# Work-Family Conflict Scale (ISSP)

Breyer, Bianka; Bluemke, Matthias

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*Bianka Breyer, Matthias Bluemke*

## 1 Overview

**Abstract**

The four item scale measures work-family conflict as a two-directional process – work interference with family and family interference with work. The items have been used since 2002 in the Family and Changing Gender Roles module of the International Social Survey Programme (ISSP).

**Keywords**

Title: Work-Family Conflict Scale (ISSP)

Author: Breyer & Bluemke

In ZIS since: 2016

Number of Items: 4

Reliability: .50 to .94

Validity: evidence for criterion validity

Construct: work-family conflict

Catchwords: work-family balance, compatibility of family and job

Language Documentation: English

Language Items: Arabic, Bulgarian, Chinese, Croatian, Czech, Danish, Dutch, English (Australia, Canada, Great Britain, Ireland, South Africa, United States), Finnish, French (Belgium, Canada, France, Netherlands), German (Austria, Germany, Switzerland), Icelandic, Indian (10 different languages), Hebrew, Hungarian, Japanese, Korean, Latvian, Lithuanian, Norwegian, Philippine (7 languages), Polish, Russian (Latvia, Russia), Slovakian, Slovenian, South African (5 languages), Spanish (Argentina, Chile, Mexico, Spain, Venezuela), Swedish, Taiwanese, Turkish

URL Website: http://www.issp.org/

URL Data archive: ISSP 2002, ISSP 2012

Item(s) used in representative survey: yes

Status of development: standardized

## 2 Instrument

### Instruction

How often has each of the following happened to you during the past three months?

### Items

The Items of the Work-Family Conflict Scale (ISSP, 2012) are shown in Table 1.

Table 1

*Items of the Work-Family Conflict Scale in English and German (ISSP)*

| No. | English | German | Facet |
|-----|---------|--------|-------|
| 1 | I have come home from work too tired to do the chores which need to be done. | Ich kam von der Arbeit zu müde nach Hause, um die anstehende Hausarbeit zu machen. | WF |
| 2 | It has been difficult for me to fulfil my family responsibilities because of the amount of time I spent on my job. | Es war schwierig, meinen familiären Verpflichtungen nachzukommen wegen der Zeit, die ich mit der Arbeit verbracht hatte. | WF |
| 3 | I have arrived at work too tired to function well because of the household work I had done. | Wegen der Hausarbeit, die ich zuvor gemacht hatte, kam ich zu müde zur Arbeit, um dann richtig arbeiten zu können. | FW |
| 4 | I have found it difficult to concentrate at work because of my family responsibilities. | Wegen familiärer Verpflichtungen fand ich es schwierig, mich bei der Arbeit zu konzentrieren. | FW |

*Note.* WF = work interference with family, FW = family interference with work.

The questionnaire was originally developed in English and then translated into the following languages: Arabic, Bulgarian, Chinese, Croatian, Czech, Danish, Dutch, English (Australia, Canada, Great Britain, Ireland, South Africa, United States), Finnish, French (Belgium, Canada, France, Netherlands), German (Austria, Germany, Switzerland), Icelandic, Indian (10 different languages), Hebrew, Hungarian, Japanese, Korean, Latvian, Lithuanian, Norwegian, Philippine (7 different languages), Polish, Russian (Latvia, Russia), Slovakian, Slovenian, South African (5 different languages), Spanish (Argentina, Chile, Mexico, Spain, Venezuela), Swedish, Taiwanese, Turkish. The questionnaires can be found on the ISSP website.

### Response specifications

There is a 4-point rating scale with categories labelled as follows: 1 = "several times a week", 2 = "several times a month", 3 = "once or twice", 4 = "never". Alternatively to these categories, the response "Don't know" (Bulgaria: "Can't choose", Croatia: "don't know, refused") is offered for each item.

### Scoring

The items 1 and 2 indicate work-family conflict due to a negative impact of work on family life. The items 3 and 4 indicate conflict because of the negative impact of family life on work. For each facet, a

mean score can be computed. It is also possible to compute a total mean score over all items as an indicator for work-family conflict as a whole.

It is recommended to invert items before interpreting the item scores so that higher scores represent a greater work-family conflict (1 = "never" to 4 = "several times a week").

**Application field**

The Work-Family Conflict Scale can be used to measure the extent of conflicting interests between work and family life. The items can help to understand the underlying actual circumstances and behavior for the observed attitudes. The Work-Family Conflict Scale is part of the International Social Survey Programme (ISSP), a cross-national collaboration for annual attitude surveys on various social science issues. The scale was used in the module Family and Changing Gender Roles in 2002 and 2012, where information on the family situation and well-being of people in 37 different countries was measured. The module mainly focuses on current gender related issues, such as attitudes towards women's employment, marriage, children and financial support, household management and partnership. It was used to explain differences in attitudes and to illustrate different types of family and work conditions.

**3 Theory**

Work-family conflict can be defined as „a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role" (Greenhaus & Beutell, 1985, p. 77). According to Greenhaus and Beutell (1985), there are different origins for work-family conflict such as lack of time, too much strain or role incompatible behavior. The opposite of work-family conflict is work-life balance, the ability to combine work and family responsibilities (Crompton & Lyonette, 2006). Until a few decades ago, the problem of work-family conflict was largely avoided by the traditional family model in Western countries, with one person – usually the man – working and the other person – usually the woman – staying at home. Today, this traditional model is often replaced by two-earner families with simultaneous management of work and family roles, which can be challenging for individuals across different countries and societies (Edlund, 2007; Allen, French, Dumani, & Shockley, 2015). Especially due to the constantly increasing employment rates among women in general and mothers in particular, there is a continuing interest in the topic of work-family conflict. The assessment of work-family conflict helps to compare the amount of perceived conflict between different groups, for example men and women or different countries, and to analyze possible causes. For example, a higher work-family conflict was found for women compared to men and for younger persons; other risk factors for work-family conflict were a higher number of persons in the household, and a higher number of weekly working hours (e.g. Byron, 2005; Crompton & Lyonette, 2006; Öun, 2012).

## 4 Scale development

### Item generation and selection

The items of the Work-Family Conflict Scale were developed as part of the module „Family and Changing Gender Roles" in order to explain different attitudes towards gender- and family-related issues (Scholz, Jutz, Edlund, Oun, & Braun, 2014). The comprehensibility and formal aspects of the ISSP Family and Changing Gender Roles module questions were tested successfully in a pretest with a representative quota sample consisting of $n = 92$ employed people (55% male, 45% female, 18-64 years) living in Germany and living together with a partner. As recommended by Greenhaus and Beutell (1985), the first two items measure the extent of perceived conflict due to a negative impact from work to family responsibilities, the other two items due to a negative impact from family to work responsibilities. The mean score of all four items can be used to describe the amount of overall work-family conflict.

### Samples

All analyses are based on the samples of the International Social Survey Programme (ISSP) 2012. Participants were randomly selected from all persons aged 15 and over resident within private households. The sampling procedures are described in the ISSP 2012 variable report for each country. In some countries, participants were selected regardless of their nationality. The following countries completed the Work-Family Conflict Scale: Argentina, Australia, Austria, Bulgaria, Canada, Chile, China, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Iceland, India, Ireland, Israel, Japan, South Korea, Latvia, Lithuania, Mexico, Norway, Philippines, Poland, Russia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Taiwan, Turkey, United States, and Venezuela.

To correct for different sampling probabilities in the countries, design weights were applied in the following analyses. The answer categories „Don't know", "No answer", "Doesn't apply: no job, no family responsibilities" were classified as missing values. Additionally, participants with missing data on all items of the Work-Family Conflict Scale were treated as unit-nonresponders and deleted. The final sample consists of $N = 34,526$ people from 37 countries, including $n = 18,731$ male and $n = 15,865$ female respondents. The average age is 42.30 years ($SD = 13.75$). See Table 2 for sample size, age, gender and educational level for each country.

Table 2

*Sample size (N), gender (%), age (M, SD) and educational level (%) for each country and across all countries (total)*

| Country | $N$ | Gender in % | | Age | | Educational level in %* | | |
|---|---|---|---|---|---|---|---|---|
| | | Male | Female | $M$ | $SD$ | 1 | 2 | 3 |
| Argentina | 977 | 47.7 | 52.3 | 47.25 | 18.58 | 62.3 | 28.9 | 8.6 |
| Australia | 1,590 | 47.1 | 50.5 | 47.62 | 17.50 | 29.1 | 31.7 | 32.5 |
| Austria | 1,182 | 48.1 | 51.9 | 48.46 | 17.86 | 70.9 | 16.6 | 12.5 |

| Bulgaria | 1,003 | 47.8 | 52.2 | 48.12 | 18.15 | 23.2 | 52.4 | 24.4 |
|---|---|---|---|---|---|---|---|---|
| Canada | 975 | 49.1 | 49.3 | 56.89 | 16.14 | 8.5 | 38.4 | 51.7 |
| Chile | 1,562 | 49.0 | 51.0 | 43.50 | 17.43 | 42.4 | 48.2 | 9.4 |
| China | 5,946 | 51.9 | 48.1 | 47.57 | 15.69 | 65.1 | 19.0 | 15.8 |
| Croatia | 999 | 47.5 | 52.5 | 47.51 | 16.52 | 33.0 | 54.4 | 12.2 |
| Czech Republic | 1,801 | 48.8 | 51.2 | 46.92 | 17.49 | 43.4 | 41.6 | 13.5 |
| Denmark | 1,400 | 49.4 | 50.6 | 46.20 | 16.51 | 9.3 | 32.6 | 58.2 |
| Finland | 1,149 | 49.9 | 50.1 | 44.49 | 16.75 | 16.7 | 54.1 | 28.7 |
| France | 2,361 | 47.6 | 52.4 | 48.72 | 18.08 | 45.2 | 17.1 | 36.6 |
| Germany | 1,763 | 48.7 | 51.3 | 49.52 | 17.81 | 12.2 | 60.0 | 27.6 |
| Great Britain | 944 | 53.2 | 46.8 | 48.06 | 17.65 | 22.8 | 35.6 | 33.5 |
| Iceland | 1,169 | 50.5 | 49.5 | 44.09 | 18.73 | 34.8 | 29.9 | 30.4 |
| India | 1,656 | 52.0 | 48.0 | 32.61 | 14.47 | 67.0 | 14.0 | 19.0 |
| Ireland | 1,213 | 48.6 | 50.8 | 45.39 | 16.58 | 19.7 | 46.7 | 33.1 |
| Israel | 1,213 | 44.2 | 55.8 | 45.82 | 17.77 | 36.2 | 37.1 | 26.0 |
| Japan | 1,204 | 44.6 | 55.4 | 50.40 | 18.45 | 19.6 | 58.9 | 20.0 |
| South Korea | 1,396 | 49.1 | 50.9 | 44.81 | 16.75 | 25.3 | 31.7 | 42.9 |
| Latvia | 999 | 45.4 | 54.6 | 44.82 | 16.10 | 17.2 | 58.5 | 24.3 |
| Lithuania | 1,186 | 44.8 | 55.2 | 47.63 | 17.50 | 26.4 | 53.3 | 19.8 |
| Mexico | 1,526 | 47.6 | 52.1 | 41.12 | 16.75 | 58.7 | 21.5 | 17.1 |
| Norway | 1,433 | 47.8 | 52.2 | 47.97 | 16.16 | 24.2 | 23.1 | 52.1 |
| Philippines | 1,200 | 50.0 | 50.0 | 42.62 | 15.69 | 44.9 | 33.3 | 21.8 |
| Poland | 1,114 | 47.7 | 52.3 | 46.22 | 17.62 | 18.7 | 60.7 | 20.6 |
| Russia | 1,524 | 45.0 | 55.0 | 45.22 | 17.49 | 9.0 | 66.4 | 24.5 |
| Slovakia | 1,128 | 48.1 | 51.9 | 45.34 | 17.05 | 43.2 | 41.8 | 14.9 |
| Slovenia | 1,034 | 46.0 | 54.0 | 51.04 | 18.53 | 44.0 | 37.4 | 18.5 |
| South Africa | 1,128 | 41.7 | 58.3 | 43.02 | 17.59 | 54.3 | 32.6 | 6.5 |
| Spain | 2,591 | 46.4 | 53.6 | 49.09 | 17.78 | 49.6 | 27.8 | 21.3 |
| Sweden | 1,052 | 45.8 | 54.2 | 52.00 | 17.09 | 36.5 | 19.6 | 41.4 |
| Switzerland | 1,237 | 50.1 | 49.9 | 48.92 | 17.57 | 20.3 | 52.1 | 27.4 |
| Taiwan | 2,071 | 49.7 | 50.3 | 44.26 | 16.62 | 30.2 | 41.1 | 28.7 |
| Turkey | 1,619 | 47.5 | 52.5 | 41.51 | 15.84 | 62.8 | 26.5 | 10.2 |
| United States | 900 | 46.9 | 53.1 | 45.19 | 17.39 | 14.1 | 58.8 | 27.0 |
| Venezuela | 645 | 46.0 | 54.0 | 38.69 | 13.84 | 32.5 | 58.5 | 9.0 |
| Average | 53,890 | 47.87 | 51.99 | 46.18 | 17.07 | 34.41 | 39.51 | 24.91 |

*Note.* Observations were weighted based on design weights. The gender and educational level data do not always sum up to 100% because the categories „no answer" and "don't know" are not reported.
[*]1 = no formal education, primary/elementary school or lower secondary, 2 = upper secondary or post-secondary (allows entry university, other programs toward labor market or technical formation), 3 = tertiary level (Bachelor, Master, doctoral degree).

**Item analyses**

To investigate the dimensionality of the scale, a multi-group structural equation model was used. Parameters were estimated using the robust maximum likelihood estimator in Mplus in order to enable design weights and to correct for deviations from normality (see descriptive statistics). In alignment with previous studies examining the dimensionality of work-family conflict (e.g. Byron, 2005; Allen, French, Dumani, & Shockley, 2015), a model with two latent variables, impact of work on family life (WF) and impact of family life on work (FW), was tested. The first two items were expected to load on the first latent variable (WF) while the other two items were expected to load on the second (FW). We examined a hierarchical model with equal factor loadings for all items but different item intercepts, which fits the German data very well ($RMSEA$ = .039, $CFI$ = .987, $\chi^2$(108) = 260.917, $p$ < .001). The model structure with standardized regression weights for Germany is presented in Figure 1.
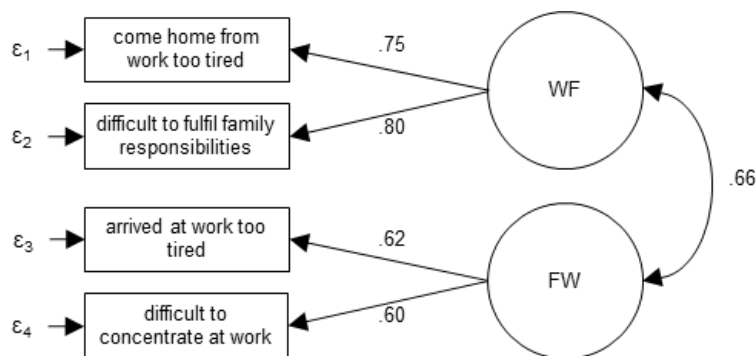


*Figure 1.* WF = impact from work to family, FW = impact from family to work. Structure and standardized parameters of the model for Germany, $RMSEA$ = .039, $CFI$ = .987, $\chi^2$(108) = 260.917, $p$ = .000, $n$ = 1,156.

**Item parameter**

Means and standard deviations for Germany and for the total sample are shown in Table 3. See Table 6 for reference values for each country.

Table 3

*Mean and standard deviation of the manifest items for Germany and across all countries (total)*

|    |                                                   | Germany |      | Total |      |
| -- | ------------------------------------------------- | ------- | ---- | ----- | ---- |
| No | Item                                              | M       | SD   | M     | SD   |
| 1  | I have come home from work too tired to do the chores which need to be done. | 2.27    | 1.07 | 2.43  | 1.08 |

| | | | | | |
|---|---|---|---|---|---|
| 2 | It has been difficult for me to fulfil my family responsibilities because of the amount of time I spent on my job. | 2.04 | 1.04 | 2.05 | 1.05 |
| 3 | I have arrived at work too tired to function well because of the household work I had done. | 1.24 | .59 | 1.51 | .83 |
| 4 | I have found it difficult to concentrate at work because of my family responsibilities. | 1.39 | .65 | 1.52 | .81 |

*Note.* Observations were weighted based on design weights, inverted scale from 1 = "never" to 4 = "several times a week", *n* = 1,077 (Germany), *N* = 32,518 (Total).

## 5 Quality criteria

### Objectivity

For the Work-Family Conflict Scale, there are several factors supporting objectivity. Firstly, the scale was administered in personally conducted face-to-face interviews in most countries and the interviewers were specially trained. Secondly, objectivity is supported by the standardized questionnaire format and written instructions. Finally, as ordered and labeled categories in a fix order are used to supply answers, and since norming data are available (see descriptive statistics), the application as well as the interpretation of the scale can be considered as very objective.

### Reliability

The reliability of the Work-Family Conflict Scale was estimated for the two facets „impact from work to family" (WF, items 1 and 2) and „impact from family to work" (FW, items 3 and 4) as well as for all items together (WFC). As Cronbach's alpha yields a biased estimator of the scale reliability, Raykov's rho is shown additionally. The reliability was estimated for each country separately.

Table 4

*Cronbach's Alpha for each country and across all countries (average)*

| | | Cronbach's α | | | Raykov's ρ | | |
|---|---|---|---|---|---|---|---|
| | *N* | WF | FW | WFC | WF | FW | WFC |
| Argentina | 606 | .75 | .72 | .79 | .82 | .85 | .88 |
| Australia | 1,057 | .66 | .66 | .72 | .77 | .82 | .84 |
| Austria | 757 | .61 | .76 | .67 | .80 | .87 | .87 |
| Bulgaria | 515 | .76 | .85 | .79 | .83 | .92 | .90 |
| Canada | 567 | .73 | .71 | .74 | .73 | .84 | .84 |
| Chile | 1,040 | .81 | .80 | .84 | .85 | .89 | .91 |
| China | 3,646 | .75 | .81 | .74 | .78 | .86 | .86 |
| Croatia | 458 | .81 | .81 | .80 | .91 | .91 | .93 |
| Czech Republic | 1,073 | .75 | .85 | .78 | .88 | .94 | .92 |
| Denmark | 988 | .72 | .67 | .69 | .79 | .88 | .86 |
| Finland | 770 | .70 | .69 | .68 | .78 | .83 | .83 |

| | | | | | | |
|---|---|---|---|---|---|---|
| France | 1,519 | .70 | .72 | .73 | .82 | .88 | .88 |
| Germany | 1,127 | .73 | .66 | .72 | .80 | .88 | .87 |
| Great Britain | 573 | .72 | .69 | .74 | .72 | .88 | .84 |
| Iceland | 893 | .65 | .67 | .70 | .76 | .88 | .85 |
| India | 987 | .56 | .50 | .65 | .53 | .55 | .59 |
| Ireland | 619 | .58 | .64 | .71 | .74 | .82 | .81 |
| Israel | 742 | .80 | .84 | .83 | .85 | .88 | .90 |
| Japan | 725 | .82 | .78 | .74 | .70 | .86 | .83 |
| South Korea | 871 | .84 | .80 | .79 | .89 | .91 | .92 |
| Latvia | 598 | .87 | .84 | .80 | .90 | .94 | .93 |
| Lithuania | 602 | .77 | .81 | .80 | .88 | .94 | .93 |
| Mexico | 992 | .71 | .79 | .82 | .85 | .89 | .90 |
| Norway | 1,073 | .66 | .55 | .68 | .78 | .87 | .86 |
| Philippines | 738 | .72 | .79 | .77 | .87 | .89 | .91 |
| Poland | 583 | .74 | .75 | .73 | .78 | .89 | .85 |
| Russia | 868 | .80 | .85 | .76 | .88 | .94 | .93 |
| Slovakia | 685 | .87 | .80 | .82 | .86 | .88 | .90 |
| Slovenia | 471 | .76 | .81 | .72 | .76 | .79 | .81 |
| South Africa | 1,164 | .76 | .72 | .82 | .83 | .86 | .89 |
| Spain | 1,364 | .67 | .61 | .71 | .79 | .83 | .85 |
| Sweden | 701 | .74 | .66 | .72 | .76 | .83 | .83 |
| Switzerland | 898 | .70 | .64 | .66 | .72 | .83 | .82 |
| Taiwan | 1,351 | .75 | .67 | .67 | .83 | .96 | .90 |
| Turkey | 614 | .86 | .89 | .85 | .92 | .94 | .94 |
| United States | 907 | .69 | .66 | .71 | .65 | .78 | .77 |
| Venezuela | 642 | .67 | .76 | .80 | .85 | .90 | .90 |
| Average | 33,784 | .75 | .72 | .79 | .80 | .87 | .87 |

*Note.* WF = impact from work to family, FW = impact from family to work, WFC = work family conflict (all items). Observations were weighted based on design weights.

**Validity**

In the absence of comparable constructs for establishing construct validity, we approach criterion validity. To examine the validity of the Work-Family Conflict Scale, each of the two facets and the mean score of all four items were correlated with other relevant scales and variables from the ISSP 2012. Whereas the facets should reflect conflict due to the impact of family on work (FW) or the impact of work on family (WF), higher correlations of the total score with relevant variables reflect rather validity for work-family conflict in general.

In previous studies, work-family conflict was related to a number of variables including gender, age, and the weekly working hours (e.g. Byron, 2005; Crompton & Lyonette, 2006; Öun, 2012). These correlations were reexamined with the ISSP 2012 data. It was assumed that the total WFC score should be higher for working women than for working men, and for younger persons. Furthermore,

especially the negative impact from work to family (WF) should increase with the number of weekly working hours, while the negative impact from family to work (FW) should increase with the number of hours spent in the household.

Additionally to these assumptions, family-related attitudes and (psychological) health were considered as possible correlates. A negative attitude towards children in terms of considering them as obstacles for financial and career aspects should be related to a higher work-family conflict. Moreover, as work-family conflict is often accompanied by perceived stress, there is reason to assume that people with higher work-family conflict feel generally worse about their health (Chu, 2014), and that those people are less happy with their life in general, including job and family life (Breyer & Voss, 2016).

The following scales from ISSP 2012 were used to examine validity:

-   Gender (male/female)
-   Age (mostly computed by year of the interview minus year of birth)
-   Hours spent in household:
    -   "On average, how many hours a week do you personally spend on household work, not including childcare and leisure time activities?"
-   Working hours:
    -   "How many hours, on average, do you usually work for pay in a normal week, including overtime?"
-   Negative influence of working woman on family: Dimension "consequences of female labor-force participation for the family" of the gender-role attitudes scale (Braun, 2014; α = .70):
    -   "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work." (-)
    -   "A pre-school child is likely to suffer if his or her mother works."
    -   "All in all, family life suffers when the woman has a full-time job."
-   Negative attitude towards children (α = .70):
    -   "Having children interferes too much with the freedom of parents."
    -   "Children are a financial burden on their parents."
    -   "Having children restricts the employment and career chances of one or both parents."

Table 5

*Correlations of the Work-Family Conflict Scale with relevant variables (Germany / all countries)*

|  | WF | | FW | | WFC | |
| --- | --- | --- | --- | --- | --- | --- |
|  | Germany | All | Germany | All | Germany | All |
| Gender | -.03 | .06*** | .02 | .09*** | -.01 | .08*** |
| Age | -.19*** | -.09*** | -.11** | -.06*** | -.17** | -.09*** |
| Household hours | -.09** | -.02 | .13** | .10*** | -.02 | .03** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Working hours | .19** | .11*** | .04 | .01 | .16** | .08*** |
| Neg. influence of working woman on family | .04 | .05*** | .13** | .10*** | .09** | .08*** |
| Neg. attitude towards children | .23** | .11*** | .15** | .13*** | .23** | .14*** |
| Health | -.09** | -.13*** | -.10** | -.13*** | -.11** | -.15*** |
| Happiness | -.23** | -.17*** | -.20** | -.17*** | -.24** | -.19*** |

*Note.* WF = impact from work to family, FW = impact from family to work, WFC = work family conflict (including WF and FW). Pearson correlation coefficients for Germany / all countries (average), $N$ = 33,784, **$p$ < .01, ***$p$ < .001 (two-tailed). Observations in individual countries were weighted based on design weights. In the following countries, some variables were not part of the study protocol: South Africa (health, happiness), Spain (gender-role attitude, negative attitude towards children).

Correlations are given for Germany as well as across all countries. To aggregate correlations across all countries, a meta-analytic integration with the 'metafor' package in R was used. This analysis considers sample sizes as weights. It should be mentioned that a larger sample size in the ISSP sample does not automatically imply a greater importance of the country.

Practical importance of the validity coefficients might be interpreted according to Cohen's (1992) conventions: small effect ($r$ = .10), moderate effect ($r$ = .30), strong effect ($r$ = .50). Consistent with expectations, gender is related significantly to all work-family conflict subscales across all countries, but not so in Germany. It should be noted, however, that the interpretation of this result depends on the presence of measurement invariance across gender in each country.

Furthermore, there is a small negative correlation between age and work-family conflict. As expected, across all countries work-family conflict decreases with age, and particularly so in Germany. Additionally, the amount of hours spent in the household predicts increases in family to work (FW) conflict, whereas work to family (WF) conflict rather decreases. This differential pattern was a little less pronounced across all countries, though at least the expected tendency is reflected by the data.

The pattern is reversed for working hours: In Germany as well as across all countries, work-family (WF) conflict rises with the amount of working hours, whereas working hours do not significantly affect family-work (FW) conflict.

Both in Germany and across all countries, the belief that a working woman has a negative influence on family life shows small positive correlations with the impact from family to work (FW) and with overall work-family conflict (WFC). Negative attitudes towards children even show small correlations with all three family conflict (sub-)scales.

Finally, as expected, there are small negative correlations between work-family conflict and happiness, both for the two facets WF and FW and for overall work-family conflict (WFC). The same applies to the negative correlation with health. These results could be demonstrated for Germany as well as across all countries.

Altogether, most of the above expected relations could be confirmed by data. The results therefore indicate validity for the Work-Family Conflict Scale.

**Descriptive statistics (scaling)**

Reference means and standard deviation norms for the Work-Family Conflict Scale for men and women in each country and across all countries (total) are presented in Table 6. Reference values were calculated for the two facets „impact from work to family" (WF, items 1 and 2) and „impact from family to work" (FW, items 3 and 4) as well as for the mean score (all items). The values for skewness range from .17 (India) to 2.56 (Japan). The values for kurtosis range between -.79 (India) and 6.67 (Japan). According to West, Finch and Curran (1995), deviations from normality for │skewness│ ≤ 2 and for │kurtosis│ ≤ 7 are relatively small and unlikely to severely distort the measurement model. The ISSP data meet these criteria in all countries except for the values of kurtosis in Switzerland (10.62) and Taiwan (13.88). Therefore, maximum likelihood estimation with robust standard errors (MLR) was used for the structural equation modeling (see item analyses).

Table 6

*Reference values for each country and across all countries (total)*

|            |        |       | WF   |      | FW   |      | WFC (mean score) |      |
|------------|--------|-------|------|------|------|------|------|------|
|            |        | *N*   | *M*  | *SD* | *M*  | *SD* | *M*  | *SD* |
| Argentina  | Male   | 412   | 1.83 | .89  | 1.36 | .61  | 1.59 | .66  |
|            | Female | 302   | 2.18 | .96  | 1.56 | .79  | 1.87 | .77  |
|            | Total  | 714   | 1.98 | .94  | 1.44 | .70  | 1.71 | .72  |
| Australia  | Male   | 551   | 2.26 | .82  | 1.43 | .55  | 1.85 | .58  |
|            | Female | 511   | 2.32 | .84  | 1.57 | .63  | 1.94 | .63  |
|            | Total  | 1,062 | 2.29 | .83  | 1.50 | .59  | 1.89 | .61  |
| Austria    | Male   | 377   | 1.98 | .83  | 1.30 | .53  | 1.64 | .57  |
|            | Female | 405   | 2.09 | .79  | 1.45 | .64  | 1.77 | .63  |
|            | Total  | 782   | 2.04 | .81  | 1.38 | .60  | 1.71 | .60  |
| Bulgaria   | Male   | 264   | 2.68 | .94  | 1.71 | .89  | 2.20 | .78  |
|            | Female | 239   | 2.78 | .91  | 1.82 | .92  | 2.30 | .78  |
|            | Total  | 503   | 2.73 | .93  | 1.76 | .90  | 2.25 | .78  |
| Canada     | Male   | 226   | 2.03 | .84  | 1.35 | .49  | 1.69 | .57  |
|            | Female | 293   | 2.36 | .91  | 1.52 | .63  | 1.93 | .66  |
|            | Total  | 519   | 2.21 | .89  | 1.44 | .58  | 1.82 | .64  |
| Chile      | Male   | 602   | 2.41 | 1.03 | 1.75 | .90  | 2.08 | .85  |
|            | Female | 427   | 2.48 | 1.04 | 2.08 | .98  | 2.28 | .94  |
|            | Total  | 1,029 | 2.44 | 1.03 | 1.88 | .95  | 2.16 | .89  |
| China      | Male   | 2,006 | 2.18 | 1.00 | 1.38 | .68  | 1.78 | .70  |
|            | Female | 1,436 | 1.95 | .93  | 1.47 | .73  | 1.71 | .72  |
|            | Total  | 3,442 | 2.08 | .98  | 1.42 | .70  | 1.75 | .71  |
| Croatia    | Male   | 249   | 2.57 | .96  | 1.63 | .81  | 2.10 | .77  |
|            | Female | 237   | 2.80 | .92  | 1.80 | .90  | 2.29 | .78  |
|            | Total  | 486   | 2.68 | .95  | 1.71 | .86  | 2.19 | .78  |
| Czech Rep. | Male   | 623   | 1.98 | .85  | 1.34 | .65  | 1.66 | .64  |
|            | Female | 625   | 2.08 | .81  | 1.45 | .67  | 1.76 | .62  |
|            | Total  | 1,248 | 2.03 | .83  | 1.40 | .66  | 1.71 | .63  |
| Denmark    | Male   | 511   | 2.15 | .81  | 1.25 | .48  | 1.69 | .53  |
|            | Female | 477   | 2.25 | .82  | 1.31 | .52  | 1.78 | .56  |
|            | Total  | 988   | 2.20 | .81  | 1.28 | .50  | 1.74 | .55  |

| Finland | Male | 355 | 2.00 | .77 | 1.33 | .47 | 1.67 | .51 |
|---|---|---|---|---|---|---|---|---|
| | Female | 401 | 2.14 | .77 | 1.42 | .57 | 1.77 | .55 |
| | Total | 756 | 2.07 | .77 | 1.38 | .52 | 1.72 | .53 |
| France | Male | 762 | 2.29 | .89 | 1.42 | .60 | 1.85 | .63 |
| | Female | 906 | 2.35 | .85 | 1.55 | .70 | 1.95 | .67 |
| | Total | 1,668 | 2.32 | .87 | 1.49 | .66 | 1.90 | .65 |
| Germany | Male | 576 | 2.18 | .93 | 1.31 | .53 | 1.74 | .63 |
| | Female | 546 | 2.14 | .94 | 1.32 | .53 | 1.73 | .64 |
| | Total | 1,122 | 2.16 | .94 | 1.32 | .53 | 1.74 | .63 |
| Great Britain | Male | 318 | 2.23 | .88 | 1.40 | .56 | 1.81 | .64 |
| | Female | 260 | 2.22 | .85 | 1.48 | .63 | 1.84 | .62 |
| | Total | 578 | 2.23 | .90 | 1.44 | .59 | 1.83 | .63 |
| Iceland | Male | 485 | 2.28 | .89 | 1.35 | .55 | 1.81 | .61 |
| | Female | 410 | 2.29 | .84 | 1.39 | .59 | 1.84 | .62 |
| | Total | 895 | 2.29 | .87 | 1.37 | .57 | 1.82 | .62 |
| India | Male | 577 | 2.62 | .78 | 2.15 | .77 | 2.38 | .65 |
| | Female | 308 | 2.28 | .96 | 2.11 | .81 | 2.21 | .77 |
| | Total | 885 | 2.50 | .86 | 2.14 | .78 | 2.32 | .70 |
| Ireland | Male | 338 | 2.12 | .77 | 1.53 | .60 | 1.82 | .57 |
| | Female | 251 | 2.23 | .80 | 1.49 | .59 | 1.86 | .61 |
| | Total | 589 | 2.17 | .78 | 1.51 | .59 | 1.84 | .59 |
| Israel | Male | 344 | 2.15 | .99 | 1.61 | .84 | 1.88 | .82 |
| | Female | 398 | 2.58 | .98 | 1.95 | 1.02 | 2.26 | .88 |
| | Total | 742 | 2.38 | 1.01 | 1.79 | .96 | 2.09 | .87 |
| Japan | Male | 365 | 2.16 | 1.12 | 1.26 | .62 | 1.71 | .74 |
| | Female | 360 | 2.10 | 1.05 | 1.28 | .56 | 1.68 | .68 |
| | Total | 725 | 2.13 | 1.08 | 1.27 | .59 | 1.70 | .71 |
| South Korea | Male | 503 | 2.22 | 1.03 | 1.42 | .66 | 1.82 | .72 |
| | Female | 385 | 2.39 | 1.03 | 1.69 | .83 | 2.04 | .82 |
| | Total | 888 | 2.29 | 1.03 | 1.54 | .75 | 1.91 | .77 |
| Latvia | Male | 295 | 2.31 | 1.05 | 1.37 | .70 | 1.84 | .75 |
| | Female | 345 | 2.50 | 1.05 | 1.52 | .79 | 2.01 | .79 |
| | Total | 640 | 2.41 | 1.05 | 1.45 | .75 | 1.93 | .77 |
| Lithuania | Male | 281 | 2.20 | .85 | 1.44 | .68 | 1.83 | .66 |
| | Female | 321 | 2.26 | .88 | 1.63 | .76 | 1.94 | .72 |
| | Total | 602 | 2.23 | .87 | 1.54 | .73 | 1.89 | .69 |
| Mexico | Male | 561 | 2.30 | .94 | 1.85 | .91 | 2.08 | .82 |
| | Female | 427 | 2.39 | .99 | 1.98 | .98 | 2.19 | .90 |
| | Total | 988 | 2.34 | .96 | 1.91 | .94 | 2.13 | .85 |
| Norway | Male | 527 | 2.06 | .81 | 1.29 | .48 | 1.67 | .55 |
| | Female | 546 | 2.23 | .79 | 1.37 | .53 | 1.80 | .57 |
| | Total | 1,073 | 2.14 | .81 | 1.33 | .51 | 1.73 | .56 |
| Philippines | Male | 553 | 2.44 | .92 | 1.75 | .88 | 2.09 | .76 |
| | Female | 375 | 2.02 | .89 | 1.81 | .87 | 1.92 | .78 |
| | Total | 928 | 2.27 | .93 | 1.77 | .88 | 2.02 | .77 |
| Poland | Male | 299 | 2.49 | .97 | 1.57 | .76 | 2.03 | .74 |
| | Female | 263 | 2.70 | .95 | 1.64 | .84 | 2.17 | .74 |
| | Total | 562 | 2.59 | .96 | 1.60 | .80 | 2.09 | .74 |
| Russia | Male | 438 | 2.70 | 1.01 | 1.56 | .82 | 2.13 | .75 |

|  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|
|  | Female | 452 | 2.64 | .92 | 1.68 | .86 | 2.16 | .76 |
|  | Total | 890 | 2.67 | .97 | 1.62 | .85 | 2.14 | .76 |
| Slovakia | Male | 366 | 2.45 | .98 | 1.57 | .76 | 2.01 | .75 |
|  | Female | 309 | 2.48 | 1.02 | 1.80 | .83 | 2.14 | .82 |
|  | Total | 675 | 2.47 | .99 | 1.68 | .80 | 2.07 | .78 |
| Slovenia | Male | 237 | 2.06 | 1.02 | 1.26 | .59 | 1.66 | .68 |
|  | Female | 234 | 2.35 | .93 | 1.28 | .57 | 1.81 | .62 |
|  | Total | 471 | 2.20 | .98 | 1.27 | .58 | 1.74 | .65 |
| South Africa | Male | 569 | 1.95 | .96 | 1.54 | .75 | 1.74 | .77 |
|  | Female | 559 | 2.06 | .98 | 1.69 | .88 | 1.87 | .86 |
|  | Total | 1,128 | 2.00 | .97 | 1.61 | .82 | 1.81 | .82 |
| Spain | Male | 680 | 2.39 | 1.05 | 1.43 | .66 | 1.91 | .72 |
|  | Female | 680 | 2.63 | .99 | 1.72 | .89 | 2.17 | .81 |
|  | Total | 1,360 | 2.51 | 1.03 | 1.58 | .80 | 2.04 | .78 |
| Sweden | Male | 338 | 2.13 | .85 | 1.30 | .50 | 1.71 | .56 |
|  | Female | 362 | 2.40 | .86 | 1.39 | .57 | 1.89 | .61 |
|  | Total | 700 | 2.27 | .87 | 1.34 | .54 | 1.80 | .59 |
| Switzerland | Male | 476 | 1.91 | .91 | 1.20 | .43 | 1.55 | .56 |
|  | Female | 422 | 2.00 | .94 | 1.27 | .50 | 1.63 | .61 |
|  | Total | 898 | 1.95 | .93 | 1.23 | .47 | 1.59 | .59 |
| Taiwan | Male | 768 | 1.75 | .96 | 1.14 | .40 | 1.44 | .58 |
|  | Female | 544 | 1.98 | 1.03 | 1.19 | .48 | 1.59 | .64 |
|  | Total | 1,312 | 1.85 | 1.00 | 1.16 | .44 | 1.50 | .61 |
| Turkey | Male | 506 | 2.51 | .97 | 1.92 | .86 | 2.21 | .79 |
|  | Female | 108 | 2.82 | .98 | 2.45 | 1.03 | 2.64 | .94 |
|  | Total | 614 | 2.56 | .98 | 2.01 | .92 | 2.29 | .84 |
| United States | Male | 482 | 2.27 | .91 | 1.42 | .65 | 1.84 | .66 |
|  | Female | 446 | 2.40 | .97 | 1.53 | .69 | 1.96 | .71 |
|  | Total | 928 | 2.33 | .94 | 1.48 | .67 | 1.90 | .69 |
| Venezuela | Male | 358 | 2.00 | .86 | 1.55 | .76 | 1.78 | .72 |
|  | Female | 285 | 2.27 | .90 | 1.91 | .98 | 2.09 | .85 |
|  | Total | 643 | 2.12 | .89 | 1.71 | .88 | 1.92 | .79 |
| Total | Male | 18,178 | 2.21 | .96 | 1.47 | .71 | 1.84 | .71 |
|  | Female | 15,855 | 2.28 | .95 | 1.57 | .78 | 1.92 | .75 |
|  | Total | 34,033 | 2.24 | .95 | 1.52 | .74 | 1.88 | .73 |

*Note.* WF = impact from work to family, FW = impact from family to work, WFC = work-family conflict (mean score of all four items). Observations were weighted based on design weights, recoded scale from 1 = "never" to 4 = "several times a week".


**Further quality criteria**

To test fairness between countries for the Work-Family Conflict Scale, measurement invariance was investigated by structural equation modeling. We investigated three possible levels of measurement invariance. When configural invariance is given, the item-to-factor structure is equivalent between countries. Metric invariance implies that both the factor structure and the respective item loadings are equivalent between countries. For scalar invariance, the factor structure, the item loadings and the intercepts of each item need to be equivalent across countries. To test configural invariance, all items

were constrained to load on the same factors but the factor loadings and the items' intercepts were allowed to differ between countries. To test metric invariance, all items were constrained to load on the same factors and the factor loadings were constrained to be invariant across countries, whereas the variance of the latent variables and the items' intercepts were allowed to differ between countries. To investigate scalar invariance, all items were constrained to load on the same factors and the factor loadings as well as the items' intercepts were constrained to be invariant across countries. Configural invariance can be assumed if the measurement model – without constraints of factor structure, item loadings or intercepts – shows a good model fit in all countries. To evaluate the models of metric and scalar invariance, we used the changes in fit indices as decision criteria. A difference of $\Delta$RMSEA ≤ .015 and a $\Delta$CFI ≤ .010 between the configural and the metric invariance model suggests metric invariance and a difference of $\Delta$RMSEA ≤ .015 and a $\Delta$CFI ≤ .010 between the metric and the scalar invariance model suggests scalar invariance (Chen, 2007). Results are shown in Table 7 below.

Table 7

*Measurement invariance for Work-Family Conflict across all countries*

|  | RMSEA | CFI | $\chi^2$ | *df* | $\Delta\chi^2$ | $\Delta df$ |
|---|---|---|---|---|---|---|
| Configural invariance | .024 | .998 | 55.441 | 36 | - | - |
| Metric invariance | .032 | .992 | 202.688 | 106 | 147.247*** | 70 |
| Scalar invariance | .072 | .930 | 1,010.627 | 176 | 807.939*** | 70 |

*Note.* Observations were weighted based on design weights, *N* = 32,784, ***$p$ ≤ .001.

The configural and the metric model show a very good fit across all countries. The rather small change in CFI as well as in RMSEA suggest metric invariance ($\Delta$RMSEA = .006, $\Delta$CFI = .008). For the model of scalar invariance, the comparison of the chi-square-values reveals a significant difference to the metric invariance model ($\Delta$RMSEA = .040; $\Delta$CFI = .062). On the basis of Chen's (2007) criteria, only the metric invariance model can be accepted; the idea of scalar invariance has to be rejected. The results suggest the same structure and factor loadings, thus equivalent item meanings, in all countries. However, intercepts differ between countries, thus item specific difficulties between countries prevent comparisons of latent means and manifest scale means across countries, unless the sources of non-invariance are identified, evaluated in terms of size and direction of misfit, and properly accommodated for in SEM. Comparisons of means can therefore be made within a country, but not between several countries (not without further adjustments of the measurement model).

**6 Literature and data sources**

**Data sources**

The scale has been used in several studies, including:

- [International Social Survey Programme: Family and Changing Gender Roles III – ISSP 2002, ZA3880](#)
- [International Social Survey Programme: Family and Changing Gender Roles IV – ISSP 2012, ZA5900](#)

**Contact details**

- Bianka Breyer, GESIS Leibniz Institute for the Social Sciences, Survey Design and Methodology, P.O. Box 12 21 55, 69072 Mannheim, Germany, [bianka.breyer@gesis.org](mailto:bianka.breyer@gesis.org)
- Dr. Matthias Bluemke, GESIS Leibniz Institute for the Social Sciences, Survey Design and Methodology, P.O. Box 12 21 55, 69072 Mannheim, Germany, [matthias.bluemke@gesis.org](mailto:matthias.bluemke@gesis.org)

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