Occupational Choice across Generations

By Amelie Constant* and Klaus F. Zimmermann**

Abstract

There are few studies on occupational choices in Germany, and second-generation occupational choice and mobility has been investigated even less. Such research is important because occupations determine success in the labor market. In a country like Germany, occupations also reflect a general socio-economic standing. This paper looks at the patterns of employment in Germany, analyzes how individual men and women access jobs given their family background, and investigates why men and women have different occupational distributions. Based on the German Socio-Economic Panel, we estimate multinomial logit models of occupational choice for the children of immigrants as well as for natives. Our findings are surprisingly similar for natives and immigrants. For both Germans and immigrants, we find that gender significantly and differentially affects occupational choice, and that individuals with more education choose higher-ranking jobs. The role of experience is important for natives and qualified individuals only. Germans are more likely to choose occupations similar to their father's occupation when the father is in the white-collar or professional category. In stark contrast, immigrants' occupational choices are more influenced by their mother's education and not by their father's occupation.

1. Introduction

The intergenerational transmission of wealth, income status, educational levels and occupational choices are important indicators for a mobile society with equal opportunities. Educational levels and occupations are closely related; both deter-

* IZA, Bonn, and University of Pennsylvania, E-mail: Constant@iza.org

** *Corresponding author:* Bonn University, DIW Berlin, and IZA, Bonn. Address: IZA, P.O. Box 7240, D-53072 Bonn, Germany; Phone: +49−228−3894−200; Fax: +49−228−3894−210; E-mail: Zimmermann@iza.org

mine earnings and wealth. Only few studies so far have dealt with occupations and their transmission across generations. Several intergenerational studies have established the importance of family background as a determinant of the economic status of children. For the US, Behrman and Taubman (1976), based on data on white twin males, find a positive correlation between fathers' and sons' socioeconomic status. In another study, they conclude that the intergenerational elasticity of earnings is greater for sons and nonwhites, and is even greater when parental income increases (Behrman and Taubman, 1990). In other studies, family background is found to exert greater influence on economic status of children than was previously believed (Solon et al., 1991), with the father's employment being strongly significant for self-employment, although there are racial differences (Hout and Rosen, 1999). However, recent studies investigating the role of family structure find it less relevant when controlled for mothers' education, parental employment and family income (Ginther and Pollak, 2003).

Contrary to findings in the US, Gang and Zimmermann (1999) conclude that the father's education is more important than the mother's education for the educational attainment of German children, but parental schooling plays no role for the educational attainment of immigrant children. Black, Devereux, and Salvanes (2003) confirm for Norway that parents with higher education levels have children with higher education levels, but reveal by a natural experiment that there is little evidence that this correlation is causal. Ermisch and Francesconi (2000) study the association between British childhood parental employment and subsequent education of the children; they find that the mother's full-time employment in early childhood has a negative effect on educational attainment. Couch and Dunn (1997) find a positive and significant correlation on the labor market status of fathers and sons for both the US and Germany. In contrast, they observe that the correlation of mothers and daughters is not significant for Germany. While it is significant for the US, this correlation is much lower than that of fathers and sons. A slow integration across generations is found by a study on the children of immigrants in Denmark (Roshom et al., 2002).

Previous research on occupational choice focuses on the neoclassical human capital theory (Becker, 1964). Boskin's (1974) study on men and women in the US confirms three hypotheses: workers choose occupations that (i) maximize the discounted present value of potential lifetime earnings, (ii) entail the lowest training costs, and (iii) offer the lowest discounted present value of expected earnings foregone due to unemployment. The last two hypotheses are less important for white males. Schmidt and Strauss (1975) in their study on the occupational choice of workers in the US find that race and gender strongly determine occupational choice. They interpret these results as strong evidence of race and gender discrimination. Few studies have looked at the occupational choice of natives and migrants in Germany. Such research, however, is important because occupations determine earnings and, thus, earnings differentials, as well as success in the labor market

(Zimmermann, 1998). In a country like Germany, occupations also reflect a general socio-economic standing.

Studies on the determinants of occupational success in Britain find that the most important determinant is the father's social class at birth, and that the foundations of occupational success are determined early in life (Harper and Haq, 1997). The findings of Iannelli (2002) for European countries suggest that there is both a significant direct and indirect effect of parental education on young people's occupational destinations; about half of it operates through the education of the kids. Others have studied the occupational mobility of workers. Chiswick's (1978) results on the occupational mobility of immigrants in the US show that immigrants experience downward occupational mobility at arrival but with additional years of residence they improve their occupational status. Similarly, Bauer and Zimmermann (1999) in their study on the occupational mobility of ethnic Germans find evidence of downward mobility by gender, immigration status, and human capital at entry. However, ethnic Germans with higher skills are able to reach their original occupational status within 14 years of residence in Germany. Studies on the intergenerational income mobility in the US find that there is less mobility than was previously believed (Solon, 1992, and Zimmerman, 1992).[1]

In this paper, we examine the patterns of occupation of full time workers in Germany. In particular, we are interested in the determinants of occupational choice and how they differ by gender and ethnicity. The question we address is whether human capital or family background characteristics are the driving force behind the choices of individuals and whether women and immigrants have equal opportunities to jobs. The populations under study are the West Germans and the guestworkers. By guestworkers we denote a subgroup of economic immigrants who were either actively recruited in their home countries by German employers or are descendents or relatives of this group. The recruitment of the guestworker populations started in the mid 1950s, peaked after the Berlin Wall was erected, and came to a halt during the first oil shock in 1973. These immigrants came exclusively from Italy, Spain, Greece, the former Yugoslavia, and Turkey, under specific bilateral agreements between the respective countries, to pave the way for Germany's economic miracle.[2] Immigration to Germany after 1973 is mainly linked to family reunification. The dominant immigrant ethnic group for the last 25 years is the Turks. Throughout this paper we use the terms immigrants and guestworkers interchangeably.

In our empirical strategy we follow Schmidt and Strauss (1975). First, we examine occupational choice within the human capital framework. Second, we augment the human capital model by incorporating the role of family background and fa-

---

1 Zimmerman (1992) acknowledges that the intergenerational transmission of status may be stronger in some parts of the income distribution than in others.

2 Immigrants were also recruited from Portugal, but they were in smaller numbers and most of them have returned to Portugal. This study does not consider Portuguese immigrants.

mily characteristics on occupational choice. As Schmidt and Strauss (1975) we employ a multinominal logit model and follow their occupational classifications closely. The paper is structured as follows. In Section 2, we specify the empirical methodology and describe the data set and the variables employed in the analysis. In Section 3, we analyze the demographic and occupational characteristics of our samples by gender and ethnicity, and discuss our research findings. Section 4 concludes.

2. Econometric Methodology and Empirical Implementation

2.1 The Econometric Model

We assume a utility maximization model where rational individuals are assumed to have preferences over a set of j different alternatives as:

$$
\begin{aligned}
U(alternative\ 0) &= \beta_0 X_0 + \varepsilon_0 \\
U(alternative\ 1) &= \beta_1 X_1 + \varepsilon_1 \\
&\cdots\cdots \\
U(alternative\ J) &= \beta_j X_j + \varepsilon_j
\end{aligned}
$$

(1)

where ε is the random error associated with that choice. We observe Y for choice j if

(2) $$U(alternative\ j) > U(alternative\ k) \quad \forall j \neq k$$

The disturbances are assumed to be independently[3] and identically distributed as a log Weibull distribution. Then, the choice probabilities given the covariates are:

(3) $$P(Y = j|X) = \frac{e^{\beta_j X_i}}{\sum_{k=0}^{J} e^{\beta_k X_i}}$$

where i indexes the individuals, and j indexes the alternative occupational choices, $j = 0, 1, \ldots, J$ with $j + 1$ nominal, unordered outcomes. To identify the model, we impose the normalization $\beta_0 = 0$.

Specifically for our analysis of occupational choice, Y indicates occupations. We consider five distinct outcomes, thus, $j = 0, 1, \ldots, 4$. The explanatory variables in X consist of a set of human capital variables, such as education and experience, individual specific characteristics, and family background variables like parental

---

[3] The Independence of Irrelevant Alternatives (IIA) is a restrictive assumption. McFadden (1973) suggested that in cases where the outcome categories "can plausibly be assumed to be distinct and weighed independently in the eyes of each decision maker," a multinomial logit model can be safely used.

education and occupation. These variables are the same for all choices, but their effects on the probability are allowed to differ for each outcome. These independent variables are expected to affect the individual's probability of being in a given occupation. We can predict the probability that an individual will choose one of the five occupations considered. According to the human capital theory, individuals will more likely choose the occupation that offers the highest discounted present value of potential future earnings. The probabilities are, therefore,

$$(4) \qquad P(Y = j|X) = \frac{e^{\beta_j X_i}}{1 + \sum_{k=0}^{4} e^{\beta_k X_i}}$$

The log-odds ratios that an individual will choose occupation j over occupation k are given by:

$$(5) \qquad \ln\left[\frac{P_j}{P_k}\right] = X_i(\beta_j - \beta_k)$$

The rest of the "contrasts" are computed by taking the difference between two of the known parameters as follows:

$$(6) \qquad \beta_{k,p|q} = \beta_{k,p|r} - \beta_{k,q|r}$$

where outcome r is the reference category. That is, we compare outcomes p versus q for attribute k. The model is solved with maximum likelihood estimation. The resulting estimates are unbiased, consistent, asymptotically normal, and asymptotically efficient. Moreover, the likelihood function is globally concave, ensuring the uniqueness of the ML estimates.

2.2 The Data

The empirical analysis is based on nationally representative data from the German Socio-Economic Panel (GSOEP). The GSOEP is administered by DIW Berlin, the German Economic Research Institute (SOEP Group, 2001). It is a longitudinal database that started in 1984 with a sample of about 12,000 respondents, 3,000 of whom were guestworkers from Turkey, Italy, the former Yugoslavia, Spain and Greece. After unification, the survey was extended to East Germans and immigrants from other countries, especially ethnic Germans and East Europeans. An important feature of GSOEP in our context is that it oversamples foreigners and also provides information on their pre-immigration profiles and the level of their socio-political integration into the German community.

Our analysis is based on the 1996 wave of the GSOEP, which we chose because it was in the middle of the decade and a good year for the German economy. We focus on the West German and guestworker populations. The immigrant sample

refers to the five nationalities that make up the majority of guestworkers. It includes the foreign-borns and those guestworkers who were born in Germany and may even have German citizenship. An important question we seek to answer is whether there are gender differences: thus, we look at both men and women. We include only members of the civilian labor force who are not in training, or self-employed (except for independent farmers), and who are aged 16−60 years old. Further, we consider only those individuals who do not have a certified disability and have valid answers to all the relevant variables.

For the purpose of this study, we consider only full-time workers, which reduced the samples to 1,830 Germans and 767 guestworkers. This also raised the minimum age to 18 for men, and 19 and 20 for immigrant and German women respectively. The gender composition of the final samples is as follows: 1,275 German men, 555 German women, 514 guestworker men, and 253 guestworker women. We acknowledge that by considering only full-time workers, the male to female ratio is about 2.3. We choose full-time workers because they have a stronger attachment to the labor market, they choose their occupation more responsibly, and they make a long-term commitment. Part-time workers may often choose their job symptomatically, and this might confound our results.

2.3 Construction of the Occupational Choice and the Independent Variables

The dependent variable measuring occupational choice indicates five distinct occupations. The GSOEP asked respondents to indicate their occupation classified under the broad rubrics of: blue-collar, self-employed, in training, white-collar, and civil service.[4] After we eliminated the self-employed and the students, we carefully recoded these occupations to correspond to the broad categories of occupations used in the study by Schmidt and Strauss (1975). We, therefore, have the following five occupational categories: professional, white-collar, skilled craft, blue-collar, and menial. Table 1 presents the coding of the grouping. All five distinct dimensions of occupational choice are analyzed separately as dependent variables within the multinomial logit framework. These categories are defined such that they are not perfect substitutes. However, one could also make the case for an ordinal logit suggesting a distinctive ranking of the occupations under study. Occupations in the higher-numbered categories may not only offer higher pay but more prestige and social status. Here we follow the treatment suggested by Schmidt and Strauss (1975), which provides more flexibility in the face of the fact that a clear ordering between categories (1)−(3) (blue-collar, skilled craft, white-collar) can be questioned.

---

[4] By broad rubrics we mean that, for example, the blue-collar occupation includes skilled and unskilled workers, as well as foremen and master craftsmen.

Table 1

Occupational Categories

Constructed Dependent Variable	GSOEP Contents
Menial (0)	Unskilled Blue-Collar Workers, Unskilled White-Collar Workers
Blue-Collar (1)	Trained Blue-Collar Workers, Semi-Skilled and Skilled Blue-Collar Workers
Skilled Craft (2)	Industry and Other Foremen, Independent Farmers, and Master Craftsmen
White-Collar (3)	Semi-skilled White-Collar Workers, Low- and Middle-Level Civil Servants
Professional (4)	Professional, Semi-professional, Managerial, Upper- and Executive-Level Civil Servants

We now introduce the independent variables. A standard set of human capital and socioeconomic status (SES) measures are entered as covariates in the model. Our main interest is how these characteristics influence individuals to choose a certain occupation. Human capital is captured by years of education and experience. For immigrants, the years of education variable includes both pre- and post-migration education. Because of the specificity of the German educational system, the years of education variable also embodies vocational training.[5] This is a better measure of human capital because in addition to formal education, it includes the effect of training on occupational attainment. We expect more years of education to sort individuals into higher professions and away from menial jobs. For the guestworker sample only, we included German language proficiency as another form of human capital.[6] Those immigrants who speak German fluently will be more likely to choose higher-ranked professions, and they will also be less likely to face employer discrimination. Language fluency propels differential access to certain occupations. It is important to recognize that German is not the spoken language in any of the guestworker countries of origin. The years of potential experience is entered as a control variable, and is calculated as "age minus years of education minus six."

---

[5] Vocational training is a unique feature of Germany's educational system and an important part of formal education for non-University-goers who want to access skilled jobs. We include here trade / agricultural apprenticeship, business school, technical college, and college or university education. In Germany there are three types of high school: the trade-oriented Hauptschule – which is the least exigent – the apprenticeship-oriented Realschule, and the most demanding, University-track Gymnasium.

[6] Studies on immigrant earnings assimilation have found that fluency in the host country's language significantly increases earnings (Chiswick and Miller, 1996).

To capture gender differences we include a variable "male", which takes the value of 1 if the respondent is male and 0 if female. In a world of equal opportunity and in the absence of discrimination and segregation, we would expect to find no gender differences in occupations.[7] Differences in personal tastes should be the only factor, ceteris paribus. However, human capital is likely to have a different effect on males and females.

We extend the basic human capital model to include family background characteristics. The structure of the family when the individual was growing up may affect not only the individual's social skills but also human capital investments and tastes. To answer the question of whether family background determines the probability of choosing a particular occupation, we added the following variables pertaining to family background: "father's education" is a continuous variable that denotes the father's years of formal education and vocational training. Similarly, "mother's education" is a continuous variable for the mother's years of education. These variables include vocational training. Mothers in Germany are very involved with child rearing. Hence, one would expect to find a strong effect of mother's education on the occupational choice of children. In particular, those individuals whose mothers are more educated will more likely choose a higher-ranked occupation.

On the other hand, labor market know-how and professional connections that can influence occupational choice are more likely to be inherited from the father, or to be precise, from his occupation. In a more traditional society like Germany, the father may be the central role model. For the father's occupation, we constructed a series of dummy variables and classified them in the same manner as the dependent variable, except for two digressions. First, we created an additional occupational category, "father other", which includes the fathers who are self-employed, free-lance, not employed, sick, retired, or POWs.[8] The majority of observations in this group are in the self-employed category and especially those who have small businesses of 10 or less employees. Second, for the guestworker sample only, we were forced to group the skilled craft, white collar, and professional categories into one category ("father white") because we had very few observations in each category. Unfortunately, the GSOEP does not provide any information about the mother's occupation. Overall, we expect that parental characteristics may exert a differential effect on sons and daughters through gender-typing.

---

[7] Constant and Massey (2003) assess the separate effects of occupational segmentation and discrimination in the allocation of occupations and wages. Their results indicate a high degree of initial occupational segmentation, with immigrants being less able to translate their human capital into a good first job.

[8] The omission of these observations would reduce our sample to a non-estimable level.

3. Empirical Findings

3.1 Characteristics of the Sample Populations

Table 2 presents and contrasts selected demographic and labor market characteristics of the four sample populations under study, as indicated by the "raw" data. Columns (1) and (2) refer to German men and women who were born and raised in the former West Germany while Columns (3) and (4) refer to guestworker men and women living in the former West German territory. The guestworker sample includes immigrants who were born in Germany or migrated at a young age. Despite emigration, many guestworkers have been living in Germany with their families for more than 25 years.

Table 2

Selected Mean Characteristics of Full Time Workers by Gender and Ethnicity

	West Germans		Immigrants	
	Men (1)	Women (2)	Men (3)	Women (4)
Age in years	39	36	38	37
Total education in years	12	12	10	10
Experience in years	21	19	22	21
Speak German well (in %)	100	100	66	72
Menial (in %)	2	7	11	18
Blue-collar (in %)	31	15	73	45
Skilled craft (in %)	10	2	5	1
White-collar (in %)	9	17	3	11
Professional (in %)	48	60	8	25
Father in menial occupation (in %)	5	6	8	6
Father in blue-collar (in %)	36	37	27	23
Father in skilled craft (in %)	7	6	1	2
Father in white-collar (in %)	7	5	1	0
Father in professional (in %)	19	22	2	2
Father in other occupation (in %)	25	23	61	68
Father's education in years	10	10	5	5
Mother's education in years	9	10	3	4
Number of observations	1275	555	514	253

Source: Own calculations from GSOEP.

West Germans are, on average, more educated than the guestworkers and have about the same years of experience as the guestworkers. German men are, on average, the oldest group while German women are the youngest. Table 2 clearly shows that Germans and guestworkers have different occupational distributions. There are striking gender differences, as well. The overwhelming majority of Germans in our sample, as a whole, are in the professional category. Sixty percent of the German women are in the professional category, as opposed to 48 percent for German men. The next highest percentage for German women is in the white-collar category, while for men it is in the blue-collar category. In contrast, guestworkers are mostly in the blue-collar occupations. In particular, 73 percent of guestworker men are in the blue-collar category (as opposed to 31 percent of German men). Although the preponderance of guestworker women lies in the blue-collar category, we find that one-quarter of the guestworker women in our sample are in the professional category. This is a much smaller percentage compared to German women, but it is quite dramatic compared to guestworker men and to their fathers' occupations. This finding has to do with the fact that we concentrate in this paper on full-time workers and, following Schmidt and Strauss (1975), have classified semi-skilled professionals (white collar workers with qualified occupations) among the professionals. However, it is also driven by the gender-specific orientation of female occupations: Women typically work in services, while the fathers and husbands of female guestworkers are blue-collar workers.

In addition, these summary statistics indicate that there is some link between the father's and the children's occupations. The majority of German fathers for both men and women are in the blue-collar category. Nonetheless, it seems that German men and especially German women are able to move away from blue-collar jobs and into higher-ranked occupations. The next highest occupation for German fathers is "other" and "professional". This is not the case for guestworkers. The majority of guestworker fathers are in the "other" category, and the next highest category is blue-collar. Guestworker fathers in the skilled craft, white, or professional categories are virtually non-existent. The educational distribution of the German and guestworker parents is particularly striking. German fathers and mothers have, on average, 10 years of education. In contrast, guestworker parents have, on average, 50 percent less years of education, while guestworker mothers have even less than that. Oddly, the mothers of both German and guestworker men have one year less education than the mothers of women. Overall, the majority of guestworkers report speaking German well, although a larger percentage of women (nine percent more) speak German well. Last, both the German and guestworker samples are male-dominated.

3.2 Multinomial Logit Estimates

This section presents the results of the human capital and family background multinomial logits for both West Germans and immigrants. Specifically, it presents

the log-odds ratios of choosing pairings of occupations. There are 10 unique and distinct comparative choices.

We first discuss the multinomial logit results for the West Germans. Table 3 presents the results of the human capital multinomial logit. The first column shows the odds of choosing an occupation among the five alternatives. Table 3 reveals significant differences in the odds of choosing an occupation between German men and women. The coefficients on the gender variable are numerically larger than the coefficients of the other variables. Men are more likely to choose the blue-collar or skilled craft categories over any other alternative. Conversely, these

Table 3

West German Sample; Human Capital Multinomial Logit Results
(Coefficients and t-ratios)

Dependent Variable: log-odds	Constant	Male	Education	Experience
ln (Blue-Collar / Menial)	2.111 (1.529)	1.887* (6.677)	-0.060 (-0.474)	-0.034* (-2.772)
ln (Skilled Craft / Menial)	-5.263* (-3.297)	2.644* (6.362)	0.373* (2.64)	0.003 (0.221)
ln (White-Collar / Menial)	-3.127* (-2.154)	0.347 (1.189)	0.455* (3.471)	-0.036* (-2.736)
ln (Professional / Menial)	-8.839* (-6.294)	0.375 (1.386)	0.997* (7.870)	0.003 (0.219)
ln (Skilled Craft / Blue-Collar)	-7.375* (-6.989)	0.757* (2.139)	0.433* (4.842)	0.037* (3.877)
ln (White- / Blue-Collar)	-5.238* (-6.082)	-1.540* (-8.018)	0.515* (6.763)	-0.002 (-0.272)
ln (Professional / Blue-Collar)	-10.951* (-14.204)	-1.512* (-9.307)	1.057* (15.585)	0.037* (5.489)
ln (White-Collar / Skilled Craft)	2.136 (1.954)	-2.297* (-6.387)	0.082 (0.906)	-0.04* (-3.54)
ln (Professional / Skilled Craft)	-3.576* (-3.723)	-2.269* (-6.634)	0.624* (7.995)	-0.0005 (-0.053)
ln (Professional / White-Collar)	-5.713* (-8.105)	0.028 (0.171)	0.542* (9.379)	0.039* (4.763)
Log Likelihood	-1855.593			
χ^2	869.413			
No. of Observations	1830			

* indicates significance at the five percent level in a two-tailed test ($p < 0.05$)

Source: Own calculations from GSOEP

results show that German women have a higher probability of choosing the white-collar or professional category over any other alternative. Of course, we realize that choices are partly the result of preferences and partly the result of chances and discrimination. Unfortunately, we are unable to disentangle these parts.

Our results support the human capital hypothesis. The years of education variable is significant and positive in almost all comparisons. Additional years of education prompt Germans to always choose the higher-numbered occupation, ceteris paribus. In fact, the years of education coefficient is larger and more significant when there is a great contrast between occupations. For example, an additional year of education increases the odds of becoming a professional as opposed to a menial worker. Each additional year of education increases the probability of becoming a professional. As expected, more educated Germans are able to climb the job hierarchy. These results are in congruence with earlier findings in the US (e.g., Schmidt and Strauss, 1975).

The coefficients of the experience variable are significant, but have enigmatic signs. We find that Germans with more experience choose the menial category over the blue-collar and even the white-collar category; they also choose the skilled craft category over the blue- or white-collar categories, and the professional category over blue- or white-collar. We suspect that the experience variable captures the age distribution of individuals. Our explanation for these results is, therefore, that in Germany, individual workers make their occupational choices early in life and they usually stay within the same occupation, in a broad sense. For example, those who have chosen the menial category will always choose that category even if they have accumulated a lot of experience. With more experience, menial workers might be rewarded more financially, but they will not be able to make a leap into a higher-ranked category.[9] This also applies to the skilled craft category workers who choose skilled craft over blue and white-collar work. Besides, changing occupations entails high transaction, retraining, and opportunity costs. This is especially true if there is labor market dichotomy. However, for individuals in upper-ranked categories such as white-collar and professional, it is possible to change occupations with additional years of experience. More experience in this case entails seniority, and through promotions, workers in the white-collar category may effectively choose the professional category. In sum, more experience – which indicates older workers – will drive workers to choose the same occupation that they are already in.

When we compare Tables 3 and 4, we see that the inclusion of parental characteristics does not really change the coefficients of the gender variable, of education and experience. With regard to the estimation of parental background characteristics in Table 4, we were surprised to find that father's or mother's education are not significant determinants of occupational choice for Germans. We suspect that

---

[9] For example, a construction worker with 30 years of experience will never become a professor.

Table 4

West German Sample; Multinomial Logit Results, Human Capital and Family Background (Coefficients and t-ratios)

Dependent Variable	Constant	Male	Education	Experience	Father's Education	Mother's Education	Father Blue collar	Father Skilled craft	Father White collar	Father Professional	Father Other
ln(B/M)	3.102 (1.929)	1.918* (6.730)	-0.026 (-0.203)	-0.033* (-2.573)	-0.135 (-1.813)	0.052 (0.678)	-0.535 (-0.829)	1.024 (0.855)	-1.298 (-1.606)	-0.526 (-0.673)	-0.649 (-0.960)
ln(C/M)	-3.782* (-2.074)	2.663* (6.365)	0.387* (2.691)	0.001 (0.047)	-0.128 (-1.593)	-0.014 (-0.167)	-0.607 (-0.812)	1.635 (1.286)	-1.341 (-1.355)	-0.125 (-0.139)	0.277 (0.361)
ln(W/M)	-1.723 (-1.025)	0.349 (1.187)	0.459* (3.436)	-0.034* (-2.456)	-0.141 (-1.820)	0.049 (0.608)	-0.832 (-1.237)	0.842 (0.687)	-0.311 (-0.381)	-0.142 (-0.177)	-0.591 (-0.841)
ln(P/M)	-8.011* (-4.947)	0.393 (1.438)	0.984* (7.614)	0.007 (0.578)	-0.094 (-1.289)	0.037 (0.491)	-0.434 (-0.670)	1.568 (1.313)	-0.575 (-0.725)	0.612 (0.793)	-0.340 (-0.503)
ln(C/B)	-6.884* (-5.982)	0.745* (2.093)	0.413* (4.601)	0.034* (3.399)	0.006 (0.139)	-0.066 (-1.330)	-0.072 (-0.158)	0.612 (1.119)	-0.043 (-0.061)	0.401 (0.722)	0.926* (2.042)
ln(W/B)	-4.825* (-5.005)	-1.568* (-8.077)	0.486* (6.302)	-0.001 (-0.115)	-0.006 (-0.155)	-0.003 (-0.055)	-0.297 (-0.857)	-0.181 (-0.389)	0.987* (2.183)	0.384 (0.925)	0.058 (0.157)
ln(P/B)	-11.113* (-13.052)	-1.524* (-9.262)	1.010* (14.771)	0.040* (5.793)	0.040 (1.182)	-0.015 (-0.386)	0.101 (0.345)	0.544 (1.474)	0.723 (1.785)	1.138* (3.284)	0.309 (0.997)
ln(W/C)	2.059* (1.687)	-2.313* (-6.391)	0.072 (0.795)	-0.035* (-3.013)	-0.013 (-0.244)	0.063 (1.090)	-0.225 (-0.444)	-0.793 (-1.265)	1.030 (1.421)	-0.017 (-0.028)	-0.868 (-1.701)
ln(P/C)	-4.229* (-3.923)	-2.269* (-6.591)	0.597* (7.580)	0.007 (0.674)	0.034 (0.756)	0.051 (1.035)	0.173 (0.372)	-0.068 (-0.124)	0.765 (1.115)	0.738 (1.349)	-0.617 (-1.337)
ln(P/W)	-6.288* (-7.709)	0.044 (0.262)	0.525* (8.922)	0.041* (4.885)	0.046 (1.205)	-0.012 (-0.271)	0.398 (1.170)	0.726 (1.632)	-0.264 (-0.645)	0.755* (1.977)	0.251 (0.705)

Log L -1812.870
χ^2 954.859
Obs. 1830

Note: M = Menial, B = Blue-Collar, C = Skilled Craft, W = White-Collar, P = Professional.
* indicates significance at the five percent level in a two-tailed test ($p < 0.05$).
Source: Own calculations from GSOEP.

this is due to the small variation in these variables.[10] In a uniform and traditional society like Germany, the majority of individuals grow up in households with both parents where almost all fathers and mothers have approximately the same number of years of education.

On the other hand, our results confirm the idea that people follow their fathers' occupations (Columns 8–12). We find that, for West Germans, the father's occupation is statistically significant and has a differential impact on occupational choice in a number of cases. Note that in the estimations, menial is the reference category. We find that Germans whose father is in the white-collar category (Column 10) choose white-collar over blue-collar jobs; and Germans whose father is in the professional category (Column 11) choose the professional category over blue-collar and the professional category over white-collar. When the father is in the "father other" category, workers choose to be in the skilled craft group and not in the blue-collar group.[11] In sum, the father's occupation is important only for the higher-numbered occupations. This finding is consistent with Behrman and Taubman (1990) on the intergenerational elasticity of income and with Zimmerman (1992) (see Footnote 1).

We now investigate the multinomial logit results for the guestworkers. Tables 5 and 6 present the estimation results for the immigrant samples. Similar to the results for Germans, we find that immigrant women choose higher-numbered occupations, while immigrant men choose the blue-collar and skilled craft categories over any other occupation. Human capital, mainly years of education, is significant in choosing higher occupations. Each additional year of schooling increases the odds of becoming a professional as opposed to a menial worker. Fluency in the German language increases the probability of choosing a higher-ranked occupation but only when the alternative is menial or blue-collar; it has no effect on the choice of blue-collar against menial. Both of these human capital variables (education and fluency in German) exert strong and positive differential effects on the occupational upgrading of immigrants.

Yet, the estimation results on the experience variable in Table 5 clearly indicate that guestworkers in Germany are led into lower numbered occupations with additional years of experience. These results reinforce our earlier explanation on Germans. Those workers who made a "wrong" choice earlier in life are confined to that occupation for the rest of their productive lives. Moreover, these results confirm that the older workers are in the lower-ranked occupations. Similar to the

---

[10] We also run the model with parental education alone. We found that only the father's education matters, and only when Germans choose the professional group versus the blue-collar, skilled craft, and white-collar groups.

[11] Recall that the *"father other"* category includes self-employed fathers. We suspect that there might be some similarities between this category and the skilled craft category. On the other hand, if the self-employed guestworkers are those who migrated as blue-collar workers but after spending time in Germany were able to open their own businesses, then our results point to occupational upward mobility for the guestworker children.

Table 5

**Immigrant Sample; Human Capital Multinomial Logit Results
(Coefficients and t-ratios)**

Dependent Variable: log-odds	Constant	Male	Education	Experience	Speak German Well
ln (Blue-Collar / Menial)	-0.357	1.538*	0.069	-0.0006	0.1642
	(-0.538)	(7.372)	(1.202)	(-0.058)	(0.763)
ln (Skilled Craft / Menial)	-7.152*	2.809*	0.195	0.002	1.846*
	(-4.016)	(3.656)	(1.465)	(0.135)	(2.361)
ln (White-Collar / Menial)	-3.563*	-0.241	0.276*	-0.080*	1.724*
	(-2.773)	(-0.651)	(2.701)	(-4.259)	(3.048)
ln (Professional / Menial)	-9.201*	-0.270	0.737*	-0.033*	2.134*
	(-7.869)	(-0.836)	(8.292)	(-2.283)	(4.421)
ln (Skilled Craft / Blue-Collar)	-6.795*	1.271	0.127	0.003	1.682*
	(-4.013)	(1.687)	(1.014)	(0.174)	(2.207)
ln (White- / Blue-Collar)	-3.206*	-1.779*	0.207*	-0.079*	1.560*
	(-2.669)	(-5.265)	(2.209)	(-4.500)	(2.835)
ln (Professional / Blue-Collar)	-8.844*	-1.808*	0.667*	-0.032*	1.970*
	(-8.387)	(-6.344)	(8.635)	(-2.537)	(4.267)
ln (White-Collar / Skilled Craft)	3.588	-3.051*	0.080	-0.083*	-0.121
	(1.773)	(-3.772)	(0.534)	(-3.199)	(-0.130)
ln (Professional / Skilled Craft)	-2.048	-3.080*	0.541*	-0.035	0.287
	(-1.071)	(-3.914)	(3.889)	(-1.573)	(0.327)
ln (Professional / White-Collar)	-5.637*	-0.029	0.460*	0.047*	0.409
	(-4.019)	(-0.074)	(4.567)	(2.402)	(0.606)
Log Likelihood			-709.95		
χ^2			357.06		
No. of Observations			767		

* indicates significance at the five percent level in a two-tailed test ($p < 0.05$)
Source: Own calculations from GSOEP

German results, the last row of Table 5 shows that more years of experience induce immigrants to choose the professional category over the white-collar category.

The role of the parental characteristics is presented in Table 6. With the exception of the experience variable, where the coefficients became smaller in absolute terms, the coefficients on gender and education largely remained the same in comparison to Table 5. In contrast to the Germans, the occupations of the immigrant

Amelie Constant and Klaus F. Zimmermann

Table 6

Immigrant Sample: Multinomial Logit Results, Human Capital and Family Background (Coefficients and t-ratios)

Log Odds	Constant	Male	Education	Experience	Speak German Well	Father's Education	Mother's Education	Father Blue-Collar	Father White	Father Other
ln(B/M)	-0.593	1.487*	0.093	0.002	0.185	-0.015	-0.055	0.590	1.350	0.086
	(-0.783)	(6.903)	(1.575)	(0.201)	(0.822)	(-0.558)	(-1.890)	(1.196)	(1.154)	(0.179)
ln(C/M)	-6.903*	2.833*	0.213	-0.003	1.906*	-0.056	-0.003	-0.228	1.680	-0.082
	(-3.681)	(3.640)	(1.579)	(-0.124)	(2.408)	(-0.884)	(-0.048)	(-0.253)	(1.020)	(-0.093)
ln(W/M)	-3.940*	-0.467	0.326*	-0.040	1.225*	0.015	-0.006	0.483	34E-03	-1.172
	(-2.806)	(-1.209)	(3.055)	(-1.794)	(2.060)	(0.339)	(-0.135)	(0.783)	(0.000)	(-1.666)
ln(P/M)	-10.261*	-0.364	0.752*	-0.007	1.742*	0.015	0.046	1.162	1.843	-0.033
	(-7.627)	(-1.072)	(8.062)	(-0.392)	(3.468)	(0.384)	(1.165)	(1.666)	(1.429)	(-0.045)
ln(C/B)	-6.309*	1.347	0.121	-0.006	1.721*	-0.041	0.052	-0.818	0.329	-0.168
	(-3.568)	(1.766)	(0.959)	(-0.217)	(2.236)	(-0.687)	(0.852)	(-1.014)	(0.257)	(-0.210)
ln(W/B)	-3.346*	-1.954*	0.233*	-0.043*	1.041	0.030	0.049	-0.107	-1.350	-1.258*
	(-2.554)	(-5.500)	(2.376)	(-1.997)	(1.801)	(0.777)	(1.336)	(-0.205)	(-1.117)	(-1.974)
ln(P/B)	-9.667*	-1.851*	0.659*	-0.009	1.557*	0.031	0.101*	0.572	0.492	-0.119
	(-7.883)	(-6.121)	(8.056)	(-0.569)	(3.237)	(0.890)	(3.019)	(0.937)	(0.576)	(-0.178)
ln(W/C)	2.963	-3.301*	0.112	-0.037	-0.680	0.071	-0.003	0.711	-1.679	-1.090
	(1.384)	(-4.000)	(0.730)	(-1.119)	(-0.713)	(1.031)	(-0.037)	(0.778)	(-1.005)	(-1.113)
ln(P/C)	-3.358	-3.197*	0.538*	-0.004	-0.164	0.071	0.049	1.390	0.163	0.049
	(-1.629)	(-3.991)	(3.786)	(-0.118)	(-0.183)	(1.078)	(0.730)	(1.442)	(0.114)	(0.049)
ln(P/W)	-6.321*	0.103	0.426*	0.033	0.516	43E-03	0.051	0.679	1.842	1.139
	(-4.041)	(0.255)	(4.050)	(1.412)	(0.733)	(0.010)	(1.232)	(1.010)	(1.458)	(1.444)
Log L	-687.424									
χ^2	402.114									
Obs	767									

Note: M = Menial, B = Blue-Collar, C = Skilled Craft, W = White-Collar, P = Professional
* indicates significance at the five per cent level in a two-tailed test ($p < 0.05$)
Source: Own calculations from GSOEP

fathers are not significant for most of the log-odds combinations.[12] Immigrants are more likely to chose blue-collar over white-collar occupations when their fathers are in the "other" occupation category. With regard to parental education, we find that a more educated immigrant mother exerts significant influence on the occupational choice of children but only when choosing a professional over a blue-collar category.[13] More educated immigrant fathers exhibit no significant effects on the occupational choices of their children, independent of the alternative under study. In the case of the West Germans, parental education was completely ineffective.

4. Conclusions

In this paper we employed data from the German Socio-Economic Panel (GSOEP) to predict the occupational choice of men and women in Germany across generations. For Germans and immigrants we find some surprisingly similar results. Gender significantly and differentially affects occupational choices even after we control for human capital and other characteristics, with women being sorted into white or professional jobs. Unlike the US, where individuals can alter their occupational choices over time, individuals in Germany make their choices early on and are in a way "stuck" with them. For example, the German educational system emphasizes "tracks", and individuals must choose the right track from the age of six. In such a context, the role of parents is crucial. West Germans have the inherited advantage of being natives. Moreover, Germans whose fathers are in a white-collar occupation have access to valuable social connections and more chances for economic success. Overall, we find some signs of persistence in the occupational choices for Germans, but not for immigrants.

In general, we find that guestworkers are concentrated in the "traditional migrant occupations." They are indeed at a disadvantage with regard to family background characteristics. Yet, we find that guestworker full-time working women are able to break the barriers and attain higher-ranked occupations in service sectors than their fathers, who were mostly blue-collar workers.

In conclusion, we find that in Germany, individuals from different family backgrounds do not face equal options. We find some evidence that individuals inherit their social status and their position in the occupational distribution. Family background may affect occupational choices both directly through genetic endowment, social connections, and wealth, and indirectly through education, or through other channels like the formation of preferences. More education increases the probabil-

---

[12] Recall that the variable "father white" includes the skilled craft, white-collar and professional categories, and the reference category is father in a menial occupation.

[13] As we did for Germans, here too we ran the model with parental education alone. We found that both the father's and the mother's education matter. That is, more highly educated parents may steer their children away from menial and blue-collar jobs and inspire them to choose a higher-numbered occupation.

ity of occupational upgrading. That is, more educated individuals have a higher probability of advancing into occupations that offer higher earnings and social status. Our results confirm earlier results on occupational attainment.

Our results with respect to family background influence on the occupational choice are not as powerful as the results of intergenerational studies on earnings. We realize that this study is a study on occupational choice and not on earnings. Nonetheless, because earnings, occupations, and economic status are interlinked in Germany we had expected to find a stronger influence of parental characteristics on occupational choice.

References

Bauer, Thomas / *Zimmermann,* Klaus F., (1999) "Occupational Mobility of Ethnic Migrants," Discussion Paper No. 58, IZA, Bonn, Germany, September.

Becker, Gary S., (1964) Human Capital, (NY Columbia University Press).

Behrman, Jere R. / *Taubman,* Paul, (1976) "The Intergenerational Correlation between Children's Adult Earnings and Their Parents' Income: Result from the Michigan Panel Survey of Income Dynamics," Review of Income and Wealth, Vol. 36, No. 2, May: 115–27.

– (1990) "The Intergenerational Correlation between Children's Adult Earnings and Their Parents' Income: Result from the Michigan Panel Survey of Income Dynamics," Review of Income and Wealth, Vol. 36, No. 2, June: 115–27.

Black, Sandra E. / *Devereux,* Paul J. / *Salvanes,* Kjell G., (2003) "Why the Apple Doesn't Fall Far: Understanding Intergenerational Transmission of Human Capital," Discussion Paper No. 926, IZA, Bonn, Germany November.

Boskin, Michael J., (1974) "A Conditional Logit Model of Occupational Choice," Journal of Political Economy, Vol. 82, No. 2, Part 1, 389–398.

Chiswick, Barry R., (1978) "A Longitudinal Analysis of Occupational Mobility of Immigrants," in Proceedings of the 30th Annual Industrial Relations Research Association Meeting, Dennis, Barbara, editor. Madison: University of Wisconsin Press, 20–27.

Chiswick, Barry R. / *Miller,* Paul W., (1996) "Ethnic Networks and Language Proficiency among Immigrants," Journal of Population Economics, Vol. 9, No. 1, February: 19–35.

Constant, Amelie / *Massey,* Douglas S., (2003) "Labor Market Segmentation and the Earnings of German Guestworkers," Discussion Paper No. 774, IZA, Bonn, Germany May.

Couch, Kenneth A. / *Dunn,* Thomas A., (1997) "Intergenerational Correlations in Labor Market Status: a Comparison of the United States and Germany," The Journal of Human Resources, Vol. 32, No. 4, Winter: 210–232.

Ermisch, John / *Francesconi,* Marco, (2000) "The Effect of Parents' Employment on Children's Educational Attainment," Discussion Paper No. 215, IZA, Bonn, Germany, November.

Gang, Ira N. / *Zimmermann,* Klaus F., (2000) "Is Child like Parent? Educational Attainment and Ethnic Origin," Journal of Human Resources, Vol. 35, No. 3, Summer: 550–569.

Ginther, Donna K. / *Pollak,* Robert A., (2003) "Does Family Structure Affect Children's Educational Outcomes?," mimeo, October.

Harper, Barry / *Haq,* Mohammed, (1997) "Occupational Attainment of Men in Britain," Oxford Economic Papers, Vol. 49, No. 4, October: 638 – 651.

Hout, Michael / *Rosen,* Harvey S., (1999) "Self-Employment, Family Background, and Race," NBER Working Paper No. W7344, September.

Iannelli, Cristina, (2002) "Parental Education and Young People's Educational and Labour Market Outcomes: A Comparison across Europe," MZES Working Paper No. 45, Mannheim.

McFadden, Daniel, (1973) "Conditional Logit Analysis of Qualitative Choice Behavior," in Zarembka, P., (editor) Frontiers of Econometrics. New York: Academic Press, 105 – 142.

Rosholm, Michael / *Husted,* Leif / *Nielsen,* Helena Skyt, (2002) "Integration across Generations? The Education of Second Generation Immigrants," Nationalokonomisk Tidsskrift, Vol. 140, No. 1, July: 35 – 58.

Schmidt, Peter / *Strauss,* Robert P., (1975) "The Prediction of Occupations Using Multiple Logit Models," International Economic Review, Vol. 16, No. 2, June: 471 – 486.

SOEP Group, (2001) "The German Socio-Economic Panel (GSOEP) after more than 15 years – Overview." In Elke Host, Dean R. Lillard, and Thomas A. DiPrete, eds., Proceedings of the 2000 Fourth International Conferences of German Socio-Economic Panel Study Users (GSOEP 2000), Quarterly Journal of Economic Research, Vol. 70, No. 1, pp. 7 – 14.

Solon, Gary, (1992) "Intergenerational Income Mobility in the United States," American Economic Review, Vol. 82, No. 3, June: 393 – 408.

Solon, Gary / *Corcoran,* Mary / *Gordon,* Roger / *Laren,* Deborah, (1991) "A Longitudinal Analysis of Sibling Correlations in Economic Status," Journal of Human Resources, Vol. 26, No. 3, Summer: 509 – 534.

Zimmerman, David J., (1992) "Regression Toward Mediocrity in Economic Stature," American Economic Review, Vol. 82, No. 3, June: 409 – 429.

Zimmermann, Klaus F., (1998), "German Job Mobility and Wages", in: Isao Ohashi and Toshiaki Tachibanaki (editors) Internal Labour Markets, Incentives and Employment. Macmillan Press: London and St. Martin's Press: New York, 300 – 332.