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*Research Article*

**On the links between employment,  
partnership quality, and the intention  
to have a first child:**

**The case of West Germany**

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**Bernd Weiß**

**Michael Wagner**

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**On the links between employment, partnership quality,  
and the intention to have a first child:  
The case of West Germany**

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**Abstract**

We examine the impact of precarious work (low income and job security satisfaction) on the intention to have a first child. We consider a direct and an indirect effect; the latter is mediated by partners' conflict behaviour, conflict level, and partnership quality. We assume that a satisfactory partnership is positively associated with the intention to have a first child. The analyses are based on a subsample of the German Generations and Gender Survey. For men we found a direct effect of income and an indirect effect of job security satisfaction on childbearing intentions, whereas for women no direct and only a weak indirect impact of precarious work could be observed.

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## **1. Problem**

In recent years labour markets in industrialised countries have experienced significant changes. The breakdown of the East-West divide led to a rapid intensification of competition and deregulation in the job market (Mills and Blossfeld 2005). As a result precarious employment increased, characterised by fixed-term contracts, part-time work, less social security, or insufficient income (Keller and Seifert 2006: 235). Family sociologists assume that this increase in precarious employment affects family formation negatively. For instance, Blossfeld et al. (2005) argue that young people in particular suffer from these recent developments and face uncertainty in employment situations. In countries with a high prevalence of precarious jobs young people postpone or even abandon starting a family.

Research on fertility motivation differentiates the desire to have a child and childbearing intention. “The difference [...] is akin to the difference between what one would like to do given no situational constraints and what one actually plans to do given the reality within which one ordinarily operates” (Miller, Lawrence and Pasta 2004: 194). According to this definition childbearing intention is a consequence of a conscious and rational fertility decision, since the restrictions of individual living conditions are taken into account. Furthermore it displays the result of the decision even better than real fertility, because births may occur when unintended, or may not when intended.

Previous research on childbearing intention has focused on the influence of attitudes, norms, and the social network or social capital (Schoen et al. 1997; Philipov, Spéder, and Billari 2006; Bühler and Fratzczak 2007; Ruckdeschel 2007; Bühler 2008; Billari, Philipov, and Tester 2009; Dommermuth et al. 2009; Klobas 2010), gender equity (Mills et al. 2008; Neyer and Rieck 2009), happiness (Billari 2009), and religion (Hayford and Morgan 2008). Moreover some studies have dealt with the impact of the employment situation on childbearing intentions. Pailhé (2009) found that in France, Germany, and Russia unemployment has no significant effect on the intention of having a child within the next three years. In Georgia household income has a positive impact on the intention to have a child (Balbo 2009). In Germany men with a high income wish to have a child more often, whereas for women the contrary seems to be true (Eckhard and Klein 2006). However no multivariate tests were performed to ensure the latter findings.

Additionally several studies have examined the link between precarious work and fertility behaviour. This research has mainly focused on the impact of fixed-term contracts or part-time employment (Tölke and Diewald 2003; Tölke 2005; Kurz 2005; Kurz, Steinhage, and Golsch 2005; Bernhard and Kurz 2007; Brose 2008; Gebel and Giesecke 2009). Not many studies have evaluated the effect of income on fertility in

Germany. Schmitt (2005) found a positive income effect for men and a negative for women, whereas González and Jurado-Guerrero (2006) detected no significant impact of women's income on their fertility. Research from other European countries shows that women's income has a negative effect on birth risks in the UK (Sigle-Rushton 2008) and a positive one in Finland and Sweden (Hoem 2000; Vikat 2004; Andersson, Duvander, and Hank 2005; Andersson and Scott 2008). Studies by Kreyenfeld (2008, 2010) revealed that dissatisfaction with job security leads to a postponement of the transition to parenthood.

So far research has focused on the direct effects of the employment situation on childbearing intentions or fertility. Since fertility decisions depend on the situation within a partnership (e.g. Miller, Lawrence, and Pasta 2004), we want to broaden the research focus by also considering indirect effects from employment on fertility intentions. More precisely, we take the conflicts within and the quality of a partnership into account, assuming that these variables mediate the association between employment and fertility intentions.

The concern of this article is to fill three research gaps. First we examine the impact of the respondent's income and her or his subjective job security on the frequency of conflicts and the conflict behaviour in a partnership, while also controlling for the partner's employment situation. The frequency of conflicts and the conflict behaviour are likely to influence the partnership quality (e.g. Clements, Stanley, and Markman 2004), which in turn should affect the intention to have a child (e.g. Rijken and Thomson 2010). Second we evaluate the association between income and fertility intentions in Germany in a multivariate model. Third, since almost all previous studies that used an objective measure of job security (a fixed-term contract) found no evidence of an impact on fertility decisions, we want to examine the impact of subjective job security on the intention to have a child. We assume how the employment situation is perceived and evaluated is more relevant than the objective characteristics of the situation.

We only consider the intention to have a first child, as the birth of a first child can be expected to have a stronger impact on the parents' life than the birth of a second or third child. We assume that with the birth of a first child a restriction on the working life of at least one of the parents begins. Moreover second or third children cost less than the first one since many essential goods can be reused. Due to these reasons the decision-making process of having a first child is different from that of having a further child, and consequently we prefer not to mix these heterogeneous groups.

For our analyses we use a subsample of childless men and women living in marital or non-marital partnerships in West Germany. We only consider employed respondents, because only those having a job can give information about their satisfaction with job security. The subsample was derived from the German Generations and Gender Survey

(2005). We estimate path models to specify the consequences of the employment situation for the quality of partnerships and childbearing intentions.

## **2. Theory**

The intention to have a child is an actual plan to have a child (Miller, Lawrence, and Pasta 2004: 194). Accordingly “fertility intentions are strong and persistent predictors of fertility”, especially if “the intentions are held with greater certainty” (Schoen et al. 1999: 790).

To explain fertility intentions we distinguish between two lines of theoretical reasoning. The first line explains the direct impact of precarious employment and is based on the microeconomic approach, arguing that a fertility intention is a result of a rational decision process about the costs and benefits of a child. The second line of theoretical reasoning is a microsociological approach, explaining the indirect effect that the employment situation has on the intention to have a child via the conflicts within and the quality of a partnership.

### **2.1 Economic uncertainty and fertility decisions**

We apply Gary Becker’s (1991) New Home Economics for modelling the link between the employment situation and the intention to have a child. This theory is based on the assumption that the decision about having a child or not is a rational decision about the use of scarce resources. Becker extended the traditional theory of consumer and household behaviour by introducing the element of time. He assumes that a household (e.g. family members) maximises its utility not only by consuming goods and services, but also “receives utility from time spent eating, sleeping [...], and participating in many other activities” (Becker 1991: 21). Furthermore families are not only consumers of (market) goods, they also use their time and goods to produce “commodities”. Commodities are goods that directly provide utility and satisfaction, for instance children, health, altruism, or sensual pleasure. Since these commodities cannot be purchased they do not have a price, but they do have a shadow price, which equals the cost of production. This includes the price of necessary goods and lost wages of spending time outside the market, which is also known as opportunity cost. Thus for the ‘production’ of children a household needs market goods and services (i.e. a source of income) and time of parents, especially those of mothers (Becker 1991: 138).

Moreover Becker (1991: 31ff) states that with regards to labour division within a household specialization is efficient. Given biological differences, different

experiences, and investment in human capital, women commonly specialize in household work including child-rearing, and men in work in the labour market. Hence the effect of income on the intention to have a child differs for men and women. Opportunity costs of raising children are mainly relevant for women. However the costs are lower in those countries with policy measures to reconcile work and family life (e.g. extensive childcare facilities). Therefore in countries such as Scandinavia or France the impact of income on fertility is quite similar for men and women, while this is not the case in countries with fewer opportunities to combine employment with child-rearing (e.g. Andersson, Duvander, and Hank 2005).

In West Germany the traditional gendered division of labour is still the conventional organisation of a family household, with the husband or male partner as the main provider of family income (Kurz, Steinhage, and Golsch 2005). Hence we assume a positive relationship between the personal income of the male partner and his intention to have a first child:

H1a: The higher a man's income, the more likely that he has a positive intention to have a first child.

For women a negative association between income and childbearing is more plausible. Apart from income a family household needs time for child-rearing (Becker 1991: 138). Due to the fact that in West Germany women perform the major part of childcare (Cooke 2007), a child causes opportunity costs in terms of women's lost wages. Therefore our hypothesis for women is:

H1b: The higher a woman's income, the less likely that she has a positive intention to have a first child.

However the causation for this hypothesis is unclear and there is no chance to clear it up with the use of cross-sectional data. Women with high incomes might never have had the intention to have a child and might therefore have focused on their career. Hakim (2003) discusses the heterogeneity of women's individual preferences regarding their lifestyle choice and the impact of these preferences on fertility patterns. Women with work-centred preferences remain childless far more often than home-centred women. Since educational attainment and other socioeconomic factors are distributed relatively evenly among the preference groups, Hakim (2003: 364) concludes that preference is the relevant factor which predicts fertility outcomes. Vitali et al. (2009) examined an association between lifestyle preferences and realized fertility. However, since they use cross-sectional data the causation of the two factors remains unclear. Furthermore they found no significant association between preference and childbearing

intentions. Hayford (2008) found no empirical support for the impact of preferences on second childbirths. Barber (2001) examines whether preferences influence premarital childbearing positively. Anyway the possibility of an underlying variable such as preferences for a more work-centred or home-centred life-style has to be minded when interpreting the findings for hypothesis 1b. That is, due to omission of that variable the results might be biased.

Low job security implies the risk of lower future earnings. Since childbearing entails long-term consequences an actor should not only consider current but future income. Oppenheimer (1988) argues that individuals are more likely to make long-term commitments if their future economic security is predictable. Thus if someone anticipates the risk of future wage cuts it is less likely that he or she intends to have a first child. This should be particularly true for German men since they are the main providers of household income. Therefore we derived the following hypothesis:

H2a: The lower a man's satisfaction with his job security, the less likely that he has a positive intention to have a first child.

For women the link between job security and fertility is more sophisticated. We have to distinguish between well and less educated women. Friedman, Hechter, and Kanazawa's (1994) Theory of the Value of Children assumes that rational actors seek to reduce uncertainty. They "predict that two categories of individuals are more likely than others to seek parenthood: those who [...] face greater uncertainty, and those who have less access to other means of uncertainty reduction" (Friedman, Hechter, and Kanazawa 1994: 384). In insecure employment situations parenthood is a means to reduce uncertainty in family life. However the link is only plausible for less educated women, because they can hardly improve their job security. But highly educated women should not be willing to change their career opportunities for a housewife's and mother's life. An unstable employment situation provides fewer options to return to the previous job after childbirth. In West Germany well educated women in an uncertain employment situation postpone their first childbirths, whereas women with low education in the same situation decide in favour of motherhood (Kreyenfeld 2008, 2010). Thus the hypotheses are:

H2b: The lower a well educated woman's satisfaction with her job security, the less likely that she has a positive intention to have a first child.

H2c: The lower a less educated woman's satisfaction with her job security, the more likely that she has a positive intention to have a first child.



## **2.2 Economic uncertainty and partnership quality**

A precarious employment situation like low income or low job security is likely to induce stress. The Social Stress Theory (Aneshensel 1992; Hansen 2005) states that stress is a consequence of location in the social system. Such stress is termed social stress. Exclusion from full participation in the social system and participation that fails to provide the expected returns are factors that link social structure with stress (Voydanoff and Kelly 1984). Social stress exhausts coping resources, affects psychological stress, and may result in social conflict and less constructive conflict behaviour. An application and specification of the social stress theory is the Family Stress Model (Conger et al. 1990; Conger and Elder 1994). This initial model has been extended by interactional variables that specify the mechanisms which link economic pressure to marital distress. The model postulates that couples experiencing economic pressure or difficulties may become frustrated, angry, and emotionally troubled. As a consequence marital conflicts arise, which in turn elevate marital distress to a later point in time (Conger, Rueter, and Elder 1999). A low income and especially low job security might lead to financial stress but also to more negative prospects for the financial situation in the future. Low job security demands individual flexibility and requires the willingness to adapt quickly to a changing work environment and work demands. As a result family planning might be postponed and the emergence of partner conflicts could be facilitated. In line with Conger, Rueter, and Elder (1999), we extend the Family Stress Model as we distinguish the level of conflict and conflict behaviour. The latter is the way that couples handle their conflicts. We hypothesise that both the level of conflict and the conflict behaviour are affected by economically induced social stress.

H3a: The lower the income, the higher the level of conflict in a partnership and the less constructive the conflict behaviour.

H3b: The lower the satisfaction with job security, the higher the level of conflict in a partnership and the less constructive the conflict behaviour.

Two models are relevant in explaining the impact of conflict frequency on partnership quality. The latter is defined differently in the literature. Scholars from the 'marital adjustment' school combine several factors, such as marital happiness, interaction, disagreements, problems, and instability, into one construct. According to Glenn (1990) this has been largely criticised. One point of criticism is that these components are likely to be causally linked to each other. Glenn (1990) prefers the perspective of the 'individual feelings' school which uses only marital happiness as an aspect of marital quality. We will follow this perspective and we will use the overall

subjective evaluation of a partnership – partnership satisfaction – as the single dimension of partnership quality.

The first model linking conflicts with partnership quality is derived from the exchange framework and specified by Lewis and Spanier (1979), and the other is the Vulnerability-Stress-Adaptation Model of Marriage (Karney and Bradbury 1995: 23). The central causal line in the model by Lewis and Spanier (1979: 282) is expressed by the hypothesis “The greater the rewards from spousal interaction, the greater the marital quality”. The level of conflict is directly related to the amount of rewards from spousal interaction: “(...) frequent conflict between partners has been generally viewed as a cost to being in the relationship” (Kurdek 1994: 924). The Vulnerability-Stress-Adaptation Model of Marriage (Karney and Bradbury 1995) is derived from an integration of several theories that deal with the functioning of marriages and a meta-analysis of empirical findings from longitudinal research. It is argued that enduring vulnerabilities (individual histories, personality factors) and – in line with the Social Stress Theory presented above – stress and stressful events influence adaptive processes or the way partners cope with differences in opinion, conflicts, or marital problems. These adaptive processes affect marital quality. Therefore marital or partnership quality is influenced by the capability of the partners to adapt to external strain and personal vulnerabilities. Because conflict is a kind of adaptive process the model implies that the conflict level affects partnership quality.

H3c: The higher the level of conflict, the lower the partnership quality.

Secondly, the exchange theory would predict that conflicts reduce partnership quality. But conflicts can also initiate a successful adaptation process leading to more satisfaction and stability. However a precondition for such a “growth through conflict” (Braiker and Kelley 1979: 160ff) is a certain type of conflict behaviour, meaning the way partners deal with their conflicts. Positive conflict behaviour is likely to enhance partnership quality (Gottman 1993, see also Wagner and Weiß 2005).

H3d: A problem-solving conflict behaviour enhances partnership quality.

The performance of a problem-solving behaviour is also likely to reduce the level of partnership conflicts. In that case the probability of an escalation is diminished and the partners come to an agreement more quickly.

H3e: A problem-solving conflict behaviour reduces the level of conflict in a partnership.

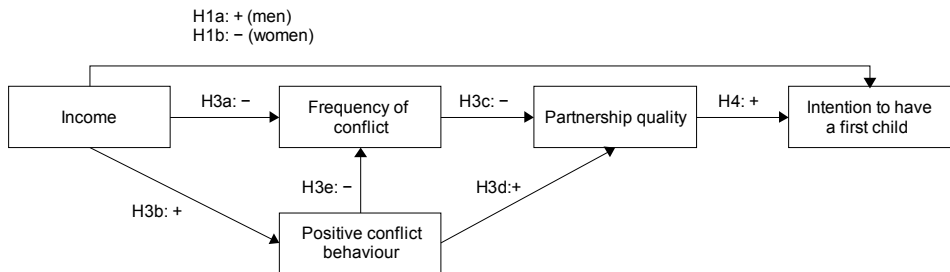
### **2.3 Partnership quality and childbearing intention**

A satisfactory partnership should be favourable for the intention to have a child (Ott 1991; Lillard and Waite 1993; Smolka 2005). Two hypotheses have been developed to better understand the relationship between partnership quality and childbearing intentions. Building on the uncertainty reduction theory by Friedman, Hechter and Kanazawa (1994), Myers (1997) tests a hypothesis stating that couples have children because the birth of a child increases solidarity and reduces uncertainty in a partnership. As people strive to reduce marital uncertainty they try to have children. From this perspective childbirth is likely if the quality of a relationship is low. Myers found no evidence for the uncertainty reduction theory. It seems that an opposite hypothesis is more realistic: happily married couples are more likely to have a child than unhappily married couples. One reason for that is that people want their children to grow up in a favourable environment. However a recent article from Rijken and Liefbroer (2009) revealed that both partners' negative and positive interactions are linked to fertility. The reason why couples with a very positive interaction might be reluctant to give birth to a child may be that a child is seen as a threat to the couple's happiness. In addition, Rijken and Thomson (2010) observed that women that reported a medium level of relationship quality are most likely to have a child. Despite previous research not providing a clear picture of the functional relationship between partnership satisfaction and the intention to have a first child, our hypothesis is:

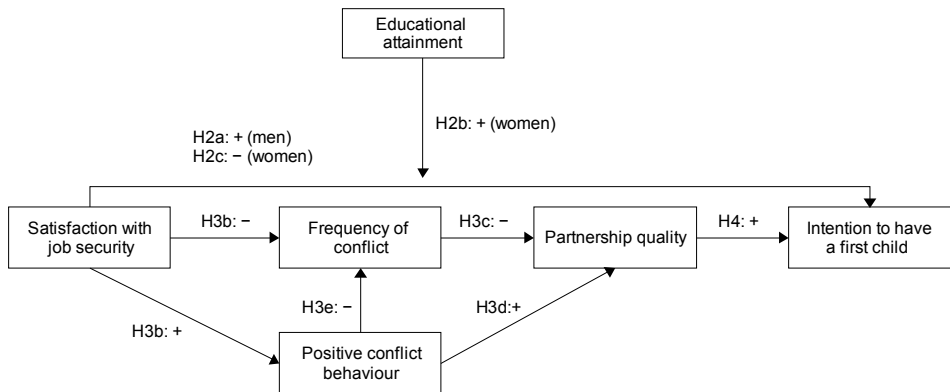
H4: Respondent's partnership quality affects the intention to have a first child positively.

The following figures combine our hypotheses within two path models. We assume that both income and satisfaction with job security have a direct effect on the intention to have a first child. These effects are different for men and women. The way the employment situation affects the dependent variable via partnership interaction is assumed to be similar for men and women.

**Figure 1: Causal links between income and the intention to have a first child**



**Figure 2: Causal links between job security satisfaction and the intention to have a first child**



### **3. Data and methods**

#### **3.1 The Generations and Gender Survey**

The empirical analyses are based on the German Generations and Gender Survey (GGS) conducted in 2005. The target population is composed of German-speaking respondents of 18 to 79 years who live in private households in Germany. The GGS is characterised by a multi-stage sampling design. Overall 10,017 face-to-face interviews were conducted and the response rate is about 55% (for an extensive study description see Ruckdeschel et al. 2006). The representativity of the GGS is probably restricted with respect to prevalence of childlessness. For some of the female birth cohorts of our analyses (1960-1987) childlessness is likely to be underestimated (Naderi, Dorbritz, and Ruckdeschel 2009: 14f; Kreyenfeld et al. 2010). That means our subsample might be biased by containing too few childless women. This should, however, only affect our results if the childless respondents who were not reached during the survey form a selective group. For the cohorts under examination, university graduates are slightly over-represented, which can be corrected through using the GGS weighting variables (Kreyenfeld et al. 2010:18).

In accordance with our analytical goals we selected a subgroup of respondents: (1) Respondents living in a heterosexual partnership in West Germany (2) without own children, stepchildren, adopted children or children in care. (3) The female partners are not pregnant. (4) Respondents are currently participating in the labour market. Respondents who were unemployed, in training or further education, retired or homemakers were excluded from the sample. (5) In order to ensure realistic fertility decisions only couples with female partners aged 45 years or below were included. Due to these restrictions the sample size decreased to 641 persons.

#### **3.2 Analytical strategy**

Our empirical analyses are organised as follows: for our two central independent variables (income and job security satisfaction) separate path models will be estimated. Although not all hypotheses differentiate between women and men path models were estimated for women and men separately. Since some variables suffer from missing data our multivariate analyses will be based on a multiply imputed dataset (for more detail see section 3.4). In total we estimate four different path models: (income and job security satisfaction) x (women and men). As we will see in the following the effects of the women's employment situation are minor. Therefore we estimate separate models for full-time employed women ( $n = 207$ ) to examine if the effect of the employment

situation becomes stronger if women with part-time jobs are excluded. We report the finding if the model containing all employed women differs from the model with only full-time employed women. Owing to the small sample size of part-time employed women ( $n = 65$ ) we do not consider them in a separate model. Besides the path models, we estimated two probit models to examine changes in the direct effects of income and job security satisfaction when considering them simultaneously and controlling for further variables (see Table 1 in the appendix). As there are no major changes the results are not discussed.

In all models we also control for the partner's employment situation (see section 1). Unfortunately the GGS does not provide information about the partner's job security and information about the partner's income is incomplete, i.e., the proportion of missing values is about 57%. Completely omitting information on the partner's employment situation would probably lead to biased estimates. Therefore we control for the partner's employment situation by considering if she or he is employed. Controlling for the partner's employment at least reflects if the partner might compensate a respondent's low income to a certain extent. Nevertheless, since information about partner's job security is missing, our results have to be interpreted with caution.

We used Mplus Version 5.1 (Muthén and Muthén 1998-2008) to estimate the path models. As they contain dichotomous (intention to have a child) and ordinal (conflict behaviour) variables we applied the WLSMV<sup>4</sup> estimator.

As mentioned earlier the GGS can be characterised by a multistage-sampling design and thus suffers from unequal selection probabilities which require applying sampling weights. Additionally the sample was adjusted to the distribution of the variables federal state, age, sex, and educational level, known from the official statistics (see Ruckdeschel et al. 2006: 13). The GGS offers weighting variables at the individual as well as at the household level. Since we are interested in individual behaviour we use the person weights.

Since our hypotheses are directed, we apply one-tailed significance tests. We speak of a "statistically significant finding" if we can reject the null hypothesis at least at the 10% level.

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<sup>4</sup> WLSMV is an abbreviation for "Weighted least squares parameter estimates with standard errors and a mean- and variance-adjusted chi-square test statistic that use a full weight matrix" (Muthén und Muthén 1998-2008: 485). The WLSMV approach is preferred when estimating models with any combinations of dichotomous, ordinal, or continuous outcome variables and a small sample size (Kline 2010: 181).

### 3.3 Operationalisation

In this section we present the measurement of our theoretical concepts. Unless otherwise stated all summary statistics can be found in Table 2 in the appendix.

Intention to have a child: Respondents were asked about their current intention to have a child<sup>5</sup>. Possible answer categories were “no” (0), “do not know” (1)<sup>6</sup>, “yes” (2) and “refused”. “Refused” (1%) is considered to be a missing value. That is, as we apply multiple imputation to deal with missing data (see section 3.4), 1% of the values of the dependent variable are imputed. About 34% of all respondents intend to have a (first) child. The percentage of undecided respondents is about 8%.

Personal income (per month): The mean individual income<sup>7</sup> is €1,527. The respondents’ income is positively (right) skewed (skewness = 1.32) and suffers from missing data (20%). Subsequent analyses will rely on a grouped income variable with four income categories, which is more equally distributed than the original income variable: 1. €0-999 (18%), 2. €1,000-1,499 (38%), 3. €1,500-1,999 (24%) and 4. €2,000+ (19%).

Satisfaction with job security: The respondents were asked: “And how satisfied are you with job security?” The scale ranges from 0 “not at all satisfied” to 10 “completely satisfied”. Overall the respondents are satisfied with their job security (mean = 6.96) and the distribution is negatively (left) skewed (skewness = -0.88).

Partnership quality was measured with the following question: “How satisfied are you with your relationship with your partner/spouse?” The scale ranges from 0 “not at all satisfied” to 10 “completely satisfied”. Relationship satisfaction is considerably high (mean = 8.91) and left skewed (skewness = -1.38).

Frequency of conflicts: The respondents were asked the following question about disagreements with their partner: “Now I am going to read out loud a list of things that couples may have disagreements about. Within the last 12 months, how often did you

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<sup>5</sup> The wording is: “Do you yourself want to have a/another baby now?” According to Bongaarts (1990:494) responses to questions asking about the intention to have further children are relatively unbiased in measuring fertility behaviour. This is particularly true when the time of the intended childbearing is given.

<sup>6</sup> It is debatable to consider the “don’t know” as a valid medial category or as a missing value. Therefore we estimated the models twice: One time with an ordinal dependent variable and one time with a dichotomous variable. The results are almost identical. The table and figures in the text are based on the model with the ordinal variable, but in any case we report differences between the two models.

<sup>7</sup> Personal income of the respondents was assessed by the following question: “Please look at this card and give me the approximate range of the amount you received each time from that [payment type]”: 1 = €499 or less; 2 = €500 to 999; 3 = €1,000 to 1,499; 4 = €1,500 to 1,999; 5 = €2,000 to 2,499; 6 = €2,500 to 2,999; 7 = €3,000 to 3,999; 8 = €4,000 to 4,999; 9 = €5,000 or more. We consider the payment types “earnings from a main job or business” and “earnings from an additional job or business”.

and your partner/spouse have a disagreement about [issue of disagreement]?” The full range of conflict issues includes “household chores”, “money”, “use of leisure time”, “sex”, “relations with friends”, “relations with parents and in-laws”, “child-raising issues”, “having children” and “drinking alcohol”. Answer categories are based on a five-point Likert scale ranging from 1 “never” to 5 “very often”. For obvious reasons “child-raising issues” were skipped, so that the following analyses rely on a summarized conflict index which has a theoretical range from 8 (8 x 1) to 40 (8 x 5). The respondents report few conflicts (mean = 12.82; skewness = 1.03); the proportion of missing data is about 7%.

Positive conflict behaviour is measured using the following question: “Couples deal with serious disagreements in various ways. When you have a serious disagreement with your partner/spouse, how often do you discuss your disagreement in a calm way?” The scale ranges from 1 “never” to 5 “very frequently”. Only those respondents who did report at least one conflict for a particular conflict issue were asked about their conflict behaviour. Thus the proportion of missing data is about 15%. This has consequences for our subsequent analyses: If we had applied a list-wise deletion strategy our sample would lack persons who did not have any conflict within the last 12 months. We decided to impute missing data using a multiple imputation approach (see section 3.4). This approach implies a conceptual redefinition of the above-mentioned conflict behaviour item, which therefore is no longer related to conflicts within the last 12 months. The average positive conflict behaviour is 3.68, which means that most of the respondents tend to discuss in a calm way in case of a conflict.

Partner’s non-employment: Respondents were asked about their partner’s present work and daily activities. Partners are considered to be employed if they are “employed or self-employed” or “helping family member in a family business or a farm”. The respondent’s partner’s non-employment rate is about 5%. Unfortunately the proportion of missing data for partner’s employment status is rather high (19%). We will apply multiple imputation procedures to deal with this problem (see section 3.4).

Educational attainment: Following the International Standard Classification of Education (ISCED) we differentiate between a high level of educational attainment (tertiary education, coded “1”) and medium or lower education (coded “0”). For substantive and technical reasons it is easier to model an interaction effect if at least one of the variables is dichotomous. About 30% of all respondents have a higher education.

Respondent’s age is used as a control variable since it is highly correlated with the intention to have a child as well as with income. The same is true for cohabitation, i.e. both partners living together (yes = 1; no = 0).



### 3.4 Strategies to deal with missing data

The GGS suffers from missing data. In particular the proportion of missing data for income, positive conflict behaviour, and partner's employment status is considerably high (20%, 15% and 19%, respectively). There are several methods to deal with missing data (Allison 2002; Graham 2009). Graham, Cumsille and Elek-Fisk (2003: 91ff) strongly recommend procedures based on maximum-likelihood imputation via an expectation-maximization (EM) algorithm or multiple imputation (MI). Allison (2002: 85) states that multiple imputation procedures (MI) are preferable for estimating all kinds of nonlinear models. Since our path models are partially nonlinear (probit and ordered probit models) we apply multiple imputation procedures to deal with missing data. Furthermore MI has the advantage of accounting for the uncertainty of the parameter estimates (Allison 2002: 31). An explanation of the underlying idea of multiple imputation can be found in Sterne et al. (2009: 158). In the first step the missing values are replaced by  $m$  imputed values resulting in  $m$  complete datasets. Since these values are sampled from their predictive distribution based on the observed data, statistical uncertainty is introduced which reflects the fact that we can never know the true values of the missing data. The second step consists of applying standard statistical methods (here: path and ordered probit models) to fit the model of interest to each of the imputed datasets. The  $m$  results are then pooled following Rubin's (1987) rules and are considered to reflect the uncertainty associated with the missing values, i.e., larger standard errors. As a consequence of the multiple imputation procedure, the statistical models will be based on the whole dataset ( $N = 641$ ).<sup>8</sup>

As already mentioned the path models are estimated with Mplus. Mplus is capable of dealing with multiple imputed data sets and automatically reports averaged (path) coefficients and corrected standard errors (Muthén 1998-2004: 25, appendix 6).

A final note on the consequences of using multiply imputed data: the primary reason to apply multiple imputation procedures is to deal with missing values for income and positive conflict behaviour. Tabulating the non-imputed and the multiply

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<sup>8</sup> We used the Stata program *ice* (version 1.6.7 with Stata 11.1) to create 30 imputed data sets. *ice* is an abbreviation for "imputation by chained equations" and was written by Royston (2004). There is no definite answer to the question of how many imputed data sets are needed. For instance, Schafer and Olsen (1998: 548) write that in most applications 3-5 imputations are sufficient. However, with respect to Schafer and Olson's recommendations Graham, Olchowski, and Gilreath (2007: 212) state that "that researchers using multiple imputation should use many more imputations than has previously been recommended." The imputation model takes the following variables into account: income (ordinal), positive conflict behaviour (ordinal), gender (0/1), satisfaction with job security (metric), respondent's partner's employment status (0/1), relationship satisfaction (metric), educational attainment (0/1), intention to have a first child (0/1), frequency of conflicts (metric), part-time work (0/1), respondent's age (metric), cohabitation (0/1), married (0/1) as well as the interaction term educational attainment x satisfaction with job security.

imputed variables shows that the differences between imputed and non-imputed data never exceed 2 percentage points.

#### **4. Empirical analyses**

We have estimated four path models which differ with regard to the employment situation (income and job security satisfaction) and gender (women and men). These models can be found in detail in the appendix (Table 3). Metric variables were centred in order to reduce multicollinearity (Frazier, Tix, and Barron 2004: 120). The description of our empirical findings mainly refers to Figure 3 and Figure 4.

The most obvious findings are related to the relationships between positive conflict behaviour, frequency of conflicts, and relationship quality (H3c, H3d, and H3e). In all path models strong and statistically significant path coefficients can be observed. We always find a negative association between positive conflict behaviour and frequency of conflicts, as well as between frequency of conflicts and relationship quality. Furthermore the links between positive conflict behaviour and partnership quality are always positive. For men, partnership quality<sup>9</sup> and the intention to have a child are also positively associated. For women the relationship is slightly significant<sup>10</sup> and becomes insignificant when only considering full-time employed women. Since in that model the coefficients decrease and the standard errors remain almost stable, the change of the significant level cannot be attributed to the smaller sample size. That is, for full-time employed women, partnership quality appears to be less relevant for their intention to have a first child.

Another result is the strong and consistent negative direct effect of the respondent's age on the intention to have a first child.<sup>11</sup> As expected, for women the effect is stronger than for men (Figure 3 and Figure 4).

We are primarily interested in the links between the employment situation (income, job security satisfaction) and the intention to have a child. For women we have no statistical evidence that income has an effect on the intention to have children. For men higher incomes are positively related to the intention to have a first child. Satisfaction with job security has no statistically significant direct effect on the

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<sup>9</sup> We also ran a model which includes respondent's partnership quality squared to test for a non-linear relationship. However, our analyses show that both coefficients (partnership quality and partnership quality squared) have a statistically significant positive effect on the intention to have a first child (see section 3.4).

<sup>10</sup> If we use the dichotomous version of intention to have a first child, the effect becomes stronger and is statistically significant.

<sup>11</sup> We also tested for a non-linear relationship between age and intention to have a child but to no avail.

intention to have first child, neither for men nor for women (H2a, H2b and H2c). That is, there is also no difference between well and less educated women in the effect of job security satisfaction on the intention to have a first child. For men we find a statistically significant main effect of educational attainment. That is, men with a high level of educational attainment who report average job security satisfaction also have a higher intention to have a first child.

Besides our proposed direct effect of employment situation on intention to have a child, we also assumed an indirect relationship between these two variables via partners' interactional behaviour and partnership quality. For women the income category €1,500-1,999 is positively related to conflict behaviour (unstand. path coefficient: 0.41). This effect becomes stronger when considering only full-time employed women (unstand. path coefficient: 0.59). For men income appears to be not relevant to their frequency of conflicts or their conflict behaviour. The next step would be to estimate the resulting indirect effect and its standard error. Unfortunately Mplus suffers from a bug<sup>12</sup> that prevents us from estimating the indirect effect. As a workaround we used the non-multiply imputed dataset to determine the path coefficient and its standard error.<sup>13</sup> However the indirect effects of income on the intention to have a child are not significant.<sup>14</sup>

With respect to the indirect effect of job security satisfaction on the intention to have a child, the empirical results are more in line with our theoretical assumptions. We found a weak significant positive effect of job security satisfaction on constructive conflict behaviour (women: 0.05; men: 0.05). However this effect becomes insignificant when only considering full-time employed women. For men there is also a weak significant negative effect of job security satisfaction on the frequencies of conflict. For men the total indirect effect is 0.008 (SE = 0.004;  $p = 0.040$ ;  $N = 287$ ), and for women the coefficient is 0.006 (SE = 0.005;  $p = 0.09$ ;  $N = 230$ ) and although smaller than the one for men is still slightly statistically significant.

The employment situation of the partner shows remarkable effects. A non-employed partner is positively associated with men's intention to have a first child, and

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<sup>12</sup> This software bug only happens when using multiply imputed datasets.

<sup>13</sup> For these analyses we use the Full Information Maximum Likelihood approach to handle missing data. Furthermore we follow Preacher and Hayes (2008) who propose bootstrapping to estimate the standard error of the indirect effect. Here we run 10,000 iterations.

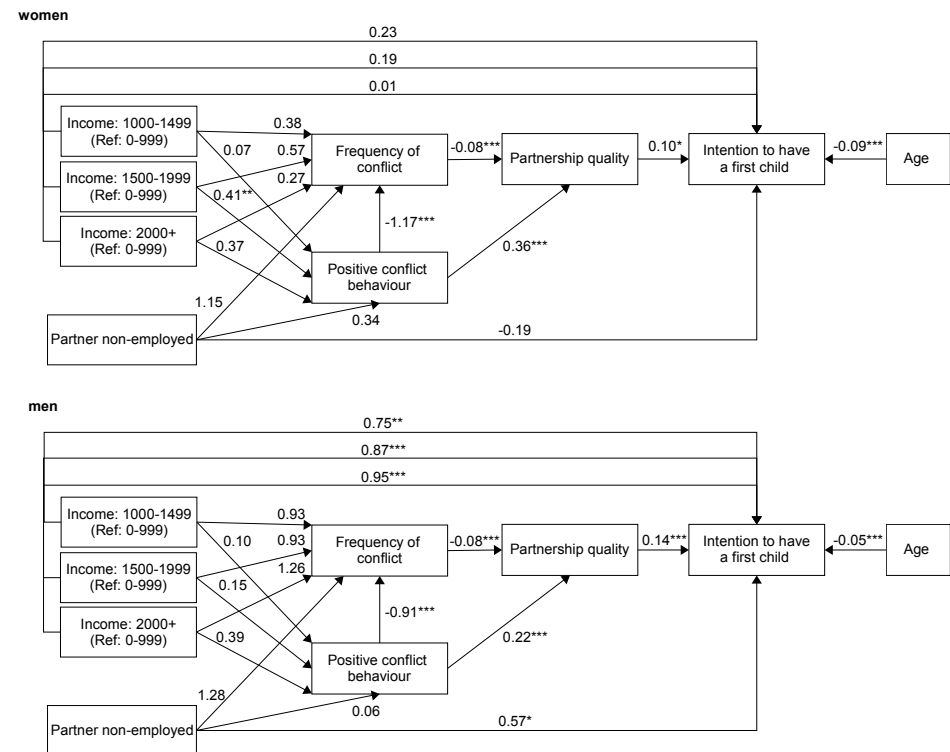
<sup>14</sup> For men the (unstandardised) total indirect effect of the respective income category on the intention to have a first child are as follows (p-values are one-sided): €1,000-1,499 (Ref. 0-999): -0.029 (SE = 0.055,  $p = 0.325$ ); €1,500-1,999 (Ref. 0-999): -0.031 (SE = 0.056,  $p = 0.293$ ); €2,000+ (Ref. 0-999): 0.006 (SE = 0.058,  $p = 0.456$ ). For women the indirect effects on the intention to have a first child are: €1,000-1,499 (Ref. 0-999): 0.010 (SE = 0.014,  $p = 0.248$ ); €1,500-1,999 (Ref. 0-999): 0.036 (SE = 0.029,  $p = 0.110$ ); €2,000+ (Ref. 0-999): 0.027 (SE = 0.028,  $p = 0.169$ ).

for full-time employed women a non-employed partner increases the frequency of conflict. This effect is insignificant in the models considering full-time and part-time employed women.

Our empirical findings can be summarised as follows: there is a direct effect of income on the intention to have a child, but only for men. For women a weak positive association between one income group (€1,500-1,999) and positive conflict behaviour was observed. However the resulting indirect effects are too small and statistically insignificant.

For men as well as for women job security satisfaction affects the intention to have a child. For women, however, the effect is only statistically significant at the 10% level.

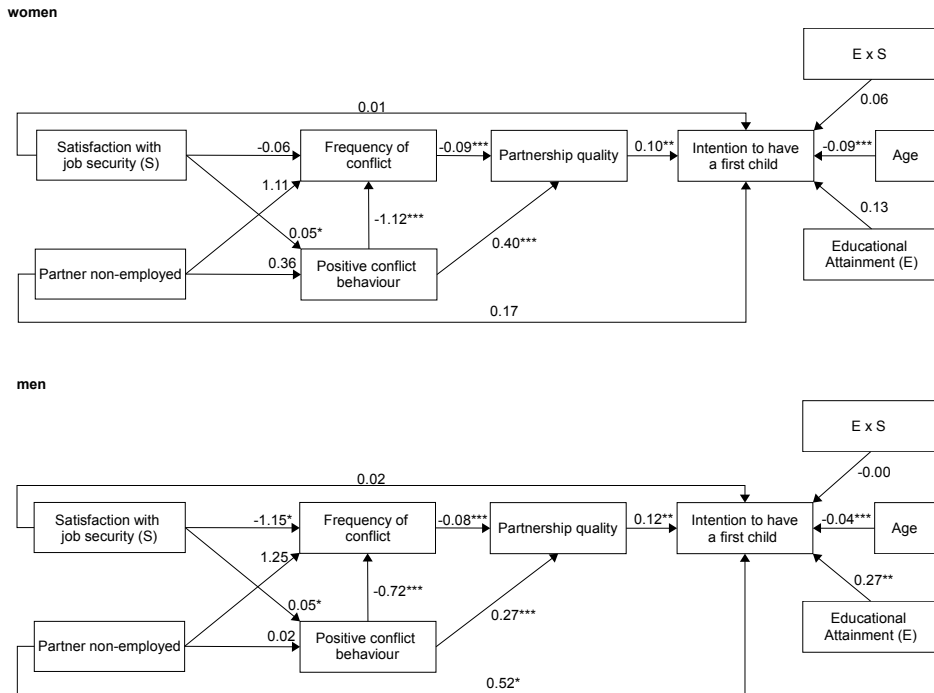
**Figure 3: Path models of income on the intention to have a first child**



Notes: \*\*\*:  $p \leq 0.01$ ;  
 \*\*:  $p \leq 0.05$ ;  
 \*:  $p \leq 0.10$  (one-tailed)

Source: Table 3; multiple imputed dataset.

**Figure 4: Path models of satisfaction with job security on the intention to have a first child**



Notes: \*\*\*:  $p \leq 0.01$ ; \*\* :  $p \leq 0.05$ ; \* :  $p \leq 0.10$  (one-tailed)  
 E x S: Interaction term of the variables "Educational attainment" and "Satisfaction with job security".  
 Source: Table 3; multiple imputed dataset.

## 5. Discussion

The objective of this article was to examine the effects of income and job security satisfaction on the intention to have a first child. We considered a direct as well as an indirect effect, assuming that the employment situation affects the conflicts and the conflict behaviour in a partnership, which in turn influence partnership quality and furthermore the intention to have a first child. A direct effect can be deduced from the

microeconomic theory, whereas the indirect effect infers from microsociological theories.

A direct effect of employment situation in terms of income and job security satisfaction on the intention to have a first child is only found for men's income. That is, the higher the man's income, the more likely his intention to have a first child. This result is in line with economic theory. Moreover there is a significant indirect effect of men's job security satisfaction on the intention to have a first child. Men who are more satisfied with job security show more constructive conflict behaviour and report less conflicts in their partnership. This in turn leads - via the satisfaction within a partnership - to a higher intention to have a first child. Women's employment situation appears to be almost irrelevant for their childbearing intentions, as we found neither direct nor strongly significant indirect effects. However for men's intention to have a first child a non-employed partner shows a positive effect.

Due to the use of cross-sectional data we cannot clear up the actual effect of income on women's fertility intentions. It is possible that women decide to concentrate on their careers and earnings because they do not want to have children. Further research on this association is needed, considering additionally the role of preferences for a more work-centred or more home-centred life-style as a possibly underlying variable (see section 2.1). Moreover some women might have already withdrawn from the labour market in anticipation of having children and are consequently not in the subgroup of the analyses. This reasoning fits to the finding that a non-employed partner has a positive effect on men's childbearing intentions. Previous research found that well educated women in an uncertain employment situation postpone their first childbirths (see section 2.1). However we observed no significant interaction effect of women's education and their job security satisfaction on the intention to have a first child. The discrepancy between the findings might be explainable by the difference between the intention to have a first child and actually becoming a mother. Despite the fact that the question "Do you yourself want to have a/another baby now?" implies a certainty about the time and the wish itself, it is of course not certain if each respondent in fact has a child immediately or later.

A very interesting finding is that for full-time employed women, partnership quality appears to be less relevant to their intention to have a first child than for part-time employed women. Maybe full-time employed women feel, at least economically, more independent from their partners.

Nevertheless a reason for the fact that the employment situation is mainly relevant to men's fertility intentions might be that in West Germany men are the main providers of family income. Hence men's job security and their income are more important to the family than women's. Women's non-employment is even positively related to men's intention to have a first child. This confirms the tendency to a gendered division of

labour in West Germany. The finding that job security has only an indirect impact on childbearing intentions shows that it is not only children's cost that is taken into account in fertility decisions, as the microeconomic theory suggested. Hence it was worth broadening the theoretical and empirical focus by considering a more sociological perspective, such as the interaction in a partnership.

A shortcoming of our contribution is that due to data restrictions we could not include information about the partner's income and his or her job security satisfaction in our analyses. How much the partner can contribute to the household earnings could be particularly relevant to a deeper interpretation of the respondent's income effect. Economic pressure, and consequently stress and conflicts in a partnership, might increase considerably if not only one but both partners have a low income. The same might occur if both and not only one partner is concerned about his or her job security. As stated above, we tried to account for the partner's employment situation considering if he or she is currently employed.

As already mentioned, the implication of our study for predicting fertility behaviour is not straightforward. On the one hand fertility intention is a strong predictor of childbearing and responses to questions about preferences for (additional) children are considered to be relatively unbiased (see footnote 5). On the other hand births also occur when unintended or cannot be realised when desired.

Despite these shortcomings the analyses show that it makes sense to use a subjective variable for the perception of employment security, at least for men, instead of an objective one as in previous research. Additionally our analyses give insight into how the effect is mediated via interactions within a partnership. Further research could broaden the focus on the mediator effects of the employment situation on fertility intentions. For instance, the implementation of single conflict issues could contribute to our understanding of why and how the employment situation is linked to partnership quality.

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## Appendix

**Table 1: Intention to have a first child (Multiple imputed data, m = 30)**

	Women		Men	
	Unstand.	SE	Unstand.	SE
1000-1499 € (Ref: 0-999 €)	0.29*	0.22	0.93**	0.48
1500-1999 € (Ref: 0-999 €)	0.10	0.29	1.05**	0.49
2000+ € (Ref: 0-999 €)	-0.12	0.38	1.06**	0.50
Satisfaction with job security (m) <sup>a</sup>	-0.00	0.03	-0.01	0.03
Frequency of conflicts (m) <sup>a</sup>	-0.00	0.02	-0.01	0.02
Positive conflict behaviour (m) <sup>a</sup>	0.24***	0.10	0.16**	0.09
Partnership quality (m) <sup>a</sup>	-0.01	0.07	0.09	0.07
Age (m) <sup>a</sup>	-0.10***	0.01	-0.05***	0.01
Partner non-employed (0/1)	-0.33	0.43	0.60**	0.36
Educational attainment (0/1)	0.31*	0.23	0.15	0.18
Cohabitation (0/1)	0.45**	0.22	-0.12	0.17
Threshold 1	0.84***	0.30	1.15***	0.48
Threshold 2	1.01**	0.22	1.43***	0.48
N	265		363	

Note: \*\*\*:  $p \leq 0.01$ ; \*\*:  $p \leq 0.05$ ; \*:  $p \leq 0.10$  (one-tailed); <sup>a</sup>: centered

Source: Generations and Gender Survey (own calculations; data weighted by ppgew)

**Table 2: Descriptive statistics**

	Mean	SD	Min	Max	Skewness	Missing values		
						N	N	%
Intention to have a child (0-2)	0.79	0.94	0.00	2.00	0.43	636	5	0.78
Income (Euro)	1526.90	724.77	250.00	5500.00	1.32	514	127	19.81
Satisfaction with job sec. (0-10)	6.96	2.66	0.00	10.00	-0.88	633	8	1.25
Partnership quality (0-10)	8.91	1.31	2.00	10.00	-1.38	636	5	0.78
Frequency of conflicts (8-40)	12.82	4.28	8.00	33.00	1.03	594	47	7.33
Positive conflict behaviour (1-5)	3.68	0.98	1.00	5.00	-0.52	542	99	15.44
Partner non-employed (0/1)	0.05	0.22	0.00	1.00	4.08	521	120	18.72
Educational attainment (0/1)	0.30	0.46	0.00	1.00	0.88	641	0	0.00
Age (years)	33.65	8.32	18.08	62.25	0.47	641	0	0.00
Cohabitation (0/1)	0.67	0.47	0.00	1.00	-0.71	641	0	0.00
Women (0/1)	0.40	0.49	0.00	1.00	0.42	641	0	0.00

Source: Generations and Gender Survey (own calculations; data weighted by ppgew)



**Table 3: Path model on intention to have a first child (Multiple imputed data, m = 30)**

Dependent variable	← Independent variable	Income					
		Women			Men		
		Unstand.	SE	Standard.	Unstand.	SE	Standard.
Frequency of conflicts (Foc) <sup>a</sup>	← 1000-1499 € (Ref: 0-999 €)	0.377	0.705	0.043	0.931	1.003	0.102
	← 1500-1999 € (Ref: 0-999 €)	0.567	0.950	0.049	0.930	1.040	0.101
	← 2000+ € (Ref: 0-999 €)	0.273	1.075	0.018	1.256	1.073	0.135
	← Partner non-employed	1.150	1.142	0.065	1.283	1.148	0.072
	← Satisfaction with job sec. <sup>a</sup>						
Positive confl. behaviour (Cb)	← Cb	-1.166***	0.312	-0.275	-0.916***	0.258	-0.217
	← 1000-1499 € (Ref: 0-999 €)	0.067	0.172	0.032	0.104	0.382	0.048
	← 1500-1999 € (Ref: 0-999 €)	0.409**	0.237	0.151	0.148	0.390	0.068
	← 2000+ € (Ref: 0-999 €)	0.370	0.324	0.100	0.385	0.390	0.174
	← Partner non-employed	0.341	0.375	0.081	0.058	0.330	0.014
Partnership quality (Pq) <sup>a</sup>	← Satisfaction with job sec. <sup>a</sup>						
	← Foc <sup>a</sup>	-0.077***	0.018	-0.230	-0.076***	0.014	-0.271
	← Cb	0.358***	0.103	0.254	0.223***	0.070	0.188
	← Pq <sup>a</sup>	0.103*	0.064	0.124	0.139***	0.059	0.150
	← 1000-1499 € (Ref: 0-999 €)	0.223	0.213	0.093	0.746**	0.371	0.316
Intention to have a child (Ic)	← 1500-1999 € (Ref: 0-999 €)	0.189	0.297	0.060	0.873***	0.375	0.363
	← 2000+ € (Ref: 0-999 €)	0.008	0.362	0.002	0.954***	0.363	0.393
	← Partner non-employed	-0.188	0.495	-0.037	0.572*	0.365	0.125
	← Satisfaction with job sec. (S) <sup>a</sup>						
	← Educational attainment (E)						
	← E x S <sup>a</sup>						
	← Age <sup>a</sup>	-0.086***	0.016	-0.514	-0.048***	0.010	-0.372
	(Pseudo) R <sup>2</sup> (Ic/Pq/Foc/Cb)			0.29 / 0.15 / 0.08 / 0.03			0.19 / 0.13 / 0.06 / 0.02
CFI / TLI / RMSEA <sup>b</sup>			0.98 / 0.96 / 0.02			0.94 / 0.88 / 0.04	
N			272			369	

Notes: \*\*\*:  $p \leq 0.01$ ;

\*\* :  $p \leq 0.05$ ;

\* :  $p \leq 0.10$  (one-tailed);

<sup>a</sup> Variable has been centered;

<sup>b</sup> CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RSMEA: Root Mean Square Error of Approximation

Source: Generations and Gender Survey (own calculations; data weighted by ppgew)

**Table 3: (Continued)**

Dependent variable	← Independent variable	Satisfaction with job security					
		Women			Men		
		Unstand.	SE	Standard.	Unstand.	SE	Standard.
Frequency of conflicts (Foc) <sup>a</sup>	← 1000-1499 € (Ref: 0-999 €)						
	← 1500-1999 € (Ref: 0-999 €)						
	← 2000+ € (Ref: 0-999 €)						
	← Partner non-employed	1.106	1.008	0.063	1.251	1.138	0.070
Positive confl. behaviour (Cb)	← Satisfaction with job sec. <sup>a</sup>	-0.055	0.132	-0.034	-0.145*	0.113	-0.086
	← Cb	-1.118***	0.314	-0.256	-0.719***	0.256	-0.086
	← 1000-1499 € (Ref: 0-999 €)						
	← 1500-1999 € (Ref: 0-999 €)						
Partnership quality (Pq) <sup>a</sup>	← 2000+ € (Ref: 0-999 €)						
	← Partner non-employed	0.359	0.032	0.088	0.015	0.319	0.003
	← Satisfaction with job sec. <sup>a</sup>	0.045*	0.032	0.121	0.050*	0.032	0.127
	← Foc <sup>a</sup>	-0.091***	0.019	-0.272	-0.076***	0.014	-0.259
Intention to have a child (Ic)	← Cb	0.399***	0.097	0.274	0.267***	0.068	0.215
	← Pq <sup>a</sup>	0.101**	0.064	0.123	0.121**	0.053	0.140
	← 1000-1499 € (Ref: 0-999 €)						
	← 1500-1999 € (Ref: 0-999 €)						
	← 2000+ € (Ref: 0-999 €)						
	← Partner non-employed	0.169	0.424	-0.034	0.524*	0.337	0.117
	← Satisfaction with job sec. (S) <sup>a</sup>	0.009	0.037	0.019	0.017	0.033	0.039
	← Educational attainment (E)	0.134	0.193	0.049	0.265**	0.146	0.116
	← E x S <sup>a</sup>	0.059	0.069	0.070	-0.002	0.053	-0.002
	← Age <sup>a</sup>	-0.091***	0.014	-0.551	-0.040***	0.008	-0.339
(Pseudo) R <sup>2</sup> (Ic/Pq/Foc/Cb)		0.32 / 0.19 / 0.07 / 0.02			0.15 / 0.13 / 0.05 / 0.02		
CFI / TLI / RMSEA <sup>b</sup>		0.94 / 0.90 / 0.04			0.97 / 0.96 / 0.02		
N		272			369		

Notes: \*\*\*:  $p \leq 0.01$ ;

\*\* :  $p \leq 0.05$ ;

\* :  $p \leq 0.10$  (one-tailed);

<sup>a</sup> Variable has been centered;

<sup>b</sup> CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RSMEA: Root Mean Square Error of Approximation

Source: Generations and Gender Survey (own calculations; data weighted by ppgew)