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562-2013

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Internal Migration in Germany**

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ISSN: 1864-6689 (online)

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# Low Occupational Prestige and Internal Migration in Germany\*

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This version: June 2013

## Abstract

This paper assesses a recent prediction of the theoretical migration literature, according to which migration may be driven by a desire to avoid social humiliation arising from occupational stigma. To this end, we study the residential mobility of workers in occupations with relatively low prestige using data from the German Socio-Economic Panel (SOEP). In order to capture low occupational prestige, we relate the prestige of a worker's current occupation to the average prestige of the occupations associated with the worker's vocational training. Our estimation results suggest a negative relationship between the incidence of low occupational prestige and the probability of internal migration in Germany and thus reject our working hypothesis. We discuss the role of specific migration costs and occupational cultures as possible explanations of this result. The absolute prestige level of a worker's occupation does not turn out to be a significant predictor of his propensity to migrate, whereas his absolute income level – but not his relative income level – is significantly positively related to this propensity.

**Keywords:** internal migration, Germany, occupational status, occupational prestige, income, vocational training

**JEL Codes:** J61, R23, Z13

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\* This paper draws on Chapter 3 of my unpublished PhD thesis and was written while I was working at the University of Tübingen. The research presented in this paper has benefited from valuable comments by Udo Kreickemeier, Marcel Smolka, as well as by the participants of the Migration Seminar at the University of Tübingen. I would also like to thank the SOEP team at DIW Berlin – in particular Martin Kroh – for their helpful advice at several occasions.

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# 1 Introduction

In this paper we ask whether empirically observed migration moves are driven by individuals' concerns for their occupational status. Such concerns may arise if an individual's occupational status is considered relatively low by his social environment and if the individual cares about the opinion of his social environment. The idea that migration may serve to reduce disutility from being employed in a low-prestige ("stigmatized") occupation was developed by Fan and Stark (2011) and has been revisited by Neubecker (2013). Disutility from occupational stigma may constitute a push factor of migration, but its empirical relevance is yet to be explored. We study how individuals' concerns for occupational status affect internal migration in Germany, using data from the German Socio-Economic Panel (SOEP 2012) provided by Deutsches Institut für Wirtschaftsforschung (DIW) Berlin. Given that the two identical countries in the theoretical model of reference can just as well be interpreted as two identical regions or cities within the same country (Fan and Stark, 2011, 554), our analysis of internal migration is compatible with this theoretical model. In particular, analyzing internal migration rather than international migration allows us to abstract from large income differences.

We exploit detailed information on individuals' occupations and education paths, in addition to data on their residential histories. In the absence of any reliable information on occupational stigma, we use available information on occupational prestige to construct an indicator for *low occupational prestige* and employ this measure as a proxy for *occupational stigma*. Our indicator is based on the assumption that an individual's occupational standing is measured as his occupational achievement within the broad occupational category to which his vocational training belongs. We expect to find a positive effect of low occupational prestige as measured by this indicator on the probability of internal migration in Germany.

In line with the theoretical model proposed by Fan and Stark (2011), our interest lies on migration that is likely to serve as a means to change an individual's social environment. Therefore, we only consider moves over a certain distance as moves and focus on workers who do not improve upon their occupational situations in the considered periods. We thus abstract from migration that is related to occupational upgrading.<sup>1</sup> Furthermore, given our interest in the residential histories of workers with vocational training, Germany appears to be an appropriate case for our analysis because of its strong dual education system.<sup>2</sup>

Our estimations reveal a statistically significant and robust negative relationship between the probability of internal migration in Germany and the incidence of low prestige associated with a worker's occupation. This finding rejects our working hypothesis according to which individuals in occupations with relatively low prestige are more likely to migrate compared to individuals in occupations with relatively high prestige. Given the specific assumptions and data considered for our empirical analysis,

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<sup>1</sup> For a study investigating the joint decision of residential and job mobility in the United States, see Kan (2003).

<sup>2</sup> According to figures for Germany for 2007 from OECD (2009, 304, Table C1.4), 57.1% of students in upper secondary education were enrolled in ISCED-97 category 3B, providing essentially access to practical or occupation-specific tertiary education, and 0.3% were enrolled in ISCED-97 category 3C. Only 42.6% were enrolled in ISCED-97 category 3A, providing access to theory-based tertiary programs; see UNESCO (2006) for details on these categories. The OECD combined average for practical secondary education is much lower (7.9 % for category 3B and 25.6 % for category 3C), while the OECD average for general upper secondary education is much higher (70.2% for category 3A) (OECD, 2009, 304, Table C1.4). In the German dual education system apprentices typically spend 3 to 4 days per week in a firm providing them with practical training, and further 12 hours per week in a part-time school where they receive general as well as occupation-specific education (Hoeckel and Schwartz, 2010, 10).

however, our finding does not necessarily reject the more general prediction of the theoretical model of reference. We provide possible explanations for our finding, but are unable to empirically discriminate between them.

By analyzing the role of occupational prestige for the migration decisions of German residents, this paper contributes to the literature on the determinants of internal migration in Germany.<sup>3</sup> As the costs of migration are generally lower in the case of internal migration as opposed to international migration, it is not surprising that we observe much more internal migration as opposed to international migration of German residents: According to figures from the German Federal Statistical Office (2011, 64), in the year 2009 a total of 2,555,165 residents in Germany changed their cities of residence within a given German Federal Land (*Bundesland*), and further 1,081,286 residents moved to another German Federal Land. In the same year, only 733,796 (German and non-German) residents left Germany to move to another country (Federal Statistical Office, 2011, 69). In what follows, we refer to studies on internal migration in Germany that are based on the same database as the analysis in this paper. Given the rich information available in the SOEP, these studies differ in various content-related dimensions, such as the definition of migration (accomplished migration versus intended migration), the factors of major interest (socio-economic factors versus psychological/non-economic factors), or the sample of individuals considered (working population versus university graduates, East Germans versus West Germans). The majority of these studies exploit information on accomplished moves documented in the SOEP. Studies investigating individuals' intentions to move within Germany include Bönisch and Schneider (2010), who look at general migration intentions, as well as Burda (1993) and Büchel and Schwarze (1994), whose focus is on East Germans' intentions to move to West Germany.<sup>4</sup> Concerning the determinants of migration, the focus of most studies using data from the SOEP is on socio-economic factors.<sup>5</sup> A recent exception is the work by Jäger et al. (2010), who analyze the role of an individual's propensity to take risks for migration. Their estimation results suggest that individuals who are more willing to take risks are more likely to move to another German region (*Raumordnungsregion*), *ceteris paribus*.<sup>6</sup> However, none of the aforementioned studies has looked at the role of low occupational prestige for internal migration.

The analysis presented in this paper is also related to the literature studying the effects of social status inconsistencies. In particular, the sociological literature has long been studying the relationship between the determinants of social status – education, occupation, and income – as well as the effects of potentially implied status inconsistencies; see, e.g., Lenski (1954). According to Lee et al. (2009, 35), a classical case of status inconsistency is when a highly educated individual works in a job associated with relatively low prestige and/or low income. While there exist several studies on the effects of status inconsistency on wages or job mobility, there is relatively little evidence on the effect of status inconsistency on geographical mobility. An exception is the study by Quinn and Rubb (2005), which

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<sup>3</sup> For a survey on internal migration in developed countries, see Greenwood (1997).

<sup>4</sup> For studies using data from the SOEP on individuals' intentions to move abroad, see Niefert et al. (2001) and Übelmesser (2006).

<sup>5</sup> For example, Hunt (2006) studies the mobility of East Germans after reunification with a focus on increases in Eastern wages and unemployment.

<sup>6</sup> A follow-up study by Bauernschuster et al. (2012) assesses the reasons underlying the comparatively high mobility of highly educated and risk-loving individuals by disentangling the psychic costs of moving from the pure geographic costs of moving. Their findings suggest that the lower overall distance sensitivity in the migration decision of more educated and risk-loving persons is essentially explained by their smaller sensitivity to the cultural costs of moving.

investigates the effect of education-occupation mismatches on migration decisions in Mexico. To measure education-occupation mismatches, the authors calculate an individual's amount of overeducation or undereducation as the positive or negative difference between the years of education completed by the individual and the years of education required in the occupation<sup>7</sup> held by the individual, respectively, see Quinn and Rubb (2005, 157). Their findings suggest that overeducation leads to a higher incidence of migration, while undereducation leads to a lower incidence of migration.<sup>8</sup> In a follow-up study, Quinn and Rubb (2011) study overeducation<sup>9</sup> both as a potential cause and as a consequence of the migration decisions of U.S. households. They report that the reduction of overeducation of husbands and wives seems to be an important factor motivating migration. Furthermore, migration is found to involve more wives than husbands exiting full-time paid employment, and to more robustly reduce the level of overeducation for men compared to women.

In light of the theoretical model proposed by Fan and Stark (2011) and revisited by Neubecker (2013), the measures of status inconsistency employed in Quinn and Rubb (2005, 2011) and in other studies entail the shortcoming that they do not allow for a distinction between the *pecuniary dimension* and the *prestige dimension* of status inconsistency. Put differently, these measures effectively compound the possible effects of status-inconsistent wages and of status-inconsistent occupational prestige, both of which can originate in an education-occupation mismatch. Lee et al. (2009) partly overcome this problem by adopting the inconsistency definition by Brown et al. (1988), which incorporates the notion that an individual's occupation and income constitute two forms of compensation for his investment in education. Lee et al. (2009, 36-37) refer to individuals with high education status but low occupational and income status as "under-rewarded inconsistencies", and characterize individuals whose occupational prestige and/or income significantly exceeds the respective measure of individuals with comparable education as "over-rewarded inconsistencies". Individuals with one typical and one atypical relationship between education and occupation/income are labeled "mixed inconsistencies". The empirical findings of Lee et al. (2009) suggest that under-rewarded individuals in the United States are more likely to migrate, while over-rewarded individuals are less likely to migrate compared to status consistent individuals. Thus, whereas Lee et al. (2009) consider both the pecuniary dimension and the prestige dimension of occupational status (inconsistency), they do not, however, disentangle the associated effects in their empirical analysis.

The empirical analysis presented in this paper contributes to the literature studying the effects of social status inconsistencies in that it discriminates between the potential effects of relatively low occupational prestige and of relatively low income on the migration decision. In doing so, the focus of the analysis is on migration as a means to change one's social environment. As a consequence, and different from the related empirical studies, we explicitly disregard the possibility of migration linked to status improvements in terms of occupational prestige. The empirical measures of low occupational prestige and low income employed in our analysis are closely related to the measures of status incon-

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<sup>7</sup> The level of education that is required in some occupation is measured by the mean level of schooling in the respective occupation, see Quinn and Rubb (2005, 157).

<sup>8</sup> Quinn and Rubb (2005) regard these findings as a possible explanation for the different effects of education on migration that have been obtained in the empirical literature. Depending on the incidence of overeducation and undereducation at different education levels in the considered sample, one might either obtain a positive or a negative effect of education on migration if overeducation and undereducation are not controlled for (Quinn and Rubb, 2005, 153-154).

<sup>9</sup> In order to determine the extent of overeducation, Quinn and Rubb (2011, 39) rely on two different measures of required education: the mean and the mode of education by occupation.

sistencies reviewed above, because they are also based on a comparison of the characteristics of an individual’s job with his (vocational) education.

To the best of our knowledge, our empirical analysis is the first of this kind that is based on a large sample of individuals. Closely related anecdotal evidence is provided by Fan and Stark (2011). They report that high-status ship building engineers in Nikolayev/Ukraine accepted to work as low-status welders only afield but not in their home town as the demand for shipbuilding engineers declined. The evidence presented in Parkins (2010) matches this anecdotal evidence: In her interviews with 40 highly educated Jamaicans, occupation/skill mismatch arises as one of the important push factors of intended or accomplished emigration.

The remainder of this paper is organized as follows. In Section 2 we develop a testable hypothesis that can be brought to our data and that is inspired by the model proposed by Fan and Stark (2011). In Section 3 we describe the empirical model and the data that we use in our analysis. In Section 4 we present and discuss our estimation results. Section 5 concludes.

## 2 Towards a Testable Hypothesis

In the following, we develop an empirically testable hypothesis that is motivated by the model of Fan and Stark (2011) and that can be brought to the data.

We depart from the model’s general prediction that migration may be motivated by an individual’s desire to avoid disutility from occupational stigma by changing his social environment. Importantly, we are not aware of any reliable empirical measure of occupational stigma, while we dispose of several indicators to measure occupational prestige. Therefore, we translate all considerations about occupational stigma into considerations about (low) occupational prestige. We make two central assumptions.

First, in line with the theoretical model proposed by Fan and Stark (2011), we assume that individuals care about occupational prestige in the sense that they attribute some utility to the prestige of their occupation. This assumption seems to be compatible with the views on self-definition in social psychology. According to Ashforth and Kreiner (1999, 417), “[...] job titles serve as prominent identity badges. The robustness of occupational prestige rankings attests to the salience and importance that society ascribes to occupational identities.”

Second, we assume that individuals evaluate both the prestige of their own occupation as well as the prestige of other individuals’ occupations on the basis of comparisons with “similar” individuals. More specifically, we assume that individuals evaluate occupational prestige as the achievement in terms of prestige within the broad occupational category to which an individual’s vocational training belongs. This means that the individuals considered for comparison work in occupations related to the considered category of vocational training.<sup>10</sup> To give an example, our assumption implies that an individual with a vocational training related to *Surface or underground construction* compares his current occupational prestige to that of individuals working in occupations related to *Surface or underground construction*, but not to individuals working in occupations related to *Electronics*. Thereby,

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<sup>10</sup>Even though we do not explicitly account for these individuals’ vocational trainings when implementing the described comparison, it is likely that most of the individuals working in a specific occupational category have a related vocational training and are thus similar in terms of their vocational trainings.

the considered comparison is independent of the broad occupational category to which the individual's *current* occupation belongs, because it is meant to account for self-selection in terms of vocational training. At the same time, by relating an individual's current occupation to his (vocational) training, the proposed comparison is closely related to the definitions of status inconsistencies reviewed in the introduction of this paper.<sup>11</sup> Our second assumption seems to be consistent with social comparison theory in social psychology, which goes back to Festinger (1954).<sup>12</sup> Whereas Festinger (1954) is known for pointing out the role of similar individuals in terms of the "critical dimension" for social comparisons, subsequent research has emphasized the role of similar individuals in terms of "related attributes" (Corcoran et al., 2011, 124). Related attributes are "[...] closely associated with the critical dimension and partially determine the performance on the critical dimension" (Corcoran et al., 2011, 124). In our context, the "critical dimension" is current occupational prestige and the "related attribute" is the occupational prestige associated with the individual's vocational training. Clearly, the type of vocational training is a determinant of occupational prestige achieved in later occupations. Contrasting social comparison theory, which focuses on social comparisons as a means of individuals to evaluate their own abilities and opinions (see, e.g., Festinger, 1954), we presume that individuals also evaluate the prestige of the occupations held by members of their social environment in the above described way. We thus assume that individuals account for the fact that the members of their social environment have selected themselves into specific occupational fields via their vocational trainings. Based on the above assumptions and considerations, we formulate the following working hypothesis:

***Hypothesis:*** *Individuals working in occupations with low prestige relative to the prestige of the occupations associated with their vocational training category are, ceteris paribus, more likely to migrate compared to individuals working in occupations with relatively high prestige. Migration in this context refers to a residential move that does not involve an improvement of occupational prestige.*

The logic underlying this hypothesis – as well as the more general prediction of the theoretical model – is that migration may serve as a means to change an individual's social environment. Thus, a sound test of this hypothesis in the described context requires us to abstract from any migration decision that is related to occupational upgrading. We will therefore focus on workers (migrants and non-migrants) who do not improve upon their occupational situations. In the next section, we describe in detail how we measure the two components of our hypothesis – the incidence of migration and relatively low occupational prestige – as well as the relevant set of control variables.

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<sup>11</sup>For example, while Quinn and Rubb (2005) relate an individual's years of education to the average years of education in his occupation, we compare the prestige of an individual's current occupation to the average prestige of the occupations associated with the individual's vocational training. This will be explained in more detail in Section 3.

<sup>12</sup>Research on social comparisons in social psychology is concerned with the causes and consequences of individuals' comparisons to other individuals, as well as with the type of individuals considered for comparisons (Corcoran et al., 2011, 119).



### 3 Empirical Model and Data

This section presents the empirical model and the data used in our analysis. We use information from the SOEP-Geocode database<sup>13</sup> to identify residential moves within Germany. All other variables are based on information that is also available in the regular SOEP database. The SOEP is a representative survey of households in Germany. Initiated in 1984, it is a panel study with a focus on individuals' well-being that tracks households over time and space; see Wagner et al. (2007) for a detailed description of the SOEP.

#### 3.1 Migration

Our dependent variable is a binary variable indicating whether individual  $i$  has moved within Germany in a given period ( $MIG_i$ ).<sup>14</sup> We only consider residential moves over a distance of at least 20 kilometers (km) as moves. Hence, our dependent variable is characterized as follows:

$$MIG_i = \begin{cases} 1 & \text{if } movedist_i \geq 20 \text{ km} \\ 0 & \text{if } 0 \leq movedist_i < 20 \text{ km,} \end{cases}$$

where  $movedist_i$  is the moving distance observed for individual  $i$ . We employ a Probit model to estimate the conditional probability of a residential move for individual  $i$ :

$$\Pr(MIG_i = 1|\mathbf{x}) = \Phi(\mathbf{x}'_i\boldsymbol{\beta})$$

where  $\Phi(\cdot)$  is the standard normal cumulative distribution function,  $\mathbf{x}_i$  is a vector of individual-level characteristics, and  $\boldsymbol{\beta}$  is a vector of parameters to be estimated.<sup>15</sup>

#### 3.2 Low Occupational Prestige

Our explanatory variable of main interest is an indicator variable for (relatively) low occupational prestige ( $LOP_i$ ). This variable takes on the value one if the prestige level  $P_i$  associated with individual  $i$ 's occupation at the beginning of a period does not exceed the average prestige level of the occupations associated with the individual's vocational training  $V_i$ ,  $\bar{P}_{V_i}$ ; it takes on the value zero otherwise:

$$LOP_i = \begin{cases} 1 & \text{if } P_i \leq \bar{P}_{V_i} \\ 0 & \text{if } P_i > \bar{P}_{V_i}. \end{cases}$$

The sociological literature offers three scale types to measure occupational status: prestige measures, socioeconomic scales, and nominal class categories (Ganzeboom and Treiman, 1996, 203). Since we consider low occupational prestige as the flip side of occupational stigma, we rely on the first scale type and measure occupational prestige based on the Magnitude Prestige Scale (MPS), which is a prestige scale specifically constructed for Germany. This scale was originally developed by Wegener (1984) for the occupations of the International Standard Classification of Occupations 1968 (ISCO-68). To

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<sup>13</sup>We accessed this information via remote computer access on the basis of an expanded data distribution contract with DIW Berlin.

<sup>14</sup>Information on the time frame is provided below.

<sup>15</sup>See Cameron and Trivedi (2005, Chapter 14) for further details on the Probit model.

construct the scale, Wegener used information from three surveys in which individuals in Germany were asked to rank 50 different occupations in terms of their prestige. We rely on an updated version of this scale by Christoph (2005), MPS88, which was developed to match the revised classification ISCO-88. The values of MPS88 range from 20.0 (ISCO-88 unit group 9312, *Construction and maintenance labourers: roads, dams and similar constructions*; ISCO-88 unit group 9311, *Mining and quarrying labourers*) to 186.8 (ISCO-88 unit group 2422, *Judges*) (see Christoph, 2005, 119-126), with higher values indicating higher prestige.<sup>16</sup> We match the MPS88 values as given in Christoph (2005) to the ISCO-88 codes of individuals' occupations reported in the SOEP.<sup>17</sup> Ideally, we would proceed in a similar way concerning individuals' completed vocational trainings, and then compare the prestige of an individual's current occupation to the prestige of his vocational training.<sup>18</sup> However, we cannot do so because information on vocational training is only available at a rather aggregated level, which is the one of *Berufsabschnitte* of the German classification of occupations *Klassifikation der Berufe 1992* (KldB-92). Therefore, we calculate mean values of MPS88 for the different vocational training categories based on the matching of the ISCO-88 4-digit occupations to the broad occupational classes of KldB-92 included in the SOEP.<sup>19</sup> Table 4 in the appendix reports the mean values for the relevant categories of vocational training, along with the minimum and maximum values of MPS88 as well as the numbers of observations. Based on these mean values, we classify the prestige of an individual's current occupation as low if the associated prestige level does not exceed the mean prestige level of the individual's vocational training category. Thereby, we have to exclude individuals with a vocational training in two KldB-92 categories because the variation of MPS88 within these categories is zero.<sup>20</sup> We rely on an indicator variable rather than on a continuous variable to measure (relatively) low occupational prestige because we do not want to put too much weight on precise prestige differences calculated on the basis of MPS88. Table 5 in the appendix lists individuals' occupations categorized as occupations with relatively low prestige by broad category of the individuals' vocational trainings. Two types of low-prestige occupations may be distinguished: occupations related to the individuals' vocational training categories and those unrelated to the individuals' vocational training categories. We treat these two types on an equal footing when constructing  $LOP_i$ , assuming that occupational prestige is judged on the basis of an individual's achievement relative to his training.<sup>21</sup>

To give an example, consider two individuals, each with a vocational training in the field of *Metal construction and machine construction* (KldB-92 *Berufsabschnitt* IIIg,  $\bar{P}_{V_i} = 50.7$ ). One individual is

<sup>16</sup>The matching of the English occupation titles is based on [http://doku.iab.de/fdz/EGS/Klassifikation\\_Berufe.xls](http://doku.iab.de/fdz/EGS/Klassifikation_Berufe.xls), accessed on 04/02/2012.

<sup>17</sup>In principle, individuals' occupations are classified at the ISCO-88 4-digit level such that we can directly match the values of MPS88 reported in Christoph (2005). However, for 2.7% of the sample observations (44 person-periods; see below), occupations are only reported at the ISCO-88 3-digit or 2-digit level. In order to retain these observations, we construct and consider mean values of MPS88 over the associated detailed occupations for these broader occupational categories.

<sup>18</sup>We summarize the following types of training in Germany under the heading of vocational training: *Lehre, Berufsfachschule, Schule des Gesundheitswesens, Fachschule (Meister, Techniker), Beamtenausbildung*.

<sup>19</sup>We construct these mean values as weighted averages of MPS88 by KldB-92 *Berufsabschnitte* considering information from the entire SOEP on individuals aged 18 or older in the period 2001-2009 and applying the provided weighting factors. We exclude ISCO-88 occupations generally requiring tertiary education (occupations of ISCO-88 majors 2 and 3, see ILO, 1990, 3-4), as well as occupations classified as *Legislators, senior officials and managers* (ISCO-88 major 1).

<sup>20</sup>These are KldB-92 categories IIIs (*Helpers without further information on their activities*) and IVb (*Technicians, technical specialists*). Note that the English names of all KldB-92 categories are own translations by the author.

<sup>21</sup>49.2% of the individuals working in occupations with low prestige ( $LOP_i = 1$ ) work in occupations that are related to their vocational trainings.

working as an *Agricultural- or industrial-machinery mechanic and fitter* (ISCO-88 unit group 7233,  $P_i = 47.4$ ), and the other one as a *Tool-maker and related worker* (ISCO-88 unit group 7222  $P_i = 52.6$ ). As the prestige level of an *Agricultural- or industrial-machinery mechanic and fitter* is smaller than the mean prestige level of occupations associated with *Metal construction and machine construction*, the indicator  $LOP_i$  is one for the first individual, indicating low occupational prestige. By contrast, the prestige level of a *Tool-maker and related worker* is larger than the relevant benchmark value. Therefore,  $LOP_i$  takes on the value zero for the second individual. Note that the occupations of both individuals pertain to the field of their vocational training.

### 3.3 Control Variables

A major challenge for our empirical analysis is the choice of an adequate set of control variables. Given that we intend to explicitly discriminate between a prestige dimension and an income dimension of (relatively) low status, we include indicator variables for (relatively) low and high income into our empirical model. These variables take on the value one for individuals with a net income that is lower (higher) than or equal to the 25-% (75-%) percentile of the net income earned in the occupations associated with the individuals' vocational training categories, and zero otherwise.<sup>22</sup>

Furthermore, our empirical model has to account for an individual's ability as well as his moving costs. These factors are likely to be correlated not only with the propensity to migrate, but also with the incidence of low occupational prestige. In our most demanding model specifications, we control for a rich set of socio-demographic and job characteristics, usually measured at the beginning of a migration period. We expect several of these variables to implicitly control for an individual's ability, such as the highest education level, the log of income, or the absolute prestige level of an individual's occupation.

We also control for other job and dwelling characteristics, as well as for an individual's attachment to his place of residence and social environment. These control variables are usually measured at the beginning of a migration period. In terms of job characteristics, we control for tenure, for whether an individual works in a different occupational field than his vocational training, for whether the individual has at least changed his occupation once, and for the satisfaction with his current job. Concerning the characteristics of the individual's dwelling and his attachment to his place of residence, we account for whether an individual has changed his district of residence (*Kreis*) in the previous year, for the number of years of residence in the current dwelling, for dwelling ownership, for satisfaction with the dwelling, and for whether the individual judges his neighbourhood as good. In terms of the individual's attachment to his social environment, we control for the number of close friends and for whether he frequently meets his friends and relatives. The last two variables are included because individuals with strong local ties could have higher moving costs, making them less likely to move. Our last specification additionally includes indicator variables for the different Federal Lands in which the individuals were living at the beginning of a migration period.

<sup>22</sup>We construct these percentiles by KldB-92 *Berufsabschnitte* on the basis of the net labor income of individuals aged 18 or older with a full-time employment observed at the beginning of a given period. As for the construction of  $LOP_i$ , we consider information from the entire SOEP and apply the provided weighting factors. Similarly as above, we exclude ISCO-88 occupations generally requiring tertiary education (occupations of ISCO-88 majors 2 and 3), as well as occupations classified as *Legislators, senior officials and managers* (ISCO-88 major 1).

In all specifications, we control for standard socio-demographic and household characteristics such as sex, age, German citizenship, whether an individual lives in East Germany at the beginning of a migration period, the presence of children in the household, marital status, as well as for an individual’s willingness to take risks. Table 6 in the appendix provides detailed source information for all variables.

### 3.4 Sample

Our sample comprises individuals aged 18 or older with completed vocational training (but no university education) who work in a full-time job at the beginning of a period and for whom the SOEP reports the type of vocational training.<sup>23</sup> As explained above, we focus on individuals who did not improve upon their occupational prestige in a given period.<sup>24</sup> Due to reasons of data availability, we only consider individuals from sample F of the SOEP (“Innovation”, initiated in 2000). One reason is that since 2001, the reported vocational trainings are based on more recent information obtained from the individuals, see Haisken-DeNew and Frick (2005, 70-71). Another reason is that information on individuals’ moving distance is only available from 2001 onward. In line with other migration studies, we aggregate the yearly residential information, considering two five-year periods (2001-2005, 2005-2009).<sup>25</sup> An individual is identified as a mover by our dependent variable if he moved at least once over a distance of 20 km in a given period.<sup>26</sup> In principle, our sample consists of 1,636 person-periods for which we have information on the two variables of interest,  $MIG_i$  and  $LOP_i$ . Depending on the set of control variables included, the sample size is reduced in some estimations due to missing information for some control variables. We pool our data for the two periods in order to maximize the number of observations.<sup>27</sup>

Our analysis of residential moves within Germany with data from the SOEP is possible due to the “follow-up concept” of the household survey. This concept implies that individuals are generally followed geographically in case they move within Germany (Haisken-DeNew and Frick, 2005, 22). Yet in some cases individuals cannot be re-interviewed because they have moved and no information on their places of residence is available. From an econometric point of view, panel attrition will constitute a problem in the context of our analysis if the attrition does not occur randomly but is indeed related to residential moves. Our concern about this type of problem is weakened, however, because the relative frequencies of successful follow-ups tabulated in Table 1 in Kroh (2011, 27) are quite high.

### 3.5 Descriptive Evidence

Table 1 provides a cross-tabulation of the indicator variables for migration and for low occupational prestige. It reports 58 migration events, corresponding to 3.55% of the person-periods included in our sample.<sup>28</sup> We observe a single move within a given five-year period for 47 migration events, and two

<sup>23</sup>We exclude individuals with university education because we cannot apply the same definition of low occupational prestige to these individuals.

<sup>24</sup>In order to see whether an individual improved his occupational prestige, we compare the prestige levels of the individual’s occupations at the beginning and at the end of a period.

<sup>25</sup>According to Long and Boertlein (1990, 5), such aggregation of information from several years avoids a strong influence of chronic movers and corrects for return and repeat migration.

<sup>26</sup>We do not consider individuals for whom the residential information contains gaps.

<sup>27</sup>The 1,636 person-periods cover 452 individuals whom we observe in both periods, and further 732 individuals whom we observe in only one period.

<sup>28</sup>This incidence is lower than the incidence of migration reported in Jäger et al. (2010, 686), which amounts to 5.8%. We relate this observation to differences in the definition of migration (we consider a threshold for the moving distance

moves for the remaining 11 migration events. The average moving distance across the 58 migration events<sup>29</sup> is 121.42 km.<sup>30</sup>

Table 1: Cross-tabulation of the Indicator Variables  $MIG_i$  and  $LOP_i$

		Above-average occupational prestige $LOP_i = 0$	Below-/average occupational prestige $LOP_i = 1$	Total
No move $MIG_i = 0$	absolute	1,145	433	1,578
	% row	72.56	27.44	100.00
	% column	95.98	97.74	96.45
Move $MIG_i = 1$	absolute	48	10	58
	% row	82.76	17.24	100.00
	% column	4.02	2.26	3.55
Total	absolute	1,193	443	1,636
	% row	72.92	27.08	100.00
	% column	100.00	100.00	100.00

*Source:* Author's tabulations using data from the SOEP.

Table 1 shows that person-periods characterized by above-average occupational prestige (in comparison to their vocational training) exhibit a higher incidence of migration (4.02%) compared to person-periods characterized by average or below-average occupational prestige (2.26%). This observation stands in contrast to our working hypothesis. 27.08% of all person-periods work in occupations with average or below-average occupational prestige. This percentage is about the same for non-movers (27.44%), but smaller for movers (17.24%). Movers and non-movers differ substantially with respect to their vocational trainings and occupational categories. Although the vocational trainings and occupations of movers do not cover each of the considered categories, their distributions neither exhibit a particular pattern, see Tables 4 and 5 in the appendix.

Table 2 provides summary statistics for the variables considered in our estimations. Looking at the mean values of some key variables, we see that most of our person-periods refer to individuals from West Germany (79%), who are male (69%), and on average aged 42. The majority of these individuals have a last schooling degree from the lowest or second-lowest schooling level (41% *Hauptschulabschluss* and 46% *Realschulabschluss*) and work in occupations with an average prestige level of 71. The average prestige gap relative to the minimum prestige level associated with the individuals' vocational trainings is positive and amounts to 34. 46% of the individuals work in an occupation that is not associated with their vocational training. 47% of the individuals are dwelling owners and the average length of residence in the current dwelling is 13 years. It is important to keep in mind that 55% of our person-periods consist of observations on individuals who are being observed in both periods.

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rather than the criterion whether an individual has moved to another German region), in the length of the considered period (we look at two five-year intervals rather than at a single seven-year interval), as well as in the considered sub-sample of information from the SOEP.

<sup>29</sup>For person-periods with two moves, we consider the average moving distance in order to construct this value.

<sup>30</sup>For 26 migration events the (average) moving distance lies in the interval [20 km, 50 km), for 12 migration events in the interval [50 km, 99 km), and for 20 migration events the (average) distance is larger than 100 km.

Table 2: Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
$MIG_i$	1636	.035	.185	0	1
$LOP_i$	1636	.271	.444	0	1
Income $\leq p25$	1636	.181	.385	0	1
Income $\geq p75$	1636	.427	.495	0	1
Male	1636	.693	.462	0	1
Age	1636	41.537	9.831	19	70
German	1636	.983	.127	0	1
East Germany	1636	.212	.409	0	1
Hauptschulabschluss	1634	.412	.492	0	1
Realschulabschluss	1634	.460	.499	0	1
Fachhochschulreife/Abitur	1634	.103	.305	0	1
Other/no schooling degree	1634	.024	.155	0	1
Children in household	1636	.597	.491	0	1
Married, living together	1523	.675	.469	0	1
Married, living separated	1523	.012	.108	0	1
Single	1523	.259	.438	0	1
Divorced	1523	.039	.193	0	1
Widowed	1523	.015	.122	0	1
Tenure	1635	12.402	9.970	0	55.3
Absolute prestige level	1636	70.647	25.832	24.7	153.5
Log of net income	1631	7.301	.447	3.912	8.732
Work in different occupational field than vocational training	1636	.464	.499	0	1
Occupational change	1615	.446	.497	0	1
Prestige gap relative to min. prestige of vocational training	1636	33.624	26.476	-21.6	130.8
Dwelling owner	1590	.474	.499	0	1
Years in current dwelling	1514	12.900	11.428	0	64
Good neighbourhood	1626	.916	.277	0	1
Change of Kreis in previous year	1630	.028	.166	0	1
Frequent meetings with friends/relatives	1632	.791	.407	0	1
Number of close friends	1574	4.179	3.688	0	50
Satisfaction with flat	1629	8.036	1.781	0	10
Satisfaction with job	1625	7.368	2.014	0	10
Willingness to take risks	1629	4.850	2.170	0	10

Source: Author's tabulations using data from the SOEP.

## 4 Estimation Results

This section presents and discusses our estimation results.

### 4.1 Results from Probit Estimation

Table 3 presents average marginal effects from Probit estimations of the incidence of migration along with robust standard errors. In all estimations we apply cross-sectional weighting factors.<sup>31</sup> The estimated specifications differ with respect to the included control variables and, as a consequence, with respect to the sample size.

<sup>31</sup>As we only consider information from sample F of the SOEP, we obtain these factors by multiplying the cross-sectional weighting factors provided in the SOEP by the factor 2.22 as suggested in Haisken-DeNew and Frick (2005, 177-178).

Table 3: Average Marginal Effects from Probit Estimations of the Incidence of Migration.  
Dependent Variable:  $MIG_i$ .

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Occupational prestige</b>						
<i>(reference: <math>LOP_i = 0</math>)</i>						
$LOP_i = 1$	-0.037**	-0.034**	-0.037**	-0.022*	-0.022*	-0.022*
	(.015)	(.014)	(.015)	(.013)	(.013)	(.013)
<b>Income position</b>						
<i>(reference: <math>p_{25} &lt; Income &lt; p_{75}</math>)</i>						
Income $\leq p_{25}$		-.006	-.006	.007	.008	.002
		(.014)	(.018)	(.015)	(.015)	(.015)
Income $\geq p_{75}$		.002	.002	-.013	-.015	-.010
		(.013)	(.014)	(.011)	(.012)	(.011)
<b>Socio-demographic characteristics</b>						
Male <i>(reference: female)</i>		.004	.003	-.025**	-.024**	-.020**
		(.012)	(.014)	(.011)	(.011)	(.010)
Age		-.000	-.000	-.000	-.000	-.001
		(.001)	(.001)	(.001)	(.001)	(.001)
German <i>(reference: non-German)</i>		.024	.026	omitted	omitted	omitted
		(.033)	(.033)			
East Germany <i>(reference: West Germany)</i>		-.011	-.012	-.004	-.003	.015
		(.014)	(.014)	(.011)	(.011)	(.024)
Realschulabschluss <i>(reference: Hauptschulabschluss)</i>		.039***	.040***	.035***	.033***	.035***
		(.015)	(.015)	(.013)	(.012)	(.013)
Fachhochschulreife/Abitur <i>(reference: Hauptschulabschluss)</i>		.019	.021	.033**	.032**	.029*
		(.018)	(.019)	(.016)	(.016)	(.018)
Other/no schooling degree <i>(reference: Hauptschulabschluss)</i>		.012	.015	omitted	omitted	omitted
		(.033)	(.033)			
<b>Household characteristics</b>						
Children in household <i>(reference: no children in household)</i>		-.031***	-.032***	-.025**	-.025**	-.030**
		(.012)	(.012)	(.011)	(.011)	(.012)
Married, living separated <i>(reference: married, living together)</i>		.074***	.074***	.038*	.037*	.047**
		(.026)	(.026)	(.021)	(.021)	(.022)
Single <i>(reference: married, living together)</i>		.022	.021	-.003	-.003	-.011
		(.016)	(.016)	(.011)	(.011)	(.011)
Divorced <i>(reference: married, living together)</i>		.025	.026	-.015	-.014	-.011
		(.026)	(.027)	(.025)	(.025)	(.024)
Widowed <i>(reference: married, living together)</i>		.047	.046	.054**	.056**	.052**
		(.031)	(.032)	(.024)	(.024)	(.025)
<b>Job characteristics</b>						
Tenure		-.003***	-.003***	-.001**	-.001**	-.001*
		(.001)	(.001)	(.001)	(.001)	(.001)
Absolute prestige level			-.000	-.000*	-.000	-.000
			(.000)	(.000)	(.001)	(.001)
Log of net income			.001	.034*	.037**	.030*

Continuation on the next page

Table 3 *continued*

	(1)	(2)	(3)	(4)	(5)	(6)
Work in different occupational field than vocational training (reference: work in same field)			(.021)	(.018)	(.018)	(.017)
				-.002	-.002	-.001
Occupational change (reference: no change)				(.011)	(.011)	(.012)
				.013	.014	.019
Prestige gap relative to min. prestige of vocational training category				(.012)	(.012)	(.014)
					-.000	-.000
					(.000)	(.000)
<b>Dwelling characteristics</b>						
Dwelling owner (reference: no dwelling owner)				-.021*	-.021*	-.023*
				(.012)	(.012)	(.013)
Years in current dwelling				-.002*	-.002*	-.002**
				(.001)	(.001)	(.001)
Good neighbourhood				-.009	-.010	-.004
				(.013)	(.013)	(.015)
Change of <i>Kreis</i> in previous year				-.010	-.012	-.015
				(.024)	(.024)	(.026)
<b>Other personal characteristics</b>						
Frequent meetings with friends/relatives (reference: no frequent meetings)				-.037***	-.037***	-.043***
				(.011)	(.011)	(.012)
Number of close friends				.001	.000	.000
				(.002)	(.002)	(.002)
Satisfaction with flat				-.009***	-.009***	-.011***
				(.003)	(.003)	(.003)
Satisfaction with job				.000	.000	-.000
				(.002)	(.002)	(.002)
Willingness to take risk				.001	.001	.001
				(.002)	(.002)	(.003)
Period 2005-2009 (reference: 2001-2005)				.006	.006	.006
				(.010)	(.010)	(.010)
Regional dummies	no	no	no	no	no	yes
Observations	1636	1520	1515	1219	1219	1129
Pseudo $R^2$	0.020	0.211	0.211	0.316	0.318	0.358

\*, \*\*, \*\*\* denote significance at the 10-%, 5-%, 1-% levels, respectively. Robust standard errors are reported in parentheses. The average marginal effects are based on the Delta method. Refer to Section 3 for a detailed description of the variables.

The average marginal effect of the incidence of low occupational prestige is negative throughout the different specifications, ranging from -0.037 to -0.022. It is always statistically significant at the 5-% or 10-% level. This implies that the probability of migration is smaller by 2.2 to 3.7 percentage points for an individual with an occupation characterized by average or below-average prestige relative to the occupations associated with his vocational training, compared to an individual with above-average occupational prestige, *ceteris paribus*. This finding confirms the unconditional negative relationship between these two variables reported above, but it clearly contradicts our working hypothesis. Before discussing this finding in more detail, we first look at the average marginal effects of the other explanatory variables.



The average marginal effects of the variables accounting for low and high income are never statistically significant at any reasonable significance level. This suggests that in our context the income dimension of (relative) occupational status is unrelated to residential mobility, *ceteris paribus*. The only dimension of (relative) occupational status that seems relevant for residential mobility is occupational prestige.

The effects of the control variables mostly have the expected signs. However, not all effects are statistically significant. In the following, our focus is on the average marginal effects that are statistically significant at least at the 10-% level. All interpretations are *ceteris paribus*-interpretations. Men have a lower probability of migration than women. Individuals with intermediate or high schooling (*Realschulabschluss* or *Fachhochschulreife/Abitur*) are, on average, more likely to migrate relative to individuals with the lowest schooling degree (*Hauptschulabschluss*). In terms of household characteristics, we find that individuals with children in their household are on average less likely to move compared to individuals without children in their household. Married individuals living separated from their partner as well as widowed individuals have a higher probability to migrate compared to married individuals living together with their partner. Furthermore, concerning the different job characteristics, only tenure and the absolute level of income exhibit statistically significant average marginal effects. The probability of migration is on average larger for individuals with a large net income or only few years of tenure. In terms of dwelling characteristics, we find that individuals who have their own dwelling are characterized by, on average, a lower probability of moving than individuals without their own dwelling. Also, the probability of migration is decreasing in the number of years an individual has been living in his current dwelling. Our estimation results furthermore provide evidence that individuals who are attached to their social environment and current place of residence are characterized by low mobility: Individuals who frequently meet their friends and relatives or who are highly satisfied with their dwelling have, on average, a lower probability to move compared to individuals who are less attached to their current place of residence.

## 4.2 Robustness Analysis

We have argued above that we expect some of our control variables to implicitly control for individual ability. If this is not the case, individual ability may interfere with the incidence of low occupational prestige. As individual ability is likely to be positively correlated with the propensity to migrate but negatively correlated with the incidence of low occupational prestige, the coefficient for  $LOP_i$  may be estimated with a downward bias. If the bias is large enough, it will lead to an overall negative marginal effect of low occupational prestige on the incidence of migration. On the basis of this consideration, we additionally include a further proxy variable for individual ability, defined as the difference between the prestige level of an individual's occupation and the minimum prestige level associated with his vocational training category,  $P_i - \text{Min}(P_{V_i})$  (columns 5 and 6 in Table 3). If the estimated coefficients of our prestige indicator and the proxy variable for individual ability were to differ in terms of sign, this would indicate the presence of the above-described omitted variables problem. However, the average marginal effect of the proxy variable for individual ability turns out statistically insignificant, while at the same time the negative effect of  $LOP_i$  remains virtually unchanged. This weakens our concern about a possible omitted variable bias due to unobserved individual ability.

Furthermore, we have repeated our estimations additionally controlling for individuals' categories of vocational training with a set of indicator variables (not reported). The negative effect of  $LOP_i$  is robust to the inclusion of these additional control variables.

In another robustness check we have based our indicator variable for low occupational prestige on Treiman's Standard International Occupational Prestige Scale (SIOPS) instead of MPS88.<sup>32</sup> Using this alternative indicator variable, we have repeated the estimations from Table 3 (not reported).<sup>33</sup> The obtained average marginal effects for the alternative prestige indicator are negative, but they lose their statistical significance in the specifications of columns (2) to (6).<sup>34</sup>

We have also assessed the robustness of our results using the Logistic (Logit) and Ordinary Least Squares (OLS) estimators instead of the Probit estimator. The obtained estimates (not reported) are in line with those from the Probit estimations, both in terms of sign and in terms of magnitude. In particular, they confirm the negative relationship between the incidence of low occupational prestige and the propensity to move.

### 4.3 Discussion

The estimation results for our indicator variable of low occupational prestige attest to a negative effect of low occupational prestige on the propensity to migrate rather than to a positive or zero effect.<sup>35</sup> In the following, we present two possible explanations for this finding.

The first explanation is related to the costs of moving. Individuals employed in low-prestige occupations could face additional costs of moving deriving from a particularly strong attachment to their social (non-work) environment, within which their low-prestige occupation may be accepted. A move over a distance of at least 20 km may involve additional costs for this group of workers because – unlike other workers – they may have more difficulties in building up a new social environment.<sup>36</sup> In terms of the theoretical model proposed by Fan and Stark (2011) and revisited by Neubecker (2013), this argument is equivalent to the existence of prohibitively high migration costs for the workers in the stigmatized sector. In the model, such high costs would discourage any incentive to migrate associated with the desire to reduce disutility from occupational stigma. The existence of additional migration costs for workers in low-prestige occupations could thus explain the lower propensity to migrate for these workers relative to workers in occupations with higher prestige.

The second possible explanation is inspired by Ashforth and Kreiner (1999, 419-420), who argue

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<sup>32</sup>Based on 85 occupational prestige studies conducted in 51 countries, this international scale was originally established for the occupational categories of the International Standard Classification of Occupations 1968 (ISCO-68) by Treiman (1977). Several years later, Ganzeboom and Treiman (1996) updated the SIOPS for the revised International Standard Classification of Occupations ISCO-88. The updated SIOPS ranges from 6 to 78, with higher values indicating higher prestige; see the listing in Ganzeboom and Treiman (1996, 221-237).

<sup>33</sup>For the sake of consistency, we also measure the absolute level of occupational prestige (which enters as a control variable) using the SIOPS in these estimations.

<sup>34</sup>This may be due to the fact that our sample is slightly decreased when using the alternative prestige scale to construct our variables of major interest. We are left with 1520 person-periods for whom we observe the two variables of major interest. A migration event is reported for 54 of these person-periods.

<sup>35</sup>One could argue that due to cheap communication and transportation technologies, these days a residential move within Germany does not necessarily imply a displacement from an individual's social environment. However, on the basis of this argument, we would expect to find a zero average marginal effect and not a negative effect for the indicator variable of low occupational prestige.

<sup>36</sup>Note that the costs associated with dealing with occupation-related prejudices by unknown individuals (e.g., potential landlords) should be already captured by the variable controlling for the absolute prestige level of an individual's occupation.

that individuals performing “dirty work” may develop “strong occupational or workgroup cultures”. One could argue that strong occupational cultures alleviate the disutility from low occupational prestige, eventually conferring a positive utility to the workers concerned. If this effect is large enough for workers in occupations with low prestige (“dirty work”), i.e., if the positive effect due to a strong occupational culture dominates the negative effect due to low occupational prestige, this may as well explain our estimation results.<sup>37</sup>

Although either one of the above explanations appears plausible, we are not in a position to give a final answer to the question of what is responsible for the negative effect of low occupational prestige on migration. In particular, to the best of our knowledge the SOEP does not provide information on the strength of occupational cultures. Whatever type of mobility-impeding force is at work, it is strong enough to dominate any mobility-enhancing motive related to disutility from low occupational prestige.

## 5 Conclusion

This paper has presented a first attempt to empirically assess a recent prediction from the theoretical migration literature, according to which migration may be driven by a desire to avoid disutility associated with occupational stigma, see Fan and Stark (2011). Thereby, the role of migration is to bring about a change in an individual’s social environment. Using individual-level data from the German SOEP, we have tested the hypothesis that individuals working in occupations with low prestige relative to the occupations associated with their vocational training category are more likely to migrate compared to individuals in occupations with relatively high prestige – even if this migration does not involve an improvement in terms of occupational prestige. Our estimations for the likelihood of moving over a distance of at least 20 kilometers within Germany have included a rich set of control variables. The results obtained from these estimations robustly reject our working hypothesis. They suggest that workers in occupations with low prestige relative to the prestige of the occupations associated with their vocational training are on average characterized by a smaller propensity to migrate within Germany, *ceteris paribus*. We have argued that our finding could derive from particularly high costs of moving or particularly strong occupational cultures relevant for the considered group of workers.

Our empirical analysis is the first to discriminate between the potential effects of relative occupational prestige and relative income on the migration decision, in addition to the effects of absolute prestige and absolute income. On the one hand, our results reveal a negative relationship between the incidence of relatively low occupational prestige and migration, while they do not reveal any significant relationship between an individual’s relative income position and his propensity to migrate. Absolute income, on the other hand, is a significant predictor of migration. The effect of absolute occupational prestige, by contrast, is not significantly different from zero. These results appear to be compatible with the observation that individuals in Germany talk more openly about (and thus are more likely to compare) their occupations and education levels than they talk about their incomes.

In future work on this topic it would be interesting to look at internal migration in a different

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<sup>37</sup>In a similar vein, one could argue that leaving such an occupational subculture confers additional costs in the case of migration, because it takes some time until a worker integrates into a corresponding occupational subculture at his new place of residence.

country. Due to the comparatively high residential mobility of individuals in the United States (see, e.g., Molloy et al., 2011), a thorough analysis of the status-related determinants of internal migration in the United States might constitute a worthwhile empirical exercise. Thereby, a distinction between the potential effects of relative occupational prestige and income may complement the work of Lee et al. (2009). Another interesting avenue for future work would be to study the exact forces underlying our main finding. This involves high data requirements. Lastly, it would also be interesting to extend the conventional survey questions on individuals' motives for migration by a question on the role of status considerations.

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## Appendix

Table 4: Prestige Characteristics of Individuals' Vocational Training Categories

<b>Occupational category of vocational training (KldB-92 <i>Berufsabschnitte</i>, author's translations)</b>		<b>Mean MPS88 (<math>\bar{P}_{V_i}</math>)</b>	<b>Min MPS88</b>	<b>Max MPS88</b>	<b>Observations (migrants)</b>
Ia	Occupations in agriculture, animal husbandry, forestry and horticulture	38.1	23.9	60.0	55 (1)
IIa	Occupations related to mining and mineral extraction	41.3	20.0	45.9	5
IIIb	Occupations concerned with ceramic and glass	36.8	36.1	45.6	2
IIIc	Occupations concerned with chemicals and synthetics	43.8	39.9	46.8	9
IIId	Occupations related to the manufacturing and processing of paper and print	52.9	31.6	64.2	15 (1)
IIIe	Occupations related to the manufacturing and processing of paper and print	39.8	31.6	58.8	1
IIIf	Occupations related to the production and processing of metals	43.2	33.9	49.6	27 (1)
IIIg	Occupations related to metal construction and machine construction	50.7	31.9	63.0	338 (5)
IIIh	Occupations related to electronics	53.9	49.9	62.3	123 (4)
IIIi	Occupations related to assembling and metals	39.7	31.9	42.7	4
IIIk	Occupations in the textile and apparel industry	42.7	41.5	58.8	25 (1)
IIIl	Occupations related to the production of leather and the processing of leather and fur	50.4	41.5	51.1	8 (1)
IIIm	Occupations related to alimentation	50.6	48.3	55.0	82 (5)
IIIn	Occupations related to surface or underground construction	41.7	20.0	53.4	60 (4)
IIIo	Occupations related to finishes and upholsterers	49.7	35.6	56.8	37 (3)
IIIp	Occupations related to the processing of wood and plastics	51.2	29.3	53.1	30
IIIq	Painters and lacquerers	52.2	36.1	52.5	37 (2)
IIIr	Inspectors and distribution workers	44.8	31.8	46.7	3
IIIt	Machine operators and related occupations	38.1	31.8	51.6	1
Va	Merchants	53.9	38.3	73.1	163 (7)
Vb	Service merchants and related occupations	85.5	35.6	92.1	82 (3)
Vc	Occupations in transportation	43.2	26.7	76.6	28
Vd	Occupations concerned with organization, administration and office	74.3	32.4	93.6	245 (9)
Ve	Occupations in public order and security	60.8	36.8	85.3	23
Vf	Writers and producers of art	47.3	36.1	75.7	5
Vg	Occupations related to health services	57.5	56.9	60.2	114 (6)
Vh	Occupations in welfare and education, and others	57.0	56.9	57.3	51 (3)
Vi	Other service occupations	46.0	28.6	77.9	63 (2)

*Source:* Author's tabulations using data from the SOEP. See Section 3 for details.

Table 5: Individuals Working in Occupations with Relatively Low Prestige, by Vocational Training Category and Current Occupation

	Occupational category of vocational training (KldB-92 <i>Berufsabschnitte</i> , author's translations)	Mean MPS88 ( $\bar{P}_{V_i}$ )	Occupation (ISCO-88 4-digit level)	MPS88 ( $P_i$ )	Observations (migrants)
Ia	Occupations in agriculture, animal husbandry, forestry and horticulture	38.1	8122 Metal melters, casters and rolling-mill operators	33.9	2
			6112 Gardeners, horticultural and nursery growers	36.6	7
III d	Occupations related to the manufacturing and processing of paper and print	52.9	9132 Helpers and cleaners in offices, hotels and other establishments	30.0	1
			8232 Plastic-products machine operators	39.9	1
			8211 Machine-tool operators	42.7	1
III f	Occupations related to the production and processing of metals	43.2	7212 Welders and flame cutters	38.3	1
			8324 Heavy truck and lorry drivers	40.7	4
III g	Occupations related to metal construction and machine construction	50.7	9313 Building construction labourers	24.7	2
			8334 Lifting-truck operators	26.7	1
			9330 Transport labourers and freight handlers	26.9	9
			8290 Other machine operators not elsewhere classified	31.8	2
			9320 Manufacturing labourers	32.4	2
			8332 Earth-moving and related plant operators	36.8	3
			9152 Doorkeepers, watchpersons and related workers	36.8	2
			7212 Welders and flame cutters	38.3	2
			8322 Car, taxi and van drivers	38.3	7
			8232 Plastic-products machine operators	39.9	1
			8323 Bus and tram drivers	40.5	3
			8324 Heavy truck and lorry drivers	40.7	13
			7143 Building structure cleaners	41.2	1
			8333 Crane, hoist and related plant operators	41.5	3
			8211 Machine-tool operators	42.7	9
			8121 Ore and metal furnace operators	43.7	1
			9141 Building caretakers	44.7	5
			4142 Mail carriers and sorting clerks	45.1	1
			7122 Bricklayers and stonemasons	45.3	2
			7214 Structural-metal preparers and erectors	45.4	15
7134 Insulation workers	45.6	1			
8159 Chemical-processing-plant operators not elsewhere classified	46.0	3			
4131 Stock clerks	46.7	9			
7213 Sheet-metal workers	47.1	6			
7233 Agricultural- or industrial-machinery mechanics and fitters	47.4	42			
8278 Brewers, wine and other beverage machine operators	48.3	1			
7223 Machine-tool setters and setter-operators	48.5	5			

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Table 5 *continued*

Occupational of vocational training (KldB-92 <i>abschnitte</i> , translations)	category training <i>Berufs-</i> author's	Mean MPS88 ( $\bar{P}_{V_i}$ )	Occupation (ISCO-88 4-digit level)	MPS88 ( $P_i$ )	Observations (mi- grants)
			7124 Carpenters and joiners	48.7	1
			8163 Incinerator, water-treatment and related plant operators	49.0	2
			7241 Electrical mechanics fitters and services	49.9	1
IIIh	Occupations related to electronics	53.9	9132 Helpers and cleaners in offices, hotels and other establishments	30.0	2
			8322 Car, taxi and van drivers	38.3	1
			8324 Heavy truck and lorry drivers	40.7	3
			6100 Skilled agricultural and fishery workers	44.0	1
			4142 Mail carriers and sorting clerks	45.1	4
			7241 Electrical mechanics fitters and services	49.9	10 (1)
			7136 Plumbers and pipe fitters	51.0	4
IIIk	Occupations related to textile and apparel industry	42.7	9320 Manufacturing labourers	32.4	2
			7143 Building structure cleaners	41.2	4 (1)
			7436 Sewers, embroiderers and related workers	41.5	1
IIIm	Occupations related to alimentation	50.6	8334 Lifting-truck operators	26.7	1
			9330 Transport labourers and freight handlers	26.9	1
			9132 Helpers and cleaners in offices, hotels and other establishments	30.0	1
			8290 Other machine operators not elsewhere classified	31.8	1
			8253 Paper-products machine operators	36.1	1
			8322 Car, taxi and van drivers	38.3	2
			8323 Bus and tram drivers	40.5	4
			8211 Machine-tool operators	42.7	2
			8159 Chemical-processing-plant operators not elsewhere classified	46.0	2
			4131 Stock clerks	46.7	2
			8221 Pharmaceutical-and toiletry-products machine operators	46.8	1
			7233 Agricultural- or industrial-machinery mechanics and fitters	47.4	2
			5122 Cooks	49.8	7 (1)
			7411 Butchers, fishmongers and related food preparers	49.9	5
III n	Occupations related to surface or underground construction	41.7	9330 Transport labourers and freight handlers	26.9	1
			8332 Earth-moving and related plant operators	36.8	5
			8322 Car, taxi and van drivers	38.3	1
			8323 Bus and tram drivers	40.5	1
III o	Occupations related to finishes and upholsterers	49.7	9313 Building construction labourers	24.7	1
			7437 Upholsterers and related workers	35.6	1
			8324 Heavy truck and lorry drivers	40.7	2

*Continuation on the next page*

Table 5 *continued*

Occupational of vocational training (KldB-92 <i>abschnitte</i> , translations)	category training <i>Berufs-</i> author's	Mean MPS88 ( $\bar{P}_{V_i}$ )	Occupation (ISCO-88 4-digit level)	MPS88 ( $P_i$ )	Observations (mi- grants)
			6100 Skilled agricultural and fishery workers	44.0	4
			7131 Roofers	47.2	4
			7124 Carpenters and joiners	48.7	4
			8143 Papermaking-plant operators	31.6	1
			8290 Other machine operators not elsewhere classified	31.8	1
			9320 Manufacturing labourers	32.4	1
IIIp	Occupations related to the processing of wood and plastics	51.2	8122 Metal melters, casters and rolling-mill operators	33.9	1
			8323 Bus and tram drivers	40.5	3
			8324 Heavy truck and lorry drivers	40.7	1
			8231 Rubber-products machine operators	41.4	1
			7423 Woodworking machine setters and setter-operators	42.1	1
			6100 Skilled agricultural and fishery workers	44.0	1
			9141 Building caretakers	44.7	2
			9320 Manufacturing labourers	32.4	1
IIIq	Painters and lacquerers	52.2	8324 Heavy truck and lorry drivers	40.7	2
			8151 Crushing-, grinding- and chemical-mixing-machinery operators	44.8	1 (1)
			4142 Mail carriers and sorting clerks	45.1	1
			7214 Structural-metal preparers and erectors	45.4	1
			9330 Transport labourers and freight handlers	26.9	1
			9320 Manufacturing labourers	32.4	2
			8322 Car, taxi and van drivers	38.3	1 (1)
Va	Merchants	53.9	8232 Plastic-products machine operators	39.9	1
			8324 Heavy truck and lorry drivers	40.7	1
			6100 Skilled agricultural and fishery workers	44.0	1
			4131 Stock clerks	46.7	4
			7124 Carpenters and joiners	48.7	2
			7442 Shoe-makers and related workers	51.1	1
			5220 Shop, stall and market salespersons and demonstrators	53.8	24
			6112 Gardeners, horticultural and nursery growers	36.6	1
Vb	Service merchants and related occupations	85.5	4142 Mail carriers and sorting clerks	45.1	1
			5220 Shop, stall and market salespersons and demonstrators	53.8	1
			4221 Travel agency and related clerks	60.2	1
			3431 Administrative secretaries and related associate professionals	73.2	3
			4133 Transport clerks	76.6	4
Vc	Occupations in transportation	43.2	8332 Earth-moving and related plant operators	36.8	1
			8322 Car, taxi and van drivers	38.3	1

*Continuation on the next page*

Table 5 *continued*

Occupational of vocational training (KldB-92 <i>abschnitte</i> , translations)	category training <i>Berufs-</i> author's	Mean MPS88 ( $\bar{P}_{V_i}$ )	Occupation (ISCO-88 4-digit level)	MPS88 ( $P_i$ )	Observations (mi- grants)
			6129 Animal producers and related workers not elsewhere classified	39.2	1
			8324 Heavy truck and lorry drivers	40.7	2
			8211 Machine-tool operators	42.7	1
			8290 Other machine operators not else- where classified	31.8	1
			9320 Manufacturing labourers	32.4	1
			8324 Heavy truck and lorry drivers	40.7	1
			4142 Mail carriers and sorting clerks	45.1	5
			4131 Stock clerks	46.7	3
			4141 Library and filing clerks	47.9	1
			7124 Carpenters and joiners	48.7	1
			7231 Motor vehicle mechanics and fitters	52.9	2
			5220 Shop, stall and market salespersons and demonstrators	53.8	4
Vd	Occupations concerned with organization, administration and office	74.3	5123 Waiters, waitresses and bartenders	55.4	1
			7137 Building and related electricians	56.0	1
			4221 Travel agency and related clerks	60.2	1 (1)
			4222 Receptionists and information clerks	60.2	1
			4223 Telephone switchboard operators	60.2	2
			3152 Safety, health and quality inspectors	66.0	1
			4212 Tellers and other counter clerks	67.1	4
			4211 Cashiers and ticket clerks	67.4	2
			4111 Stenographers and typists	73.1	2
			4115 Secretaries	73.1	10
			4190 Other office clerks	73.1	27 (1)
			3431 Administrative secretaries and related associate professionals	73.2	13 (1)
Vg	Occupations related to health services	57.5	5132 Institution-based personal care work- ers	57.3	15 (1)
			5122 Cooks	49.8	1
Vh	Occupations in welfare and education, and others	57.0	7231 Motor vehicle mechanics and fitters	52.9	1
			7422 Cabinetmakers and related workers	53.1	1
			5131 Child-care workers	56.9	2
			5139 Personal care and related workers not elsewhere classified	56.9	1
			8322 Car, taxi and van drivers	38.3	1
Vi	Other service occupations	46.0	7143 Building structure cleaners	41.2	1
			8261 Fibre-preparing-, spinning- and winding-machine operators	44.2	1 (1)
			7134 Insulation workers	45.6	1

*Source:* Author's tabulations using data from the SOEP. See Section 3 for details.

Table 6: Data Sources

Variable	Source: <i>Variable</i> (Dataset) in the SOEP (v28)
$MIG_i$ : Indicator for residential move over at least 20 km, periods 2001-2005 and 2005-2009	Own variable construction based on <i>resmove</i> and <i>distance</i> (movedist)
$LOP_i$ : Indicator for low occupational prestige, 2001 and 2005	Own variable construction based on <i>is8801</i> , <i>traina01</i> , <i>trainb01</i> , <i>trainc01</i> , <i>traind01</i> , <i>rpbbil02</i> (rpgen), <i>is8805</i> , <i>traina05</i> , <i>trainb05</i> , <i>trainc05</i> , <i>traind05</i> , <i>vpbbil02</i> (vpgen); matching of MPS88 to <i>is8801</i> , <i>is8805</i> based on Christoph (2005)
Indicator for low or high income, 2001 and 2005	Own variable construction based on <i>labnet01</i> (rpgen), <i>labnet05</i> (vpgen)
Indicator for being male	<i>sex</i> (ppfad)
Age	Own variable construction based on <i>gebjahr</i> (ppfad)
Indicator for German citizenship, 2001 and 2005	<i>rp115</i> (rp), <i>vp135</i> (vp)
Indicator for East Germany, 2001 and 2005	<i>rsampreg</i> , <i>vsampreg</i> (ppfad)
Indicators for different schooling levels attained, 2001 and 2005	<i>rpsbil</i> (rpgen), <i>vpsbil</i> (vpgen) (own recoding)
Indicator for household with children, 2001 and 2005	<i>typ1hh01</i> (rhgen), <i>typ1hh05</i> (vhgen) (own recoding)
Indicators for different types of family status, 2001 and 2005	<i>rfamstd</i> (rpgen), <i>vfamstd</i> (vpgen)
Tenure, 2001 and 2005	<i>rerwzeit</i> (rpgen), <i>verwzeit</i> (vpgen)
Magnitude prestige scale	<i>is8801</i> (rpgen), <i>is8805</i> (vpgen); matching of MPS88 to <i>is8801</i> , <i>is8805</i> based on Christoph (2005)
(Ln of) Net income, 2001 and 2005	<i>labnet01</i> (rpgen), <i>labnet05</i> (vpgen)
Indicator for work in different occupational field than vocational training	Own variable construction based on <i>klas01</i> , <i>traina01</i> , <i>trainb01</i> , <i>trainc01</i> , <i>traind01</i> , <i>rpbbil02</i> (rpgen) and <i>klas05</i> , <i>traina05</i> , <i>trainb05</i> , <i>trainc05</i> , <i>traind05</i> , <i>vpbbil02</i> (vpgen)
Indicator for at least one occupational change	<i>occmove</i> (biojob) (own recoding)
Prestige gap relative to minimum prestige of vocational training category	Own variable construction based on <i>is8801</i> , <i>traina01</i> , <i>trainb01</i> , <i>trainc01</i> , <i>traind01</i> (rpgen), <i>is8805</i> , <i>traina05</i> , <i>trainb05</i> , <i>trainc05</i> , <i>traind05</i> (vpgen); matching of MPS88 to <i>is8801</i> , <i>is8805</i> based on Christoph (2005)
Indicator for dwelling ownership, 2002 and 2007	<i>sp85a01</i> (sp), <i>xp126a01</i> (xp)
Years in current dwelling	Own variable construction based on <i>brmovein</i> , <i>erheb</i> (bioresid) and <i>resmove</i> (movedist)
Indicator for whether household is located in good neighbourhood, 2001 and 2005	<i>rh5311</i> (rh), <i>vh5413</i> (vh)
Indicator for whether household changed <i>Kreis</i> in previous year, 2001 and 2005	Own variable construction based on <i>kkz</i> (kreise.l)
Indicator for frequent meetings with friends/relatives, 2001 and 2005	<i>rp0305</i> (rp), <i>vp0305</i> (vp) (own recoding)
Number of close friends, 2003 and 2008	<i>tp06</i> (tp), <i>yp06</i> (yp)
Satisfaction with dwelling, 0-10, 2001 and 2005	<i>rp0105</i> (rp), <i>vp0106</i> (vp)
Satisfaction with job, 0-10, 2001 and 2005	<i>rp0102</i> (rp), <i>vp0102</i> (vp)
Willingness to take risks, 0-10, 2004	<i>up119</i> (up)
Indicators for the Federal Lands of residence, 2001 and 2005	<i>nuts2</i> (ror.l) (own recoding)

See Section 3 for details on the construction of the variables.