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MPIDR WORKING PAPER WP 2009-044
DECEMBER 2009

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MPIDR Working Paper

December 21, 2009

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Abstract

This study examines the impact of public and private childcare supply and family ideologies on individual childbearing behavior in Sweden. We assume that childcare services facilitate the reconciliation of family and paid work. However, this relationship is not independent from family images like “dual-earners” or the “male-breadwinner”. Although differences in family ideologies are not very pronounced in an egalitarian society like Sweden, we expect that childcare provision encourages young adults to start a family especially if dual-earner families are well accepted. In the empirical part, we use logistic regressions to analyze the entry into parenthood. Based on the Swedish survey “Family and Working Life in the 21st Century” and regional data for the years 2001 to 2003, we find that the probability to become parents is low in regions with a high level of childcare provision. However, in regions where non-familial childcare is highly accepted and, simultaneously, the childcare supply is high individuals are more likely to have a first child. This finding shows the importance of attitudes towards family arrangements on fertility behavior and childcare usage.

INTRODUCTION

The childcare system is well established in Sweden. At present, more than 40% of children aged below 3 years and most children of working parents are enrolled in public childcare facilities (Oláh and Bernhardt 2008). The quality of the childcare facilities is very high and the Swedish system of early childhood services is ranked as the best among developed countries (UNICEF 2008). Simultaneously, fertility is also high, with a Total Fertility Rate of 1.91 in 2008 (SCB 2009) and a Completed Fertility Rate that is around 2 children per woman for the birth cohorts born between 1925 and 1960 (Björklund 2006).

Although childcare policies in Sweden have not focused on childbearing behavior but more on female labor force participation and child wellbeing, social policy-makers in countries with low fertility seek to copy the Scandinavian success story hoping to increase national fertility levels. Swedish family policy institutions, including the childcare system, are proposed as 'best practice' example for other countries (UNICEF 2008; Mahon 2002). However, a simple policy transfer from one country to another can produce disappointing results (Dolowitz and Marsh 1996; Hulme 2005). In different social systems, mimicking childcare policies does not necessarily change generative behavior, as the institutional or cultural settings might be incompatible.

The present article assumes that the provision of childcare and its encouraging effect on fertility behavior is interrelated with the attitudes towards gender roles within the family. The degree to which potential parents take into consideration the availability of childcare in their childbearing behavior also depends on the acceptance of non-familial care. We assume that family ideologies are reflected in the attitudes toward the best family arrangement ranging from the "male breadwinner model" which is less compatible with formal childcare and "dual earner families" that rely on childcare outside the family.

In the empirical part, we analyze Swedish data. Although Sweden is among the most gender egalitarian societies in the world (Hausmann et al. 2007), we find regional

differences in gender role attitudes and also in childcare provision rates. Following our argument, the comparably broad childcare provision in Sweden may incentivize childbearing in most regions as a majority of the population supports the view that parents should both work and care for their children equally. Such a family ideology is infrastructurally supported by a dense childcare supply. However, in the few cases in which young Swedes believe that it is better for a child below 3 years if its mother cares for it, childcare provision does not encourage childbearing.

The following chapter explores the theoretical relationship of ideologies and formal childcare including individual and regional level characteristics. In the Methods section, we describe the data, variable measurement and the empirical model. Our analysis shows an unexpected negative effect of childcare on childbearing behavior for young adults in Sweden. However, this effect is reduced in regions where, ideologically, a family with two working parents—that is, a family that also uses non-familial care for children—is supported. Although this diminishing effect is small, the findings are in line with our assumption: the effect of childcare provision partly relies on the attitude towards the preferred family arrangement.

CHILDCARE PROVISION AND FAMILY IDEOLOGY

Besides the attempt to improve equal opportunities of children, political interest in childcare usually focuses on two interwoven aspects of parenthood. First, politicians try to reduce opportunity costs tied to children. Staying at home with a child lowers future wages, especially those of mothers, in various ways, such as through a loss in job experience (Budig and England 2001). With a well-developed childcare system, parents can stay in the labor market and thus lower the indirect costs of having children. Second, from a sociological perspective, childcare may help to reconcile incompatibilities between work and family. Education, career, and children, interpreted as lifestyle preferences, have different role requirements depending on the individual (Rindfuss 1991). With extensive childcare provision, parents have the

possibility of combining both family and occupational aspirations. Thus, a comprehensive childcare availability reduces the difficulties that parents may face when planning a family.

Following this reasoning, we expect to find higher fertility in a region with high childcare provision than in regions with low provision. This hypothesis is supported in several studies (Del Boca 2002; Rindfuss et al. 2007; Baizán 2009). However, some other analyses did not find this expected relationship, suggesting that the relationship between the two phenomena is more complex (Hank and Kreyenfeld 2003; Andersson et al. 2004).

As the childbearing decision does not only depend on economic reasoning, we consider also norms and personal attitudes to evaluate the effectiveness of childcare provision for childbearing. We argue that socially constructed family ideologies play an important role in the effectiveness of childcare coverage with regard to fertility behavior. Family ideologies refer to the normative picture of the family and the desired family-related gender roles within a society. They are mirrored in the family organization in a society; typical examples are the male breadwinner model or the dual-earner model. Institutional childcare services for children below the age of 3 years supports the dual-earner model as it provides the possibility for both parents to work. If this family organization is not accepted in a society, the childbearing behavior of young adults might remain unaffected by formal childcare provision.

Although policies not always explicitly aim at influencing family life, in our study we follow Bourdieu (1996) and consider policies as a steering element to support a certain kind of family organization. Single policies can be conceptualized as part of a greater gender policy strategy favoring a specific family model in a society (Korpi 2000). In this framework, institutional childcare shifts the responsibility of rearing children from parents to a person outside the home, thus supporting a family organization where both parents work (Lister et al. 2007; Leira 2002; Fraser 1994). Thus, we interpret public childcare provision (particularly for younger children) as

dual-earner support. In contrast, cash child benefits and family tax benefits are regarded as general family support that favors the male breadwinner arrangement in families. The strategy in a country does not necessarily follow only one track—usually, we find a mixture of policies that support diverse family organizations. However, the combination of instruments concerning gender policies can be evaluated and single countries can be ranked according to their level of general family support or dual-earner support. The policy measures chosen in Sweden mainly favor the dual-earner model (Björnberg 2002).

Societies' normative support for family models often reflect this political dimension of gender roles (Sjöberg 2004). Surveys show that the population in countries with dual-earner supporting policies agrees more strongly with statements expressing gender equity and less with conservative family attitudes (Ferrarini 2006: 130ff.). In contrast, in countries with general family support policies, the respondents follow the reverse pattern: the majority believes that family life and children suffer if the mother works, which we interpret as a preference for the male breadwinner model

However, family ideologies depend not only on policy strategies—they are also coined by normative changes in a society. The Second Demographic Transition approach highlights a cultural shift concerning gender role attitudes that appeared simultaneously with other phenomena, such as the postponement of childbirth and a decrease in period fertility rates in Western Europe (Billari 2008; van de Kaa 2001; Lesthaeghe and Surkyn 1988). The underlying mechanisms are complex; we assume that new policies may result in societal transformation but it is also possible that normative change drives political initiatives (see de Bruijn 1999). As we assume, a change in norms and values evolves over time and, therefore, there might be a period of discrepancy between societal and political ideologies. So, our central argument

emphasizes that the possible effects of the childcare availability on childbearing behavior depend on a population's favored family arrangement.¹

This aggregate-level hypothesis translates into micro-level mechanisms: following sociological explanations of individuals' behavior, we assume that the decision to have a child is influenced not only by economic factors but also by personal attitudes and social norms (see e.g. Ajzen 1991). Thus, an increase in childcare availability affects the individual childbearing behavior depending on the social acceptance of the dual-earner model. This argument is twofold as it contains an individual and a social level component.

First, childcare provision might interact with the attitude a person has regarding gender roles within the family. We expect that formal childcare should be in line with the ideal family arrangement that a person wishes. Potential parents who believe that generally both fathers and mothers should work (dual-earner model) might consider the childcare supply before they decide to have a child. In contrast, the childbearing decision of individuals who favor the male breadwinner model with a female homemaker would not consider childcare availability as a crucial condition. It is important to keep in mind that individual attitudes and preferences reflect a person's perception of positive and less positive implications of becoming a parent and specific living and working arrangements (Hakim 2003). In this context, some mothers might feel guilty when taking their child to non-familial childcare (Duncan et al. 2003), whereas others are happy to have the possibility to work on their career². Therefore, childcare availability has a positive effect on childbearing behavior more for people who favor the corresponding dual-earner model.

¹ Changes in the childcare provision do not always aim at increasing fertility (for a discussion of historical targets of family policies in Sweden, see Björnberg 2002). Even if not explicitly stated, such a change may have an unintended but positive effect on fertility.

² There are also other reasons for parents to send their children to childcare facilities, e.g. social integration and early childhood education (for a review on the relationship between childcare and child outcomes see e.g. Waldfogel 2002). These factors do not vary with family ideologies and therefore we leave them aside in our argumentation.

Second, normative expectations of an individual's social surrounding are an important factor for fertility behavior. Normative pressure concerning family ideologies might be exerted through emotional bonds to parents, siblings, and other kin (Bernardi 2003: 535), or through anticipated sanctions imposed by peers (Erickson 1988). Therefore, a person seeks to adapt to the family arrangements favored in her social surrounding. Similarly, as for personal attitudes, we expect that the more support for the dual-earner model is found in a social environment, the stronger the effect of childcare availability on entry into parenthood.

To sum up, when evaluating the effect of childcare policies, we have to take into account the direct effects of childcare on fertility behavior but also the conditional effects of personal and social norms about family arrangements (such as the male breadwinner or the dual-earner model).

DATA AND METHOD

In order to analyze the proposed relationship between family ideology, childcare and fertility behavior, we have computed logistic regression models for the years 2001 to 2003 using Swedish survey data combined with regional data provided by Statistics Sweden and the OECD. The key questions to be answered are as follows (all other things being equal, e.g. individuals' income and regional unemployment levels): (1) Do childless individuals in a region with more extensive childcare provision³ have a greater probability of entering parenthood compared to individuals in regions with lower childcare availability? (2) Does the effect of childcare on fertility behavior vary over personal preferences about family arrangements? and (3) Does the effect of

³ Although we are interested in effects of childcare provision, we use percentages of childcare enrollment in our statistical analyses. This is appropriate as in Sweden childcare supply meets demand.

childcare on fertility behavior depend on the aggregated attitudes towards desirable family types in a region?

The regional-level data are available only from 2001 onwards. Therefore, we constructed a data set including the years 2001, 2002, and 2003, combined with individual-level information from the two-wave Young Adult Panel Survey, the so-called YAPS data.⁴ This data set provides information on individual gender role and family attitudes for both men and women. Additionally, it offers socio-demographic characteristics, including reproductive behavior of the individual respondents in the time between the Bernhardt waves. The first wave was carried out in 1999, the second wave in 2003. The panel data set includes a nationally representative sample of 2,089 young adults from cohorts born in the years 1968, 1972, and 1976. Of these, 1,749 individuals had been born in Sweden to Swedish-born parents. The sample also contains 340 persons born in Sweden in 1972 and 1976 with one or both parents born in either Poland or Turkey. The response rate for the Swedish sample in 1999 was 82% (2003: 72%); for the Turkish/Polish sample, it was 56% (2003: 67%).

As a dependent variable, we focused on the occurrence of a first birth between the two waves of the YAPS survey. We assume that entry into parenthood leads to drastic changes in an individual's life. Parents, in contrast, may behave according to different rationales: for example, a mother might more easily decide to have a second child because she already has interrupted her career when she had her first child, something that we have left out of account in the present analysis. Therefore, we have concentrated on entry into parenthood and excluded all parents who had a child before the year 2001. This reduced the sample size to 1,367 individuals. Within this data, we found 242 first births. The dependent variable in the model is the dummy "first child", coded as 1 for all respondents who became a parent in 2001 or

⁴ The survey was designed by Eva Bernhardt at Stockholm University with Statistics Sweden in charge of the field-work. Data are provided by the Swedish Social Science Data Service (SSD) and are available at <http://www.ssd.gu.se/>.

later, and coded 0 otherwise. Respondents who had a child drop out of the sample for the following years.

The survey offers the item “What do you think is the best arrangement for a family with pre-school children?” and we used the responses as measurements of the central variable “family ideology”. The answer options were as follows: “the woman stays at home, the man earns the money” (7%); “both parents work but the woman works part-time” (16%); “both parents work but the man works part-time” (<1%); “both parents work and care equally” (69%); “don’t know” (8%). Based on our theoretical considerations, we take the last major option, which we call “dual-earner support”⁵, to be strongly connected to the acceptance of non-family childcare use. During working hours, parents are usually not able to take care of their children. Assuming that there is no kin who can look after the child (as is reasonable in Sweden), working parents have to rely on public or private childcare arrangements. According to this line of thought, the acceptance of a dual-earner family arrangement mirrors the acceptance of non-family childcare. Therefore, we used a dichotomous variable that picks up affirmative answers to the question about the dual-earner family, coded as 1 (0 otherwise).⁶

As the usual socio-demographic control variables, we included age and sex (coded 1 for females and 0 for males) in the model

An adequate income is an important precondition for forming a family (Esping-Andersen 2002), thus we expect that a person with a higher yearly income is more probable to enter parenthood. The information provided in the survey is taken from an income register. It is coded in Swedish Kronor earned in the years 1997 and 2001,

⁵ The answer “both parents work and care equally” can also be interpreted as an indicator for gender equality in a society in which men and women share both paid work and care. As the question explicitly concerns family arrangements, we use it as a measure for the acceptance of dual-earner families leaving aside the care aspect.

⁶ A measure with a more refined scale would reflect the acceptance of the dual-earner model in more detail. However, the questionnaire on which the analysis is based does not provide such information.

and includes income from employment, capital, and business. Considering the time order of cause and effect, we inserted the income for 1997 in our analysis of the year 2001 and the income in the year 2001 for our observations in 2002 and 2003, as we expect that only income before conception might have an effect on childbearing in a given year. In order to account for the aspirations of young adults to reach a similar income level as their environment, we relate the income of young adults to the overall mean income in Sweden in the same period. According to OECD statistics, the mean yearly income in Sweden (across all age groups and for both men and women) around the year 2000 was 182,404.4 Swedish Kronor. On this basis, we categorized the income levels as low (meaning half of the mean income and below: =91,000 Swedish Kronor), middle (<182,000 and >91,000 Swedish Kronor) and high income (above the mean: >182,000 Swedish Kronor per year).

In Sweden, parental leave benefits are paid on basis of the individual's income in the calendar year before childbirth. We assume that a person strives for a parental leave benefit above the minimum payment and therefore, we considered whether the respondent had a paid job. This variable is coded 1 in cases in which the individual had a full- or part-time job in 1999 and 0 otherwise (the latter category includes students, unemployed, and housekeepers). Our last individual-level control variable is the educational level attained by the year 1999. This may influence childbearing behavior through a number of channels (Lappegård and Rønsen 2005). The specification in our data set was coded into three categories: lower-secondary education or less (22% of the respondents), upper secondary (45% of the respondents), and tertiary education (33% of the respondents). Additionally, we controlled for the working status "student", expecting that young adults normally want to finish their education before starting a family.

Sweden is divided into 21 regions, the so-called *län*, each divided into a number of municipalities (*kommuner*). On basis of the 95% confidence intervals to evaluate the reliability of the sample proportions, we excluded 5 regions from die analysis (see table 2 in the appendix). The *län* data for childcare consist of the percentage of

children between 1 and 2 years of age enrolled in public or private childcare⁷. The rates for the 16 regions in the years from 2001 to 2003 vary between 55.7% and 69.8% with a mean of 63.5%⁸. Statistics Sweden, who provided the data, defines public childcare as childcare activities for which the municipality is responsible, organizes and performs, whereas private childcare comprises activities for which the municipality has overall supervisory responsibility but which is run by another organizer.⁹ Unfortunately, the data are available only from 2001 onwards. As the development of childcare provision is very similar across regions (and also to enhance our data set), we include the variable “childcare enrollment” in the years 2001 to 2003 without a lag in our regression model

The measurement of childcare provision is problematic. First, from a theoretical perspective, we are interested in childcare availability. Although enrollment rates are rather a measure of demand than supply, we use enrollment as a proxy for availability. We base this procedure on the fact that, generally speaking, in Sweden childcare demands are met (Plantenga and Remery 2009), i.e. the demand mirrors the supply.

Second, we might have a bias in the data in case that there is a selection process involved in attending childcare facilities. In Sweden, while formerly childcare was guaranteed only to children whose parents work or study, nowadays all children have access to childcare: since 2001 also children of unemployed parents and since 2002 children of parents on parental leave have the right to attend childcare (UNESCO 2002). Still, there might be some parents who gave birth to another child, take parental leave and care for their older child(ren) at home. That means that the

⁷ The coverage rate of children under 1 year is below 1% and reveals that Swedish parents care for their very young children themselves. The main reason for this is the generous parental leave system in Sweden, which substitutes 80% of parents' earnings for 480 days if both parents take up leave (Lister et al. 2007). For this reason, we use the percentage of children aged 1 and 2 years enrolled in childcare omitting children below 1 year.

⁸ Table 2 in the appendix gives the enrollment rates in regional childcare.

⁹ The data provided includes pre-school services and family day-care.

number of enrolled children might depend also on fertility behavior in the years before. However, we avoid an endogeneity bias in our regression results by analyzing first births as dependent variable - first births cannot influence enrollment of children aged 1 year or older.

A third problem might lie in a possible, infrastructural heterogeneity of the Swedish regions. As the regions cover a rather large area, the average percentage of children enrolled in childcare might conceal the fact that there are rural sub-regions with very low (or urban areas with very high) childcare availability. Unfortunately, in the survey data we use, there is no detailed information on the municipality a person lives in; therefore, we decided to combine the individual data with *län*-level childcare data. Numbers of the Swedish National Agency for Education suggest, however, that the variance between rural and urban areas in their childcare provision is shrinking: in 2005, the enrollment rates of children between 1 and 5 years in rural municipalities and big cities differed only by 9% (Neumann 2009).

An optimal analysis of childcare effects would not only include availability but also other characteristics, such as prices and quality. These data are not available. However, Andersson et al. (2004) did not find any effects of the various dimensions of childcare, so we assume that we do not produce biased results by omitting these variables.

As a measure of regional family ideology, we aggregated the individual answering patterns to the “dual-earner” item in the questionnaire (of the year 1999) by calculating the percentage of people who answered affirmatively (for an evaluation of this procedure, see Kravdal 2006). The variable ranges from 61% to 84% in the different regions, with a mean of 64%, and indicates a broad but not uniform acceptance of the dual-earner family. For detailed numbers in each *län*, please see the appendix.

Lagged regional unemployment rates (in the years 2000, 2001, and 2002) were downloaded from the OECD Statistics Web site,¹⁰ and serve as an indicator of economic uncertainty in a region. Here, we expect that a high unemployment level fuels the perception of social risks for potential parents (Hoem 2000; Kravdal 2002) who can be expected to react with a postponement of childbearing until less insecure times arrive in the future.

Additional to the main effects of childcare provision and family ideology we insert two interaction terms to account for the combined effects of the variables. By multiplying the indicators of childcare provision and of personal attitudes, we try to pick up individual level support for dual-earner families. A second multiplicative term controls for the effect of childcare on entry into parenthood depending on the regional-level acceptance of the dual-earner model.

As we mentioned above, we applied a logistic regression analysis, estimating the probability of entry into parenthood, i.e. the occurrence of a first birth. The observed response (Y_{ij}) is 1 if a person has a first child:

$$Y_{ij} = \begin{cases} 1 & \text{if individual } j \text{ has a first child by year } i \text{ (} i=2001, \dots, 2003 \text{)} \\ 0 & \text{otherwise} \end{cases}$$

The probability of having a first child can be defined as

$$p_{ij} = P_{ij}(Y_{ij} = 1 | \mathbf{x}_{ij}, u_j),$$

where P_{ij} denotes the probability of individual j to have a first child in year i , given a vector of individual and regional level covariates \mathbf{x}_{ij} and given an individual level heterogeneity factor u_j . Taking into account the panel structure of the data, we adopted the random intercept logit model.

¹⁰ URL (April 2009): <http://stats.oecd.org/WBOS/index.aspx>.

$$\ln\left(\frac{p_{ij}}{1-p_{ij}}\right) = \mathbf{a} + \mathbf{x}_{ij}'\mathbf{b} + u_j,$$

where \mathbf{a} is the intercept and \mathbf{b} is the vector of regression coefficients.

In yet another approach, we could have used a multilevel analysis to get the opportunity to analyze the influence of *län*-level variations on entry into parenthood. Such a model allows accounting for the fact that individuals within a region are more similar to each other than to individuals in a different region. However, a multi-level analysis did not lead to an improvement of the model fit when considering *län* as second level.

REGRESSION RESULTS

We made two logistic regression analyses for mainly individual-level effects (model 1 and 2), one analysis that also included our main regional level variables (model 3) and one full model that contained all our individual- and regional-level characteristics (model 4). The results of the analyses are presented as odds ratios in Table 1.

Age influences entry into parenthood significantly. During the period of observation, women have a more than double chance of becoming a parent than men, *ceteris paribus*. This might be due to the fact that there is no strong biological restriction of the reproductive years for men and therefore they can postpone their entry into parenthood more than females. Obviously, there is an appreciable income effect only when the annual income is well above the mean income. One possible explanation for this might be that in Sweden the level of the parental leave benefit is computed on the basis of the former income — that is, young adults try to reach an income as high as possible before entry into parenthood so as to receive a high parental leave benefit.

Table 1. Odds ratios of the logistic regression analysis for the first child.

	Model 1	Model 2	Model 3	Model 4
Individual-level variables				
Age	1.25 *** (0.097)	1.12*** (0.075)	1.18*** (0.067)	1.21*** (0.080)
Sex (1 = female)	2.59 *** (0.931)	2.20 *** (0.632)	2.08 *** (0.559)	2.23 *** (0.677)
Middle income (ref: low income)	1.15 (0.412)	1 (0.313)	1.18 (0.350)	0.98 (0.317)
High income (ref: low income)	3.78 *** (1.778)	3.10*** (1.169)	3.13*** (1.150)	3.20*** (1.262)
Paid job (1 = yes)	1.92*** (0.734)	1.76** (0.545)	1.75** (0.513)	1.77** (0.572)
In education (1 = yes)	0.13*** (0.084)	0.19*** (0.102)	0.21*** (0.102)	0.18*** (0.100)
Upper secondary education (ref: lower secondary education)	1.58 (0.706)	1.66 (0.600)	1.45 (0.484)	1.72 (0.650)
Tertiary education (ref: lower secondary education)	1.21 (0.497)	1.20 (0.400)	1.21 (0.379)	1.21 (0.421)
Attitude: dual-earner family		0.07 (0.275)		0.13 (0.495)
Regional-level variables				
Childcare coverage		0.89** (0.053)	0.41 ** (0.259)	0.34** (0.232)
Unemployment			1.06 (0.093)	1.03 (0.103)
Aggregated attitude: dual- earner family			0.54** (0.274)	0.47** (0.262)
Interaction effects				
Childcare × individual attitudes		1.04 (0.068)		1.03 (0.069)
Childcare × aggregated attitude			1.01** (0.009)	1.01** (0.010)
Model fit				
Std.deviation of the individual level heterogeneity factor u_{ij}	2.24 (0.422)	1.50 (0.532)	1.41 (0.545)	1.62 (0.542)
Intraclass correlation ρ	0.74 (0.081)	0.58 (0.130)	0.56 (0.134)	0.61 (0.130)
Number of observations	3,204	2,956	3,183	2,944
Number of individuals	1,148	1,061	1,141	1,057
p-value of the likelihood-ratio test of the hypothesis $\rho=0$	0.000	0.001	0.002	0.001

* $p = 0.10$; ** $p = 0.05$; *** $p = 0.01$. Standard errors are shown in parentheses.

Educational attainment seems to be less influential in this context. This finding is in accordance with other studies that show a shrinking difference in childbearing behavior between different education levels in Sweden (Andersson et al. 2009).¹¹ The patterns for the individual-level control variables were robust over all four model specifications.

As the next step, we included the individual-level attitude towards the dual-earner model, the percentage of regional childcare coverage, and the interaction term between the two variables. The individual-level effect did not support our hypothesis: the coefficient was non-significant, and we conclude that the respondent's attitude toward the dual-earner family was unimportant for entry into parenthood.

On the other hand, the provision of childcare in a region significantly affects the entry into parenthood; however, the effect is the opposite of what we hypothesized: for every 1% increase in childcare provision for children in the age group 1-2 years, the chance of having a first child was reduced by a factor of 0.8. The coefficients for the individual attitudes towards dual-earner families and the interaction term were insignificant.

Considering the fit of our models, we found the random intercept approach for individuals appropriate to analyze our research question. In such a model, it was assumed that some variance exists between the individuals, as shown by the overall standard deviation of the individual level heterogeneity factor σ_j . The values in the referring row range between 1.62 and 2.39 indicating that individuals differ considerably from each other and the random intercept model is appropriate to account for this between-individual heterogeneity. The intra-class correlation ρ varies between 0 and 1 giving insights into the degree of similarity between measurements of individual j in the different years i . The ρ -values between 0.63

¹¹ The coefficients for education are also insignificant in a model without the income variable.

and 0.44 show that the measurements for one person in the different years are not independent from each other indicating that the random effects approach used in this analysis accounts sufficiently for the structure of the data. The very low p -values of the likelihood ratio test confirm that the value of ρ in the different models is significantly different from zero in the population.

DISCUSSION

For the individual-level control variables¹², we found significant effects of age and sex on having a first child. For the income variable, only respondents who belong to the high-income group had significantly higher odds of having a first child than individuals with a low income.

Contrary to our theoretical expectations, the extent of childcare enrollment of very young children exerted a negative impact on fertility. The more children were covered by public and private childhood services at ages 1 to 2 years, the lower was the probability of having a first child. Rindfuss et al. (2007) (who used a different model specification for their analysis of register data on Norwegian cohorts born in the years 1957 to 1962) found similar results in their analysis when they used what they call a naïve model. Their specification with fixed effects for Norwegian regions changed their childcare effect from significantly negative to significantly positive. However, a multilevel analysis of our data, including *län* as the third-order level, resulted again in negative coefficients.¹³ A methodological explanation for this counter-intuitive finding could lie in a selection bias, as our sample consists of respondents below 36 years of age. At present, women—especially those with high

¹² We did not show the results for other covariates that did not yield significant results such as “ethnic background” (coded 1 for respondents with Swedish born parents and 0 otherwise) and “urban place of residence” (coded 1 for people living in an area with more than 27.000 inhabitants which are closer to a central place (*kommuncentrum*) than 31 km and 0 otherwise).

¹³ Moreover, as already mentioned above, such a multilevel specification did not result in an improved model fit.

educational attainment and high income levels—postpone their first births to above the age of 35 years. These same women could be part of the group that strongly demands (and accepts) childcare facilities.

The individual-level attitude that the best arrangement for families with pre-school children is a “dual-earner” constellation has a non-significant and unimpressive impact on entry into parenthood. This means that personal opinions on family organization do not influence fertility behavior as strongly as we previously expected. In addition, the interaction between childcare provision and individual attitudes has a statistically non-significant coefficient. This result might be an indicator for difficulties in transferring a gender-equal family organization from attitude to reality. A methodological explanation for the non-significant attitude variable might be the fact that the survey item in the questionnaire does not sufficiently cover the facets of the concept “dual-earner family”. The Swedish population has reached comparably high levels of gender equity, as shown in an overwhelming majority of 75% of the respondents in the survey who support the dual-earner model. However, the use of one single question does not mirror the whole picture. In order to measure other dimensions of the dual-earner support, more detailed attitudinal patterns should be included in the analysis.¹⁴

In contrast to effects on the individual level, the regional-level attitudes did have an effect on first births. Individuals living in regions with weaker support for the dual-earner family had a higher probability of entering parenthood than in regions with stronger support. This indicates that, in more traditionalist regions, young adults start a family earlier; in less traditionalist regions, postponement of first births is more pronounced. This interpretation is in line with the study of Bernhardt and Goldscheider (2006) who also analyzed the YAPS data. The authors found that more

¹⁴ One statement used in various other data sets that captures the perceived importance of mothers for the development of their children is “A pre-school child suffers if his/her mother works”. Unfortunately, this item is not included in our data set.

traditionalist Swedish men are more likely to become a parent at young ages than are men with more egalitarian attitudes.

Our last variable of interest—the interaction between regional-level attitudes and childcare provision—showed a significant and positive coefficient. The odds ratios for this interaction are rather small but support our theoretical argument: the impeding effect of childcare on fertility behavior, which we found in our analysis, is reduced in regions where the acceptance for dual-earner families is greater. In egalitarian regions, which are the majority in Sweden, mothers are expected to work. In such a region, a high childcare provision helps to reconcile family and career and encourages having a first child. In contrast - although this is the exception in an open, generally gender egalitarian society as the Swedish one - regions with lower acceptance of the dual earner family, the population is more traditional and mothers who stay at home when having a baby or work part-time are accepted. Therefore, in such a region, the childcare provision is less important for young adults to start a family.

CONCLUSIONS

This study examines the effect of regional childcare provision and the support of the dual-earner model on the probability of entering parenthood. We have analyzed a Swedish panel data set of young adults, combined with regional-level data. The logistic regression analyses showed congruent results over differing model specifications.

Based on our results, a final evaluation of childcare effects on fertility behavior remains difficult. We found that the most important factors encouraging a young Swede to enter parenthood below 36 are being female, having a paid job, and having completed an education. Connected to the latter two findings, people in the high-income group have three times the odds of having a child compared with people in

the low-income group. However, as our analyses show, the possibilities of politically supporting potential parents by increasing childcare provision remain unclear. Contrary to our expectations, young Swedish individuals do not seem to enter parenthood more easily in regions where the childcare provision is higher. As one possible explanation for this statistical, negative relationship between childcare and childbearing probabilities might be the age structure of the respondents in the survey, we suggest expanding the analysis to a sample that includes individuals above 35 years of age. This would also allow for enhancing the time horizon and analyzing the dynamics of childbearing over the entire reproductive period of respondents.

Although in Sweden most people support an egalitarian division of paid and unpaid work of fathers and mothers, we find some regional variation between the shares of respondents that agree to such equal gender roles. Our statistical analyses show, moreover, that in regions where more people favor the dual-earner model, childcare provision affects childbirth more than in regions with less support for this family model. This effect is rather small in scale, however, it is in line with our hypothesis and implies that childcare provision is not only related to childbearing behavior but also to the family ideology within the population.

Concerning younger adults, we need to learn more about their rationale behind the decision to have a first child. Why do they postpone their entry into parenthood—due to career reasons or because they strive for personal self-fulfillment? What normative expectations does their social environment have towards them? Is childcare support the adequate measure to give young adults the opportunity to overcome the obstacles they see? According to our findings, Swedes below age 36 enter parenthood based on their individual situation, especially income and job status. Drawing conclusions from this result, the provision of cheap childcare organized according to the needs of young parents, for example students, might be a promising means of encouraging parenthood in younger age groups. Such a policy

could be combined with an amendment of parental leave benefits in Sweden as these refer to the income and young adults often have no or a comparably low income.

ACKNOWLEDGEMENT

The author is grateful for the support received from the collegial environment at the Max Planck Institute for Demographic Research during her work with various drafts of this text.

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APPENDIX

Table 2: Regional childcare provision and aggregated attitudes for Swedish regions.

	childcare 2001 ¹	childcare 2002 ¹	childcare 2003 ¹	% of respondents supporting dual-earner family ²
Stockholms län	64.7	69.7	69.8	70.1
Uppsala län	59.7	60.9	60.3	72.0
Södermanlands län	64.3	69.0	69.3	68.8
Östergötlands län	62.7	67.6	67.8	72.1
Jönköpings län ³	59.9	61.7	63.8	53.9
Kronobergs län ³	62.5	67.3	68.3	63.3
Kalmar län	62.7	61.0	61.0	70.3
Gotlands län ³	66.8	59.7	67.2	52.9
Blekinge län ³	66.8	78.8	74.9	61.2
Skåne län	61.0	68.3	69.0	71.0
Hallands län	60.4	62.5	62.3	60.8
Västra Götalands län	56.8	61.2	63.0	67.1
Värmlands län ³	64.0	61.7	63.8	62.3
Örebro län	57.9	67.9	65.6	72.3
Västmanlands län	63.7	66.1	67.4	66.2
Dalarnas län	57.3	57.7	55.7	64.7
Gävleborgs län	62.2	68.2	68.1	68.9
Västernorrlands län	59.0	64.3	65.2	75.0
Jämtlands län	58.1	64.1	65.7	84.1
Västerbottens län	63.3	60.0	62.6	68.5
Norrbottnens län	57.7	67.6	67.7	74.2

¹ In % of children aged between 1 and 2 years enrolled in public and private childcare including pre-school and family daycare.

² % of respondents who answered that “dual-earner family” is the best arrangement for families with pre-school children.

³ Calculating the 95% confidence interval showed that sample size and answering pattern in the YAPSurvey does not allow for precise prediction of population proportions in this *län*. Therefore, we excluded the region from our analysis.