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Gender Segregation:
Work Values and Gender (A)Typical
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DFG Research Center (SFB) “From Heterogeneities to Inequalities”

Whether fat or thin, male or female, young or old – people are different. Alongside their physical features, they also differ in terms of nationality and ethnicity; in their cultural preferences, lifestyles, attitudes, orientations, and philosophies; in their competencies, qualifications, and traits; and in their professions. But how do such heterogeneities lead to social inequalities? What are the social mechanisms that underlie this process? These are the questions pursued by the new DFG Research Center (SFB) “From Heterogeneities to Inequalities” at Bielefeld University, which was approved by the German Research Foundation (DFG) as “SFB 882” on May 25, 2011.

In the social sciences, research on inequality is dispersed across different research fields such as education, the labor market, equality, migration, health, or gender. One goal of the SFB is to integrate these fields, searching for common mechanisms in the emergence of inequality that can be compiled into a typology. More than fifty senior and junior researchers and the Bielefeld University Library are involved in the SFB. Along with sociologists, it brings together scholars from the Bielefeld University faculties of Business Administration and Economics, Educational Science, Health Science, and Law, as well as from the German Institute for Economic Research (DIW) in Berlin and the University of Erlangen-Nuremberg. In addition to carrying out research, the SFB is concerned to nurture new academic talent, and therefore provides doctoral training in its own integrated Research Training Group. A data infrastructure project has also been launched to archive, prepare, and disseminate the data gathered.

Research Project A3 “Gender-specific Patterns of Opportunity in Employment”

This project aims to identify the mechanisms of inequality of occupational opportunities for men and women. The research investigates different areas and phases of life and considers the role of cumulative disadvantage in family and social networks as well as in the family of origin before and during employment. To reach this end this project applies a cohort sequence analysis using panel data from the German Socio-Economic Panel Study (SOEP), DIW Berlin.

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Determinants of Occupational Gender Segregation: Work Values and Gender (A)Typical Occupational Preferences of Adolescents*

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Abstract

The study examines micro-level determinants of the occupational gender segregation, analyzing work values and their effects on gender (a)typical occupational preferences of adolescents. Human capital theory assumes that women develop higher preferences for a good work/life-balance in youth, whereas men develop higher extrinsic work values. Socialization theory predicts that female adolescents form higher preferences for social work content. This gender typicality in work values is expected to affect preferences for gender typical occupations. Additionally, parental gender role models are explored as important determinants for the development of gender (a)typical occupational preferences. Analyses of adolescents in the German Socio-economic Panel Study show that work values of a good work/life-balance do not differ between women and men. Furthermore, those work values increase men's preference for male, not female, occupations. This result challenges traditional economic approaches taking into account only resource oriented explanations. The strongest explanatory power comes from social work values. These are more important for women and increase preferences for female occupations for both genders. Therefore, this work value formed in youth still plays an important role for gender (a)typical occupational paths. Parental role models also partly explain gender (a)typical occupational preferences, primarily for male adolescents having a good relationship to their parents.

1	Introduction.....	2
2	Explaining Gender Specific Occupational Preferences: Theory and Hypotheses	3
3	Data, variables, methods	8
4	Results.....	14
5	Summary, discussion	18
6	Tables and figures	20
7	References.....	23

Keywords:

Occupational gender segregation, work values, preferences, supply-side theories, human capital, socialization, adolescents

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1 Introduction

Modern labor markets are characterized by an astonishing persistence of occupational gender segregation (Charles and Bradley 2009; Charles and Grusky 2004; European Commission 2010). Despite a trend towards more gender egalitarianism, visible for example in the growing involvement of women in the labor market, family-friendly policies, and anti-discrimination laws, most women still work in typical “women’s occupations” and most men in typical “men’s occupations”. Compared to other European Member States, Germany is on a middle position (Smyth and Steinmetz 2008): In 2004, Germany showed an index of dissimilarity of about 0.5, which means that 50 percent of women and men should change the job to get a complete equality over occupations on the labor market.

This gender specific structure on the labor market has a high societal relevance: The segregation is an important dimension of social inequality, because women’s jobs are generally characterized by worse employment conditions, e.g. concerning job security, career opportunities and wages (Blau, Ferber, and Winkler 2006). Many studies analyze the effects of working in a gender typical or atypical occupation on job success measured by wages, promotion, status or occupational prestige (Achatz, Gartner, and Glück 2005; Busch and Holst 2010; Cohen and Huffman 2007; England 1982; England 1992; England, Farkas, Kilbourne, and Dou 1988; Jacobs and Steinberg 1995; Liebeskind 2004; Magnusson 2009; Trappe 2006).

The question is where this gender specific labor market structure comes from. Especially for Germany, only few studies so far have analyzed determinants of gender specific occupational decisions systematically (exceptions: Trappe and Rosenfeld 2004; Blossfeld 1987; see for the US Okamoto and England 1999). The present study tries to fill this lacuna by focusing on so-called supply-side explanations. Supply-side theories explain gender (a)typical occupational decisions by focusing on individual characteristics and preferences for special jobs, preferences that are formed in youth. Adolescents internalize gender specific gender roles and also gender typical work values and preferences that influence gender typical occupational decisions later in work life.

Drawing on these theories, the paper examines in how far adolescents form gender typical work values, and to what extent these work values affect preferences for gender typical occupations. Furthermore, it is analyzed in how far traditional constellations in the parental home - in terms of housework, occupations, and employment relations of the parents - affect these preferences, in form of an intergenerational transmission. The research questions are

analyzed looking at 17-year-old adolescents from the German Socio-Economic Panel Study (SOEP) 2001-2010 (Wagner, Frick, and Schupp 2007). To the authors' knowledge it is the first time that these research questions have been analyzed for the German labor market.

The paper is structured as follows: Firstly, supply-side theories explaining gender specific occupational preferences are presented (section 1), and related working hypotheses are formulated (section 2). Then in section 3, the data material and variables are presented, and the applied quantitative multivariate methods are illustrated. After that, the empirical findings are presented in Section 4. Finally, in Section 5, the results are summarized and further analytical steps are introduced.

2 Explaining Gender Specific Occupational Preferences: Theory and Hypotheses

In the classical theoretical literature about gender specific occupational choices and with that the occupational gender segregation – meaning the unequal distribution of women and men across occupations – one can find approaches about the supply side of the labor market. These approaches localize the determinants of the segregation in individual constellations in the pre-occupational life-time, like human capital accumulations and socialization background (see Reskin 1993 for a summary). The assumption is that there exist certain gender specific work-related preferences that lead to different dispositions and occupational choices.

A useful conceptualization of work-related preferences is the one about “work values”, meaning the values that individuals evaluate as important or satisfying when performing the work role (Rosenberg 1957; see also Johnson 2002): *Intrinsic work values* are focused on the importance of the work itself, with high values of the interest of the work and autonomy. *Extrinsic work values* are focused on importance of instrumental resources, such as income, prestige, and security (Marini, Fan, Finley, and Beutel 1996: 50). Above that, other work values have been defined in the literature, like *social work values* that contain preferences for jobs with social work content (e.g. helping other people), or work values for *work/life-balance* (like high leisure time beside work or a high compatibility between family and work) (Lueptow 1980). Supply-side theories assume that men and women differ in these work values, and that these work values affect gender typical occupational decisions.

Human capital theory assumes that all occupational decisions are the result of rational cost-utility calculations (Becker 1975). The occupational segregation is explained with different

investments in human capital: Women are more focused on family concerns than men and plan a more indirect professional path accordingly. Hence, for women, investments in educational and occupational training are less profitable. This means that the different proportions of women and men in certain occupations and fields of work and thus the occupational gender segregation is the result of rational considerations: Since women expect more indirect professional paths with more breaks, they choose in form of a “self-selection” (Polachek 1981) particular jobs with low opportunity costs, meaning those jobs that can be combined with family responsibilities, for example, those that allow part-time work and breaks in employment. In the theory these jobs are mainly typical women’s occupations. Men on the other hand are more oriented towards career, and since they perform more often the role of the male breadwinner, they prefer those occupations with high income, career opportunities and stability – values that can be fulfilled mainly in typical men’s occupations.

Above human capital theory that provides only economic and resource oriented explanations, approaches from *socialization theory* postulate gender typical preferences for specific work content. It refers to socialization experiences of the individuals in adolescence: Preferences and orientations are learned during childhood already. In this stage of development, societal structures with their action-guiding values and norms are internalized and are important for the personality development of children (Eder and Nenga 2003; Hurrelmann 1994). Also gender specific roles and preferences are internalized in this socialization process. The historical responsibilities for the family (women) and for the occupation (men) developed in the modernization process (Beck 1992) lead to corresponding gender-specific values and norms internalized by young persons and thus to gender-specific orientations and “preferences” for special jobs (Marini and Brinton 1984). Because of the responsibility for family and household needs learned in socialization, women internalize a “feminine work capacity” (Ostner and Beck-Gernsheim 1979): For the family work, special social abilities, like empathy or communication, are important. With this, women “learn” in adolescent socialization to have higher social work values, like helping others or having contacts to other people at work. Since jobs with housework and family related social work content are expected to be found mainly in “female” parts of the labor market (like nurse or kindergarten teacher), those social work values explain why women prefer those typical women’s occupations. This consideration provides an explanation for the segregated structure of the labor market, going beyond economic resource oriented explanations.

Furthermore, from supply-side theories it can be expected that men attach higher importance in a self-fulfilling job, since they are assumed to be more work oriented than women and

spend a higher amount of their life time in their jobs. Therefore, from those theories – although not explicitly formulated in literature – it can be expected that men have higher intrinsic work values compared to women, meaning they have a higher interest in jobs that are interesting and where they can make use of their specialized knowledge and work autonomously. Women in contrary are predicted to find a higher self-fulfilment in their family than in the occupational work. Furthermore, from supply-side approaches it can be assumed that high intrinsic work values lead men (but also women if they have high intrinsic work values) into gender typical occupations since in those occupations they can make use of their special work capacity and are therefore seen as most self-fulfilling and interesting.

It is important to note here that the assumptions from supply-side theories concerning the effect of work values on occupational preferences are assumed to be gender neutral. Therefore, for example if women have high extrinsic work values they also prefer men's occupations.

From these considerations from human capital and socialization theory, the following hypotheses can be assumed:

H1: There exist gender specific differences in work values:

- a) Male adolescents show higher extrinsic work values than female adolescents.*
- b) Female adolescents show higher work/life-balance work values than male adolescents.*
- c) Female adolescents show higher social work values than male adolescents.*
- d) Male adolescents show higher intrinsic work values than female adolescents.*

H2: Gender specific work values are associated with gender (a)typical occupational preferences:

- a) Persons with high extrinsic work values have higher preferences for men's occupations.*
- b) Persons with high work values for work/life-balance have higher preferences for women's occupations.*
- c) Persons with high social work values have higher preferences for women's occupations.*
- d) Persons with high intrinsic work values have higher preferences for gender typical occupations.*

International studies dealing with gender differences in those work values show mixed results: Some older studies confirm higher extrinsic work values for men than for women (Herzog 1982; Lueptow 1980; Mannheim and Seger 1993), others refer no significant gender

differences (Marini, Fan, Finley, and Beutel 1996; Rowe and Snizek 1995). The only study for the German labor market shows gender specific differences of extrinsic work values that are however small and diminish over the observed time period (Pollmann-Schult 2009). Above that, studies show that not women but men show higher work values of a good work/life-balance – a result that clearly contradicts assumptions from human capital theory (Herzog 1982; Lueptow 1980; Marini, Fan, Finley, and Beutel 1996). Furthermore, it has been shown that women have higher, not lower, intrinsic work values than men (Herzog 1982; Marini, Fan, Finley, and Beutel 1996). The only work value that shows significant gender differences that are in line with supply-side approaches are social work values with women valuing these as more important than men (Lueptow 1980; Marini, Fan, Finley, and Beutel 1996; Pollmann-Schult 2009).

Only few studies so far have analyzed the effect of gender typical work values on gender typical occupational decisions. For the US labor market it has been shown that women that had early plans for employment breaks in adolescence do *not* work more often in typical women's occupations, as it is assumed in human capital theory (England 1982; Okamoto and England 1999). The result is also in line with other studies showing that women's occupations are not better compatible with family responsibilities as human capital theory predicts, but that compatibility in terms of flexible work schedules is higher in men's occupations - which is explained with higher authority in those occupations (Glass 1990; Glass and Camarigg 1992). At least in Germany, people with high extrinsic work values work more often in men's occupations, and people with high social work values work more often in women's occupations, which is in line with supply-side theories (Pollmann-Schult 2009). However, in Germany gender differences in work values have not yet been explicitly analyzed with empirical focus on adolescents. Additionally, to the author's knowledge no study exists to date that examines for adolescents in how far these work values form preferences for gender typical occupations *before entering the labor market*.

Furthermore, the role of the parents for the development of gender typical work values and occupational preferences for adolescents, in form of an "intergenerational transmission", is not yet fully explored in the literature. Gender typical work values and occupational preferences are not invariant personality traits of the adolescents but vary with the specific family background. The assumption of intergenerational transmission (also: social or cultural reproduction) is an essential part of socialization theory (Eder and Nenga 2003). It is seen as an important determinant to explain socialization-driven gender typical occupational preferences (Marini and Brinton 1984). „The fact that mothers and fathers tend to be

employed in different jobs outside the home, to perform different tasks within the home, and to have different interests and personal and social characteristics provides information to children about what is expected of women and men” (Marini and Brinton 1984: 210). In life course research this consideration is called “linked lives”: This concept describes the embeddedness of persons in social relations and networks and the dependency of individual life courses on those of other people in these personal networks (Elder 1994). The embeddedness within the family of origin plays a central role here (Elder 1994; Hout 1982).¹ With regard to the research question in the present study it can be assumed that traditional or egalitarian parental role models, respectively, determine gender (a)typical work values and occupational preferences of their children and therefore also mediate the effect of work values on occupational preferences for adolescents.

From these assumptions the following hypotheses can be formulated:

H3: Adolescents whose parents show traditional role models have higher preferences for gender typical occupations.

H4: Parental role models mediate the effect of gender typical work values on gender typical occupational preferences.

Studies show that there is to some extent an intergenerational transmission of gender roles in general and occupational preferences in particular. Some of these studies employ direct measurements of parental gender roles, some of them use indirect indicators like the employment behaviour of the parents. Older studies point out that adolescents whose parents show a less traditional division of labor, with mothers being employed, form less traditional gender roles themselves (see Marini and Brinton 1984, for an overview). Furthermore, a recent study shows that the division of housework of the parents also affects gender roles of their children: If the housework division is traditional (with mothers having the higher amount of housework) the gender roles of the children are more traditional as well (Cunningham 2001). However, other studies analyzing the dependency between employment behaviour and gender roles of the parents on gender roles or work values of their offspring found only weak or even contradictory effects (Kulik 2002; Mannheim and Seger 1993). Kulik explains this with the consideration that intergenerational transmission is very complex when analyzing at

¹ Above that, the concept of linked lives is closely related to research on partnerships and couples' careers (Elder 1994; Hout 1982; Moen 2003).

the stage of adolescence, because adolescence is “a turbulent period by nature” (Kulik 2002: 456).

Only a few studies exist to date that explicitly analyzed the effect of parental characteristics on gender (a)typical occupational preferences or decisions: For example, Ilona Ostner and Elisabeth Beck-Gernsheim found for Germany that male nurses often had to help with housework or had to care for younger siblings when they were adolescents (Ostner and Beck-Gernsheim 1979). For the US labor market, Okamoto and England found that the gender typicality of the performed occupation of the parents in the adolescence of the observed individuals affects the gender typicality of their occupational decision later in work life (Okamoto and England 1999). The results however contradict the assumption of socialization theory that women and men whose parents worked in a gender atypical occupation form preferences for atypical occupations themselves: Men (but not women) were more often employed in men’s occupations if in their youth (14 years) the father *or* the mother worked in men’s occupations. The question is if these effects get visible to the same extent for German adolescents or if they differ.

3 Data, variables, methods

Data

The hypotheses are tested with the German Socio-economic Panel Study (SOEP) (Wagner, Frick, and Schupp 2007). Started in 1984, The SOEP is a wide-ranging representative longitudinal study of private households, located at the German Institute for Economic Research, DIW Berlin. It includes nearly 11,000 households, and more than 20,000 persons. Central for the current analysis is the youth questionnaire provided by the SOEP (Lohmann and Witzke 2010): Since the year 2000 all 17-year old household members in the SOEP households get this youth questionnaire. The questionnaire is asked only one time, therefore, no longitudinal information is provided. It collects work values as well as occupational plans and preferences. Furthermore, the data set includes for every adolescent the identification number of the father and mother in the household, respectively. Therefore, information of the parents living in the household, like the employment behaviour, can be merged via the identification number to the adolescents, to study intergenerational transmission.

The data set used here therefore consists of 17-year old adolescents. Since some variables are included into the youth questionnaire only from 2001 onwards, the time period for the

analysis is 2001-2010. Another restriction of the sample is that only those adolescents are included that have a valid identification number for both parents, since one focus of the analysis lies on intergenerational transmission from parents to their children. Although the amount of single mothers or fathers as well as the amount of “patchwork” families steadily increases, in those families other mechanisms that are not observed in the present study may play a role for the formation of work values and preferences. After these restrictions, the observed sample consists of 1,480 male and 1,460 female adolescents.

Variables

Dimension “gender (a)typical work values”

To collect work values, adolescents are asked how important different aspects of work life are for their later occupational choice (1 “not important”, 2 “less important”, 3 “important”, 4 “very important”) (Weinhardt and Schupp 2011). For these items, a principal components factor analysis was conducted for the selected sample, resulting in a four-factor solution (rotated factor loadings using varimax):

- *Social work values* (high factor loadings for the variables “many contacts to other people”, “job that is important for the society”, “helping other people”)
- *Extrinsic work values* (high factor loadings for the variables “secure job”, “high income”, “good promotion opportunities”, “job with high recognition”)
- *Work/life-balance values* (high factor loadings for the variables “job that allows much leisure time”, “safe and healthy working conditions”, “enough time for the family responsibilities”)
- *Intrinsic work values* (high factor loadings for the variables “interesting work”, “Job that allows for independent working”).

The Kaiser-Meyer-Olkin measure of sampling adequacy shows a value of 0.76. From this factor solution, factor scores were predicted through regression.

Dimension “gender (a)typical occupational preferences”

Gender (a)typical occupational preferences are measured with the *percentage of women in the preferred occupation*. In the youth questionnaire people are asked what occupation they prefer later in work life. For these answers standard job classifications are generated and provided by the SOEP. We use here the job classification of the German Federal Office of Statistics (3-

digit), version 1992 (Federal Office of Statistics 1992):² We merged year-specific values of the percentage of women within each job of this job classification from a special evaluation of the German Microcensus (Federal Office of Statistics 2008) conducted by the German Federal Office of Statistics, to the SOEP. For descriptive overviews, the continuous variable has been categorized as men's occupations (percentage of women 0-30 percent), women's occupations (percentage of women 70-100 percent) and integrated occupations (all remaining occupations).

Dimension "parental role models"

To show to what extent the parental home of the adolescents shows a traditional or egalitarian gender role behavior which may affect the gender typicality of occupational preferences of the adolescents, several indicators are included in the models. The parents' information is merged via the identification number of the father or mother, respectively, to the adolescents when adolescents were 15 years old, to make sure that parental role models are measured at a point in time where adolescents still lived in the parental home.³ The SOEP does not collect gender roles or work values for the parents, therefore indicators are used that measure those values indirectly, oriented on previous studies. Firstly, the *employment relation of the parents* is considered (both working full-time, father full-time/mother part-time, father full-time/mother not employed, others, missing).⁴ The assumption is that a traditional employment relation of the parents (where the father is the male breadwinner) affects work values and occupational preferences of the adolescents into a traditional direction. Secondly, the information if *the mother and the father worked in a gender typical or atypical occupation*, respectively, is considered. The assumption is that women and men whose parents worked in a gender atypical occupation form preferences for atypical occupations themselves. Here, the year-specific percentage of women in the occupation of the parents is merged via the job classification of the federal office of statistics (3-digit) from the German Microcensus to the parents in the SOEP and is dichotomized hereafter into women's occupations (percentage of women 70-100 percent) and all other occupations (see above). Furthermore, the *division of domestic labor ("dodl", see Gershuny 1996) of the parents* is included. For that indicator it is

² This German specific classification is more appropriate than the ISCO88-code (International Standard Classification of Occupations, version 1988) to show the horizontal segregation and related inequalities because it contains many more job categories than the ISCO88.

³ Missing values (arising especially when the parents did not attend the survey in the particular year) are imputed by parents' information when the respondent was 14 years old. Remaining missing values are controlled with a dummy.

⁴ Full-time employment is defined as working an agreed 35 hours or more per week, or actually working 35 hours or more per week if no number working hours has been agreed in the contract.

assumed that a traditional housework division of the parents increases gender typical occupational preferences of the children. Here, the amount of hours per weekday people spend on housework (washing, cooking, cleaning) is considered, and the division between the parents is calculated (father performs higher amount of housework (more than 50 percent), mother performs higher amount of housework (70 percent or more), housework equally distributed).⁵

Control dimension “familial resources”

Relationships between the employment of the parents and occupational preferences of their children may be mediated by financial resources of the parents. The more resources parents have the more they can invest into the education of the children. If it is assumed that men’s occupations offer higher wages than women’s occupations (England, Farkas, Kilbourne, and Dou 1988) and require a higher human capital investment, then an effect of the mother working in a men’s occupation on the preference of the daughters for a men’s occupation may not be explained by an intergenerational transmission of traditional gender roles, but “simply” by better occupational prospects for the children due to a better financial situation. Therefore, the *monthly net income of the household*, the *number of persons in the household*, as well as the information if *at least one of the parents is in a high hierarchical position* is considered.⁶

Control dimension “human capital”

Human capital theory assumes that low human capital endowments are an indicator for a low career orientation and a high family orientation, which affects decisions for women’s occupations since these occupations require relatively few human capital accumulation (Becker 1975). For adolescents, human capital endowments can hardly be measured, but it is taken into account indirectly through school efforts. Thus, the *attended school or the school degree* (if school is already finished) is considered (secondary general school, intermediate school, upper secondary school). Furthermore, not only the quantity, but also the quality of human capital may play a role for gender (a)typical occupational decisions. Typical men’s occupations are often high qualified occupations with mathematic-technical content (Solga and Pfahl 2009). Good math skills therefore are important requirements for those jobs. In line with that, it is often argued that good math skills are seen as skills where men are more

⁵ The categorization has not calculated in a symmetric way, since the variable is extremely left skewed. In nearly 50 percent of the cases, the mothers performed 100 percent of the housework.

⁶ The hierarchical position is defined with the two highest values of the occupational position: With managerial function or highly qualified duties, or with extensive managerial duties.

competent than women in society (Correll 2001). Typical women's occupations on the other hand contain often personal service, with social and communication skills required (England 1992). Therefore, for women's occupations good grades in communication-related school subjects may be more important. Also, verbal skills are seen as connotated more feminine, although this is less clear compared to math skills (Correll 2001). Thus, the last *school grade in mathematics* and the last *school grade in German* are considered in the models (1 (very good) to 6 (failure)).

Control dimension "relationship with parents"

The quality and intensity of the relationship to the parents is expected to be an important moderator of the intergenerational transmission. Studies point out that the familial climate plays a large role in the intensity of intergenerational transmission of values (White 2000). This is also true for gender roles, which a study for Germany shows: If the family climate is positive, the degree of intergenerational transmission is strengthened – and this moderating effect is stronger for women than for men (Hess, Ittel, and Kuhl 2006). Therefore, as indicator for the quality of the family cohesion the information if both *father and mother are very important persons in the respondents' life* is included.

Other controls

In addition to the mentioned variables, other controls are included in the models that may affect gender (a)typical work values and occupational preferences: *Place of employment in the former East Germany (German Democratic Republic), including East Berlin, or in West Germany* (the old Federal Republic of Germany) (Trappe and Rosenfeld 2004), *having a migration background*, the information if the *respondent is in or has already completed vocational training*, and *year-dummies*.

Methods

The methodological strategy is as follows: In a first step, the means in the work values are calculated separately for women and men, and it is tested if the means between genders differ in a significant way ("t-test"). In a second step, multivariate regression models are calculated predicting the gender(a)typicality of occupational preferences, with the percentage of women in the preferred occupation as dependent variable, and work values and parental information as central independent variables (controlled for all other described variables, see above).

Since the dependent variable “percentage women in the preferred occupation” is measured as proportions and therefore is bounded between 0 and 1, standard OLS regression is not appropriate here, since it would predict impossible values smaller than 0 and larger than 1, which violates central assumptions of OLS-regression (non-normal errors, heteroscedasticity, non-linear effects) (Papke and Wooldridge 1996). One way of dealing with this problem is transforming this fractional dependent variable into log-odds. The main problem with this strategy is that in this transformation procedure the values of 0 and 1 are transformed into missing values. Therefore, Maddala proposed a way to transform the variable into log odds in a way that all values are maintained (Maddala 1983: 30):

$$Y_{ij}^* = \log \left(\frac{Y_{ij} + (2N_{ij})^{-1}}{1 - Y_{ij} + (2N_{ij})^{-1}} \right)$$

Y_{ij} is the percentage women in occupation j for each individual i in the sample, N_{ij} is the number of all persons within the occupation j for each individual i . The transformed percentage of women in the preferred occupation Y_{ij}^* serves as dependent variable in the models.

Another problem with the dependent variable is that a high amount of male as well as female adolescents do not yet have concrete occupational preferences and therefore no valid information on the percentage of women in the preferred occupation. This observation indicates a selection problem since the persons having no concrete occupational plans might be “special persons” which may bias the results of the multivariate model. Therefore, to correct for such a selection bias, the following multivariate models predicting the gender (a)typicality of occupational preferences are calculated using Heckman’s correction (Heckman 1979). Here, in addition to the main estimation, a selection estimation for the population observed is calculated - more precisely a probit model for the probability of specifying a concrete occupational preference. From this probit model, a correction factor λ is calculated. This factor serves as instrumental variable for the main equation to correct for the selection bias.

In the probit model, the same independent variables as in the main model are included, plus two selection variables: The information if the *person still tries to find what his/her talents are*, and if *the goal for occupational decision is to take things as they come* (1 (totally agree) to 4 (not agree at all)).

4 Results

Figure 1 shows the mean work values separated for male and female adolescents plus the information if the difference in the means between genders is significant (“t-test”). The strongest gender differences can be observed for social work values: For female adolescents social aspects of work, like helping other people, are much more important compared to male adolescents; the difference in means is highly significant. Also for the extrinsic work values gender specific differences get observable, at a lower level compared to social work values though. For men, having a high income or good promotion opportunities are more important than for women. This supports assumptions from supply-side theories that people form gender specific work-related preferences in youth. From these results it follows that *hypotheses 1a and 1c* can be confirmed.

[Figure 1 about here]

However, one of the observed work values stands contrary especially to the economic approaches: No significant gender specific difference in the work/life-balance work values is observable. From human capital theory it should be assumed that women place higher values on these work-related preferences since they are more family oriented than men. This lacking gender difference is in line with other studies showing that women do not have higher values here. Furthermore, we observe higher intrinsic work values for women than for men. Again, this result is in line with other studies and contradicts supply-side assumptions: Following those approaches men attach higher importance in the work life area, therefore it should be expected that men have a higher interest in jobs where they can make use of their specialized knowledge, that are interesting and where they can find self-fulfilment. Therefore, *hypotheses 1b and 1d* cannot be confirmed.

For adolescents, occupational preferences are already gender biased (figure 2): Male adolescents prefer more often men’s occupations, whereas women prefer women’s occupations in later work life. However, occupational preferences are more gender typical for men than for women: While 40 percent of men want to go into a gender typical men’s occupations, the amount of women who prefer a gender typical women’s occupation is smaller (28 percent).

[Figure 2 about here]

What also gets visible is that a high amount of male as well as female adolescents do not yet have concrete occupational preferences: 42 percent of men and 43 percent of women declare that they do not have occupational preferences at the time of the interview.

Model 1 in Table 1 shows the results of the multivariate model with the dependent variable of the (transformed) gender (a)typicality of occupational preferences, separated for women and men, using Heckman's correction. The models are controlled for basic variables described above, but do not yet include variables around parental role models. For both women and men, social work values strongly increase the preference for more female occupations. This is in line with supply-side approaches, since women's occupations are more often concentrated in social parts of the labor market, and the approaches assume gender neutrality in the effect. Therefore, *hypothesis 2c* is confirmed.

[Table 1 about here]

Extrinsic work values increase preferences for more male occupations. This is also in line with supply-side approaches, since men's occupations offer on average higher wages and are located in higher hierarchies compared to women's occupations. However, the effect appears only for women, which stands contrary to supply-side approaches that assume a gender neutrality in the effects. For men, it does not matter if they have high or low extrinsic work values for planning to go in men's occupations, as it does for women. It may be that women's preferences for men's occupations are to a larger extent associated with preferences for high hierarchical positions, whereas men's preferences for men's occupations are more associated with technical or mechanical jobs that are on lower hierarchical positions.⁷ Therefore, the significant effect of extrinsic work values that gets visible for women and not for men may be explained with preferences for high hierarchical positions. Since supply-side theories assume that men's occupations in general are located in higher hierarchical positions, this result implicitly also stands contrary to those approaches. Together with the gender difference in the effect, *hypothesis 2a* cannot be confirmed.

What also contradicts supply-side approaches is the effect of work/life-balance values on occupational preferences: On the one hand, for women high work/life values increase preferences for more *female* occupations. On the other hand, for men these values increase preferences for more *male* occupations. Supply-side theories would assume that those values increase preferences for female occupations for both men and women. It may be that for example flexible work schedules are for men more associated with high prestigious male

⁷ Additional analysis shows that 13 percent of women who prefer men's occupations would like to be a manager in later work life. This is only true for 0.5 percent of men (results not shown).

occupations. This is also in line with research that shows that female occupations often have less flexible structures, due to lower authority in those occupations. Therefore, *hypothesis 2b* is not confirmed.

Intrinsic work values only have marginal effects on the gender (a)typicality of occupational preferences. For men (as well as for women, although not significant) intrinsic work values increase preferences for gender atypical occupations. It may be that intrinsic work values are an indicator for internalized egalitarian values with regard to gender roles, increasing gender atypical occupational preferences. Therefore, *hypothesis 2d* assuming that persons with high intrinsic work values have higher preferences for gender typical occupations is not confirmed.

In how far does the employment and housework behavior of parents affect gender (a)typical occupational preferences of their offspring and are able to “explain away” the effects of work values on occupational preferences for adolescents? The results are listed in table 1, model 2. For women, neither information about parents’ employment and household behavior has effects on occupational preferences, nor do these variables decrease the effects of work values on occupational preferences. For men, we see that if the division of housework between the parents was organized traditional (meaning that mothers did more housework than fathers) when the sons were 15 years old, the sons prefer more often traditional men’s occupations. This is in line with assumptions from socialization theory and indicates intergenerational transmission of gender roles and work values. However, also for men the mediating effect of parents’ information on work values is low; including these variables to the models decreases only the effect of intrinsic work values on occupational preferences. The question is: Are parents’ effects moderated by the quality of the parents-offspring relationship?

To answer that, in a last step models 1 and 2 are calculated again, restricting the sample to those with a good relationship to the parents (“parents are very important”) (model 1a and 2a) and to those with a bad relationship to the parents (model 1b and 2b), respectively. The assumption would be that parents’ effects get visible particularly for those having a good relationship with the parents. But the results show a mixed picture here (table 2): For women, parents’ effects do not change for those that have a good relationship to the parents. Also, introducing the parents’ variables to the models does not decrease the effects of work values on occupational preferences. Interestingly, if the relationship to the parents is bad, the gender typicality of the mothers’ occupation gets significant for women: Here, indeed the daughters prefer more traditional female occupations themselves if the mothers work in a more traditional female occupation, which is a sign for an intergenerational transmission of occupational preferences. But it was expected that this effect occurs particularly for those

with a good, not with a bad relationship to the parents. It may be that especially for those families with a good parents-offspring relationship, disadvantages of typical women's occupations (like lower wages, few career opportunities) are more discussed and daughters more often are advised *not* to go into these occupations due to experiences of the mothers. Interestingly, the effect of work/life-balance values on occupational preferences gets visible only for women with a bad relationship to the parents, whereas the effect of extrinsic work values appear only for women with good relationships to the parents. This underlines the assumption of a better job guidance of daughters when the family cohesion is good, since a good work/family-balance in women's occupation again is associated with decreased career opportunities. Daughters in those families with a good cohesion may be more "pushed" to a successful work life and better prepared for barriers in work life.

[Table 2 about here]

For men, indeed the effects of parental role models are strengthened for those having a good relationship to the parents: Firstly, the effect of the division of housework on occupational preferences is stronger compared to those where the relationship is bad. Secondly, for those with a good relationship, the employment relation between the parents into the direction from a male breadwinner model (father works full-time, mother is not employed) to a more egalitarian one (father full-time, mother part-time) increases occupational preferences for atypical female jobs for the sons.

This latter effect changes the sign if the relationship with the parents is bad: In those families, the sons prefer more traditional gender typical male occupations if the mother works part-time and the father is full-time employed and the parental role model is therefore less traditional (compared to a strict traditional male-breadwinner model where the mother does not work). Furthermore, if the relationship with the parents is bad, the effect of the father working in a women's occupation is strengthened for those with a bad family cohesion: If the father works in a women's occupation, the son prefers to work in a more male occupation himself. Both observations make sense since it can be assumed that the son refuses to follow parental role models and plan opposite occupational paths if the relationship is bad.

The mediating effect of parents' information on work values also is weak for men, no matter if family cohesion is good or bad. No matter if parents' information is included or not in the models, the effects of work values on occupational preferences do not change. Furthermore, the effect of work/life-balance on more male occupational preferences occurs only for men with a good relationship to the parents.

Altogether, *hypothesis 3* about the intergenerational transmission shows a mixed picture and is dependent on the family cohesion. It can be confirmed primarily for men having a good relationship to the parents, with regard to employment behavior and housework division of the parents. With regard to the gender typicality of parents' occupation, the hypothesis can be confirmed mainly for intergenerational transmission of mothers to daughters – but only if the family cohesion is bad. *Hypothesis 4* about the mediating effect of parents' information on work values cannot be confirmed, neither for women nor for men.

5 Summary, discussion

Taking supply-side theories into account, the study examined to what extent work values differ between male and female adolescents and in how far those work values affect gender (a)typical occupational preferences. Furthermore, it has been analyzed to what extent gender role behavior of the parents mediates this dependency. Using German representative data of adolescents, the study confirms higher social work values and lower extrinsic work values for women compared to men. This is in line with supply-side approaches. However, work values of a good work/life-balance do not differ between women and men, and also those work values increase men's preference for male, not for female occupations as it was assumed from human capital assumptions. Both is in line with other studies and shows that these work values are not appropriate to explain the persisting occupational gender segregation in Germany. The results challenge traditional supply-side approaches taking into account only economic resource oriented explanations. The highest explanatory power comes from social work values that are higher valued by women and increase preferences for women's occupations for both men and women. Therefore, these work content resulting from a gender traditional socialization in the pre-occupational life time still seems to play an important role for gender typical or atypical occupational paths.

The gender role behavior of the parents has only a marginal mediating power between the effects of work values on occupational preferences. However, they can explain partly gender (a)typical occupational preferences, primarily for men having a good relationship to the parents. The question is if this picture differs when adolescents enter the labor force. Studies point out that daughters and sons more converge to the parent's values and attitudes when they are adults (Acock 1984; Hess, Ittel, and Kuhl 2006; Hofer, Reinders, Fries, and Clausen 2005). Maybe effects of intergenerational transmission get more visible if the concrete occupational decision of job starters is observed, whereas analyzing intergenerational

transmission for adolescents, as it has been done here, is very complex, because of the turbulent nature of adolescence.

It has to be taken into account that for adolescents studied in the present paper, institutional barriers and discrimination mechanisms on the labor market do not yet play a role for occupational preferences. Therefore, for job starters, the effect of work values on the real occupational decision may differ from the occupational preference as observed here. Values can maybe not be translated fully into occupational decisions, due to those boundaries, for women in particular. Especially the observed effect of extrinsic work values on preferences for high hierarchical male occupations for female adolescents may decrease when it comes to the “real” occupational decisions, due to a growing realism at this stage (Johnson 2002). Women may face a glass ceiling here (Wirth 2001) that hinders them to enter those positions – a barrier they are not aware of when they are adolescents.

Therefore, this study contributed to provide an comprehensive picture of supply-side approaches, meaning individual constellations in the pre-occupational life-time that differ between men and women and in how far this affects gender (a)typical occupational preferences. Further research should compare these results to the group of job starters to show in how far boundaries on the labor market change those effects, when institutional barriers of the labor market come into play.

6 Tables and figures

Figure 1: Work Values of Adolescents by Gender (Mean Values of Factor Variables)

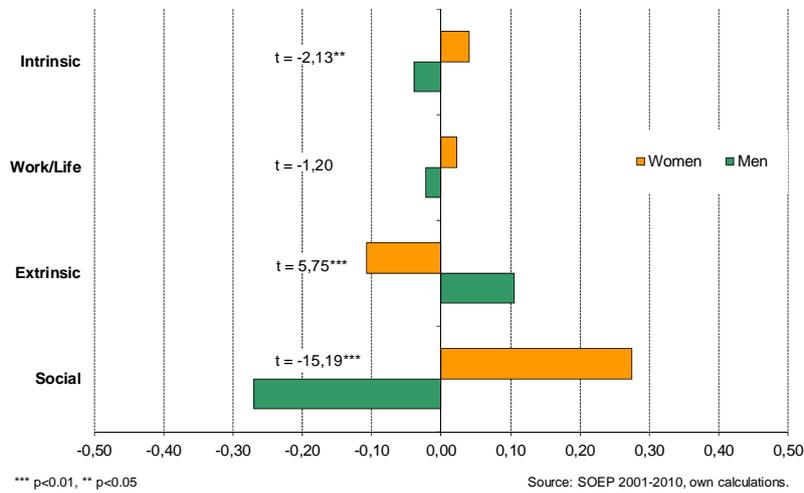


Figure 2: Gender (A) Typical Occupational Preferences of Adolescents by Gender (percent)

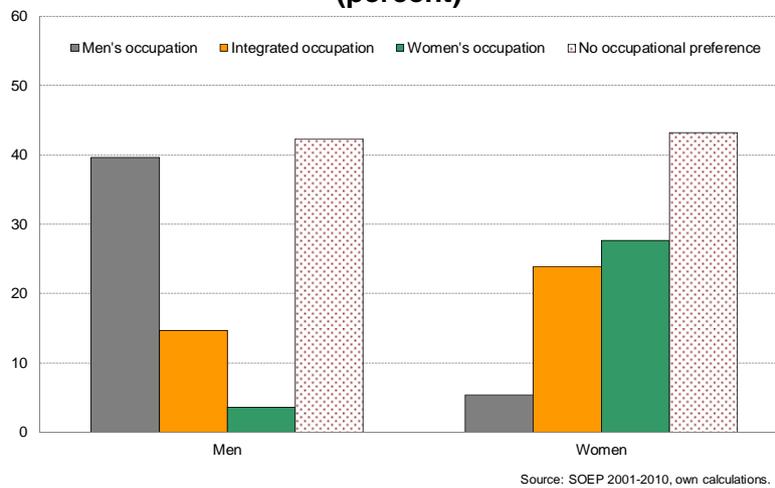


Table 1: Determinants of Gender (A) Typical Occupational Preferences of Adolescents, 2001-2010

	Model 1		Model 2	
	Women	Men	Women	Men
Work values				
Social	0.212 ***	0.304 ***	0.207 ***	0.315 ***
Extrinsic	-0.146 ***	0.015	-0.141 ***	0.036
Work/life-balance	0.107 **	-0.148 **	0.102 **	-0.146 **
Intrinsic	-0.074	0.105 *	-0.079	0.090
Parental role models				
Employment relation parents (ref.: father full-time/mother not employed) ^a				
Both full-time			-0.148	-0.217
Father full-time, mother part-time			0.107	-0.004
Occupation of father: Women's occupation ^b			-0.083	-0.202
Occupation of mother: Women's occupation ^b			0.166	0.054
Dodl: Mother higher amount of housework ^c			0.063	-0.330 **
Relationship with parents				
Parents are very important for respondent	0.017	-0.263 **	0.005	-0.297 **
Human capital				
Grade in German	0.023	-0.197 ***	0.016	-0.201 ***
Grade in Math	0.087 *	-0.080	0.064	-0.082
Attended school/school degree (ref.: intermediate school)				
Secondary general school	0.338 **	-0.679 ***	0.324 **	-0.647 ***
Upper secondary school	-0.775 ***	0.429 ***	-0.764 ***	0.395 **
Others	0.142	-0.219	0.131	-0.204
Familial resources				
Father or mother in high hierarchical position ^d	0.060	-0.159	0.095	-0.222
Monthly net household income	-0.000	0.000	-0.000	0.000
Number of persons in household	0.061	-0.006	0.040	-0.005
Other controls^e				
Constant	0.622 *	-1.491 ***	0.783	-0.906
Wald chi ²	184.50 ***	184.00 ***	210.10 ***	204.46 ***
Rho	-0.201 *	0.314 **	-0.224 *	0.315 **
Observations	1,228	1,233	1,228	1,233

Results of Regression with robust standard errors and Heckman's correction. Dependent variable: Transformed percentage of women in preferred occupation. *** p<0.01, ** p<0.05, * p<0.1

^a Controlled for "others" and "missing".

^b Ref.: men's/integrated occupation. Controlled for "not employed", "missing".

^c Ref.: father higher amount/housework equally distributed. Controlled for "missing".

^d Controlled for "missing".

^e Models controlled for "Living in East Germany", "Migration background", "In vocational training /vocational training completed", "Year".

Source: SOEP 2001-2010, own calculations.

Table 2: Determinants of Gender (A) Typical Occupational Preferences of Adolescents, Moderator Family Cohesion, 2001-2010

	Model 1a		Model 2a		Model 1b		Model 2b		
	<i>Good relationship with parents</i>				<i>Bad relationship with parents</i>				
	Women	Men	Women	Men	Women	Men	Women	Men	
Work values									
Social	0.183 **	0.350 ***	0.185 **	0.373 ***	0.272 ***	0.278 ***	0.275 ***	0.294 ***	
Extrinsic	-0.152 **	0.065	-0.145 **	0.091	-0.089	-0.037	-0.084	-0.001	
Work/life-balance	0.044	-0.241 ***	0.037	-0.241 ***	0.203 **	0.011	0.203 **	0.023	
Intrinsic	-0.091	0.120	-0.098	0.114	-0.022	0.128	-0.001	0.101	
Parental role models									
Employ. rel. parents (ref.: father full-time/mother not empl.) ^a									
Both full-time			-0.363	0.827			0.084	-0.821	
Father full-time, mother part-time			-0.116	1.450 ***			0.424	-1.319 **	
Occupation of father: Women's occupation ^b			-0.114	-0.143			0.027	-0.405 *	
Occupation of mother: Women's occupation ^b			-0.024	0.094			0.508 **	0.130	
Dodl: Mother higher amount of housework ^c			0.043	-0.425 **			0.122	-0.333	
Relationship with parents									
Parents are very important for respondent	-	-	-	-	-	-	-	-	
Human capital									
Grade in German	0.035	-0.209 **	0.026	-0.222 **	0.017	-0.189 *	-0.028	-0.219 **	
Grade in Math	0.065	0.020	0.037	0.010	0.107	-0.205 **	0.107	-0.214 ***	
Attended school/school degree (ref.: intermediate school)									
Secondary general school	0.298	-0.518 **	0.287	-0.516 **	0.477 **	-0.959 ***	0.516 **	-0.885 ***	
Upper secondary school	-0.747 ***	0.908 ***	-0.746 ***	0.798 ***	-0.836 ***	-0.222	-0.897 ***	-0.235	
Others	0.422	-0.255	0.403	-0.349	-0.293	-0.291	-0.333	-0.232	
Familial resources									
Father or mother in high hierarchical position ^d	0.023	-0.123	0.006	-0.106	0.127	-0.207	0.305	-0.160	
Monthly net household income	-0.000	-0.000	-0.000	-0.000	-0.000	0.000	-0.000	0.000	
Number of persons in household	0.105 **	-0.078	0.092 **	-0.066	-0.014	0.097	-0.079	0.118	
Other controls^e									
Constant	✓	✓	✓	✓	✓	✓	✓	✓	
Constant	0.714	-1.450 ***	1.188 *	-2.057 **	0.597	-1.457 **	0.332	0.266	
Wald chi ²	115.10 ***	165.46 ***	138.84 ***	191.07 ***	131.82 ***	115.27 ***	181.12 ***	180.98 ***	
Rho	-0.231	0.421 *	-0.224	0.506 **	-0.207	0.256	-0.214	0.227	
Observations	722	694	722	694	506	539	506	539	

Results of Regression with robust standard errors and Heckman's correction. Dependent variable: Transformed percentage of women in preferred occupation. *** p<0.01, ** p<0.05, * p<0.1.

^a Controlled for "others" and "missing".

^b Ref.: men's/integrated occupation. Controlled for "not employed", "missing".

^c Ref.: father higher amount/housework equally distributed. Controlled for "missing".

^d Controlled for "missing".

^e Models controlled for "Living in East Germany", "Migration background", "In vocational training /vocational training completed", "Year".

Source: SOEP 2001-2010, own calculations.

7 References

- Achatz, Juliane, Hermann Gartner, and Timea Glück. 2005. "Bonus oder Bias? Mechanismen geschlechtsspezifischer Entlohnung." *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 57:466-493.
- Acock, Alan C. 1984. "Parents and their Children: The Study of Inter-Generational Influence." *Sociology and Social Research* 68:151-171.
- Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. London/Thousand Oaks/New Delhi: Sage.
- Becker, Gary S. 1975. *Human Capital. 2nd Edition*. New York: Columbia University Press.
- Blau, Francine D., Marianne A. Ferber, and Anne E. Winkler. 2006. *The Economics of Women, Men and Work*. New Jersey: Pearson.
- Blossfeld, Hans-Peter. 1987. "Labor-Market Entry and the Sexual Segregation of Careers in the Federal Republic of Germany." *The American Journal of Sociology* 93:89-118.
- Busch, Anne and Elke Holst. 2010. "Der Gender Pay Gap in Führungspositionen: Warum die Humankapitaltheorie zu kurz greift." *Femina Politica* 19:91-102.
- Charles, Maria and Karen Bradley. 2009. "Indulging Our Gendered Selves? Sex Segregation by Field of Study in 44 Countries." *American Journal of Sociology* 114:924-976.
- Charles, Maria and David B. Grusky. 2004. *Occupational Ghettos. The Worldwide Segregation of Women and Men*. Stanford, California: Stanford University Press.
- Cohen, Philip N. and Matt L. Huffman. 2007. "Working for the Woman? Female Managers and the Gender Wage Gap." *American Sociological Review* 72:681-704.
- Correll, Shelley J. 2001. "Gender and the Career Choice Process: The Role of Biased Self-Assessments." *The American Journal of Sociology* 106:1691-1730.
- Cunningham, Mick. 2001. "The Influence of Parental Attitudes and Behaviors on Children's Attitudes toward Gender and Household Labor in Early Adulthood." *Journal of Marriage and Family* 63:111-122.
- Eder, Donna and Sandi Nenga. 2003. "Socialization in Adolescence." Pp. 157-182 in *Handbook of Social Psychology*, edited by J. Delamater. New York: Kluwer.
- Elder, Glen H. Jr. 1994. "Time, Human Agency, and Social Change: Perspectives on the Life Course." *Social Psychology Quarterly* 57:4-15.
- England, Paula. 1982. "The failure of human capital theory to explain occupational sex segregation." *The Journal of Human Resources* 17:358 - 370.
- . 1992. *Comparable Worth. Theories and Evidence*. New York: Aldine de Gruyter.
- England, Paula, George Farkas, Barbara Stanek Kilbourne, and Thomas Dou. 1988. "Explaining occupational sex segregation and wages: Findings from a model with fixed effects." *American Sociological Review* 53:544 - 558.
- European Commission. 2010. "Report on Equality between Women and Men 2010." Luxembourg.
- Federal Office of Statistics. 1992. "Klassifizierung der Berufe - Systematisches und alphabetisches Verzeichnis der Berufsbenennungen. Ausgabe 1992." Stuttgart: Metzler-Poeschel.
- . 2008. "Mikrozensus 2007. Qualitätsbericht." Wiesbaden: Federal Office of Statistics.
- Gershuny, Jonathan. 1996. "Veränderungen bei der Arbeitsteilung im Haushalt: Mikrosoziologische Analysen." Pp. 97-124 in *Lebenslagen im Wandel: Sozialberichterstattung im Längsschnitt*, edited by W. Zapf, J. Schupp, and R. Habich. Frankfurt a.M. /New York: Campus.
- Glass, Jennifer. 1990. "The Impact of Occupational Segregation on Working Conditions." *Social Forces* 68:779-796.

- Glass, Jennifer and Valerie Camarigg. 1992. "Gender, Parenthood, and Job-Family Compatibility." *The American Journal of Sociology* 98:131-151.
- Heckman, James J. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47:153-161.
- Herzog, A. Regula. 1982. "High School Seniors' Occupational Plans and Values: Trends in Sex Differences 1976 Through 1980." *Sociology of Education* 55:1-13.
- Hess, Markus, Angela Ittel, and Poldi Kuhl. 2006. "Innerfamiliale Transmission von Geschlechterrollenorientierungen bei Jugendlichen: Die Bedeutung des Erziehungsverhaltens und des Familienzusammenhalts." Pp. 107-129 in *Jahrbuch der Jugendforschung*, edited by A. Ittel, L. Stecher, H. Merkens, and J. Zinnecker. Wiesbaden: VS-Verlag.
- Hofer, Manfred, Heinz Reinders, Stefan Fries, and Marten Clausen. 2005. "Der Einfluss des Wertewandels auf die Entwicklung im Jugendalter: Ein deduktiver Ansatz." *Zeitschrift für Pädagogik* 51:81-100.
- Hout, Michael. 1982. "The Association between Husbands' and Wives' Occupations in Two-Earner Families." *American Journal of Sociology* 88:397-409.
- Hurrelmann, Klaus. 1994. "International Handbook of Adolescence." Westport: Greenwood Publishers.
- Jacobs, Jerry A. and R. Steinberg. 1995. "Further Evidence on Compensating Differentials and the Gender Gap in Wages." Pp. 93-124 in *Gender Inequality at Work*, edited by J. A. Jacobs. Beverly Hills/CA: Sage.
- Johnson, Monica K. (2002). "Social Origins, Adolescent Experiences, and Work Value Trajectories during the Transition to Adulthood." *Social Forces*: 1307-1340.
- Kulik, Liat. 2002. "Like-Sex Versus Opposite-Sex Effects in Transmission of Gender Role Ideology From Parents to Adolescents in Israel." *Journal of Youth and Adolescence* 31:451-457.
- Liebeskind, Uta. 2004. "Arbeitsmarktsegregation und Einkommen. Vom Wert "weiblicher" Arbeit." *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 56:630 - 652.
- Lohmann, Henning and Sven Witzke. 2010. "BIOAGE17: The Youth Questionnaire." in *Biography and Life History Data in the German Socio Economic Panel (SOEP, v26, 1984-2009)*. DIW Data Documentation No. 52, edited by J. R. Frick and H. Lohmann. Berlin: DIW.
- Lueptow, Lloyd B. 1980. "Social Change and Sex-Role Change in Adolescent Orientations Toward Life, Work, and Achievement: 1964-1975." *Social Psychology Quarterly* 43:48-59.
- Maddala, G. S. 1983. *Limited Dependent and Qualitative Variables in Econometrics*. Cambridge: Cambridge University Press.
- Magnusson, Charlotta. 2009. "Gender, Occupational Prestige, and Wages: A Test of Devaluation Theory." *European Sociological Review* 25:87-101.
- Mannheim, Bilha and Tally Seger. 1993. "Mother's Occupational Characteristics, Family Position, and Sex Role Orientation as Related to Adolescents' Work Values." *Youth & Society* 24:276-298.
- Marini, Margaret Mooney and Mary C. Brinton. 1984. "Sex Typing in Occupational Socialization." Pp. 192-232 in *Sex Segregation in the Workplace. Trends, Explanations, Remedies*, edited by B. F. Reskin. Washington, DC: National Academy Press.
- Marini, Margaret Mooney, Pi-Ling Fan, Erica Finley, and Ann M. Beutel. 1996. "Gender and Job Values." *Sociology of Education* 69:49-65.
- Moen, Phyllis. 2003. "Linked Lives. Dual Careers, gender, and the Contingent Life Course." Pp. 237-258 in *Social Dynamics of the Life Course. Transitions, Institutions, and*

- interrelations*, edited by W. R. Heinz and V. W. Marshall. New York: Aldine de Gruyter.
- Okamoto, Dina and Paula England. 1999. "Is there a Supply-Side to Occupational Sex Segregation?" *Sociological Perspectives* 42:557-582.
- Ostner, Ilona and Elisabeth Beck-Gernsheim. 1979. *Mitmenschlichkeit als Beruf. Eine Analyse des Alltags in der Krankenpflege*. Frankfurt a.M./New York: Campus.
- Papke, Leslie E. and Jeffrey M. Wooldridge. 1996. "Econometric Methods for Fractional Response Variables with an Application to 401(K) Plan Participation Rates." *Journal of Applied Econometrics* 11:619-632.
- Polachek, Solomon W. 1981. "Occupational Self-Selection: A Human Capital Approach to Sex Differences in Occupational Structure." *The Review of Economics and Statistics* 63:60-69.
- Pollmann-Schult, Matthias. 2009. "Geschlechterunterschiede in den Arbeitswerten. Eine Analyse für die alten Bundesländer 1980-2000." *Zeitschrift für ArbeitsmarktForschung* 42:140-154.
- Reskin, Barbara F. 1993. "Sex Segregation in the Workplace." *Annual Review of Sociology* 19:241-270.
- Rosenberg, Morris. 1957. *Occupations and Values*. New York: Arno Press.
- Rowe, Reba and William A. Snizek. 1995. "Gender Differences in Work Values : Perpetuating the Myth." *Work and Occupations* 22:215-229.
- Smyth, Emer and Stephanie Steinmetz. 2008. "Field of Study and Gender Segregation in European Labour Markets." *International Journal of Comparative Sociology* 49:257-281.
- Solga, Heike and Lisa Pfahl. 2009. "Doing Gender im technischnaturwissenschaftlichen Bereich." Pp. 155-219 in *Förderung des Nachwuchses in Technik und Naturwissenschaft*, edited by J. Milberg. Berlin: Springer.
- Trappe, Heike. 2006. "Berufliche Segregation im Kontext. Über einige Folgen geschlechtstypischer Berufsentscheidungen in Ost- und Westdeutschland." *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 58:50-78.
- Trappe, Heike and Rachel A. Rosenfeld. 2004. "Occupational Sex Segregation and Family Formation in the Former East and West Germany." *Work and Occupations* 31:155-192.
- Wagner, Gert G., Joachim R. Frick, and Jürgen Schupp. 2007. "The German Socio-Economic Panel Study (SOEP) - Scope, Evolution and Enhancements." *Schmollers Jahrbuch* 127:139-169.
- Weinhardt, Michael and Jürgen Schupp. 2011. "Multi-Itemskalen im SOEP Jugendfragebogen." in *DIW Data Documentation No. 60*. Berlin: DIW.
- White, Fiona A. 2000. "Relationship of Family Socialisation Processes to Adolescent Moral Thought." *Journal of Social Psychology* 140:75-91.
- Wirth, Linda. 2001. *Breaking through the glass ceiling: Women in management*. Genf: International Labour Organization.

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