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Who Cares? Determinants of the 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 determinants of the fathers' use of parental leave after the introduction of the Parental Allowance and Parental Leave Act in Germany in 2007. As this reform implied a strong paradigm shift in German family policy, it is expected that the results differ substantially from those of previous German studies and may rather resemble those of Scandinavian analyses. Using the German Microcensus as a data basis and a logit model as a method, it is estimated which factors influence the fathers' use of parental leave. The findings are partly consistent with German studies that have been conducted under the former family policy regime and partly with Scandinavian studies.

JEL Classification: D13, J13, J18, J22

Keywords: childcare, fatherhood, family policy, gender, parental leave, time allocation

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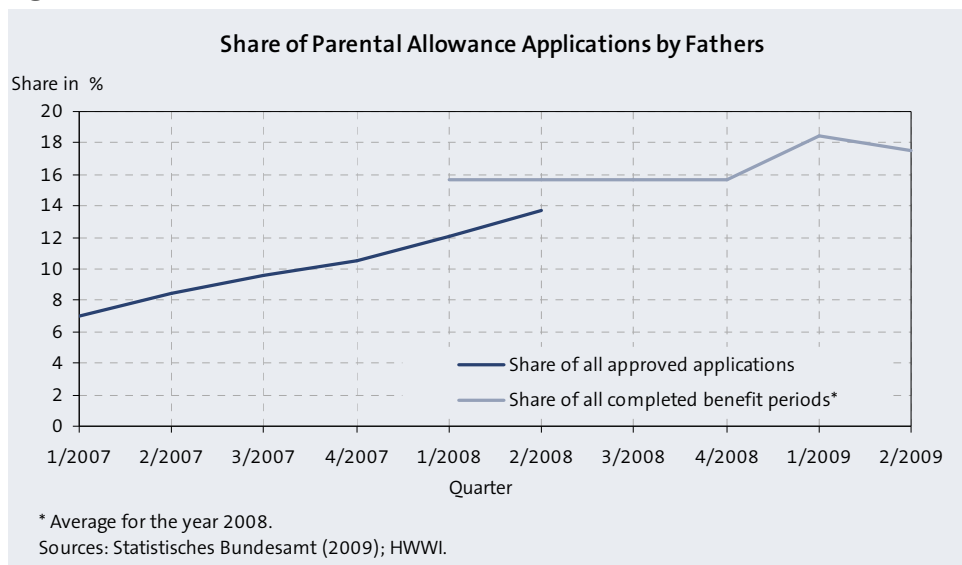
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1 Introduction

Since the 1980s, several European countries have established some kind of paternity leave or have reserved a part of the parental leave for the parent who does not take the lion's share of the leave, which is the father in most cases. In Germany, from 1996 till 2006, the Federal Child-Raising Allowance Act (Bundeszahungsgeldgesetz, BErzGG) was in place. According to this law, mothers and fathers could share a 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. However, take-up rates of fathers stagnated between 2.1 and 3.3 % (Statistisches Bundesamt 2009). Meanwhile, the total fertility rate remained between 1.33 and 1.37 in the past decade, and therefore substantially below the replacement level. At the same time, the female employment rate increased from 55.3 % in 1996 to 62.2 % in 2006, but stayed at an average level compared to other EU countries (EU-27 average: 57.3 % in 2006, Eurostat 2009). But due to several extensions of the child-raising leave, the mothers' actual number of working hours even decreased during the 1990s, while the mothers on leave were counted as employed in the national statistics (Merz 2004).

The replacement of the BErzGG by the Parental Allowance and Parental Leave Act (Bundeselterngeld- und Elternzeitgesetz, BEEG) in 2007 implied a strong 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 her or his spouse or governmental support in the long run. According to this law, which is geared towards the Swedish model of family policy, parents can share 14 months parental leave among each other, while receiving a parental benefit of 67 %³ of the monthly net income. 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 that take-up rates of fathers increased sharply to 18 % in 2009 (see figure 1).

Figure 1:⁴



In the year 2007, which is explored in this study, more than 60,000 fathers applied for parental leave with parental benefit (Statistisches Bundesamt 2008a). About two thirds took parental

³ Minimum amount of allowance for all: 300 Euros, maximum: 1,800 Euros.

⁴ Change in the official statistical records in 2008/2009: Parental Allowance is no longer recorded in the application month but in the month of the end of the benefit period.

leave for a period of two months. Obviously, these are the months that are reserved for the partner and that would be lost otherwise. About one fifth (21.2 %) took between three and eleven months of parental leave, and 17.6 % took twelve months which is the maximum amount of months a parent of a two parent household is entitled to.

If parents share the parental leave months and take them successively, the mother will be absent from work for a shorter period, which entails numerous positive effects. It reduces a mother's losses of human capital and income induced by the birth of a child.⁵ This promotes equal opportunities with regard to job applications and wages. This, in turn, reduces the poverty risk of mothers and children. Besides, the fathers' involvement in childcare is associated with strong father-child bonds and lower divorce rates (Hausegger et al. 2003). Furthermore, analyses from several European countries show that it raises the number of desired children in a household (e.g. Neyer et al. 2006, Cooke 2003, Buber 2002, Lappegård 2008b). This effect is of great importance for Germany, as, due to the demographic change, there is a lack of qualified workers both at the present (the non-employed mothers) and in the future (the children). This can be counter-steered with higher female employment and fertility rates.

This study explores the determinants of fathers' use of parental leave, because knowledge about these factors can be applied to the formulation of policy recommendations that further promote the leave-taking of fathers. As the BEEG rather resembles the parental leave schemes found in Scandinavian countries than the former German system, the hypothesis is that the results differ substantially from those of previous German studies that were conducted under the BErzGG and may rather be similar to those of Scandinavian studies.

In the next step, economic theories and international literature on these determinants is evaluated. After the description of the data and method, descriptive results are presented and the hypothesis is tested with binary response models using data of the German Microcensus 2007. It is estimated which variables affect the fathers' use of parental leave, and, if applicable, how strong their effects are. At the end, the results are summarized and discussed.

2 The Fathers' Use of Parental Leave: Theoretical and Empirical Background

2.1 Theoretical Background

In microeconomic theory, two strands of literature about intra-family time allocation have widely spread: time-allocation models of the New Home Economics and game-theoretic bargaining models.

In the model of the allocation of time by Gary S. Becker, a household forms one consumption and production unit (Becker 1965). It produces "goods" that are not available on the market, among them children. The demand for such goods depends on their prices, which, in turn, are based on direct costs as well as time and opportunity costs. Additionally, it is subject to an income and a time constraint. The total available time equals the sum of working time and consumption time, which includes parental leave. An individual's division of time depends on the utilities of the different options. The higher the opportunity costs of the consumption time are, which consist of the foregone earnings and human capital depreciation, the lower is the utility of the consumption time. A higher income implies higher opportunity costs and thus a higher rela-

⁵ Boll (2009) finds that 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.

tive price of the consumption time. Consequently, as the income rises, a rational individual increases the time spend on work and decreases the time for consumption. Becker (1981) 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 nonmarket work.

On the contrary, household bargaining models assume the maximisation of an individual utility function to each spouse (e.g. Ott 1992). This is a plausible assumption, since rising divorce rates and decreasing alimony claims imply an asymmetric risk to the partner that has specialized in household production and childcare. Therefore, neither spouse agrees to do so. Each spouse’s allocation of time is the result of bargaining and depends on her or his individual’s bargaining position. This, in turn, is positively related to individual income and human capital resources. To sum up, although both microeconomic approaches differ substantially in their assumptions and mechanisms, the results are quite similar. The spouse with the relatively higher work-related resources concentrates on market work, while the other one takes the lion’s share of household and childcare tasks.

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/Meyer 2005, Strancanelli 2003, Yamada et al. 1999).

For that reason, sociologists argue that not only rational considerations but also cultural factors, especially gender role expectations, are important factors that determine intra-family time allocation (e.g. Coltrane 1996, Duncan/Edwards 1997, Pfau-Effinger 1998, 2004, West/Fenstermaker 1993). As Geisler and Kreyenfeld (2009) have summarized before, numerous empirical studies support this assumption. According to empirical findings, collective beliefs have a stronger effect than individual attitudes: 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 (e.g. Schulz/Blossfeld 2006, Wengler et al. 2008, Zerle/Krok 2008). The enhancement of the bargaining model through the variable “identity” by Akerlof and Kranton (2000) may contribute to the explanation of this phenomenon. They argue that female labour market participation threatens the identity of husband and wife, which implies a loss of utility. This, in turn, is compensated by a stereotypical behaviour of the female partner concerning household tasks, which probably results in stereotypical behaviour on the male partner’s side.

2.2 Empirical Background

Most empirical studies on the fathers’ use of parental leave have been conducted in the Scandinavian countries, as they had been the first ones that introduced “daddy months” and parental leave for both parents in the late 1970s and early 1980s. Sundström and Duvander (2002) use data from the 1994 registers of the National Insurance Board of Sweden to analyze the determinants of the fraction of parental leave days used by the father. They find that this fraction is positively correlated with the education and income of both spouses, but fathers’ income had a greater impact. Moreover, fathers use a larger fraction if they were married and if it was the firstborn child. For the same country, Bygren and Duvander (2006) confirm the positive impact

of the mother's education and income, but not of the father's. Even so, fathers' workplace characteristics have a stronger effect than those of the mother. Fathers who work in the public sector, in large firms and in female-dominated professions take more parental leave. Hoem (1995)⁶ finds the same results as Sundström and Duvander (2002) for the fathers' education and the birth order. In addition, they reveal that growing up in Sweden has a positive influence on the fathers' leave-taking. In this context, Haas et al. (2002) point to the importance of organizational 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 the use of parental leave by fathers.

For Norway, Lappegård (2008a) conducts a comprehensive analysis of the determinants of fathers' leave-taking using data from the Norwegian population registers. She distinguished between one-child and two-child couples as well as between paternity leave (leave for fathers exclusively) and gender-neutral leave (parental leave that can be used by either parent). For one-child couples, the workplace characteristics rather affect the gender-neutral leave of fathers than the use of the paternity leave, since the gender-neutral leave has to be negotiated among the spouses. The use of the paternity leave is positively correlated with both spouses' education and the father's employment in a medium sized company. This is also true for the gender-neutral leave, but in addition, fathers are more likely to take this leave if both parents work in the public sector and in a male-dominated profession. In both models, the 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. Another study for Norway shows that fathers' education, mothers' income, mothers' fulltime employment prior to birth and the number of preschool children positively affects the fathers' use of paternity leave and gender-neutral leave (Naz 2007). Besides, married fathers and those working in a female-dominated profession as well as those from a Western country are more likely to use leave. In this study, the father's workplace does not have an effect on the paternity leave but a strong effect on the use of the gender-neutral leave.

To the best of my knowledge, there is no German study on the determinants of the fathers' use of parental leave after the introduction of the new parental leave scheme in 2007. Geisler and Kreyenfeld (2009) conducted a multivariate analysis on the use of the child-raising leave of fathers between 1999 and 2005. According to this study, fathers are more likely to take child-raising leave if they live in eastern Germany, are of German nationality, not married but cohabiting, have multiple births or an older spouse or are less educated than their partner. Furthermore, the father's age and the number of children are positively associated with his use of the leave. As to workplace characteristics, fathers with a permanent work contract are more likely to take leave than self-employed men and those with a temporary contract, and so are fathers that are employed in the public sector in comparison to the private sector. The main conclusion of studies that investigate women's and men's attitudes towards the uptake of child-raising leave is that the omnipresent fear of income losses deters fathers from using this leave (Beckmann 2001, Institut für Demoskopie Allensbach 2005, Kassner/Rüling 2005, Rost 2002). Further reasons are career disadvantages as well as the fear of stigmatization and losing the job (Beckmann 2001, Institut für Demoskopie Allensbach 2005). With regard to personal characteristics of fathers involving in child-raising leave, Kassner and Rüling (2005) suggest that these men are highly educated and live in an urban environment.

⁶ Hoem (1995): Kvinnors och mäns liv, i. Sysselsättning från 17 års ålder (The lives of women and men, i. employment from age 17). Statistics Sweden, Stockholm. Cited in Sundström & Duvander (2002).

3 Data and Method

The Microcensus is a 1 % representative sample of the German population. It comprises about 370,000 households with about 820,000 individuals. This survey has been conducted in western Germany since 1957 and in eastern Germany since 1991. By extrapolation, the data are representative for the total resident population in Germany (Statistisches Bundesamt 2008b). The questionnaires reveal whether a father is taking parental leave (at all, less than three months, three months or more) (Statistisches Bundesamt 2007b). The advantage of this survey is that it provides enough cases for a multivariate analysis due to the large sample size.

However, there are a few disadvantages. Firstly, the individual is only asked whether she or he is currently on parental leave. It is not recorded whether they have already taken parental leave in the corresponding year or whether they intend to use it. Therefore, the group of fathers that are not currently on parental leave include those that have completed their parental leave months or have not started yet. Intuitively, it is expected that many fathers take the two parental leave months that would otherwise be lost in the 13th and 14th months after the child's birth. But, as 2007 is the first year under the new legislation, only fathers that took parental leave during the first year after the child's birth are included in the sample. Thus, the fact that this database provides only information on a particular time (a snapshot) of the respondents' lives calls for caution with regard to the results and their interpretation.

Secondly, as the biological kinship between family members is not accounted for, our sample includes all male persons with one or more children below the age of one in the family, although some of them may not be the biological father of the child. This probability is higher among fathers that are currently not on parental leave, as only the biological or the legal father of a child is eligible for parental leave.

As stated above, this sample includes all men that reported to have a child under the age of one in the family. It is further restricted to men between 22 and 54 years of age who live with a spouse in the same household. I apply three logistic regression models. The bivariate dependent variable takes the value 1 if the father is on parental leave and 0 if not. The selection of the independent variables is based on the empirical literature on the determinants of the fathers' use of parental leave, as summarized in section 2.2. Model 1 includes personal traits of character and work-related characteristics of the father as well as differences between the spouses:

$$\begin{aligned}
 \text{parentalleave} = & \alpha + \beta_1 \text{age} + \sum_{i=1}^2 \beta_{2,i} \text{citizen}_i + \beta_3 \text{cohab} + \beta_4 \text{kids} + \sum_{i=1}^2 \beta_{5,i} \text{edu}_i + \sum_{i=1}^2 \beta_{6,i} \text{regtype}_i + \beta_7 \text{east} \\
 & + \beta_8 \text{inc} + \sum_{i=1}^2 \beta_{9,i} \text{contract}_i + \beta_{10} \text{public} + \beta_{11} \text{lead} + \sum_{i=1}^2 \beta_{12,i} \text{fsize}_i + \sum_{i=1}^2 \beta_{13,i} \text{sratio}_i \\
 & + \sum_{i=1}^4 \beta_{14,i} \text{agdif}_i + \sum_{i=1}^2 \beta_{15,i} \text{incdif}_i + \sum_{i=1}^2 \beta_{16,i} \text{eddif}_i + \sum_{i=1}^3 \beta_{17,i} \text{leaddif}_i + \sum_{i=1}^3 \beta_{18,i} \text{pubdif}_i + \sum_{i=1}^2 \beta_{19,i} \text{sizedif}_i \\
 & + \sum_{i=1}^3 \beta_{20,i} \text{condif}_i + \sum_{i=1}^4 \beta_{21,i} \text{ratioidif}_i + e
 \end{aligned}$$

As to personal characteristics, the age (*age*), family status (*cohab*), nationality (*citizen*), number of children in preschool age (*kids*), the level of education (*edu*), the type of the region (*regtype*) and the region (*east*) are included in the model. In regard to the father's workplace, the model accounts for the type of work contract (*contract*), the firm size (*fsize*), the personal net income of

the last month (*inc*), having a leading position or not (*lead*)⁷, sector affiliation (*public*) and the sex ratio of the profession (*sratio*). Finally, the differences between the spouses regarding the age (*agedif*), and the mentioned workplace-related variables are included.⁸ α denotes the axis intercept and e the error term. Model 1 is restricted to the fathers' personal and occupational characteristics whereas model 2 accounts for his personal characteristics and differences between the spouses. All independent variables are also used for the descriptive analysis.

4 Descriptive Results

The descriptive results are shown in table 1. The sample contains 4493 fathers. 227 (5.0 %) of them were on parental leave in the reference week. The majority (218, 4.8 %) took parental leave for less than three months, while only nine fathers (0.2 %) took parental leave for three or more months. Almost half of the fathers took parental leave at the same time as their partner (100 fathers, 44.0 %), while 127 fathers (56.0 %) were on leave not at the same time as their partner.

As to the personal characteristics, the two groups of fathers – those taking parental leave and those not taking it – do hardly differ in regard to the marital status. However, the fraction of fathers taking parental leave is somewhat higher in families with only one or two children in pre-school age. Firstly, this may be due to a financial rationale, as the costs of children increase with their number, so that the relinquishment of the father's income is more likely to be accepted after the birth of the first child than after subsequent births. Secondly, if the mother has already done the lion's share of childcare after the first birth while the father was continuously employed, the specialization of household productivity and hence the reservation wage of the mother rises whereas the father's productivity on the labour market increases. Finally, the birth of the first child has a greater importance for the reaffirmation of the parental and partnership status (Vikat et al. 1999).

The average age of fathers that take parental leave is 35.3 years, which is more than one year older than the average age of the reference group. The highest fraction of fathers taking parental leave can be found in the middle aged group, while the fraction is lower in the oldest age group and at a medium range in the youngest age group. The difference between the middle and the oldest age group can probably be explained with the higher income and thus higher opportunity costs and / or the prevalence of traditional gender roles of older cohorts (Wengler et al. 2008). Considering that the family formation age rises with the educational level, and higher educated men are more likely to share domestic tasks (Wengler et al. 2008), the comparatively low share of fathers using parental leave in the youngest age group comes at no surprise.

Regarding the citizenship, 5.5 % of German fathers and 5.6 % of fathers with dual citizenship, but only 2.9 % of fathers with a foreign citizenship take parental leave. Low labour market participation rates of foreign women as well as culture-specific gender role models are possible explanations for this result. Fathers in western and eastern Germany do not differ substantially from one another with regard to parental leave-taking. However, the fraction of fathers using this opportunity is lowest in rural regions, medium in urbanized regions and comparatively high in agglomerated regions. In addition, the probability of leave-taking by fathers increases with the educational level. Only 3.7 % of fathers with a low educational level take parental leave, compared to 6.3 % of those with a high educational level. Firstly, this is in line with the prevalence

⁷ Individuals that hold a leading position are public officers in the upper grades of civil servants (gehobener Dienst and höherer Dienst) or employees with tasks on one's own responsibility or those with broad managerial functions and decision-making power.

⁸ Income differences (*incdif*), differences in the educational level (*eddif*), differences in holding a leading position (*leaddif*), differences in sector affiliation (*pubdif*), differences in firm size (*sizedif*), differences in the work contract (*condif*), differences in the sex ratio of the profession (*ratiodif*).

of modern role models at higher educational levels. Secondly, the female partners of highly educated men are likely to be well-educated, too. Thus, they pursue a career eagerly, so that they are characterized by a high human capital accumulation and income, which, in turn, strengthens their bargaining position.

With regard to the workplace-related variables, especially the results for the firm size are standing out. While only 3 % of fathers in small firms are taking parental leave, 7 % of those in a large firm take this opportunity. This finding hints at lower costs for the substitution of employees and a high flexibility of working times in large companies. Furthermore, the fathers that have a permanent contract take substantially more often parental leave (6.3 %) than fathers with a temporary work contract (4.5 %) or self-employed fathers (2.4 %). Additionally, fathers that are employed in the public sector (versus the private sector) and hold a leading position take parental leave more often. Of all fathers that have a leading position, 8.3 % are taking parental leave, of those without a leading position only 4.7 %. Hence, it is not surprising that fathers taking parental leave are overrepresented in higher income categories. All in all, the fraction of fathers that take parental leave is particularly high among those with sophisticated, secure and well-paid jobs. Moreover, their fraction is notably high in female-dominated professions. On the one hand, selection effects are likely to be at play. On the other hand, female-dominated professions can generally better be reconciled with household and caring tasks (Datta Gupta/Smith 2000, Jacobs 1995), while male-dominated professions are associated with higher costs of taking parental leave (Jacobs 1995, Polachek 1981).

Recalling the suggestions of theoretic models and empirical literature, it is expected that fathers taking parental leave differ from the reference group in terms of differences to their spouses. Regarding age differences, it is striking that the fraction of leave-taking fathers is small for couples in which the female partner is between two and five years older, while the fraction is highest for couples with a female partner who is more than five years older. The results for the last-mentioned type of couples are in line with the bargaining model rationale that the older spouse has the advantageous position with regard to human capital and, therefore, income. Yet, traditional gender roles do not seem to be easy to overcome, as the result for couples with a female partner that is between two and five years older indicates. The mothers in this age category probably have a strong preference for caring for the child themselves. They have a higher average age than in the other categories (34 years), and thus might have realized motherhood comparatively late.

Concerning couples where the father's income is higher, his bargaining position at his workplace might be the reason for the positive impact of his wage on the leave-taking. As to the educational level, the share of fathers taking parental leave varies only slightly between the categories. Looking at the type of work contract, however, the share of fathers taking parental leave is considerably higher when both partners have a permanent contract. Hence, not only the father's job security, but also the mother's is decisive for the parental leave taking of fathers. By contrast, regarding the firm size, the probability that the father uses parental leave is higher when the father is employed in a larger firm. The exploration of the female- and male-dominated professions shows that an eminently high fraction of fathers on parental leave can be found among couples of which both spouses work in a profession that is not typical for their sexes. On the contrary, the fraction is small when the woman works in a female-dominated profession and the father in a male-dominated profession. As mentioned above, the opportunity costs of parental leave are lower in professions with a comparatively high share of women.

5 Regression Results

Table 2 provides the results of the three different logit models for the assessment of determinants of the parental leave taking of fathers. The tests for the goodness of the models show a good adaptation of all three models. Precisely, model 3 is suited best to explain the dependent variable. However, multicollinearity problems are amplified by the large number of independent variables on the one hand and the small number of fathers using parental leave as well as of female partners that reported work-related information on the other hand. This is the reason why not all variables of model 1 and 2 could be included in model 3. Besides, it impinges the level of significance of work-related variables.

As to model 1, which controls for personal and workplace-related characteristics of the father, the age of the father influences his use of parental leave significantly. The odds of taking leave increase by 4 % with each year. While there is no difference between German fathers and those with a dual citizenship, the odds of leave-taking is reduced by more than 50 % for fathers of a foreign nationality. They are also significantly lower for fathers living in rural regions than for those living in agglomerated regions. Contrary to the expectations, the fathers' use of parental leave depends negatively on the income. However, the results for the work position, the firm size and the gender ratio meet the expectations derived by the descriptive results. The odds are two thirds higher if the father holds a leading position. They are 44 % higher if the father works in a female-dominated profession. They are also significantly higher for large companies compared to small and medium-sized ones. Neither the number of preschool children, nor the educational level, the region or the type of work contract affect the fathers' use of parental leave significantly. However, a permanent job contract and the employment in the public sector tend to be positively correlated with the dependent variable. As to the educational level, collinearity with the monthly net income is at play, which can affect the significance level. But it may also imply that the fathers' use of parental leave rather depends on the current personal and occupational situation.

Model 2 accounts for personal characteristics as well as differences between the spouses. In this model, the residence in a rural area is the only significant variable out of the personal characteristics. In comparison with the spouse, the age, the level of education, and workplace-related variables contribute to the explanation of leave-taking by fathers. The odds of taking parental leave increase by almost 150 % if the father earns less than his spouse, and they tend to be lower if his earnings are higher. They are higher if both spouses have a leading position, are employed in the public sector and have permanent work contracts. Obviously, the security of both the father's and his partner's jobs play a crucial role in the decision on the distribution of parental leave months. As to the firm size, the odds are 50 % higher if the father is employed in the larger firm. Besides, they are significantly lower if the spouses work in occupations that are typical for their sex. With regard to the age differences, the significantly lower odds for couples of which the mother is between two and five years older are striking and cannot be explained without further analysis.

Model 3, which includes all three categories of variables, reveals that the differences between the spouses are more important than the characteristics of the fathers' workplace alone. The odds ratios and the significance levels are similar to those in model 2. The father's age, his employment in a large firm and a higher monthly net income of the mother increase the odds for fathers to use parental leave significantly. In contrast, living in a rural region, being employed in a small company, having a spouse that is between two and five years older, being self-employed or having a temporary contract, while the mother has a permanent contract reduce the odds. The

same applies for couples where only one spouse is employed in the public sector and for those where only the father or none of the spouses has a leading position.

All in all, the three models show that the fathers' use of parental leave is hardly significantly influenced by personal characteristics except for the age and the type of the region. The determining factors are features of the father's and the mother's workplaces. In this context, the positive relations between the fathers' uptake of parental leave and variables that are related to the job security (sector affiliation, type of work contract, occupational position) as well as the father's income in comparison to his partner's income are remarkable.

6 Summary and Discussion

Using data from the German Microcensus 2007, this paper provides insights into the determinants of the fathers' use of parental leave after the introduction of the new parental leave scheme in Germany that is geared towards the Swedish model of family policy. The "new fathers" in this sample are on average older than the reference group as well as better educated and therefore overrepresented in leading positions. Moreover, they are more frequently employed in the public sector, in large companies and female-dominated professions. Their share is also higher among German fathers and those living in agglomerated regions. The small percentaged differences between the values of each variable could be related to the fact that the data is restricted to fathers that take leave during the first twelve months after a child's birth, and that almost half of them take this opportunity with her spouse at the same time. The binary regression models confirm most of the results of the descriptive analysis, but point to the fact that workplace characteristics, especially in comparison with the partner, have a greater impact on the use of parental leave than personal traits of character. With regard to the father's sector affiliation and firm size, the mother's income as well as the share of females in the both spouses' professions, the results are consistent with those of most Swedish and Norwegian studies. They differ with respect to the effect of the educational level and the marital status, also in comparison with the German study by Geisler and Kreyenfeld (2009) on the use of the child-raising leave by fathers. Besides, this study departs from the latter with regard to age differences, region and nationality. However, concerning the effects of the age, the type of the region as well as the type of work contract, the results are similar. All in all, the findings of this study are partly consistent with Scandinavian analyses and partly with the German Study under the former family policy regime.

The finding that fathers with a secure job, namely those with a permanent contract, in the public sector and in leading positions, face fewer obstacles when considering taking parental leave, comes at no surprise. Thus, more "father friendliness" in the private sector, for self-employed fathers or those with a temporary contract and not in a leading position could enhance the share of fathers that use parental leave. In addition, the reduction of the gender pay gap would presumably boost parental leave taking by fathers, since this study demonstrates its positive dependence on the female partner's net wage. In this context, the reduction of child-related career breaks through shorter parental leave periods, daddy months that cannot be used with the mother at the same time as well as an abundant supply of fulltime public childcare slots are essential instruments against the mothers' human capital and income deprivation. The replacement of the joint tax system for married couples by a progressive individual taxation of each parent would further have a positive impact on women's wages and therefore enhance fathers' use of parental leave. This reform would stop the positive discrimination of couples with a large wage gap and would raise most women's net wages during the fiscal year, which is associated with a positive incentive to work, as theoretical frameworks (e.g. Apps/Rees 2004) and empirical studies (e.g. Wrohlich 2007) suggest.

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Appendix

Table 1: Descriptive Results

Share of fathers using parental leave (%)	
personal traits of character	
age	
22 - 32 years	3.74
33 - 43 years	6.04
44 - 54 years	5.13
citizenship	
German	5.46
dual citizenship	5.62
foreign citizenship	2.85
marital status	
married	5.22
cohabiting	4.26
number of children below the age of seven	
one	5.31
two	5.07
three or more	3.13
education	
low: school-leaving certificate "Hauptschulabschluss" or "Oberschule of the GDR"	3.66
medium: school-leaving certificate "Realschulabschluss"	5.49
high: school-leaving certificate "Fachhochschulreife" or "Abitur"	6.30
type of region	
agglomerated	5.43
urbanized	4.92
rural	3.74
region	
western Germany	5.04
eastern Germany	5.13
work-related characteristics	
monthly net wage	
0 - 500 Euro	3.09
500 - 1300 Euro	3.71
1300 - 2600 Euro	5.54
2600 - 4000 Euro	5.70
4000 Euro or more	7.42
sector affiliation	
public sector	8.95
private sector	5.12
leading position	
yes	8.30
no	4.69
firm size	
small: 1 - 9 employees	2.95
medium: 10 - 49 employees	4.97
large: at least 50 employees	6.95
type of work contract	
temporary	4.52
permanent	6.28
self-employed	2.41
sex ratio of the profession	
male-dominated: share of women < 30 %	5.16
balanced: share of women between 30 and 49,9 %	5.41
female-dominated: share of women > 50 %	7.02
differences between the spouses	
age differences	
male partner is more than 5 years older	5.11
male partner is between 2 and 5 years older	5.36
less than 2 years age difference	5.26
female partner is between 2 and 5 years older	1.87
female partner is more than 5 years older	7.42
income differences	
male partner has a higher income	5.03
same income category	3.67
female partner has a higher income	6.25
educational level (ISCED classification)	
male partner has higher educational level	4.88
same educational level	5.02
female partner has the same educational level	5.45
occupational position	
only male partner holds a leading position	7.11
both hold a leading position	14.62
only female partner holds a leading position	9.89
none holds a leading position	5.63
sector affiliation	
only male partner is employed in the public sector	7.07
both are employed in the public sector	14.47
only female partner is employed in the public sector	6.77
both are not employed in the public sector	6.61
firm size	
male partner is employed in the larger firm	8.66
same firm size category	7.66
female partner is employed in the larger firm	4.23
work contract	
female: temporary or self-employed, male: permanent	5.29
both permanent	8.44
both temporary or self-employed	6.96
female: permanent, male: temporary or self-employed	2.65
sex ratio of the profession	
both employed in a profession with a similar share of women	9.26
female: male-dominated profession, male: female-dominated or balanced profession	9.76
female: balanced, male: male-dominated	8.26
female: balanced, male: female-dominated	6.67
female: female-dominated, male: male-dominated or balanced	5.61
N (total number of fathers in the sample)	4493
not using parental leave	4266
using parental leave	227

Table 2: Regression Models

	Model 1	Model 2	Model 2
	Odds Ratio	Odds Ratio	Odds Ratio
personal traits of character			
age	1.04 ***	1.03	1.04 *
citizenship			
German	1.00	1.00	1.00
dual citizenship	1.00	1.22	1.06
foreign	0.42 ***	0.62	0.61
marital status			
married	1.00	1.00	1.00
cohabiting	0.97	1.19	1.18
children below the age of 7	0.92	0.97	0.99
educational level			
low	1.00	1.00	1.00
medium	1.29	1.10	1.16
high	1.18	0.81	0.90
type of region			
agglomerated	1.00	1.00	1.00
urbanized	0.88	1.04	1.00
rural	0.60 *	0.44 **	0.43 **
region			
western Germany	1.00	1.00	1.00
eastern Germany	1.15	1.14	1.14
workplace-related characteristics			
monthly net income	0.94 **		0.97
type of work contract			
temporary	1.03		
permanent	1.41		
self-employed	1.00		
employed in the public sector	1.36		
leading position	1.68 ***		
firm size			
small	0.52 **		0.49 *
medium	0.69 *		0.68
large	1.00		1.00
sex ratio of the profession			
male-dominated: share of women < 30 %	1.28		1.53
balanced: share of women between 30 - 49,9 %	1.00		1.00
female-dominated: share of women > 50 %	1.44 *		1.58
differences between the spouses			
age differences			
male partner is more than 5 years older		1.01	0.99
male partner is between 2 and 5 years older		1.00	1.00
less than 2 years age difference		0.90	0.92
female partner is between 2 and 5 years older		0.16 **	0.16 **
female partner is more than 5 years older		2.00	2.13
income differences			
male partner has the higher income		0.83	0.89
same educational level		1.00	1.00
female partner has the higher income		2.44 **	2.23 *
educational level (ISCED classification)			
male partner has higher educational level		1.05	1.09
same educational level		1.00	1.00
female partner has the same educational level		1.17	1.17

leading position				
only male partner holds a leading position			0.63	0.58 *
both hold a leading position			1.00	1.00
only female partner holds a leading position			0.91	0.39
none holds a leading position			0.45 ***	0.85 ***
sector affiliation				
only male partner employed in the public sector			0.50 *	0.50 *
both employed in the public sector			1.00	1.00
only female partner employed in the public sector			0.50 **	0.48 **
both employed in the private sector			0.55 **	0.62
firm size				
male partner employed in the larger firm			1.54 **	1.54 **
same firm size category			1.00	1.00
female partner employed in the larger firm			0.65	0.98
work contract				
female: temporary or self-employed, male: permanent			0.47 **	0.56
both permanent			1.00	1.00
both temporary or self-employed			0.65	0.98
female: permanent, male: temporary or self-employed			0.35 ***	0.42 **
sex ratio of the profession				
both employed in a profession with the same share of women			1.00	1.00
female: male-dominated profession, male: female-dominated or balanced			1.28	1.38
female: balanced, male: male-dominated			0.99	0.87
female: balanced, male: female-dominated			0.76	0.64
female: female-dominated, male: male-dominated or balanced			0.70 *	0.70
Goodness of the Models				
	Model 1	Model 2	Model 3	
number of iterations	4	5	5	
Log likelihood (null model)	-802.78	-548.33	-548.33	
Log likelihood (final model)	-788.11	-499.54	-495.25	
LR chi ²	29.35	97.59	106.17	
	(LR chi ² (12))	(LR chi ² (33))	(LR chi ² (38))	
Prob chi ²	0.000 ***	0 ***	0.000 ***	
McFadden's Pseudo R ²	0.045	0.089	0.097	
Goodness-of-Fit Test Pearson's chi ² , Prob>chi ²	0.562	0.258	0.539	
Hosmer-Lemeshow Test, Prob > chi ²	0.751	0.362	0.239	
N (total number of fathers in the sample)				
	3399	1951	1951	
using parental leave	202 (9.6%)	153 (7.8%)	153 (7.8%)	
note: the sample consists of men aged 22-54 who live in heterosexual partnerships and have at least one child below the age of one in the family.				
*** p<0.01; **p<0.05; *p<0.1.				

Sources of both tables: Statistisches Bundesamt 2007a (Mikrozensus 2007); HWWI.