FWE– efficiency
WFC–time	.04	–.06	–.01	.16	.18	.09
WFC–strain	–.10	–.12	.00	.08	.12	.08
WFC–behavior	–.06	–.00	.01	–.02	.02	.03
FWC–time	.07	.05	.10	.00	–.01	–.05
FWC–strain	–.02	.09	.14	.02	–.06	–.09
FWC–behavior	–.14	–.04	–.05	–.05	–.02	–.01

* $p < .001$, one-sided.

General discussion

The aim of our study was to validate the Slovenian versions of two existing scales assessing the negative and positive aspects of the work–family interface. The work–family conflict (Carlson et al., 2000) and work–family enrichment scale (Carlson et al., 2006) were translated and examined in terms of dimensionality, item adequacy, reliability and several construct validity aspects. First, the Slovenian versions of both scales were confirmed to be six-dimensional with eighteen items addressing the two directions (work-to-family and family-to-work) and several forms (time, strain and behavior for work–family conflict; development, affect, capital, efficiency for work–family enrichment). Second, all dimensions of the work–family conflict and enrichment scales showed appropriate reliability. Third, support for the construct validity of the two scales was found from different sources. Work–family conflict and enrichment were related to several known work and family antecedents and outcomes. The scales also represented two distinct concepts. Therefore, they can provide valuable information on different experiences of the work–family interface in the future.

However, the scales may not be without limitation. Although the six-dimensional solutions were superior to other solutions, some correlations between factors were still rather high. However, we argue that small rather than moderate and high correlations may be more problematic. All dimensions of work–family conflict and enrichment provide insights on different but interrelated aspects of the work–family interface. Some aspects of work–family conflict, for instance, may also have several common sources (e.g. higher work hours result in higher WFC–time but also higher WFC–strain) (Greenhaus & Beutell, 1985). Therefore, moderate and high

correlations between the dimensions are not surprising. In addition, authors of the original versions as well as the German adaptation found comparable correlations (Carlson et al., 2000; Carlson et al., 2006; Wolff & Rieger, 2009).

Not only the high correlations between factors but also high correlations between error terms in confirmatory factor analysis seem to be problematic in our version. Usually, correlated errors suggest a wording similarity between the items (Brown, 2006). In our case the correlation between error terms of two WFE–capital items may in fact appeared because of the similar content of the items. In a changed format (i.e. a more appropriate translation of one of the two items), however, the work–family enrichment scale may be more appropriate for future use.

Despite these limitations, the work–family conflict and work–family enrichment scales show several strengths. First, the scales reflect recent developments in the work–family interface research. They include a perception of both a more difficult and an easier functioning in one domain because of the other one rather than only including problems occurring in one domain (e.g. deteriorated relationships with supervisors, co-workers or family members). Second, they take multiple aspects of the work–family interface experiences into consideration. Several authors agree that the work–family interface may be experienced from two directions and in different forms rather than being a general construct (Carlson et al., 2000; Carlson et al., 2006; Netemeyer et al., 1996). Third, the scales show relationships with several work and family variables which makes them valuable instruments for research in different fields (e.g. work and organizational psychology, family research). Finally, the scales are the first multi-dimensional scales of the work–family interface to be validated in the Slovenian context.

In addition, the future use of the work–family conflict and enrichment scales can be recommended in a variety of ways. A necessary step for future examination of the metric characteristics is the use of the scales on larger samples from different occupations. The scales can be used for the entire length, only from one direction or only in the form of single dimensions (Premeaux et al., 2007). A much needed step is also a further examination of gender differences in work–family conflict and enrichment. Men and women may not differ in their experience of the work–family interface in a great extent but may be differently affected by it (e.g. higher job satisfaction as result of work–family enrichment for men only). Furthermore, the scales can be used when different predictors of job or family satisfaction are examined (Allen et al., 2000) or as mediators between demands, resources and different outcomes (Eby et al., 2005). Using the work–family conflict and enrichment scales together with personality variables would also seem to be a promising approach (Wayne, Musisca & Fleeson, 2004). An examination of how employees with different family responsibilities (e.g. having children and/or elder care responsibilities) experience the work–family interface and whether they differ in the dimensions of work–family conflict and enrichment would be interesting as well (e.g. Fredriksen-Goldsen & Scharlach, 2001).

Considering the upper recommendations for future research we can conclude that the work–family interface is a promising research field with a variety of research questions yet to be answered. The first step toward a broader work–family interface examination, however, is the work–family conflict and enrichment scales validated in the Slovenian context.

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