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Unwilling or Unable? : Spatial, Institutional and Socio-Economic Restrictions on Females' Labor Market Access

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Unwilling or Unable? Spatial, Institutional and Socio-Economic Restrictions on Females' Labor Market Access

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February 2004

Forschungsinstitut
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Institute for the Study
of Labor

Unwilling or Unable? Spatial, Institutional and Socio-Economic Restrictions on Females' Labor Market Access

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ABSTRACT

Unwilling or Unable? Spatial, Institutional and Socio-Economic Restrictions on Females' Labor Market Access

We analyze the effects of regional structures on both females' willingness to work and the probability of being employed for those willing to work. Special permission was granted to link regional data to individual respondents in the German Socio-Economic Panel (GSOEP). Results of a bivariate probit model correcting for sample selection show that high regional unemployment discourages women from entering the labor market. Those who are willing to work find it easier to do so if living in regions with low regional unemployment rates, short distances to the next agglomeration, and – for mothers – a high density of childcare provision.

JEL Classification: R23, J13, J21, J64

Keywords: female labor supply, regional labor markets, childcare provision, bivariate probit model, Germany

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INTRODUCTION

Most women face severe day-to-day space and time constraints because of their domestic workload, which limits the time available for work and getting to work (HANSON and PRATT, 1990; PRATT and HANSON, 1991). These constraints often form a serious geographical barrier to labor-force participation because they spatially restrict the opportunity set of available jobs (VAN HAM, 2002). Poor geographical access to suitable jobs is thought to negatively influence employment opportunities and labor market outcomes at the individual level (KAIN, 1968; PRESTON and MCLAFFERTY, 1999 on the spatial mismatch hypothesis). Other authors have suggested that geographical access to childcare facilities is an important factor determining access to employment opportunities for mothers with young children (KWAN, 1999; VAN DIJK and SIEGERS, 1996; VAN HAM and MULDER, 2003).

Most of the literature on spatial barriers to female labor-force participation focuses on the direct effect of access to jobs on the probability of having a paid job. The mechanism studied is straightforward: it is hypothesized that the more suitable jobs can be reached within acceptable commuting time, the easier it is to find a suitable job. Besides this direct effect of access to jobs on female labor-force participation, there might also be a second, indirect, mechanism at work. Some women might get discouraged in their job search and fail to enter the labor force because they consider the probability of finding a suitable job to be very low given the lack of suitable local job opportunities (see FISHER and NIJKAMP, 1987; VAN HAM *et al.*, 2001 on the discouraged worker hypothesis). In other words, it can be hypothesized that some women in the potential labor force state that they do not want a paid job, but would in fact state otherwise if they had access to suitable employment. The question is thus to what extent these women are unable or unwilling to find a suitable job. The answer to this key question will provide more of an insight into the size of the hidden labor force. However, the difference between the two mechanisms in operation has received little attention in the existing literature.

This article addresses the question of to what extent the opportunity structure of the regional labor market has a double-edged effect on female labor-force participation in the Western part of Germany. It is hypothesized that the opportunity structure influences both the decision to enter the labor market (willingness to take up a paid job) and the probability of being in employment for those willing to work. The outcome of both effects might be the same – non-employment – but the mechanisms leading to this outcome are different. Aspects of the regional labor market considered are the unemployment rate, geographical accessibility to employment opportunities and the availability of childcare. The hypothesis was tested using individual level data from the 2001 wave of the German Socio-Economic Panel (GSOEP). This representative dataset, which is easily accessible to the scientific community, includes detailed information on the individual and household characteristics of more than 22,000 respondents. For this article, two unique features of the GSOEP data were used. First we utilized of a set of variables identifying the hidden labor market reserve. Second, we were given special permission to link regional labor market characteristics to individual respondents. The effect of the regional opportunity structure on female employment was estimated using a bivariate probit model that corrects for sample selection.

SPATIAL DETERMINANTS OF WILLINGNESS TO WORK AND SUCCESS IN FINDING A JOB

The principal argument of this paper is that, in order to fully understand the effect of the spatial context on female labor-force participation, two phases of participation should be distinguished. In the first phase, women decide whether or not to participate in the labor market. In principle, all women are part of the potential labor force; however, only those willing to be in paid employment are part of the active labor force and therefore 'at risk' of actually being employed. The second phase is the job search of those willing to work and

therefore in the active labor force. A successful search leads to employment. We argue that the opportunity structure of the regional labor market influences both phases of participation and that it is necessary to consider both phases in order to fully understand the mechanisms at work. Looking at both phases provides more insight than looking at female labor-force participation in terms of employment versus non-employment.

A key question as regards the first phase is what determines whether women are willing to work. Not all women want to have a paid job. Especially when (young) children are present, some women prefer to be a full-time housewife and mother. However, it is also widely recognized that women face numerous restrictions making it difficult to take up paid employment, especially when they have children (see, for example, HANSON and PRATT, 1995). It is very likely that some women would like to work if they considered it a possibility, but state that they do not want to work because they perceive the probability of actually getting a job to be very low.

In the labor market literature, this effect is known as the discouraged worker effect (FISHER and NIJKAMP, 1987; VAN HAM *et al.*, 2001). According to the discouraged worker hypothesis, people with poor labor market expectations become discouraged in their job search and leave or fail to enter the labor force, because the probability of finding a suitable job after a certain period of time is too low. Poor labor market prospects, leading to discouragement, may result from individual characteristics, either real or ascribed. Discouragement can also be caused by the structure of the labor market (VAN HAM *et al.*, 2001). Poor access to employment opportunities may lead people to become discouraged in their search for jobs. If, given the expected returns, the costs of a job search are too high, people may give up searching.

Poor access to employment opportunities may be expressed by a high regional unemployment rate, which indicates a mismatch between demand and supply on the regional labor market (SIMPSON, 1992). We therefore expect women living in regions with a high

unemployment rate to be less likely to express willingness to work (be part of the active labor force) than women in regions with a low unemployment rate. Another indicator of poor access to employment opportunities is the time a worker has to travel to the nearest concentration of job opportunities (see BÜCHEL and VAN HAM, 2003). The longer this time, the more difficult it will be to find a suitable job. Research shows that especially women are sensitive to commuting times, and that men will tolerate longer commuting times than women (MADDEN, 1981; GORDON *et al.*, 1989; JOHNSTON-ANUMONWO, 1992). Women are more likely than men to have to cope with severe day-to-day space and time constraints dictated by their domestic workload (HANSON and PRATT, 1991). We expect women living in locations further from concentrations of employment opportunities to be less likely to express willingness to work.

For women with young children, poor geographic access to childcare may also lead to discouragement. Several authors have asserted that geographical access to childcare facilities is an important factor determining access to certain job locations for women with young children (MICHELSON 1985, 1988; TIVERS 1985, 1988; HANSON and PRATT 1988, 1990; ENGLAND 1996a, 1996b; GILBERT 1998; KWAN 1999). This implies that, for many mothers, good geographical access to childcare facilities is a precondition for access to job opportunities. When childcare is not available, this may lead to discouragement. We therefore expect mothers with poor access to childcare facilities to be less likely to express willingness to work than mothers with good access to childcare facilities.

For those women willing to have a paid job (and therefore in the active labor force), the probability of actually having a job is expected to be influenced by the opportunity structure of the local labor market. A lack of job opportunities is a well-established explanation of unemployment in the spatial mismatch literature (for an overview, see PRESTON and MCLAFFERTY, 1999). Based on the above, we can formulate three hypotheses concerning the influence of the regional opportunity structure on the probability of those women who are willing to work actually having a job. First, we expect a high regional

unemployment rate to negatively influence the probability that those willing to work are actually in employment. A high regional unemployment rate indicates fierce competition on the regional labor market, and it is more difficult for workers to find a suitable job under these conditions. Second, we expect women who live far away from large concentrations of employment opportunities to run a high risk of unemployment. For these women, the costs of finding a suitable job are particularly high. Third, the probability that mothers with poor access to childcare are in employment is expected to be low because it is difficult for them to find a job that they can combine with caring for small children.

DATA AND METHODOLOGY

Data

The individual level data used in this paper were taken from the 2001 wave of the German Socio-Economic Panel (GSOEP) with information on 22,351 respondents. This database is administered by the German Institute for Economic Research (DIW) in Berlin (see WAGNER *et al.*, 1993; SOEP GROUP, 2001, for details). The analyses were restricted to women aged between 18 and 60 who were living in the former West Germany. We excluded students, trainees, and respondents who reported that they were unable to work due to a disability. Following this selection procedure, the data set comprised 5508 female respondents.

To test our hypotheses, we need to analyze both willingness to work (being part of the active labor force) and employment status among those willing to work. The German Socio-Economic Panel includes some unique variables that make it possible to identify the hidden labor force reserve, i.e. those who are in principle willing to work, but are currently not looking for a job and therefore do not report unemployment status. According to our definition, all selected women are in the potential labor force. Those who have a paid job or are not employed, but willing to work (involuntary unemployed or member of the hidden

labor force reserve), are in the active labor force. To make this distinction, we drew on the responses to a question posed to non-employed respondents: "Do you intend to engage in paid employment (again) in the future?" The women who stated "No, definitely not" were coded as not willing to work and therefore not in the active labor force.

For the second part of the analysis we had to define employment. We decided to categorize women in regular full-time or part-time employment as employed. Consequently, women who stated that they were employed only marginally or irregularly were coded as non-employed. The above definitions of the active labor force and employment result in a total of 4761 female respondents in the active labor force (either willing to work or already employed), of whom 3320 were employed.

Besides the individual level data from the GSOEP respondents, information on regional labor market characteristics was also needed. For this purpose, the 2001 regional data for the 75 West German spatial planning regions (*Raumordnungsregionen*) were obtained from the German Federal Office for Building and Regional Planning (BUNDESAMT FÜR BAUWESEN UND RAUMORDNUNG, 2002). Using the *Raumordnungsregion* number for the GSOEP respondents' place of residence as a key variable, we were able to link regional data to individual data. We gratefully acknowledge the invaluable help of the data protection officer responsible for the GSOEP data, who granted us special permission to link these two sets of data. Three regional level variables were used in the analyses: unemployment rate, mean traveling time to agglomeration, and number of childcare slots per 100 children.

Table 1 presents the variable summary statistics and definitions of the variables for the whole sample (willingness to work equation) and the sample of those willing to work (employment equation).

---- please insert Table 1 about here ----

Methodology

Theoretical considerations have two important implications for the methodology used. First, the cases in our model need to be clustered by region of residence (the 75 West German *Raumordnungsregionen*). The data include both individual level and regional characteristics, and there is more than one respondent per region in our sample. Ignoring the nested nature of the data would violate the standard assumption of independence of observations that underlies traditional regression models. Clustering the data by region in the model used solves this problem (STATACORP, 2001).

Second, we have to analyze the two mechanisms of willingness to work and actually having a job in one model, because the two mechanisms can not be seen separately. The relationship between regional characteristics of the labor market and the women's probability of actually having a job is not straightforward. Those willing to work and therefore in the active labor force are a selective group, and it can be assumed that the selection process is related to our dependent variable (being in employment). If the regional labor market situation is poor, unwillingness to work may be a strategy deliberately chosen to avoid becoming non-employed. Because those most likely to be unemployed are those least likely to enter employment (VAN HAM *et al.*, 2001), analyzing employment while restricting the sample to those in the active labor force could lead to biased results. In the present study, we account for sample selection bias by employing a variant of HECKMAN's (1979) two-step selection model. In the first step, the probability of willingness to work (be in the active labor force) is analyzed. In the second step, the probability of actually being employed is analyzed for those willing to work. Because the dependent variables in both the selection and the employment model are binary, a bivariate probit model with sample selection is proposed, following VAN DE VEN and VAN PRAAG (1981).[1] Such a maximum-likelihood probit model with sample selection provides consistent, asymptotically efficient estimates for all parameters in the model (STATACORP, 2001).

When specifying a two-step model, one has to ensure the model is properly identified (MANSKI, 1995). Strictly speaking, our model is basically identified by functional form because the bivariate probit model is non-linear. However, we decided to adopt an additional strategy in order to avoid multicollinearity problems and to ensure identification of the model. The key element of this strategy is to select at least one instrument variable that affects only the decision to be in the active labor force, but not the probability of being employed. The difficulty here is that we can expect very similar factors to influence both the probability of willingness to have a paid job and the probability of having a paid job since both selection processes can be expected to be very similar. Since a formal econometric test that could indicate the correct specification of the model is not available, any argument as to why specific variables are expected to influence one equation and not the other has to be of a substantive, theoretical nature. In our situation, we chose to use identical sets of regressors in both equations (because of the arguments given above), with the exception of the religion variable, which is only used in the in active labor force equation. We consider it likely that religion, as a proxy for traditional values, influences women's decisions on whether to be part of the active labor force, but not their employment risk, for two reasons. First, there are good theoretical arguments to suggest that religion does not significantly influence the probability that those in the active labor force will actually have a job. Second, we ran a model including the religion variable as a regressor in a single probit employment equation. This test produced very similar results to the employment equation with sample selection shown in the lower part of Table 2, and yielded no significant effect of religion (not shown).

RESULTS

Table 2 presents the results of the full bivariate probit model with sample selection. First of all, the coefficient ρ (0.404) that is significantly different from zero reveals that there is a

positive correlation between the error terms of the willingness to work and employment equations. This indicates that unmeasured respondent characteristics influence both the probability of willingness to work and the probability of being employed, and that it is therefore necessary to correct for (self-)selection. To give a substantive interpretation, the results indicate that women with unmeasured characteristics such as high motivation to be economically active are more likely to state that they want to work, and also more likely to be in paid employment than others.

---- please insert Table 2 about here ----

Selection equation

The results of the selection equation are presented in the top half of Table 2. The dependent variable indicates whether respondents are willing to have paid job (1) or not (0). The results found for the control variables are in line with the existing literature and are, therefore, only briefly discussed.

The probability of willingness to work is non-linearly related to age: with increasing age, the probability that women are willing to have a paid job first increases and then falls. This reflects the well-known fact that the labor market participation of females is highest in the middle age group. As expected, the probability of willingness to work increases with the number of years in education. The more people have invested in their formal human capital, the more likely they are to want to realize a return on this investment in the form of a wage or salary (see BECKER, 1962, on the human capital theory).

Women with a partner are less likely to be willing to have a paid job than single women. This often reflects the outcome of a work specialization decision within the household. Note that this result is not influenced by monetary aspects, since we control for the financial contribution of the partner (if present) separately. Mothers with children under the

age of 7 years are not significantly underrepresented among those willing to have a paid job. This notable results reflects the high work orientation of young West German women, most of whom are educationally well prepared for an occupational career. With increasing age of the youngest child, women become less likely to state that they want a paid job. This result may reflect a growing disillusionment with earlier plans for combining family and work after childbirth, which is consistent with the discouraged worker hypothesis. The higher the additional household income (the net monthly household income minus the net monthly earnings of the respondent)[2], the lower the probability that women will state that they are willing to work. This reflects the well-known decreasing value of additional working hours supplied to the labor market by any household members. Female foreigners are less likely to express willingness to work. On the one hand, this may reflect culturally differential labor market behavior; similarly, we observe that women defined as religious are underrepresented in the active labor force. On the other hand, the reduced labor market participation of female foreigners could also indicate discouragement effects induced by reduced labor market opportunities for this group. This may also explain our finding that disabled women are underrepresented among those women who state that they want a paid job.

Of the three regional variables included in the equation, only the regional employment rate has a significant impact on labor-force participation. The probability of being in the active labor force decreases as the regional rate of unemployment increases. The fact that women in regions with a poor labor market more often state that they do not want to work indicates that these women are discouraged: they say they do not want to work because they perceive the probability of getting a paid job to be too low.

Employment equation

The results of the employment equation are given in the bottom half of Table 2. The dependent variable indicates whether the respondents were employed (1) or not (0). The

sample is restricted to those women who are in employment or who are not employed, but stated that they are willing to work.

The effect of age on the probability of being employed is not significant. This means that the chances of realizing an explicit will to work are equally distributed among age groups. Again, this result is in line with the discouraged worker hypothesis, which suggests that groups with poor employment prospects, such as older people, tend to abandon their employment ambitions. As expected, the probability of being employed increases with years of education. This indicates brighter employment prospects for the better educated. Women with a partner are less likely to be employed than singles. This is consistent with the expectation that a dual job search is more difficult than a single job search within the male breadwinner model. The presence of children under 7 years in the household strongly decreases the probability of a woman's employment. This effect is by far the most pronounced in our model. Thus, although mothers with young children often express a wish to work (selection equation), they are far less able to realize their plans than women without young children. This indicates that there are high (institutional) barriers to employment for mothers with young children. However, the probability of being employed also increases with the age of the youngest child – another well-known pattern. Therefore, the results for these two variables in our two equations suggest that mothers with very young children would like to work, but cannot, because it is difficult to combine caring for a young child with a paid job. As the child grows older, discouraging effects increase, but for those who persist with their career plans, it becomes easier to combine family and work.

In line with our expectations, the probability of being in employment decreases with increasing additional household income. The lower the economic pressure, the less necessary it is for those women who are in principle willing to work to accept jobs with unfavorable conditions. Disabled women and female foreigners are underrepresented in paid employment, even when controlling for their willingness to work. This may reflect some discrimination.

Again, three characteristics of the regional labor market are included in the analysis. All three are significant and have the expected effect on employment. With increasing regional unemployment, the probability of being in paid employment decreases. It is a simple mechanism: the tighter the labor market, the more difficult it is to find a job. With increasing traveling time to the nearest agglomeration, the probability of being employed decreases. This indicates that women facing poor local labor market conditions may escape them if a larger regional labor market is reachable within reasonable commuting time. The third characteristic of the regional labor market included in the model is the number of childcare slots per 100 children in the regional labor market. This variable can be interpreted as an interaction effect with the variable indicating whether a child under age 7 lives in the household. The results show that the probability of being in paid employment increases with increasing numbers of childcare slots. This also is in line with our expectations. The better the access to childcare facilities, the easier it is for mothers to find a suitable job that allows family and work to be combined satisfactorily. This finding is of great policy relevance.

To sum up, our results show that the regional structure of employment opportunities affects female labor force participation in several ways. First of all, the regional unemployment rate influences women's decisions on whether they actually want to work and become active on the labor market and, for those willing to work, the probability of actually having a job. This finding indicates a discouraged worker effect with respect to the decision to participate on the labor market. Second, as a proxy for access to employment opportunities, traveling time to the nearest concentration of jobs negatively influences the probability of being employed. Third, for mothers with young children, the availability of childcare facilities influences the probability of being in employment. Although mothers with young children do not state that they do not want to work more often than other women, they are less successful in finding suitable paid employment. Our findings indicate that an important explanation for

this is a lack of sufficient childcare in the region of residence, which prevents these mothers from combining the care for a young child with a paid job.

SUMMARY AND CONCLUSION

The aim of this paper was to gain an insight into the effect of the regional labor market structure on female labor force participation. Our approach extends the existing literature by distinguishing two mechanisms: the willingness to have a paid job and actually having a job for those willing to work. It was argued that this approach would make it possible to discern the extent to which poor labor market conditions discourage women in the potential labor force and thus affect female labor force participation. We hypothesized that poor access to employment opportunities would negatively influence the probability of willingness to work and the probability that those willing to work are actually in paid employment.

In order to test our hypotheses, we utilized two special features of our data. First, the German Socio-Economic Panel includes some unique variables on whether or not non-employed respondents are willing to look for a paid job in the future. We were thus able to distinguish three groups of women: non-employed women not willing to have a paid job; non-employed women willing to have a paid job; and employed women. To analyze this data structure, we used a variant of the Heckman two-step procedure, which allows selective access to the active labor force to be controlled. A second special feature of our data was that it allowed characteristics of the regional labor market (e.g., traveling time to the next agglomeration, density of childcare provision) to be linked to the individual respondents based on their region of residence.

Testing our framework for the West German labor market confirms the hypothesis that some women who are not participating on the labor market are discouraged by poor labor market conditions. A high regional unemployment rate has a strong discouraging effect.

However, we did not find any discouraging effects of a long traveling time to agglomerations or poor access to childcare facilities for mothers. The latter finding, in particular, is of high policy relevance. For those women who were willing to work, on the other hand, all controlled characteristics of the regional labor market had the expected effect on the probability of being employed. The higher the regional unemployment rate, the longer the traveling time to the nearest concentration of employment opportunities, and – for mothers – the better the regional provision of childcare, the higher the probability of finding a suitable job.

Our findings demonstrate the importance of the spatial context in the explanation of female labor force participation. Poor regional labor market characteristics not only influence the probability of being in employment for those willing to work, but also affect, at an earlier stage of the decision-making process, the willingness to work. Furthermore, the formal distinction between the willingness to work and the ability to do so gives much more insight into the obstruction mechanisms blocking the road to female employment than is possible with traditional research designs that analyze female employment versus unemployment only. This made it possible to discern a differential effect of the presence and age structure of young children in the household on mothers' willingness and ability to work. Applying this advanced methodology may help policy makers to support female employment more specifically and at an earlier point of intervention. Further research may try to assist these actors by working with more differentiated spatial indicators than was possible at this stage.

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NOTES

1. The two-step selection model is often estimated by obtaining the inverse Mill's Ratio from a first stage probit, and entering it into the second stage equation. As noted by VAN DE VEN and VAN PRAAG (1981), if the dependent variable in the second stage equation is binary, the error term is not normally distributed; a two-stage approach to this problem would therefore yield only approximate results.
2. We correct for household size and composition using the so-called modified OECD equivalent scale (weights are: head of household = 1; other household members aged 16 years and older = 0.7; children up to 16 years = 0.5).

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Table 1 Variable summary statistics and definitions

	Mean	Std. Dev.	Range
Willingness to work equation (N = 5508)			
Dependent: willing to work (1 = willing)	0.86		0-1
Age (in years)	40.97	10.41	18-60
Education (in years)	11.63	2.46	7-18
Partner (1 = partner present)	0.83		0-1
Child(ren) up to 7 years (1 = child(ren) present)	0.23		0-1
Age of youngest child under 7 years	3.03	0.85	0-6
Additional household income (in 1000 DM)[a]	1.56	1.15	0-11.94
Disabled[b] (1 = disabled)	0.07		0-1
Foreigner[c] (1 = foreigner)	0.14		0-1
Religious[d] (1 = religious)	0.21		0-1
Unemployment rate in region[e]	7.99	2.84	3.60-17.90
Traveling time to agglomeration[f]	1.22	0.36	0.75-2.22
Childcare slots per 100 children in region[g]	56.87	7.70	39.40-82.70
Employment equation (N = 4761)			
Dependent: employment (1 = employed)	0.70		0-1
Age (in years)	39.66	9.90	18-60
Education (in years)	11.81	2.47	7-18
Partner (1 = partner present)	0.82		0-1
Child(ren) up to 7 years (1 = child(ren) present)	0.24		0-1
Age of youngest child under 7 years	3.02	0.88	0-6
Additional household income (in 1000 DM)[a]	1.49	1.12	0-11.94

Disabled[b] (1 = disabled)	0.05		0-1
Foreigner[c] (1 = foreigner)	0.12		0-1
Unemployment rate in region[e]	7.94	2.87	3.60-17.90
Traveling time to agglomeration[f]	1.22	0.35	0.75-2.22
Childcare slots per 100 children in region[g]	56.94	7.76	39.40-82.70

[a]Additional household income is defined as the equivalized net monthly household income minus the net monthly earnings of the respondent

[b]Respondents are defined as disabled if they state that their health situation "strongly" impedes their performance of daily activities

[c]Respondents are defined as foreigners if they do not have German nationality

[d]Respondents are defined as religious if they state that they attend church or other religious events every week

[e]Percentage unemployed in total potential labor force (15-65 years old), regional level data

[f]Average travel time in hours to the nearest three agglomerations by car, regional level data

[g]Number of childcare slots per 100 children up to 6 years old, regional level data (measured on 01.01.1999)

Source: Own calculations based on GSOEP data, matched with regional data from the German Federal Office for Building and Regional Planning (both for 2001, West Germany only).

Table 2 Determinants of willing to wok and being in employment for those willing to work (bivariate probit model with sample selection)

	Coefficient		Robust Std. Error[1]
Willingness to work equation (N = 5508)			
Age (in years)	0.061	***	0.024
Age squared	-0.001	***	0.000
Education (in years)	0.139	***	0.016
Partner	-0.388	***	0.083
Child(ren) up to 7 years	-0.659		0.503
Age of youngest child under 7 years	-0.071	**	0.028
Additional household income (in 1000 DM)	-0.209	***	0.026
Disabled	-0.679	***	0.080
Foreigner	-0.421	***	0.072
Religious	-0.181	***	0.069
Unemployment rate in region	-0.042	**	0.019
Traveling time to agglomeration	0.043		0.099
Childcare slots per 100 children in region	0.007		0.009
Constant	1.020	*	0.538
Employment equation (N = 4761)			
Age (in years)	-0.006		0.016
Age squared	0.000		0.000
Education (in years)	0.094	***	0.014
Partner	-0.126	*	0.076
Child(ren) up to 7 years	-1.876	***	0.241

Age of youngest child under 7 years	0.256	***	0.022
Additional household income (in 1000 DM)	-0.214	***	0.022
Disabled	-0.269	**	0.122
Foreigner	-0.294	***	0.070
Unemployment rate in region	-0.014	**	0.006
Traveling time to agglomeration	-0.108	*	0.063
Childcare slots per 100 children in region	0.009	**	0.004
Constant	-1.332		0.385
Log likelihood = -3959.223			
Correlation coefficient (ρ)[2]	0.404	**	0.165

*=p<0.10; **=p<0.05; ***=p<0.01

[1]Standard errors adjusted for clustering on *Raumordnungsregionen* (spatial planning regions)

[2]Wald test for independent equations: chi-square = 4.75, df = 1, p = 0.029

Source: Own calculations based on GSOEP data, matched with regional data from the German Federal Office for Building and Regional Planning (both for 2001, West Germany only).