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Predictors of Fathers' Use of Parental Leave in Germany

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Abstract

The aim of this study is the identification of socio-economic and workplace-related predictors of the fathers' use of parental leave after the introduction of the Parental Allowance and Parental Leave Act in Germany in 2007. This reform implied a paradigm shift in German family policy and led to a sharp increase in the share of leave taken by fathers. Using the 2008 German Microcensus database, three logistic models are developed, including all fathers, working fathers, and fathers in dual-earner couples, respectively. The dependent variable distinguishes between fathers who were on parental leave at the time of the interview and those who were not. Many of each father's personal characteristics and workplace-related variables as well as some of his partner's attributes increase the odds of using parental leave significantly. Especially the female partner's full-time employment and income have a strong positive impact. Overall, the findings are in part consistent with existing empirical studies from Scandinavian countries and Germany under the former legislation.

JEL Classification: D13, J13, J18, J22

Keywords

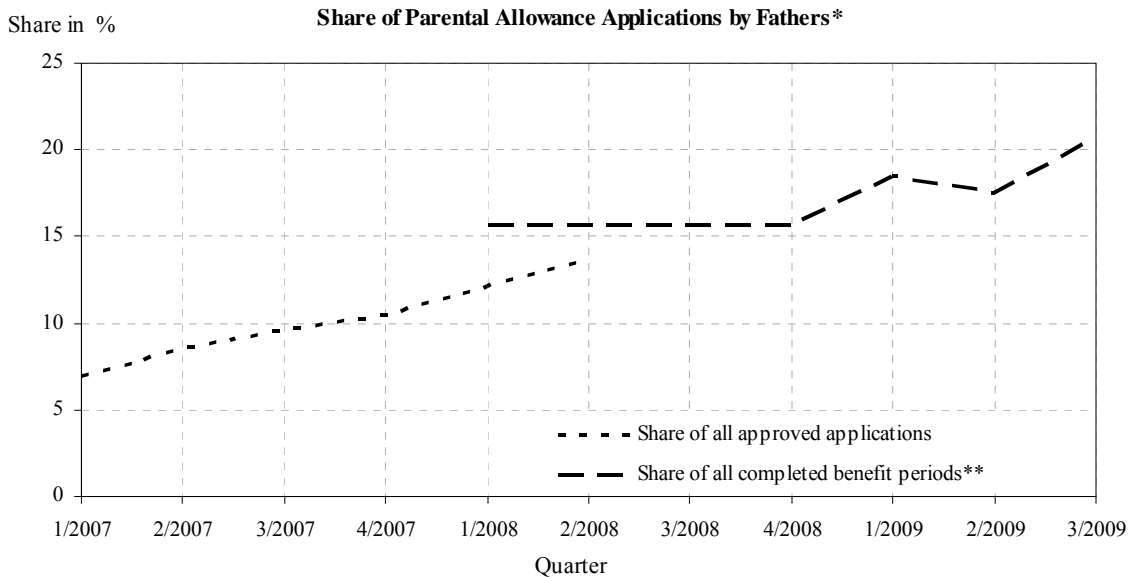
Childcare, fatherhood, family policy, gender, parental leave, time allocation

1. Introduction

Since the 1980s, many European countries have given fathers the possibility to take leave after the birth of their child. Some of them have even reserved some part of parental leave for fathers exclusively. In Germany, from 1996 to 2006, the Federal Child-Raising Allowance Act (*Bundeserziehungsgeldgesetz, BErzGG*) was in place. According to this law, parents could share child-raising leave for up to three years after the birth of a child while receiving a means-tested benefit if the income was below a certain threshold. Although the BErzGG implied that fathers could stay home to take care of their newborn child for the first time, the rates at which they did so stagnated between 2.1% and 3.3% (Federal Statistical Office 2009a). Regarding the impact on the labour market participation of mothers, statistical analyses show that the actual number of working hours among employed mothers decreased, due to several extensions of the possible leave duration (Merz 2004). Meanwhile, the total fertility rate remained between 1.33 and 1.37 in the past decade, and therefore substantially below the replacement level of 2.1 children per woman on average (Eurostat 2009).

The replacement of the BErzGG by the Parental Allowance and Parental Leave Act (*Bundeselternzeitgesetz, BEEG*) in 2007 implied a paradigm shift with regard to German family policy. The BErzGG promoted the male-breadwinner family model. On the contrary, the aim of the BEEG is that no parent should be dependent on their spouse or governmental support in the long run. According to this law, which is inspired by the Swedish family policy model, parents can take 14 months of parental leave.¹ The parental leave benefit equals 67% of monthly net income, but at least 300 Euro and at most 1,800 Euro per month. Parents can share their months of parental leave amongst each other, however, following the “use-it-or-lose-it” system, two months are reserved for the other parent (usually the father). One result which is already visible is the sharp increase in participation rates among fathers to over 20% in 2009 (see Figure 1).

Figure 1:



* Change in the official statistical records 2008/09: Approved parental allowance applications in the application month are no longer recorded, but completed benefit periods in the month of the end of the benefit period instead.

** Average for the year 2008.

Sources: Federal Statistical Office (2008a; 2009b); own illustration.

¹ In order to distinguish between the leave under the Federal Child-Raising Allowance Act and under the Parental Allowance and Parental Leave Act, ‘child-raising leave’ is used for leave under the first, ‘parental leave’ for leave under the latter legislation.

In 2007 and 2008, which are explored in this study, more than 178,000 fathers took parental leave with benefits (Federal Statistical Office 2008a, 2009b). In other words, about 8.8% of children born in 2007 and over 17% of those born in 2008 had fathers that took parental leave (Federal Statistical Office 2010).

If parents share the parental leave months and take them successively, the mother can be absent from work for a shorter period. An analysis on the labour market participation of mothers who had given birth to a child after the introduction of the BEEG shows that mothers whose partner has taken parental leave have a 20 percentage point higher employment rate during the observed time span between six months and three and a half years after the child's birth (Kluge and Tamm 2009). This entails interesting effects both on the micro and the macro level. On the micro level, a reduction of the leave period reduces a mother's loss of human capital and income induced by the birth of a child.² This can possibly promote equal opportunities for mothers with regard to job applications and wages and that can in turn reduce the poverty risk of mothers and their families.³ In this context, it is noteworthy that the fathers' involvement in childcare is associated with higher marital satisfaction and stability (Greenstein 1995; McHale and Crouter 1992; Oláh 2001; Sanchez and Gager 2000; Wengler et al. 2008). Furthermore, analyses from several European countries show that it can raise a couple's actual or desired number of children (Buber 2002; Cooke 2003; Duvander and Andersson 2006; Lappegård 2008a; Oláh 2003). On the macro level, Germany would especially profit from the mothers' stronger attachment to the labour market and higher fertility rates. They could diminish the lack of qualified workers both at present (the mothers) and in the future (the children), given that the labour supply matches the demanded job specifications.

The aim of this study is the identification of the predictors of fathers' use of parental leave in Germany after the introduction of the BEEG. Knowledge about these factors and the comparison to findings in other European countries can be applied to the formulation of policy recommendations that further promote fathers' taking parental leave. In the first step of this study, economic theories and international literature referring to the predictors of the fathers' use of parental leave are evaluated. After the description of the data and methodology employed in this study, descriptive results and the results of three binary response models using data from the 2008 German Microcensus are presented. The dependent variable distinguishes between fathers that were on parental leave at the time of the interview and fathers who were not availing themselves of this opportunity at that point in time. The first model includes all fathers, regardless of their own and their partner's work status, in order to capture an overall picture of parental leave predictors for fathers, including the differences between the partners' work statuses. The second model focuses only on working fathers. It therefore allows an analysis of work-related predictors. The third model is restricted to fathers in dual-earner relationships, so that the influence of differences between the spouses with regard to workplace-related features can be assessed. In addition, the third model allows for a comparison of results to the empirical literature focussing on working parents. At the end, the results are summarised and discussed.

2. Fathers' use of parental leave: theoretical and empirical background

2.1 Theoretical background

In current microeconomic theory, two strands of literature about intra-family time allocation are generally accepted: time-allocation models of New Home Economics and game-theoretic bargaining models.

In models of the allocation of time, a household forms one consumption and production unit (Becker 1965, 1981). In other words, both spouses maximise a joint utility function. One important constraint for this joint utility function is the assumption that the main breadwinner is altruistic. This spouse is made better off by actions that raise both spouses' utility. Utility can be derived from 'commodities', which are

² Boll (2009) finds that in western Germany, a woman who takes three years of leave plus three years of part-time work at the age of 28 loses between 29 and 36% of the maximum wage (depending on the education level) until the age of 45. If she only takes one year of parental leave and two years of part-time employment, the income loss is halved.

³ In Germany, the poverty risk of families in which both parents work full-time is substantially lower than in families in which one or both parents work less than full-time or are not employed at all. Across European countries, there is a negative descriptive correlation between the employment of mothers and the poverty risk of children (BMFSFJ 2010).

produced and consumed by the household. These commodities include children. Commodities which are produced using time and goods as inputs do not have market prices. Instead, they have shadow prices that are equal to the cost of production. The demand for commodities depends on their shadow prices, which are in turn based on direct and time costs. The total available time equals the sum of working and consumption time, which includes parental leave. An individual's division of time depends on the opportunity costs of the different options. The opportunity costs consist of foregone earnings and human capital depreciation. The higher the opportunity costs of consumption time, the lower the amount of time spent on consumption. A higher income implies higher opportunity costs and thus a higher relative price of consumption time. Consequently, as the income rises, a rational individual increases the time spent on work and reduces the time for consumption. Becker (1981:21) claims that due to the "biological commitment" of women for child "production" and care, they are more productive in the household, even if both spouses are endowed with the same human capital. In addition, early specialisation of women into household tasks as well as limited career advancements and lower wages further contribute to the gender-specific distribution of market work and non-market work. In the end, the maximisation of the joint utility function entails the wife's specialisation in home production and the husband's specialisation in full-time market work.

Becker's model has been criticised for several reasons, above all for his assumptions about the altruistic spouse. Firstly, he assumes that the breadwinner behaves altruistically, in spite of his greater power due to his higher market income. Secondly, he uses the masculine pronoun for the altruist and the feminine pronoun for the beneficiary (Becker 1981:278). In traditional families, the male partner is indeed the breadwinner. But assuming that he is the altruist is not in line with empirical evidence that reveal a stronger tendency of women to care for family members than of men (Blossfeld and Drobnič 2001; England and Farkas 1986). Moreover, in the incidence of marital dissolution or the breadwinner's death, the implicit economic dependency of one partner on the other in Becker's approach implies an asymmetric risk to the partner who has specialised in household production and childcare (Blossfeld and Drobnič 2001). Therefore, contrary to Becker's conception, household bargaining models assume the maximisation of an individual utility function to each spouse (e.g. Ott 1992), in which neither spouse agrees to do so. Both are eager to spend some time in paid work. But each partner's allocation of time as well as the division of goods within the household are the result of bargaining and depend on their individual bargaining position. This, in turn, is positively related to individual income and human capital resources. As a lower level of human capital in the future will result in a worse bargaining position (in the future), the eagerness to work in the labour market holds even in relationships that are assumed to be stable. However, from the start, the spouse with the relatively higher work-related resources concentrates on market work and does less housework and childcare, while the other one does less paid work but the lion's share of household and childcare tasks. To sum up, the outcome of this model is not as 'radical' as in Becker's approach, even though both microeconomic models' results depend strongly on the economic power of each spouse.

However, empirical findings suggest that there are more factors that influence the allocation of time between spouses. Several studies argue that even if the female partner exhibits a higher human capital endowment and income, or works as many hours as her partner, she is still responsible for most of the housework and childcare (Beblo 1999; Lauk and Meyer 2005; Strancanelli 2003; Yamada et al. 1999). At the same time, it is widely observed that there is hardly any difference in time for household chores of 'traditional' and 'modern' men, especially when a couple has children, despite very different views in regard to the gendered division of labour (Schulz and Blossfeld 2006; Wengler et al. 2008; Zerle and Krok 2008).

For this reason, sociologists claim that not only rational considerations but also cultural factors, especially gender role expectations, are important factors that determine intra-family time allocation. England and Kilbourne (1990) argue that culture imposes an altruist value system on women and a rather self-interested one on men. In unions formed between partners, the gendered value system implies that the man negotiates harder, so that the outcome of bargaining exceeds what it would be in an arrangement

based solely on a husband's and wife's respective income and human capital resources.⁴ According to the 'doing gender' approach, also referred to as the 'gender display' approach, cultural norms hamper the role reversal of men and women, so that women have to display that they are women and men that they are men (West and Zimmermann 1987; Brines 1994). If traditional views are prevalent in a society, this theory implies that when a woman's earnings capacity exceeds that of her husband, both spouses are eager to retain traditional behaviour in terms of housework and childcare in order to show that they are 'proper' wives and husbands. Similar results are assumed in the identity-formation model (Bielby and Bielby 1989) and in the gendered moral rationalities approach (Duncan and Edwards 1997). Akerlof and Kranton (2000) utilised the suggestion that female labour market participation threatens the identity of husband and wife and therefore enhanced the bargaining model through the variable 'identity'. As a result, a woman's paid work implies a loss of utility. This, in turn, is compensated for by a female partner through stereotypical behaviour concerning household tasks, which probably results in stereotypical behaviour on the male partner's side.

In this context, Blossfeld and Drobnič (2001) point out that collective beliefs about the correct division of labour within a couple do not only vary between societies, but also between social classes, as the motivation for mothers' labour market participation differs between them. However, from this point of view, predictions of the gendered division of childcare are not straightforward. On the one hand, men's participation in childcare is likely to increase with his level of education and, hence, his income. On the other hand, the higher his income, the lower the incentives for his wife to work in the labour market, so that she possibly spends more time on childcare. As it will be presented in the next section, the majority of empirical analyses support the first mentioned alternative.

2.2 Empirical background

Most multivariate empirical studies on the fathers' use of parental leave have been conducted in Scandinavian countries, as they were the first to introduce 'daddy months' and parental leave for both parents in the second half of the twentieth century. There is only one major German study on the use of the child-raising leave of fathers between 1999 and 2005, i.e. before the parental leave reform (Geisler and Kreyenfeld 2009).

Looking at specific variables, most studies find that both the father's and his female partner's education and income level have positive effects on the father's taking parental leave.⁵ However, in Bygren's and Duvander's (2006) model, the mother's income has a negative effect and the father's education is not shown to have any significant effect. Furthermore, in Lappegård's (2008b) study, fathers are more likely to take leave if his partner's income is only slightly lower than his own, compared to a much lower income or a higher income of the mother than of the father. The result that fathers are less likely to take parental leave if his income is considerably higher hints that a couple's choices are subject to economic constraints. It is in line with the main conclusion of surveys investigating women's and men's attitudes towards taking child-raising leave in Germany. They show that the omnipresent fear of income losses deterred fathers from using this leave (Beckmann 2001; Institut für Demoskopie Allensbach 2005; Kassner and Rüling 2005; Rost 2002). Studies that took the nationality into account agree that the likelihood of a father's taking a leave is higher if he is home country national (Geisler and Kreyenfeld 2009; Hoem 1995) or, more generally, from a Western country (Naz 2007), respectively. In Germany, fathers living in the eastern part of the country had higher odds of taking child-raising leave under the old system in place before 2007 (Geisler and Kreyenfeld 2009).

However, the literature is divided on the impact of marriage and the number of children. While married fathers seem to have higher odds of using parental leave than cohabiting men in Sweden (Sundström and

⁴ According to England and Kilbourne (1990:163), once the wife has taken the structural role of the homemaker, her bargaining position further declines not only because of human capital depreciation, but because of the cultural devaluation of traditional family work, the fact that the beneficiaries of much domestic work are children rather than men, some of the investments in domestic work are specific to a particular relationship, and the fact that even 'general' investments in domestic skills are only useful while being in a relationship.

⁵ Father's education: Sundström and Duvander 2002; Hoem 1995; Lappegård 2008b; Naz 2007. Father's income: Bygren and Duvander 2006; Sundström and Duvander 2002. Female partner's education: Bygren and Duvander 2006; Sundström and Duvander 2002; Geisler and Kreyenfeld 2009; Lappegård 2008b. Female partner's income: Sundström and Duvander 2002; Naz 2007.

Duvander 2002) and in Norway (Naz 2007), they had lower odds in Germany under the old legislation (Geisler and Kreyenfeld 2009). As to the number of children, Naz (2007) as well as Geisler and Kreyenfeld (2009) suggest that the father's use of parental leave is higher in families with more children. In contrast, Sundström and Duvander (2002) as well as Hoem (1995) find a positive effect if it is the firstborn child.

Regarding father's workplace characteristics, employment in the public sector, a permanent contract, a large company as well as the existence of a large share of women in a profession are all positively associated with a father's using parental leave.⁶ Lappegård (2008b), who compared characteristics of the father's workplace with those of his female partner, concludes that the father's use is highest if both partners work in the public sector, in a medium-sized company or in a male-dominated profession. In this context, Haas et al. (2002) point to the importance of the organisational culture of firms. They show that a company's commitment to caring values, the level of 'father friendliness', the support for women's equal employment opportunities, the fathers' perception of support from senior managers as well as a rewarding system that is geared to task performance instead of the number of attended hours are crucial factors for a father deciding whether to take parental leave. Similarly, German surveys identified career disadvantages as well as the fear of stigmatisation and job-loss as important reasons why fathers did not go on child-raising leave (Beckmann 2001; Institut für Demoskopie Allensbach 2005).

After the introduction of the new parental leave scheme in Germany in 2007, only one German study was conducted on the characteristics of the fathers who used parental leave. Pfahl and Reuyß (2009) conducted a descriptive and explorative analysis with a sample of 624 fathers that took part in a survey launched on the internet. This sample consisted of 0.7% of all fathers who used parental leave in 2008. The results show that the majority are comparatively old (mean age: 36.8 years)⁷, hold a university degree, live in large cities and have a partner who is working. About two thirds of fathers have more than one child. Almost two thirds work in the public sector or in other service branches. Three fourths are employed in companies with more than 100 employees. As a decisive factor for the decision to take parental leave, the fathers in the sample specify the amount of their income in comparison to their partner's as well as their workplace situation, including the flexibility of work schemes. However, because of the method of drawing the sample, this study is not representative, so that the results have to be treated with caution. Besides, the authors did not use multivariate statistical methods to test for significant effects under control of important covariates.

3. Data and methodology

In this study, a representative sample – the German Microcensus – is used to analyse the factors that influence a father's going on parental leave with multivariate regression models. The German Microcensus has been conducted annually in western Germany since 1957 and in eastern Germany since 1991 (Federal Statistical Office 2008b). This survey is a 1% representative sample of the German population and comprises about 370,000 households with about 820,000 individuals in each wave. The questionnaires reveal whether a father is taking parental leave and receiving leave benefit or not (Research Data Centres 2010). Besides its representativeness, further advantages of the Microcensus include the provision of data collected after the parental leave reform of 2007 and the inclusion of enough cases for multivariate analyses of fathers with young children due to the large sample size. In fact, these prerequisites – the presence of both data from 2007 or later and a sufficient number of fathers – make the German Microcensus the single database currently available that can be used to address the research question. Moreover, the German Microcensus contains few missing data, because the response to most questions is mandatory.

However, there are a few drawbacks. Firstly, the respondents are only asked whether they are currently – meaning in the survey week, which is always in April – on parental leave and receive parental leave

⁶ Public sector: Bygren and Duvander 2006; Hoem 1995. Permanent contract: Geisler and Kreyenfeld 2009. Large company: Bygren and Duvander 2006. Share of women in the profession: Bygren and Duvander 2006; Naz 2007.

⁷ In the study of Pfahl and Reuyß (2009), 36% of fathers using parental leave are younger than 35, and 29% are at least 40 years old. In contrast, in the official statistics, 47% are younger than 35, while only 21% are 40 or older (Pfahl and Reuyß 2009).

benefits. The questionnaire does not record whether they have already taken parental leave, or whether they intend to do so. Therefore, the group of fathers not currently on parental leave is biased by those that have completed their parental leave or have not started it yet. Thus, the fact that this database provides only information on a particular time (a snapshot) of the respondents' lives, implying that fathers *currently taking parental leave* are compared to fathers *currently not on this leave*, calls for caution with regard to the results and their interpretation. Throughout this study, fathers that were using parental leave in the survey week are defined as fathers 'taking parental leave', whereas fathers who were not using this leave in the survey week are defined as 'not taking parental leave', respectively. Likewise, the discussion of the results of the models refers to 'having higher odds of taking a leave' and 'having lower odds of taking a leave', without stating in every sentence that it applies to the time of the interview.

Secondly, married and cohabiting couples can be identified, but as biological kinship between family members is not accounted for, it is not clear whether a child is the biological offspring of both partners or of only one of them. Therefore, the sample includes married as well as cohabiting men with at least one child born in 2007 or 2008, although some of them may not be the biological or legal father of the child. This probability is higher among men who are currently not on parental leave, as only the biological or the legal father of a child is eligible for parental leave. The missing information on biological kinship also implies that the age group has to be limited to men and women that can possibly be the parents of the child in their family. In this study, couples with one partner under the age of 18 are excluded. The upper boundary for men is set at 53 years, as the number of men reporting to have a child below the age of two in the family markedly drops at this threshold. In particular, the restriction on men aged 18 to 53 years excludes less than 0.4% of men who reported having a child born in 2007 or 2008 in the family. Besides, couples in which the woman is older than 45 are excluded, as this marks the end of the childbearing age in Germany (Dorbritz 2008).

Summing up, this sample includes all men who live with a female spouse in the same household and report to have a child born in 2007 or 2008 in the family. It is further restricted to men between 18 and 53 years of age whose spouse is between 18 and 45 years old. Three logistic regression models are applied. The dichotomous dependent variable Y takes the value 1 if the father is on parental leave and 0 if not. The selection of the independent variables (X) is based on the empirical literature on the determinants of the fathers' use of parental leave, as summarised in section 2.2.⁸

There is one particularly noteworthy difference between the BEEG and parental leave systems in other countries, namely the fact that not only parents who had been working prior to the birth of their child, but in fact all parents are eligible for parental leave with parental benefit. Therefore, model I includes *all* men of the sample previously described: In particular, besides men who are classified as employed (among them men that reduce their work hours to zero while on parental leave), it includes unemployed men and those that are neither registered as employed nor unemployed, e.g. students and homemakers. Among the independent variables are personal characteristics and the partners' employment status, as depicted in the estimation equation:

$$\text{logit}(Y_{1/0}|X) = \alpha + \sum_{i=1}^2 \beta_{1,i} \text{agecat}_i + \beta_2 \text{citizen} + \beta_3 \text{cohab} + \beta_4 \text{kids} \\ + \sum_{i=1}^2 \beta_{5,i} \text{edu}_i + \beta_6 \text{inc} + \beta_7 \text{incsqu} + \beta_8 \text{east} + \sum_{i=1}^5 \beta_{9,i} \text{workdif}_i$$

As to personal characteristics, age categories (*agecat*), family status (*cohab*), nationality (*citizen*), number of children at preschool age (*kids*), the level of education (*edu*), the monthly net income (*inc*) and its square (*incsqu*) as well as the region (*east*) are included in the model. *Cohab* is a dummy variable that takes the value 0 if the father is married and 1 if he is cohabiting. Three age categories are defined, from 18 to 29, from 30 to 41, and from 42 to 53.⁹ The dummy variable *citizen* distinguishes between fathers

⁸ Geisler and Kreyenfeld (2009) consider the degree of urbanisation in their study on the former child-raising leave. As sensitivity analyses have revealed the insignificance of this variable in the analyses at hand, it has been excluded in the models presented in this article.

⁹ As sensitivity analyses have revealed that the variables age and age squared would not be significant in models I and II, because the underlying functions do not capture the increased use of leave for the oldest fathers, three age categories have been inserted into the models I and II instead.

with a German or other European passport on the one hand and fathers with citizenship from a non-European country on the other.¹⁰ The level of education is classified into three categories. Persons with nine years or less schooling are defined to have a low educational level. In the model, dummy variables for medium educational level (ten or eleven years of schooling) and high educational level (twelve to thirteen years of schooling, i.e. technical college or university entrance qualification) are included.¹¹ The variable for income is a metric variable, consisting of the mid-value of the class interval of 24 income groups and denoting zero in case of no income. Furthermore, the dummy variable *east* denotes whether a person lives in the eastern or western part of Germany.¹² This variable is included because of the different historical backgrounds of these two regions. The variable *workdif* captures the partners' differences in the employment status and includes all possible combinations of the three work statuses: not employed, part-time employed, and full-time employed. A summary of the variables for model I is presented in table 1 in the appendix. In all models, α denotes the axis intercept and i denotes the value of the dummy variables which equals the number of categories minus the reference category.

Model II is restricted to men who are classified as employed in the survey; among them are men who reduce their weekly working hours to zero in order to take parental leave while on an ongoing work contract (in following: 'working fathers'). In addition to the variables in model I, model II allows an assessment of the influence of the workplace. It accounts for the following work-related characteristics, each being composed of one or several dummy variables: type of work contract (*temp*), firm size (*fsize*), sector affiliation (*public*) and the sex ratio of the profession (*sratio*). Moreover, a variable that captures the female partner's work status is included (*femwork*). The estimation follows the equation:

$$\begin{aligned} \text{logit}(Y_{1/0}|X) = & \alpha + \sum_{i=1}^2 \beta_1 \text{agecat}_i + \beta_2 \text{citizen} + \beta_3 \text{cohab} + \beta_4 \text{kids} + \sum_{i=1}^2 \beta_{5,i} \text{edu}_i + \beta_6 \text{inc} + \beta_7 \text{incsqu} \\ & + \beta_8 \text{east} + \sum_{i=1}^2 \beta_{9,i} \text{femwork}_i + \beta_{10} \text{temp} + \beta_{11} \text{public} + \beta_{12} \text{fsize} + \sum_{i=1}^2 \beta_{13,i} \text{sratio}_i \end{aligned}$$

The variable *temp* denotes whether a person holds a permanent contract or not, and *fsize* captures whether or not there are more than 50 employees working at the specific establishment. For the classification of the sex ratio of the profession, an analysis was conducted on the basis of the German Microcensus in order to find the sex ratio of occupations listed in the ISCO¹³ classification list. Following Leitner (2001), female-dominated occupations feature a share of women above 50% of all employed persons, male-dominated occupations a share of less than 30% and balanced occupations are between these two groups. A summary of the variables of model II is presented in table 2 in the appendix.

Finally, model III comprises only dual-earner couples¹⁴ so that the differences between the partners' socio-economic and work-related background can be estimated. The independent variables include personal characteristics of the fathers as well as differences between the partners as to age (*agedif*), income (*incdif*), educational level (*eddif*), employment sector (*pubdif*), firm size (*sizedif*), work contract (*condif*) and the sex ratio of the professions (*ratiodif*). They are included in the model as dummy variables. Precisely, age differences are captured through three categories: male partner is more than five years old, less than five years difference, female partner is more than five years old. Similarly, three categories for educational differences indicate whether the male or the female partner hold the higher level of schooling or whether they hold the same level; three income categories indicate if the male or the female partner has a higher income (mid-value of class interval) or if they have the same; and the categories for the firm size show if one partner is working in a larger firm or whether their firms have the same number of employees. The categories for differences in the sector and work contract each account

¹⁰ Models that distinguish between German and other European countries have shown that there is no significant difference between these two categories.

¹¹ For the educational level, only the level of schooling is used, because younger fathers might not have completed higher education (e.g. apprenticeship or university). In this case, they would hold a low ISCED (International Standard Classification of Education) degree, however, this would only be due to the age.

¹² Berlin belongs to eastern Germany in this study.

¹³ International Standard Classification of Occupations.

¹⁴ That means that model III includes the men and women who are currently employed, or who are employed but reduced their working hours up to zero hours while using parental leave.

for all possible combinations of private and public sector and accordingly, permanent contract versus temporary contract or self-employment, resulting in four categories each. Finally, six categories account for the differences between the sex ratios in the partners' professions, which cover all possible combinations of female-dominated, male-dominated and balanced. Further details on the variables of model III are provided in table 3 in the appendix. For each variable, all categories but one which serves as the reference category are inserted into the model. The equation for model III is:

$$\begin{aligned} \text{logit}(Y_{1/0}|X) = & \alpha + \beta_1 \text{age} + \beta_2 \text{citizen} + \beta_3 \text{cohab} + \beta_4 \text{kids} + \beta_5 \text{inc} + \beta_6 \text{east} \\ & + \sum_{i=1}^2 \beta_{7,i} \text{agdif}_i + \sum_{i=1}^2 \beta_{8,i} \text{eddif}_i + \sum_{i=1}^2 \beta_{9,i} \text{incdif}_i + \sum_{i=1}^3 \beta_{10,i} \text{pubdif}_i \\ & + \sum_{i=1}^2 \beta_{11,i} \text{sizedif}_i + \sum_{i=1}^3 \beta_{12,i} \text{condif}_i + \sum_{i=1}^4 \beta_{13,i} \text{ratioidif}_i \end{aligned}$$

Before the results of the estimations are presented, a closer look is taken at some descriptive statistics in the next section.

4. Descriptive results

For a better overview on the fathers using parental leave, it is valuable to examine significant differences in the share of fathers taking parental leave in the survey week as a percentage of all fathers in each category of the variables. This distribution and the significance according to the chi-square test are displayed in table 4 (see appendix) for samples of all fathers, working fathers, and fathers in dual-earner couples.

First to age, where there is a significant difference between the three categories. The highest fraction of fathers on parental leave can be found in the oldest aged group. The portion of fathers taking parental leave is also significantly higher for married than for cohabiting fathers. Concerning educational level, there is a significant increase in parental leave being taken at the time of the interview across the levels of schooling in the samples of working fathers and fathers in dual-earner couples. In contrast, the distribution across the father's monthly net income resembles a U-shaped pattern. Parental leave is claimed at the highest rates by fathers earning below 500 Euro per month, and the least by fathers earning between 2600 and 4000 Euro, but it is higher again for fathers with a monthly income of at least 4000 Euro.

Outstandingly high differences between fathers taking advantage of parental leave in the survey week and fathers who did not are found when taking differences between the partners' work statuses into account. The lowest share of fathers on leave can be found in couples with a composition that is typical for Germany: a father who is employed full-time and a mother part-time.¹⁶ The share of leave is highest for couples in which the mother works full-time while the father is not employed or works part-time. It is also very high when she is employed part-time and he is not employed. Going on leave occurs at a medium rate when both parents have the same employment status. Remarkably, compared to 'typical' couples, the rate of participation is also higher if the woman works fewer hours than her male partner in a 'non-typical' composition (she is not employed, he is employed full-time or part-time). To sum up, couples with the typical composition of the partners' employment status appear to be the most traditional, whereas in couples in which the mother works more hours than the father, the share of fathers using parental leave is highest.

¹⁶ In 2007, 40% of couples in western Germany and 28% of couples in eastern Germany showed this composition, and its share had been growing in both parts of Germany between 1990 and 2007 (Hans Böckler Stiftung 2010).

With regard to workplace-related variables, the share of fathers going on parental leave is substantially higher in the public sector or with a permanent contract. Moreover, participation is notably high in balanced professions and small firms.

Recalling the suggestions of the theoretical models and empirical literature, it is expected that the fathers taking parental leave differ from the reference group with respect to their differences to their partners, especially in dual-earner couples. Looking at income differences, the use of parental leave by fathers is clearly higher if their female partner earns the higher wage. Concerning the educational differences, the fraction of fathers using leave is high in couples in which both have the same level of education or the mother has enjoyed more years of schooling. Hence, fathers who take parental leave have on average a higher level of schooling than other fathers, but compared to their partners, they have the same, if not a lower level. With regard to workplace related variables, the share of fathers taking parental leave is especially high if both partners are employed in the public sector, the female partner is employed in the larger firm, only the male partner or neither partner holds a permanent contract or if the female partner works in a male-dominated profession while the male partner is employed in a female-dominated or balanced profession. In contrast, the share of fathers on parental leave is small if only the female partner is employed in the public sector, if she is the only partner holding a permanent contract, if the father is employed in the larger firm or if both partners work in professions that are typical for their sex. In the next section, the results of three logistic models are presented, which reveal whether the significance of the discussed characteristics hold true in multivariate analysis.

5. Regression results

Tables 5 and 6 (see appendix) provide the results of the three different logistic models for the assessment of which predictors exist in decisions to take parental leave by fathers. For reasons of interpretation, the results of the estimations are shown in terms of odds ratios. The tests for the models' goodness of fit show that all three models contribute to the explanation of the dependent variable. To be precise, model III shows the best results as to McFadden's Pseudo R^2 and the log likelihood of the final model. In addition, sensitivity analyses have confirmed the robustness of the results, even for independent variables that are likely to be highly correlated with each other, such as the educational level and income, for instance. Reduced models that contain only the significant variables have been estimated as well, but in order to show differences to other empirical studies, the full models are presented.

According to model I, which controls both for the father's personal characteristics as well as both partners' work status, fathers of the oldest age category have significantly higher (71%) odds of using parental leave than those in the youngest age group. Holding non-European citizenship decreases the odds of leave-taking significantly, by 43%. Furthermore, the odds are significantly reduced by 58% if the father is not married but lives in a consensual union, and they are reduced by 27% if he lives in the eastern part of Germany. As to the educational level, fathers' odds of using the available leave seem to increase with their education. However, only the difference between the lowest and the highest educational group is significant. Fathers in the highest educational group have 64% higher odds using leave. In contrast, the odds are negatively correlated with the income and its square, but the results are very small in terms of odds ratios.

The difference between the partners' work statuses has the greatest impact. Compared to the reference category (mother employed part-time, father full-time), the odds of taking leave are more than quadrupled if the mother works full-time and the father works part-time or does not actively participate in the labour market. If she works part-time instead and he is not employed, they are more than tripled. If both partners work full-time or part-time, the odds are still significantly increased. Even if the female partner or both partners are not working in the labour market, the results tend to be higher than in the reference group with the 'typical' composition. The number of children below the age of seven and the type of region are not significant in this model.

Model II includes only working fathers and accounts for their personal characteristics as well as work-related variables. The results for the personal features and the partner's work status are mainly congruent with those of model I, with two exceptions. First, holding non-European citizenship is not significant in this model. Second, the father's use of parental leave is positively correlated with the number of children below the age of seven. Only if the woman works full-time are the odds significantly increased (by 88%) compared to part-time employment, while there is no significant difference between the latter category and no employment. Regarding workplace characteristics, the odds are 38% higher of leave being taken if the father has a permanent contract. They are 72% higher if the father is employed in the public sector. They are also significantly higher for fathers working in professions that exhibit an about equal share of both sexes, in comparison to male-dominated professions, while there is no significant difference between male-dominated and female-dominated professions. This result is astonishing, as are the findings regarding firm size: The odds are significantly lower if the father is employed in a company with 50 or more employees.

Model III is restricted to dual-earner couples. It accounts for the differences between the partners and important personal characteristics. Among the latter, age, citizenship, marital status as well as income remain significant. With respect to the differences between the partners, the result for income differences stands out. The odds of taking parental leave are more than tripled if the father earns less than his partner in comparison to partners whose income is of the same category. Surprisingly, fathers in the latter category are not more likely to use parental leave than fathers whose partner earns the lower income. Furthermore, the odds are significantly reduced if only the mother (63%) or neither of the partners (57%) is employed in the public sector compared to couples of which both are employed in the public sector. However, compared to the same group of couples, there is no significant difference to couples in which only the father is employed in the public sector. The odds are almost doubled if only the father has a permanent contract, and they are significantly reduced by 60% if only the mother has a permanent contract, in comparison to couples in which both have permanent contracts. Remarkably, there is no significant difference between couples where both have a permanent contract in comparison to couples where none hold a permanent contract. Concerning the differences in the share of women in both partners professions, the odds are almost doubled if the mother works in a male-dominated profession and the father works in a female-dominated or balanced profession compared to couples in which the mother works in a job that is typical for women and her partner in a profession that is typical for men or has a balanced share of sexes. This model does not show significant results regarding age and educational differences.

To sum up, the first two models show that fathers' odds of taking parental leave are not only influenced by personal features and the characteristics of his workplace, but also strongly by his partner's employment status in comparison to his own. The model for dual-earner couples (model III) especially points to the importance of the differences between the partners' income, the type of work contract and the sectoral affiliation.

6. Summary and discussion

Using data from the 2008 German Microcensus, this paper provides insights into the predictors of the fathers' use of parental leave after the introduction of the new parental leave scheme in Germany that is designed based on the Swedish family policy model. Fathers who were on leave in the survey week are compared to fathers who were not taking advantage of the leave at that time.

The fathers in this sample who used parental leave in the survey week are overrepresented in the oldest age group and in the group of married fathers. They are also more common among European fathers and those living in the western part of Germany. Many of them have reached a high level of schooling, yet they do not necessarily have a higher income. This study shows further that fathers using leave are more frequently employed in the public sector and hold a permanent contract. A large portion also has a partner who is employed full-time and is the main breadwinner of the family.

The binary regression models are in line with most of the results of the descriptive analysis, but point to the fact that especially differences between the work statuses of the partners as well as their income

disparity play an important role. In many families, the father's use of parental leave seems to require that the mother works at least roughly the same hours in paid work as the father or earns the higher income. In addition, in dual-earner couples the variables that are related to job security (sector affiliation, type of work contract) and the sex ratio of the profession are correlated with the father's parental leave. Fathers in the public sector have higher odds of using parental leave if partner's employment is also in public sector. On the contrary, a father with a permanent contract is more likely to use parental leave if his partner does not enjoy the same level of job security. Noteworthy is also the finding that the result of model II, that fathers in balanced professions have the higher odds of using leave, holds true in dual-earner couples (model III) if the mother works in a male-dominated profession.

It is important to compare the results with those of the empirical studies discussed in section 2.2. With regard to the father's education, citizenship, sector affiliation and work contract as well as the mother's income and the sex ratio of her profession, the results are consistent with those of most empirical studies. Furthermore, they are in line with studies that propose a positive effect of a higher number of children and of being married. Regarding the unrepresentative German study under the new legislation (Pfahl and Reuyß, 2009), the present analysis supports the findings that fathers using parental leave are likely to be comparatively old, have a high level of education, work in the public sector and have a partner that is employed fulltime. However, it does not support the view that fathers in larger companies are more likely to take this opportunity. In comparison with Scandinavian studies, the study at hand differs as to the fathers' firm size and the sex ratio of his profession. Moreover, the results depart from the German study on the use of the former child-raising leave by Geisler and Kreyenfeld (2009) with regard to age differences and the residence in eastern or western Germany. The latter difference is astonishing, as also other authors propose that men in the eastern part of Germany are more inclined to do unpaid family work than their western German counterparts (e.g. Cooke 2006; Gille and Marbach 2004). Overall, the findings of this study are partly consistent with other empirical studies.

When comparing the results to the theoretical approaches presented, it becomes clear that the economic theory of relative resources is widely confirmed in the comparison *between the partners*. Two partners obviously compare the opportunity costs of parental leave between them in light of their income and job security, or rather, the negative economic effects of this timeout. The finding that a part-time job does not clearly improve the mother's bargaining position in couples in which the father works full-time, as compared to mothers' not working in the labour market, is remarkable. One explanation might be the self-selection of family-oriented mothers into the typical German composition of 'father full-time – mother part-time', as these couples have the lowest odds of sharing parental leave. Likewise, family-oriented fathers might have chosen part-time work in order to focus mainly on childcare in case of a birth. In this case, too, the number of working hours is influenced by parental leave decisions and not vice versa. Of course, this pattern of self-selection may also be the root of the results regarding sector affiliation and the sex ratio of the profession. For example, on the one hand, mothers and fathers working in professions with a higher share of women could have discovered ex post that they can generally better reconcile themselves with household and caring tasks (Datta Gupta and Smith 2000; Jacobs 1995), while male-dominated professions are associated with higher costs of taking parental leave (Jacobs 1995; Polachek 1981). On the other hand, family-oriented individuals might have chosen professions with lower opportunity costs of parental leave intentionally, while work-oriented individuals might have chosen different professions. Hence, the results have to be treated with caution in terms of the causal relationship.

Regarding the comparison *between fathers using leave and fathers not using it*, the results support the microeconomic rationale of opportunity costs for the impact of the sector affiliation and firm size, with, again, self-selection mechanisms that might play a role. Moreover, considering education, the results follow the sociological view that collective beliefs about the correct division of labour within a couple vary between social classes, as men with more years of schooling, who are most likely to hold modern gender role models, are more likely to have an equal division of parental leave. However, they do not necessarily have a high income. One explanation could be the parental leave benefit cap at 1,800 Euro: It implies that fathers whose monthly net income exceeds 2,686 Euro do not receive the usual share of 67% but rather less of their monthly net income.

The results for the age and the marital status call for a detailed explanation in view of the theoretical approaches. The results for age contradicts microeconomic theory, which predicts that older men are more likely to earn a higher income and thus to have higher opportunity costs when taking parental leave. However, the family formation age rises with the educational level, so that highly educated men could be overrepresented in the oldest age group. According to sociological approaches as well as empirical studies (e.g. Wengler et al. 2008) higher educated men are, firstly, more likely to share domestic tasks. Secondly, they are more likely to have a highly educated partner (Teckenberg 2000; Wirth 2000; Blossfeld and Timm 2003). Thus, their partners are probably characterised by a high income, which, in turn, strengthens their bargaining position. According to this argumentation, the increase of the share of fathers using leave across the age group comes at no surprise. As to marital status, according to microeconomic theory, the specialisation of partners is higher for married couples, which would result in a lower percentage of fathers using leave among this group. In contrast, predictions of sociological approaches are not straightforward (Naz 2007; Sundström and Duvander 2002). On the one hand, cohabiting couples are said to pay more attention to an equal division of labour. On the other hand, marriage can be an indicator for a relatively strong family-orientation of the father, which can serve as an explanation of the findings here.

Finally, it is noteworthy to mention that, due to the shortcomings of the German Microcensus as discussed in section 3, it would be interesting to repeat this analysis once other data sources suitable for the research question addressed in this paper are available. It might be valuable to compare fathers that have ever been on parental leave with those that have never taken this opportunity. This is not possible with the German Microcensus, as only fathers currently on leave can be compared to fathers that were not. Other surveys would not be subject to seasonality, whereas the German Microcensus only captures the fathers' situation in the survey week which is always in April. Besides, retrospective surveys would do not share the disadvantage of this study that fathers using a small share of parental leave have a lower probability to be included as using parental leave. The implementation of these suggestions is left for further research.

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Appendix

Table 1: Summary of the sample for model I (all fathers)

	Obs	Mean	Std. Dev.	Min	Max
age categories	6619	1.9000	0.5725	1	3
citizenship	6619	0.1186	0.3233	0	1
marital status	6619	0.1958	0.3984	0	1
children below the age of 7	6619	1.5144	0.6478	1	*
educational level	6619	2.0692	0.8348	1	3
region	6619	0.1840	0.3875	0	1
monthly net income	6619	2127.1190	1547.0350	0	19000
monthly net income squared	6619	6917590	19800000	0	361000000
difference in the employment status of the spouses	6619	3.8507	1.6970	1	6

* publication prohibited by the providers of the Microcensus for reasons of anonymisation.

Definition of the variables: age categories: 18 to <30, 30 to <42, 42 to <54; citizenship: 0 = German or other EU citizenship, 1 = non-EU citizenship; marital status: 0 = married, 1 = cohabiting; educational level: 1 = "Hauptschulabschluss" or less (<= 9 years of schooling), 2 = school-leaving certificate "Realschulabschluss" or "Oberschule der DDR" (10-11 years of schooling), 3 = school-leaving certificate "Fachhochschulreife" or "Abitur" (12-13 years of schooling); region: 0 = western Germany, 1 = eastern Germany; monthly net income: mid-value of class interval of 25 income groups; partner's employment status: 1 = both fulltime, 2 = female full-time, male part-time or not employed, 3 = female part-time, male full-time, 4 = both part-time or female part-time, male not employed, 5 = female not employed, male full-time or part-time, 6 = both not employed. Full-time employment is defined as at least 30 hours per week, part-time is defined as between 1 and under 30 hours a week, not employed are persons who are classified as such in the German microcensus. The definition follows the ILO classification.

Sources: Research Data Centres of the Federal Statistical Office and the Statistical Offices of the Länder (2011). Microcensus 2008; own calculations and illustration.

Table 2: Summary of the sample for model II (working fathers)

	Obs	Mean	Std. Dev.	Min	Max
personal characteristics					
age categories	5903	1.9180	0.5569	18	53
citizenship	5903	0.1008	0.3011	0	1
marital status	5903	0.1774	0.3820	0	1
children below the age of 7	5903	1.5125	0.6397	1	*
educational level	5903	2.1116	0.6397	1	3
region	5903	0.1699	0.3756	0	1
monthly net income	5903	2268.1310	1525.9190	0	19000
monthly net income squared	5903	7472452	20100000	0	361000000
partner's employment status	5903	2.3427	0.8334	1	3
work-related variables					
type of work contract	5903	0.8032	0.3977	0	1
sector affiliation	5903	0.1206	0.3257	0	1
firm size	5903	0.5763	0.4942	0	1
sex ratio of the profession	5903	1.6677	0.7890	1	3

* publication prohibited by the providers of the Microcensus for reasons of anonymisation.

Partner's employment status: 1 = employed full-time, 2 = employed part-time, 3 = not employed. Definition of the other personal characteristics see table 1. Work-related variables: type of work contract: 0 = temporary contract or self-employed, 1 = permanent contract; sector affiliation: 0 = not in the public sector, 1 = public sector; firm size: 0 = less than 50 employees at the location, 1 = >= 50 employees at the location; sex ratio of the profession: 1 = male-dominated, share of women < 30%, 2 = balanced, share of women between 30 and > 50%, 3 = female-dominated, share of females >= 50%.

Sources: Research Data Centres of the Federal Statistical Office and the Statistical Offices of the Länder (2011). Microcensus 2008; own calculations and illustration.

Table 3: Summary of the sample for model III (fathers of dual-earner couples)

	Obs	Mean	Std. Dev.	Min	Max
personal characteristics					
age	2453	34.8300	5.5966	*	53
citizenship	2453	0.0514	0.2208	0	1
marital status	2453	0.2097	0.4059	0	1
children below the age of 7	2453	1.4000	0.5749	1	*
monthly net income	2453	2278.7100	1554.3350	0	1900
region	2453	0.2018	0.4014	0	1
differences between the spouses					
age	2453	1.7896	0.4403	1	3
income	2453	1.2740	0.6410	1	3
educational level	2453	2.0893	0.6720	1	3
sector affiliation	2453	2.9484	0.7058	1	4
firm size	2453	1.8928	0.6207	1	3
work contract	2453	2.2487	0.8258	1	4
sex ratio of the profession	2453	3.3481	1.8115	1	5

* publication prohibited by the providers of the Microcensus for reasons of anonymisation.

Definition of the personal characteristics see table 1. Differences between the spouses: age: 1=male is > 5 years older, 2 = 5 years or less age difference, 3= female is > 5 years older; income differences: 1 = male has higher income category, 2 = same income category, 3 = female has higher income category; educational level 1 = male has higher educational level, 2 = same educational level, 3 = female has higher educational level; sector affiliation: 1 = only male in public sector, 2 = both in public sector, 3 = none in public sector, 4 = only female in public sector; firm size: 1 = male in larger firm, 2 = same firm size, 3 = female in larger firm; work contract: 1 = female temporary contract or self-employed, male: permanent contract, 2 = both have a permanent contract, 3 = both have a temporary contract or are self-employed, 4 = female permanent contract, male temporary contract or self-employed; sex ratio of the profession: 1 = same share of women, 2 = female: male-dominated, male: female-dominated or balanced profession, 3 = female: balanced, male: male-dominated, 4 = female: balanced, male: female-dominated, 5 = female: female-dominated, male: balanced or male-dominated.

Sources: Research Data Centres of the Federal Statistical Office and the Statistical Offices of the Länder (2011). Microcensus 2008; own calculations and illustration.

Table 4: Share of the fathers on parental leave in the survey week as percentage of all fathers in each category of the variables (all fathers, working fathers and fathers in dual-earner couples)

Results written in **bold** are significant at the 10% level according to the χ^2 test.

		Sample 1	Sample 2	Sample 3
		all fathers	working fathers	fathers in dual-earner couples
N (total number of fathers in the sample)		6,995	6,305	2,660
using parental leave		294	239	115
using parental leave (%)		4.20%	3.79%	4.32%
Share of fathers using parental leave of all fathers in the category (%)				
personal characteristics				
age	18 - < 30 years	3.49	3.46	2.47
	30 - < 42 years	4.08	3.58	4.40
	42 - < 54 years	6.17	5.54	6.40
citizenship	German or other EU country	4.31	3.82	*
	non-EU country	3.37	3.55	*
marital status	married	4.63	4.18	4.66
	cohabiting	2.42	1.97	3.06
number of children below the age of seven				
	one	4.04	3.72	4.44
	two	4.26	3.76	4.04
	three or more	5.31	4.49	4.95
education	low	3.73	3.17	2.96
	medium	3.89	3.55	3.63
	high	4.85	4.42	5.43
	no answer	2.78	3.13	0.00
monthly net wage	0 - 500 Euro	5.73	7.14	12.50
	500 - 1300 Euro	6.64	6.30	10.29
	1300 - 2600 Euro	3.78	3.51	3.49
	2600 - 4000 Euro	2.81	2.65	1.50
	4000 Euro or more	3.04	3.04	2.11
region	no answer	3.90	2.91	4.55
	western Germany	4.30	3.95	4.30
	eastern Germany	3.77	2.99	4.42
differences between the partners' employment statuses				
	both fulltime	4.83	4.83	4.83
	female: full-time, male: part-time	18.37	18.37	18.37
	female: full-time, male: not employed	19.81		
	female: part-time, male: full-time	2.75	2.71	2.71
	both part-time	11.11	11.11	11.11
	female: part-time, male: not employed	12.73		
	female: not employed, male: full-time	3.29	3.29	
	female: not employed, male: part-time	5.96	5.96	
	both not employed	5.10		
female partner's employment status				
	not employed	3.62	3.40	
	part-time employment	3.56	3.13	3.13
	full-time employment	6.25	5.28	5.28

Table 4 (continued):

work-related characteristics				
sector affiliation	public sector		5.43	8.12
	private sector		3.31	3.73
firm size	small: less than 50 employees		4.39	4.7
	large: at least 50 employees		3.40	4.04
type of work contract	no answer		2.00	3.33
	temporary or self-employed		3.62	4.11
	permanent		3.82	4.34
	no answer		1)*	1)*
sex ratio of the profession	male-dominated: share of women < 30%		3.29	3.16
	balanced: share of women between 30 and 49,9%		4.60	5.66
	female-dominated: share of women > 50%		4.02	4.85
differences between the partners				
age	male partner is more than 5 years older	4.23	3.7	*
	less than 5 years age difference	4.16	3.81	*
	female partner is more than 5 years older	5.66	4.65	*
income differences	male partner has a higher income	3.28	3.05	2.26
	same income category	4.11	4.15	4.46
	female partner has a higher income	12.52	15.08	20.45
	no answer	3.96	2.81	4.43
educational level	male partner has higher educational level	3.23	3.10	2.43
	same educational level	4.42	3.97	4.73
	female partner has the higher educational level	4.41	3.86	4.77
	no answer	*	*	*
sector affiliation	only male partner is employed in the public sector			6.67
	both are employed in the public sector			9.60
	only female partner is employed in the public sector			3.69
	both are not employed in the public sector			3.97
	no answer			0.00
firm size	male partner is employed in the larger firm			3.43
	same firm size category			4.31
	female partner is employed in the larger firm			6.49
	no answer			1.43
work contract	female: temporary or self-employed, male: permanent			7.19
	both permanent			3.90
	both temporary or self-employed			6.81
	female: permanent, male: temporary or self-employed			2.80
	no answer			*
sex ratio of the profession	both employed in a profession with a similar share of women			5.22
	female: male-dominated profession, male: female-dominated or balanced profession			10.53
	female: balanced, male: male-dominated			6.02
	female: balanced, male: female-dominated			3.67
	female: female-dominated, male: male-dominated or balanced			3.16

Results in **bold** are significant at the 10% level according to the χ^2 test.

* publication prohibited by the providers of the Microcensus because of too few cases in each category

Sources: Research Data Centres of the Federal Statistical Office and the Statistical Offices of the Länder (2011). Microcensus 2008; own calculations and illustration.

Table 5: Results of the logistic regression models I and II (all fathers and working fathers)

		Model I all fathers		Model II working fathers	
dependent variable: using parental leave in the survey week or not					
		Odds Ratio	Std. Err.	Odds Ratio	Std. Err.
personal characteristics					
age	18 - < 31 (ref.)	1.00		1.00	
	31 - < 42	1.15	(0.194)	1.00	(0.186)
	42 - < 53	1.71 **	(0.370)	1.61 **	(0.386)
citizenship	German or other European (ref.)	1.00		1.00	
	Non-EU country	0.57 **	(0.130)	0.77	(0.190)
marital status	married (ref.)	1.00		1.00	
	cohabiting	0.42 ***	(0.864)	0.41 ***	(0.097)
children below the age of 7		1.16	(0.113)	1.20 *	(0.129)
educational level	low (ref.)	1.00		1.00	
	medium	1.21	(0.212)	1.27	(0.249)
	high	1.64 ***	(0.272)	1.71 ***	(0.341)
monthly net income		1.00 ***	(0.000)	1.00 ***	(0.000)
monthly net income squared		1.00 ***	(0.000)	1.00 ***	(0.000)
region	western Germany (ref.)	1.00		1.00	
	eastern Germany	0.73 *	(0.132)	0.62 **	(0.131)
differences between the spouses' employment statuses					
	both fulltime	1.79 ***	(0.405)		
	female: full-time, male: part-time or not employed	5.34 ***	(1.637)		
	female: part-time, male: full-time (ref.)	1.00			
	female: part-time, male: part-time or not employed	3.23 ***	(1.208)		
	female: not employed, male: full-time or part-time employed	1.26	(0.261)		
	both not employed	1.44	(0.449)		
partner's employment status					
	not employed (ref.)			1.24	(0.250)
	part-time employment			1.00	
	full-time employment			1.88 ***	(0.407)
workplace characteristics of the father					
work contract	temporary or self-employed (ref.)			1.00	
	permanent			1.38 *	(0.259)
sector affiliation	private sector (ref.)			1.00	
	public sector			1.72 ***	(0.337)
firm size	less than 50 employees (ref.)			1.00	
	50 or more employees			0.72 **	(0.107)
sex ratio of the profession					
	male-dominated: share of women < 30% (ref.)			1.00	
	balanced: share of women between 30 and 49,9%			1.40 *	(0.245)
	female-dominated: share of women > 50%			1.00	(0.185)

*** p<0.01; **p<0.05; *p<0.1. Reference categories have the value 1.00.

Model 1: Goodness of fit: McFadden's Pseudo R² 0.056; number of iterations: 4; Log likelihood (null model): -1156.486; Log likelihood (final model) -1093.303; LR chi²: 126.37; Prob chi² (likelihood ratio test): 0.000***, Goodness-of-fit Test Person's chi², Prob>chi²: 0.2134; Hosmer-Lemeshow Test, 5 groups, Prob>chi²: 0.196. **N (total number of fathers in the sample):** 6619; using parental leave: 279. **Sample:** men aged 18-53 who live in a heterosexual partnership with a woman aged 18-45 and have at least one child born in 2007 or 2008.

Model 2: Goodness of fit: McFadden's Pseudo R² 0.049; number of iterations: 4; Log likelihood (null model): -965.421; Log likelihood (final model) -918.043; LR chi²: 94.76; Prob chi² (likelihood ratio test): 0.000***, Goodness-of-fit Test Person's chi², Prob>chi²: 0.002***; Hosmer-Lemeshow Test, 5 groups, Prob>chi²: 0.291. **N (total number of fathers in the sample):** 5903; using parental leave: 228. **Sample:** employed men aged 18-53 who live in a heterosexual partnership with a woman aged 18-45 and have at least one child born in 2007 or 2008.

Sources: Research Data Centres of the Federal Statistical Office and the Statistical Offices of the Länder (2011). Microcensus 2008; own calculations and illustration.

Table 6: Results for the logistic regression model III (dual-earner couples)

		Odds Ratio	Std. Err.
personal characteristics			
age		1.05 **	(0.023)
citizenship	German or other European (ref.)	1.00	
	Non-EU country	0.24 *	(0.186)
marital status	married (ref.)	1.00	
	cohabiting	0.53 **	(0.159)
children below the age of 7		1.00	(0.185)
monthly net income		1.00 ***	(0.000)
region	western Germany (ref.)	1.00	
	eastern Germany	0.87	(0.238)
differences between the spouses			
age differences	male partner is more than 5 years older	0.76	(0.226)
	less than 5 years age difference (ref.)	1.00	
	female partner is more than 5 years older	1.78	(1.421)
income differences	male partner has higher income	0.56	(0.242)
	same income level (ref.)	1.00	
	female partner has the higher income	4.29 ***	(1.876)
educational level	male partner has higher educational level	0.73	(0.256)
	same educational level (ref.)	1.00	
	female partner has the higher educational level	0.98	(0.241)
sector affiliation	only male partner employed in the public sector	0.93	(0.450)
	both employed in the public sector (ref.)	1.00	
	only female partner employed in the public sector	0.36 **	(0.164)
	both employed in private sector	0.43 **	(0.155)
firm size	male partner employed in the larger firm	1.00	(0.289)
	same firm size category (ref.)	1.00	
	female partner employed in the larger firm	1.46	(0.421)
work contract	female: temporary or self-employed, male: permanent	2.06 **	(0.610)
	both permanent (ref.)	1.00	
	female: permanent, male: temporary or self-employed	0.40 **	(0.153)
	both temporary or self-employed	1.59	(0.576)
sex ratio of the profession	female: female-dominated, male: male-dominated or balanced (ref.)	1.00	(0.205)
	female: balanced, male: male-dominated	1.18	(0.410)
	female: balanced, male: female-dominated	0.42	(0.282)
	female: male-dominated profession, male: female-dominated or balanced profession	2.93 *	(1.530)
	both employed in a profession with the same share of women	1.24	(0.310)

*** p<0.01; **p<0.05; *p<0.1. Reference categories have the value 1.00.

Goodness of the model: McFadden's Pseudo R² 0.189; number of iterations: 6; Log likelihood (null model): -439.781; Log likelihood (final model) -356.574; LR chi²: 166.41; Prob chi² (likelihood ratio test): 0.000***, Goodness-of-fit Test Person's chi², Prob>chi²: 0.000***; Hosmer-Lemeshow Test, 5 groups, Prob>chi²: 0.726.

N (total number of fathers in the sample): 2453, using parental leave: 107.

Sample: men in dual-earner couples, aged 18-53 who live in heterosexual partnerships with a women aged 18-45 and have at least one child born in 2007 or 2008.

Sources: Research Data Centres of the Federal Statistical Office and the Statistical Offices of the Länder (2011). Microcensus 2008; own calculations and illustration.