



# Working Paper

## **A Study of Employment Careers of Immigrants in Germany**

Irena Kogan

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Editorial Note:

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## Abstract

This study examines immigrants' employment careers and their (dis)similarity with the standard career sequence of native Germans. Applying the sequence analysis techniques, the study shows that career patterns of ethnic Germans and EU immigrants are closer to the employment patterns of the native-born than it is the case for other immigrant groups. Career paths of guest workers from Turkey remain however extremely dissimilar even when differences in the age structure and the educational level are taken into account. Long and frequent unemployment seems to be behind this dissimilarity. Immigrants, and particularly Turks, not only have higher propensity to be unemployed, they are also pushed to the unskilled occupations. The second generation, although displaying the closest degree of similarity to the employment career patterns of native-born Germans, largely fail when it comes to occupational assimilation, even though they seem to escape labour market segmentation, pronounced among their parents, often entering occupations in which first-generation unprivileged immigrants are barely found.

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## 1 Introduction

By the end of the twentieth century, Europe had become a magnet for millions of immigrants pushed from their homelands by political and economic hardships and attracted by stable economies, liberal democracies and generous welfare policies in the majority of Western European countries, with Germany being one of the prominent immigrant-accepting countries. Post-war immigration history of Germany can be divided into several rather distinct periods. An immigration wave that immediately followed the end of the second world war when several millions of refugees and expellees from the former German East and from East European regions resettled in the FRG (Bade, 1997) and a later one, up until the construction of the Berlin Wall, when Germans from the GDR (*Übersiedler*) were able to enter the FRG will not be discussed in this study.

The focus will be on all subsequent immigrant waves, beginning with the recruitment of *Gastarbeiter*, the period in the history of immigration to Germany which started in 1955 when Italy and Germany signed a treaty, which allowed the organized recruitment of Italian labour to meet the needs of the growing German economy. After the construction of the Berlin wall in 1961, which marked the halt of the influx of *Übersiedler* from the GDR, the recruitment of the foreign labour force intensified dramatically reacting to the sharp increase in the demand for additional labour force and expanded to the following countries: Spain and Greece (1960), Turkey (1961), Morocco (1963), Portugal (1964), Tunisia (1965) and Yugoslavia (1968) (Rudolph, 1994). However, foreign workers were recruited to Germany on a temporary basis and hence no comprehensive concept for dealing with the social integration of the foreign population was adopted.

The practice of the foreign labour recruitment stopped in 1973, following the oil crisis and a sharp decrease in the labour demand. The end of the labour recruitment and the barriers involved with settling in Germany for foreign workers minimized trans-national fluctuations and marked the growing tendency toward permanent settlement among those who entered Germany as temporary workers. This was the start of the next period of immigration to Germany, the one based on family reunifications of guest workers who arrived earlier. Since then immigrants have been accepted in Germany mostly on humanitarian grounds, including resettlement of refugees and guarantying asylum to those seeking it.

Since the late 1980s, the inflow of refugees and asylum seekers has increased and marked another phase in the post-war immigration. It has been dominated by the inflow from the eastern European countries, since the fall of the iron curtain made it easier to leave former socialist countries. Ethnic cleansing and wars in former Yugoslavia brought thousands of refugees to Europe, with Germany being one of the countries which accepted large numbers of these nationals. Since liberalisation in Eastern Europe and the former Soviet Union and the eventual fall of communist rule numbers of ethnic Germans entitled to settlement and full rights in Germany as German nationals amplified tremendously. Ethnic Germans from the East (*Aussiedler*) were welcomed in the homeland of their

ancestors even earlier, but the problem then was their restricted exit from former socialist countries (Münz and Ulrich, 1997).

## **2 Past research**

There is no lack of empirical literature dealing with immigration and labour market situation of the foreign population in Germany (Münz and Ulrich, 1997; Seifert, 1995, 1998; Berger, 2000; Münz et al., 1997; Schultze, 1990; Gillmeister et al., 1989; Bender and Seifert, 2000; Bender et al., 2000), but the majority of studies are largely descriptive (for notable exceptions see Velling, 1995, Kalter and Granato, 2002; Granato and Kalter, 2001). Moreover, empirical research has primarily focused on the structural assimilation of guest workers from Italy, Spain, Greece, Turkey, Portugal and Yugoslavia, who arrived in a specific historic period to fill vacancies in unskilled and low-skilled occupations. There is a general agreement among researchers that the guest-worker wave is marked by economic segmentation and over-representation at the lower part of the occupational hierarchy even until this day, some 20 to 25 years after experimentation with the mass guest-worker recruitment ended. Explanations for this limited upward mobility of foreign workers are multiple. The most important obstacle is the lack of education and particularly vocational training necessary to enter skilled jobs in Germany (Schultze, 1990). This coupled with the limited knowledge of German, particularly among Turkish immigrants, (Schultze, 1990; Kühne, 1990) prevents immigrants from further training and occupational upgrading. Considering immigrant presence as temporary, employers are often unwilling to provide training for already employed un- and semi-skilled workers, many of whom are immigrants, and rather prefer to hire more qualified workers from outside (Kühne, 1990). In fact, in Germany on-the-job training aimed at un- and semi-skilled workers (not including apprenticeship) is only a small fraction (up to 6-10%) of the total number of programs offered for the occupational upgrading (Schultze, 1990; König et al., 1986). Finally, immigrant workers themselves for quite a long time have considered their stay in Germany as temporary, which made them more reluctant to invest in country-specific human capital (Bonacich, 1972, Kalter and Granato, 2002). Actually, some studies do report occupational mobility among guest worker immigrants, which occurs, however, mainly within the manual sector (Bender and Seifert, 1996), largely from unskilled to semi-skilled jobs (Köhler and Preisendörfer, 1988) and in big manufacturing enterprises with a high proportion of foreigners employed (König et al., 1986). At the same time Bender and Seifert (1996) admit that downward mobility (from skilled to un- or semi-skilled jobs) takes place more often than the other way around, and that mobility between manual and non-manual sectors is extremely rare.

The overwhelming focus on guest-worker immigrants and the fact that often immigrants from the main sending countries to Germany are treated as a homogenous group without a reference to the specific historic period of their immigration seems to be unwarranted especially since in the late 1990s about 40 per cent of all foreign residents in Germany arrived already in the post-recruitment phase (Fertig and Schmidt, 2001). Rare studies that attempt to distinguish the later immigrants as a separate group report some interesting findings (Kalter and Granato, 2002).

Ethnic Germans seem to receive more research attention and according to numerous studies (Rudolph, 1994; Koller, 1993, Janikowski, 1999; Greif at al., 1999; Münz and Ohliger, 1998; Konietzka and Kreyenfeld, 2001; Bommers et al., 1999), despite the fact that their educational and occupational qualifications are at least officially recognized by German employees, remain a disadvantaged group at the German labour market. This is especially true for highly-educated *Aussiedler*, women, and ethnic Germans arriving from the Former Soviet Union, who have experienced downward mobility in Germany because of their insufficient knowledge of the German language, required to enter higher status jobs in the service sector. As a result they are hardly able to compete with native-born Germans in the tertiary sector and are often pushed to the lower part of the occupational ladder (Westphal, 1999). Employment chances seem to be more favourable, however, for *Aussiedler* holding skilled and technical manual qualifications (Janikowski, 1999; Greif at al., 1999; Westphal, 1999).

Second-generation immigrants, children of guest workers, seem to have more favourable labour market prospects than their parents but their labour market achievements, especially among Turks, still fall short as compared to Germans of the similar age cohort (Granato and Kalter, 2001; Gillmeister et al., 1989). One of the main reasons for the labour market underperformance of the second generation and especially second-generation Turks can be found in their lower educational qualifications (Bender and Seifert, 2000; Wagner et al., 1998; Alba et al, 1998, Kalter and Granato, 2002), which are in turn the artefact of regional segregation, social origin (Nauck et al., 1997; Leggewie, 2000) and a lack of social capital (Portes, 1995). A positive signal is however that those non-nationals who managed to complete vocational training within the German dual system seem to have similar chances of finding a job as compared to native-born Germans (Bender and Seifert, 1998; Seifert, 1995). Moreover, as Szydlik (1998) reports, second-generation immigrants with adequate educational qualifications have higher chances of attaining matching employment as compared to their parents, among whom those with qualifications have serious difficulties to find suitable jobs.

### **3 Paper's objectives**

Many of the studies mentioned above base their conclusions mainly on the analyses of the cross-sectional data. Even though some authors (e.g. Seifert, 1995, 1998) utilize available panel data (GSOEP in the majority of cases), the full potential of this type of data is significantly under-exploited both for the causal modelling and the descriptive analysis. This paper's aim is to assess the degree of immigrant structural assimilation exploiting the full potential of the existing longitudinal data. This is done to mitigate the main drawback of the cross-sectional data, which is in capturing only a snapshot of the substantive process being studied. Immigrant integration is rather a sequential process of transitions in the labour market career of each immigrant and it should be treated accordingly. Similar to other scholars (Kalter and Granato, 2002), who understand structural assimilation as a convergence in distributions over categories of relevant variables, here it is conceptualised as a (growing) resemblance of employment *careers* of the indigenous population and immigrants. Thus the first objective of the current study is to compare employment and occupational careers of immigrants with

those of the native-born in order to establish the degree of (dis)similarity between them. Secondly, the study covers a variety of immigrant groups in post-war immigration history: alongside with guest workers and their children, second-generation immigrants, most recent immigrants to Germany and ethnic Germans are included in the analysis. The expectation is that due to the circumstances and the nature of immigration, guest workers that arrived prior to 1973 are expected to be largely segregated with respect to their employment careers even though they have resided some 30 years in the host country. Similar patterns of employment marginalization might also be found for third-country immigrants who arrived after 1973. Due to the attempt of the German state to facilitate integration of ethnic Germans, a higher degree of assimilation is expected for this group, even though *Aussiedler* arrived in a rather similar time period as other third-country immigrants. Immigrants from EU and other western countries should probably fare best if compared to the rest of immigrant groups because of their more privileged labour market status. This, however, might be less so for immigrants from Southern Europe, who originally arrived in the framework of guest worker schemes to fill unskilled and semi-skilled jobs; the flow which has continued even after the post-1973 recruitment stop. Finally, second-generation immigrants, persons who possess German educational certificates, are expected to display a higher degree of assimilation into the German society as compared to their parents, but might still fall short as compared to native-born Germans of the same age cohort.

In short the paper will remain largely descriptive in its nature and its main goals are primarily to validate results of the previous research referring to marginalization and labour market segmentation of immigrants to Germany applying the sequence analysis techniques and expanding the analysis to more recent immigrant cohorts.

## 4 Data, methods and variables

The current study is based on the employment history data from the German Socio-Economic Panel (GSOEP) (Wagner et al., 1994; DIW, 2003), a representative panel survey of the resident population, a rich database on labour market, employment and job dynamics, which has been widely used to study the guest-worker immigrant population because of over-sampling of the five most important immigrant groups residing in Germany: Italians, Turks, Yugoslavs, Spaniards, and Greeks (for more see Seifert, 1995). For the purpose of the paper the West German<sup>1</sup> data from GSOEP waves L-Q (1995-2000), samples A (West German resident national population), B (West German immigrant population from Turkey, Greece, Yugoslavia, Spain and Italy), and D (immigrants who arrived in Germany between 1984-1993) have been used to generate a monthly employment history calendar in

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<sup>1</sup> Since the absolute majority of immigrants live and work in West Germany and because economical disparities between Western and Eastern parts of Germany remain too large to consider the reference group of native-born Germans as a homogenous it was decided to exclude East Germany from the analysis.

the 6-year observation window between January 1995 and December 2000<sup>2</sup>. A rather short observation window has been chosen in order to include most recent immigrants, who entered the survey in 1995 (sample D).

For describing labour market careers of immigrants as compared to the indigenous population in Germany we apply a relatively new tool in empirical sociology (for notable exceptions see Brükner and Rohwer, 1996; Rohwer and Trappe, 1997; Scherer, 2001; Halpin and Chan, 1998; Brüderl and Klein, 2002) – the sequence analysis, which allows treating whole careers or their parts as a serial succession of different states over time. Unlike the event history data analysis, which focuses mostly on single events, the sequence analysis' aim is to capture the whole labour market career (or its part, as in our case) with all different states and transitions that occur.

A specific technique used most often for the treatment of career sequences is Optimal Matching Analysis (OMA), first introduced to sociology by Abbott (1983), Abbott and Forrest (1986), Abbott and Hrycak (1983)<sup>3</sup>. Its idea is to create an interval-level measure of dissimilarity between the sequences by counting costs needed to turn one sequence to another or in other words, by counting a minimum number of transformations needed to make both sequences equal. Thus the more steps are necessary to make two sequences equal the higher the costs required and hence the greater the dissimilarity. On the other hand, if the two sequences are identical the distance or dissimilarity between them is obviously zero. In order to transform one sequence to another two types of transformations are possible: substitution and insertion/deletion. While functioning of substitution is quite straightforward, the aim of the insertion/deletion procedure is to allow detecting equal statuses or patterns staggered through the sequences. In such a way OMA takes into account not only the length and frequency of the events but also their location and order. Each transformation is assigned with costs, which represent the OMA distance. In this paper all statuses are treated as equally dissimilar from each other, that is no weighting of statuses is applied (Scherer, 2001). Following default in TDA 6.4 (Rohwer and Pötter, 1999), a statistical program which was used for the sequence analysis, insertion/deletion is assigned cost 1, and substitution, 2.

Since structural assimilation is understood here as a growing resemblance of employment careers between the mainstream indigenous population and immigrants, it seems reasonable to empirically test the degree of this (dis)similarity by comparing labour market careers of immigrants to those of the native-born national population, or in the terminology of the sequence analysis, by comparing immigrants' careers to the reference sequence of the indigenous population. Another option would be to calculate pairwise dissimilarities between each sequence (6-year part of the labour market career) and then to try to find typologies or classifications in sequences. OMA, however, does not provide any

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<sup>2</sup> It should be mentioned that as all panel data, GSOEP is subject to attrition. Furthermore, after 10 years of the panel (GSOEP started in 1984) attrition might be quite substantial. We however did not include refreshment and innovation samples (samples E and F) since they were selected only in 1998 and 2000 respectively, thus allowing rather a short observation period for the current study.

<sup>3</sup> It originally stems from the molecular biology and genetics and is used for investigating DNA sequences.

classifications of sequences, therefore the cluster analysis is applied in order to empirically investigate the dissimilarity matrix resulting from the sequence procedure. An explorative nature of the analysis requires a hierarchical clustering method. From a large variety of clustering methods, Ward's linkage was used since it is well suited for the interval-scale data and is supposed to find the most homogenous clusters (Bacher, 1996; Gordon, 1999). The cluster analysis was conducted with the SPSS11 program. For describing employment careers we used the monthly employment data, where it was possible to differentiate the following statuses:

- Employment
- Unemployment
- Education and training
- Retirement
- Other

Unfortunately, the monthly activity calendar does not include occupation and other job characteristics of those employed; that is why annual information on a labour market status was used with the aim to find typologies in the labour market careers<sup>4</sup>. To this end the following classification of statuses, which combine the collapsed version of the EGP classification (see Table I in appendix) with labour market statuses as defined by ILO, was applied:

- Service class (EGP I+II)
- Routine non-manual (EGP III)
- Petty bourgeoisie (EGP IV a+b+c)
- Technical (EGP V)
- Skilled (EGP VI)
- Unskilled (EGP VII a+b)
- Unemployment
- Out of labour
- Missing

The study focuses on the male population, aged 25-55 in 1995. While for men a 6-years-career period can be considered as a sample from a longer career path, women's labour market careers are more cyclical and are heavily influenced by a phase in their family life that is why it was decided to concentrate the analysis only on male breadwinners. Independent variables used in the analysis are, first of all, seven comparison groups with native-born Germans serving as a reference category. Among immigrants we differentiate ethnic Germans or *Aussiedler* and because of the data-specificity these include only those who arrived after 1984 (Sample D). Further, guest workers that arrived between 1955-1975 are distinguished, while those from Turkey are considered as a separate group. In addition, immigrants from EU countries or other western industrialized countries arriving after 1975,

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<sup>4</sup> It is obvious that the annual employment information leads to the over-representation in the statuses, which are dominant in a particular year, and ignores employment mobility that occurs within a year. However, for an explorative descriptive overview annual information seems to be satisfactory enough.

and other non-EU immigrants after 1975 are distinguished. More detailed information on this as well as other control variables may be found in Table II in the appendix.

## 5 Employment careers

As suggested above, structural assimilation is understood here as a growing resemblance of employment careers between the mainstream indigenous population and immigrants. Hence an empirical test for the degree of the (dis)similarity of the immigrant population would be to compare labour market careers of immigrants to those of the native-born national population.

Common sense supported by the evidence from the cross-sectional distribution of employment statuses among German men aged 25-55 suggests that the dominant pattern is continuous employment. Indeed, at any given month between 1995 and 2000 almost 90% of all German men were employed. Half of all German men aged 25-55 are continuously employed during a six-year sample of their careers. 60% of German men born between 1950-1960 have continuous employment as the dominant pattern, while only 40% of those born between 1960-1970 were continuously employed. It is clear enough that the reference population, native-born Germans, are themselves far from being a homogeneous group, that is why with the help of the OMA technique we calculate the distance to continuous employment, the dominant pattern of native-born Germans, for immigrants as well as for the native-born and further examine the degree of dissimilarity with continuous employment controlling for socio-demographic characteristics.

Figure 1 plots the proportion of immigrants and the native-born in each of the four quartiles of the OMA distance, which ranges from 0 to 144<sup>5</sup>, and percentage of those who are continuously employed during the discussed period. First of all, the percentage of those who are continuously employed is low in all immigrant groups as compared to native-born Germans. The bars for three age cohorts of the native-born are also included to facilitate the comparison. As the matter of fact, age distribution in some immigrant groups differs from that of the native born (see Figure I in appendix). For example, guest workers have an age structure comparable to native-born Germans of the 1940-1950 year of birth cohort, while second-generation immigrants are rather to be compared to the youngest cohort of the native-born.

Results show that none of the immigrant groups has an employment pattern identical to native-born Germans. Moreover, the most dissimilar group remains guest workers from Turkey. They are substantially remote from native-born Germans of the older cohort with regard to both zero and non-zero distances, and have the highest proportion of those with particularly distant employment patterns. Even third-country nationals, a group which among other nationals also include Turks who arrived

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<sup>5</sup> 144, a maximum distance, results from 72 months (6 years) multiplied by the maximum cost of 2. 0-distance refers to those who are continuously employed.

after 1975, is more similar in the 6-year employment career path regardless of the fact that they have a shorter duration of stay in Germany. At the same time, guest workers who arrived from the Southern European countries and former Yugoslavia have a rather similar employment pattern to those who arrived after the recruitment stop from the EU countries and encompass the highest proportion of continuously employed immigrants among all immigrant groups in Germany. Ethnic Germans follow the employment pattern of native-born Germans rather closely as well, however the proportion of those who are continuously employed is lower than among immigrants from the EU countries. One of the most important findings is that the employment pattern of second-generation immigrants converges with that of native-born Germans of the corresponding age cohort. This might be considered as an evidence of the growing assimilation across generations.

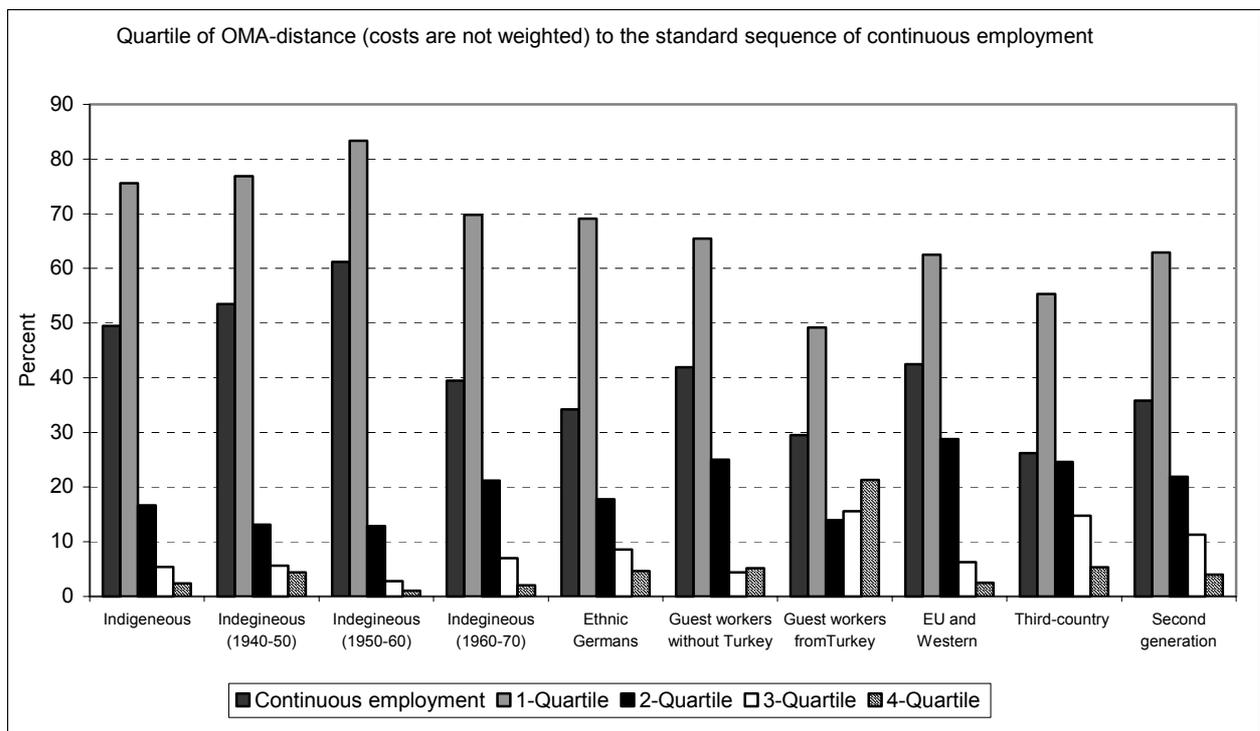


Figure 1: Quartiles of distance to the continuous employment  
 Source: GSOEP, Waves L-Q (1995-2000), monthly unweighted data

Even though in this graphical presentation the attempt was made to control for age differences of the analysed population, the figures should still be interpreted with caution. A further insight to the degree of labour market assimilation would be certainly obtained if one takes into account socio-demographic differences between the groups under discussion. This is indeed possible, since one of the advantages of the OMA method is that it produces interval-scale distances, which can be easily regressed on. Figure 2 plots the unstandardized OLS-regression coefficients, the significance of which is marked with an asterisk, of the six dummy-coded variables pertaining to the immigrant groups, with native-born Germans being a reference category.

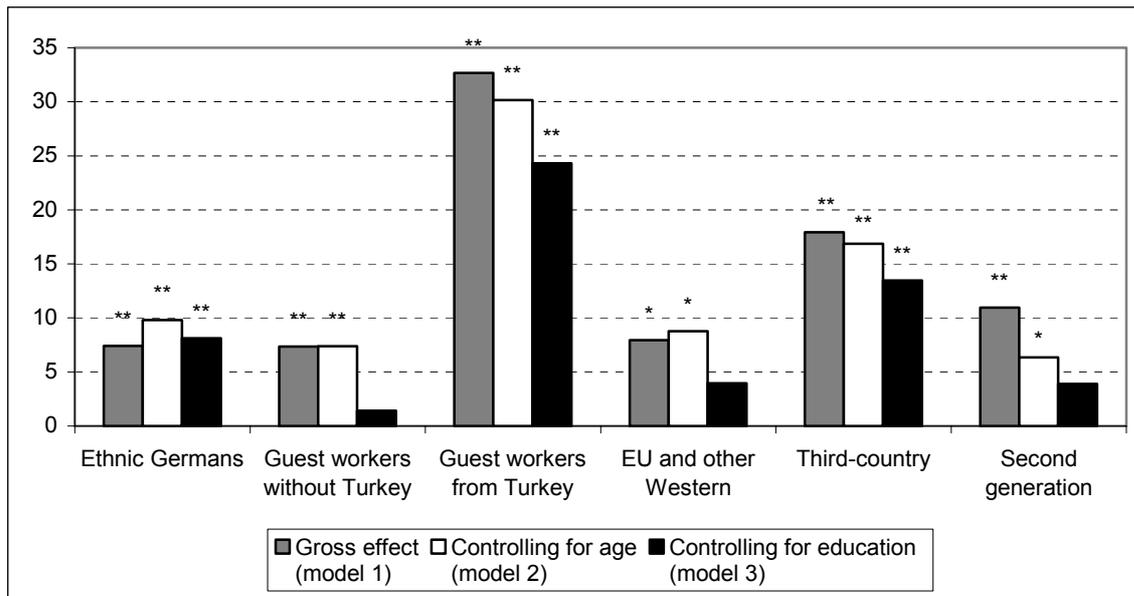


Figure 2: Unstandardized coefficients of the dummy-coded variables pertaining to immigrant groups in the OLS regression analysis of the distance to continuous employment

Source: GSOEP, Waves L-Q (1995-2000), monthly unweighted data

Notes: \*  $p < 0.05$ , \*\*  $p < 0.01$

Gross effects of the immigrant groups are similar to the trends plotted in the previous figure with Turks being mostly disadvantaged as compared to the native-born. Different age structures of the immigrant population indeed explain a part of the dissimilarity in the case of Turks, who arrived before 1975, and the second-generation immigrants. This is not the case for ethnic Germans, EU and other western nationals who arrived after 1975: indeed when the age structure of *Aussiedler*, EU immigrants or other westerners is taken into account (and with respect to age they are quite similar to the native-born, as it is evident from Figure 1 in Appendix) the dissimilarity of their careers from those of the native-born slightly increases. In general, differences in the age structure between immigrants and native-born Germans are found to be responsible for the dissimilarity in employment careers but cannot explain the full extent of the difference. The third model attempts at pursuing the question to what degree variation in education might be found responsible for the employment dissimilarity of the analysed groups<sup>6</sup>. Education obtained abroad (for immigrants) and particularly the lack of vocational training<sup>7</sup>, explains the remaining dissimilarity for the guest workers from Southern Europe and the former Yugoslavia and second-generation immigrants. After controlling for education the dissimilarity of ethnic Germans, Turkish guest workers and other third-country immigrants who arrived after 1975 remains large (especially for the latter two groups) and statistically significant, but is at least partially explained by the lack of the relevant human capital.

<sup>6</sup> See Figure II in appendix for a descriptive overview of educational attainment among comparison groups. The measurement of education is not optimal since it is based on the information at the fixed time point – 1995 or prior if education level in 1995 was missing. This however should not distort results significantly since the vast majority of respondents, the youngest of whom are 25 years old, have finished their education.

<sup>7</sup> The importance of vocational training is evident as the regression coefficients suggest. Full regression models can be found in Table IV in appendix.

The sequence analysis among other things allows describing sequences and this is done further to explore peculiarities of immigrants' employment careers. Table 1 presents the mean duration (in months) in 5 employment statuses and the average number of episodes in employment and unemployment, two dominant statuses, which are of particular interest, for five immigrant groups, second-generation immigrants and native-born Germans, the latter being further subdivided into three age cohorts<sup>8</sup>. Asterisks represent significance of the differences in means at p=0.05 in duration and the number of states in unemployment and employment according to the T-test ( $t = \hat{\beta}_1 - \hat{\beta}_2 / \sqrt{(\hat{\sigma}_{\hat{\beta}_1})^2 + (\hat{\sigma}_{\hat{\beta}_2})^2}$ ). The results demonstrate that all immigrant groups with the exception of ethnic Germans have shorter employment durations. This is especially evident for Turkish guest workers and third-country immigrants who arrived after 1975. On the other hand, all immigrant groups, with the exception of later EU immigrants, have longer unemployment durations, Turkish guest workers having particularly long unemployment spells, and third-country immigrants and ethnic Germans being also disadvantaged. Durations in education, training and retirement rather reflect age peculiarities of the groups under comparison. It is evident that second-generation immigrants and the youngest cohort of native-born Germans spend more time in education, while Germans of the older cohort and Turkish guest workers have already started entering retirement. It is worth noting, however, that guest workers from countries other than Turkey have much shorter duration in retirement than Turkish guest workers.

Table 1: Description of the 6-year employment sequences, 1995-2000

	Duration (months) in					Number of episodes in	
	employment	unemployment	education	retirement	other	employment	unemployment
Indigenous	56.04	2.50	1.90	1.17	0.70	1.24	0.27
Indigenous 1940-50	56.72	3.13	0.15	3.72	0.84	1.15	0.24
Indigenous 1950-60	60.42	2.02	0.46	0.30	0.82	1.21	0.24
Indigenous 1960-70	52.73	2.46	3.87	0.27	0.55	1.31	0.31
Ethnic Germans	51.65	6.31 **	1.59	0.93	0.47	1.33 **	0.66 **
Guest workers without Turkey	50.37 **	5.16 **	0.00	1.37	1.54	1.21	0.34
Guest workers from Turkey	38.26 **	13.89 **	0.30	6.48	1.51	0.92	0.49 **
EU and Western	49.27 **	3.17	1.33	0.21	1.23	1.40 **	0.33
Third-country	42.83 **	6.25 **	2.24	0.80	1.49	1.35 **	0.60 **
Second generation	47.89 **	3.83 **	4.05	0.42	0.79	1.26	0.35

Source: GSOEP, Waves L-Q (1995-2000), monthly unweighted data

Notes: \*\* p&lt;0.05

<sup>8</sup> Subdivision into 3 age cohorts among the native-born is done to facilitate the comparison. As the matter of fact, age distribution in some immigrant groups differs from that of the native born (see Figure II in appendix). For example, guest workers have age structure comparable to native-born Germans of 1940-1950 cohort, while second generation immigrants should rather be compared to the youngest cohort of the native-born.

Another informative characteristic of the employment sequences is the number of episodes in different states. It has been chosen to focus on the number of episodes in employment and unemployment since the number of other episodes is rather negligible. Taken both the number and duration of different episodes together, later immigrants, i.e. ethnic Germans and those from other third countries, have more frequent transitions from employment to unemployment and the other way around. It is also evident that their employment spells are shorter and unemployment ones are longer than among native-born Germans. Immigrants from EU and other western countries seem to repeatedly change their employment places, while Turkish guest workers have more frequent and as well prolonged unemployment episodes.

Summarizing this section, it should be noted that employment careers of ethnic Germans, Turkish guest workers and third-country immigrants who arrived after 1975 significantly differ from employment patterns of native-born Germans and this dissimilarity remains pronounced even controlling for age and educational characteristics. Longer unemployment durations and more frequent unemployment episodes is what lies behind this dissimilarity. In the next section we will try to find out what kind of jobs immigrants and native-born Germans occupy and if indeed we can confirm previous research results pointing to occupational segmentation of immigrants using the sequence analysis techniques.

## **6 Germany's underclass?**

In the following we report results of the pairwise Optimal matching analysis for career statuses of immigrants and native-born Germans based on the annual data. As described in the methodological section the classification of statuses combines the collapsed version of the EGP classification plus two employment statuses, namely unemployed and inactive, as defined by ILO. The matrix resulting from the pairwise calculation of distances was subjected to the hierarchical cluster analysis, and on the basis of the standard criteria<sup>9</sup> a solution with 11 clusters (see Table 2) was selected. The idea of the cluster analysis was to get a minimal number of rather homogenous clusters, which would reflect distinct patterns of career paths among the male German population. Unlike the cross-sectional distribution of statuses, which is able to summarize single statuses at a particular point in time only, clustering of the matrix produced by the pairwise Optimal matching analysis allows to distinguish patterns of mobility in a 6-year interval of employment careers. It is expected that the analysis would yield at least 8 clusters because each valid status potentially forms a cluster. In addition, two distinct clusters emerged from the analysis, clusters which capture apparent status transitions among the German male population aged 25-55, namely mobility with the dominant status being the service class (cluster 2) and mobility within the working class (cluster 8). One cluster (cluster 11) was dominated by missing cases, which might indeed be a problem for the substantial interpretation, but is a natural

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<sup>9</sup> Following recommendations by Bacher (1996) the decision was made based on the Mojena I criterion, which also allowed clear substantial interpretation of the cluster solution.

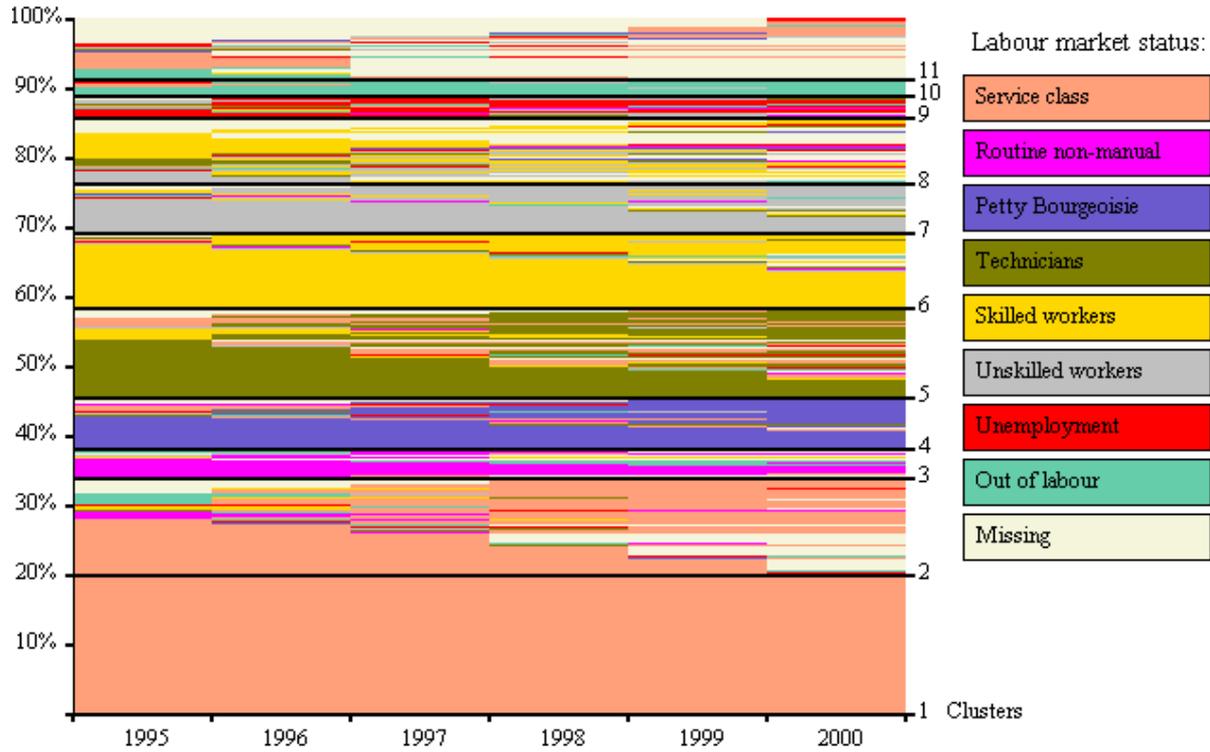
result of panel mortality (including emigration), later appearance of new panel members due to new households' formation, immigration and finally because of non-response. It should be noted that the OMA analysis algorithm fails if missing information occurs in the middle of the valid sequence; hence these so-called gaps in career sequences were filled with the previous valid status information.

Table 2: 11-Cluster solution of employment career paths of men in Germany

1. Stable service class – career paths with exclusively service class jobs
2. Mobile service class – career paths are dominated by service class jobs, but mobility to and from other statuses is notable
3. Routine non-manual class
4. Petty bourgeoisie
5. Low-grade technicians and supervisors of manual workers is a dominant class, but mobility mainly to and from the service and skilled working classes is observed
6. Largely stable skilled working class with some slight mobility to and from unemployment, unskilled class and technicians
7. Largely stable unskilled working class plus rare instants of inflows and outflows to and from unemployment and exchange with skilled occupations
8. Mobile working class – comprised of skilled, unskilled workers and technicians. Two major types of mobility within this cluster are mobility from the skilled to unskilled class and the other way around.
9. Unemployment with some mobility mostly from and to the unskilled worker class
10. Out of the labour force
11. Mostly missing cases

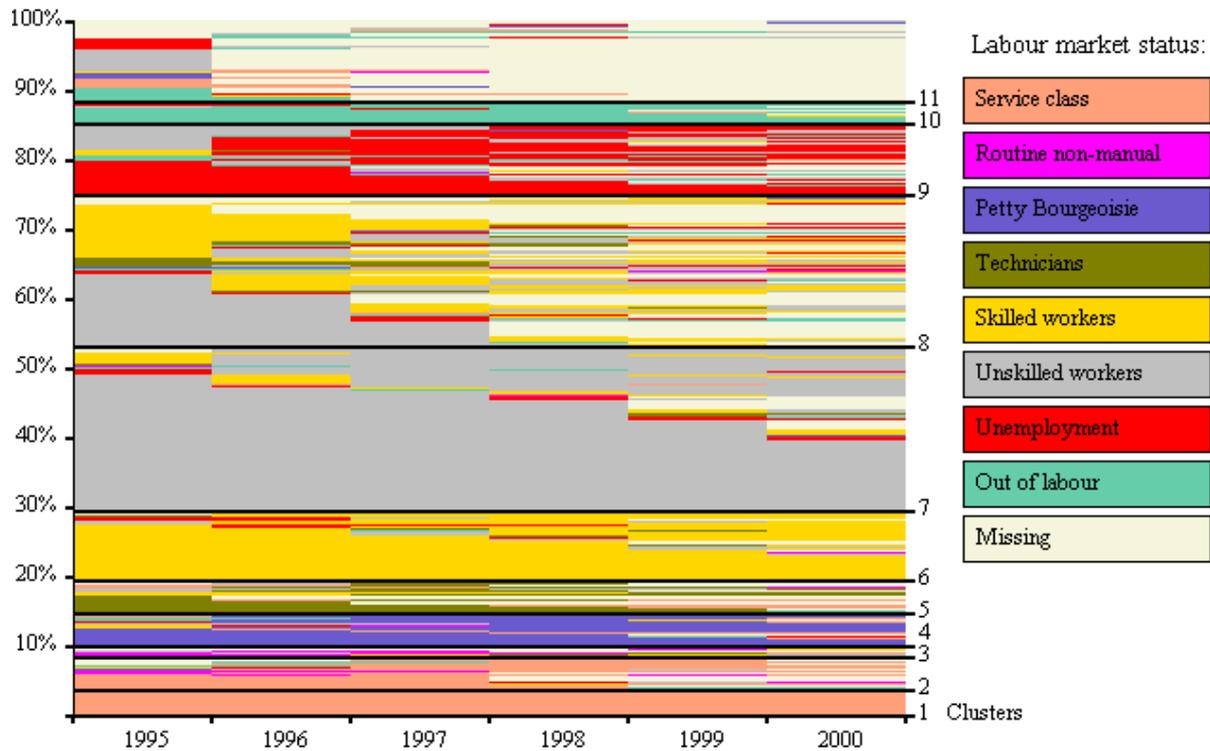
Figures 3a and 3b plot labour market career sequences of native-born German men and all immigrants plus the second generation according to the cluster membership. 6-year employment career of each individual in the sample is plotted as a line. Different shadings pertain to the variety of statuses held by the individual. Since individual sequences are sorted according to their cluster membership, with black lines representing the cluster borders and figures to the right pertaining to the cluster membership, it is easy to explore typical trajectories visually. The findings are by no means new (similar results are reported using cross-sectional distribution of statuses) but still striking: while less than 10% of immigrants are employed in service class jobs, among native-born Germans this figure is almost 35%. Moreover, only about 4% of immigrants are continuously employed in service class occupations, whereas the corresponding figure for the native-born is 20%. On the other end of the occupational hierarchy, namely unskilled employment, immigrants are over-represented with about 25%, while less than 10% of native-born Germans pursue unskilled employment. The share of those employed as skilled workers is similar among the native-born and immigrants. Native-born Germans, however, double immigrants in the proportion of technicians and supervisors of manual workers. As already shown in the earlier analysis, unemployment is a problem for immigrants, long-term unemployment being even more of a problem, which is clearly visualized in Figure 3b. In addition, it is also obvious that self-employment, though practiced by immigrants, has not become as spread as among native-born Germans. It is worth noting that mobile working cluster (cluster 8), is much larger for immigrant populations than for native-born Germans. Here it is evident that immigrant workers do have transitions from unskilled to skilled manual work, however the opposite transitions are also frequent.

Figure 3a: Labour market career sequences of native-born German men according to the cluster membership



Note: N=2204

Figure 3b: Labour market career sequences of male non-nationals and/or immigrants in Germany according to the cluster membership



Note: N=1049

Source: GSOEP, Waves L-Q (1995-2000), annual unweighted data

Further on, we explore how various immigrant groups differ in their cluster membership; the results of this analysis are presented in Table 3. The first row pertains to the percentage of the native-born according to the cluster membership, which largely corresponds to the cluster membership proportions as already seen in Figure 3b with the only difference that cluster 11, which mainly encompasses missing information, is excluded here. Deviations from the cluster membership of native-born Germans for each particular immigrant group are displayed further in the table. The last column in the table presents an entropy measure of the average homogeneity in state distributions, with the help of which we try to assess the degree of mobility within the cluster<sup>10</sup>.

From the table emerges that ethnic German immigrants are over-represented in the clusters of the stable skilled and unskilled working class and the mobile working class cluster. On the other hand, they are almost absent in the service class cluster, clusters of petty bourgeoisie and inactive persons. A higher proportion of guest workers from Southern Europe and the former Yugoslavia managed to get technical jobs than it is the case among other immigrant groups, however, they are also over-represented in the stable unskilled working and mobile working cluster. Besides, they are almost absent in the white-collar jobs' clusters, i.e. service class cluster and routine non-manual cluster. Guest workers from Turkey have, however, a 6-fold chance to be found among unemployed and 4-fold to be inactive. As expected, they are underrepresented in the non-manual sector and stable skilled working cluster. The under-representation in the white-collar and stable skilled manual cluster is also evident for the third-country nationals, while they outnumber the rest of immigrants in the mobile working cluster. EU and other Western countries' immigrants are those who contribute to the service class (though their representation in the service cluster does not reach levels of native-born Germans) and petty bourgeoisie. They are also more rarely found among the unemployed, but still outnumber the native-born in the unemployment cluster. The situation of the second-generation immigrants could be considered as an optimistic signal for the intra-generational assimilation trends in Germany. Children of guest workers tend to enter white-collar jobs and technical occupations more often than other immigrants, although patterns of their employment do not converge with those of native-born Germans. Second-generation immigrants are under-represented in the manual, particularly unskilled

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<sup>10</sup> Assuming states  $j=1, \dots, q$ , the entropy is defined by  $E_t = -\sum_{j=1}^q p_{ij} \log(p_{ij})$ , where  $N_t$  denotes the number of individuals with a valid state at time  $t$ , and  $p_{ij}$  the proportion of  $N_t$  being in state  $j$ . It follows that  $0 \leq E_t \leq \log(q)$ . In general, the entropy becomes zero if all individuals are in the same state, and it takes its maximum (2.08 in our case of 8 valid states) value if the individuals are equally spread over different states.

Table 3: Cluster composition of the immigrant groups

Cluster	1	2	3	4	5	6	7	8	9	10	Homogeneity of state distributions	N
Native-born Germans	21.9%	15.2%	4.5%	8.1%	14.3%	11.8%	7.7%	10.5%	3.6%	2.4%		2204
Ethnic Germans	-19.0	-10.9	-3.1	-7.3	-10.0	+9.9	+16.9	+17.1	+8.0	-1.7	1.56	138
Guest workers without Turkey	-20.2	-12.0	-4.1	-2.7	-6.1	-2.3	+25.2	+17.5	+5.1	-0.3	1.61	243
Guest workers from Turkey	-20.0	-14.3	-3.6	-2.3	-12.4	-2.2	+19.2	+5.9	+20.5	+9.1	1.60	104
EU and Western	-13.7	-7.0	-4.5	+3.4	-11.0	-0.3	+20.1	+12.5	+3.0	-2.4	1.68	61
Third-countries	-20.9	-10.1	-1.5	-3.0	-11.7	-2.1	+22.4	+17.6	+8.7	+0.7	1.58	196
Second generation	-15.9	-2.5	-0.8	-1.3	-6.0	-2.0	+10.3	+9.8	+6.2	+2.1	1.88	133
All immigrants from Southern EU	-20.2	-12.5	-4.0	-2.1	-6.6	-5.3	+32.2	+14.1	+5.2	-0.8	1.58	183
All immigrants from Turkey	-20.5	-14.3	-3.1	-1.9	-12.9	-1.0	+25.8	+8.4	+14.8	+4.7	1.55	212

Source: GSOEP, Waves L-Q (1995-2000), annual unweighted data

Notes: Cluster with predominating missing status (cluster 11) is excluded

Number in the first row refers to the following clusters:

1. Stable service class
2. Mobile service class
3. Routine non-manual class
4. Petty bourgeoisie
5. Low-grade technicians and supervisors of manual workers
6. Largely stable skilled working class
7. Largely stable unskilled working class
8. Mobile working class
9. Unemployment with some mobility mostly from and to the unskilled worker class
10. Out of labour force

manual employment if compared to other immigrant groups. They also opt more actively for self-employment than their parents (see also Leggewie, 2000) and are in general the most mobile group among immigrants in Germany, particularly within the service class cluster, displaying the highest entropy measure.

In the continuation of the table, one can find cluster membership of immigrants from the typical migrant-sending countries to Germany, namely Southern Europe and Turkey, irrespectively of the period of migration<sup>11</sup>. The peculiarity of the immigrants from Southern Europe, who either arrived within recruitment schemes or afterwards, is their over-representation in the unskilled labour. They are also contributors to the mobile working class cluster. Comparing these figures with those pertaining to guest workers from Southern Europe and the former Yugoslavia, one can conclude that even after the recruitment stop Southern European countries have continued sending immigrants, which contributed to low and unskilled employment, and that these are different from the rest of newcomers from other EU and western countries, who rather make up the service class. Looking at all Turkish immigrants and comparing their figures to the Turks who arrived in the guest-worker phase of immigration, one can presume that those who arrived later tend to enter unskilled jobs, are found more often in the mobile working class cluster and less so among the unemployed and inactive than their predecessors.

Summarising the findings of the cluster analysis it should be noted that occupational careers of none of the immigrant groups in Germany mimic career paths of the native-born. The closest match of occupational and employment careers is probably achieved by EU or other western immigrants and second-generation immigrants, but deviations from the typical career paths of native Germans are still too large to speak about correspondence between them. Moreover, it is evident that all immigrant groups are under-represented in the stable and mobile service class clusters, while outnumber the native-born in the unskilled labour cluster (cluster 7) and mobile working class cluster (cluster 8).

The question is, however, if occupational segmentation of practically all immigrant groups can be traced back to the insufficient human capital of immigrant population (and with respect to education substantial variation among immigrant groups is evident) or other factors are responsible for the situation described. To try to answer this question a multinomial logistic regression analysis is further conducted to predict the cluster membership of various immigrant groups controlling for age and education. Several clusters were collapsed to wider groups to allow the analysis: clusters 1,2,3 were grouped together to the white-collar employment cluster, while clusters 5 and 6 were assigned to one group pertaining to skilled and technical employment. Finally stable unskilled working and mobile working cluster (clusters 7 and 8) were combined into one category. As a result we ended up with six categories: (1) white collar employment, (2) petty bourgeoisie, (3) skilled and technical employment, (4) unskilled work and employment within mobile working class, (5) unemployment, (6) economic inactivity. Table V in Appendix presents unstandardized coefficients of the multinomial regression

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<sup>11</sup> Combining both country of birth and immigration year seems impossible for the analysis due to the insufficient number of cases.

predicting log-likelihood of being in each of the above-mentioned clusters as compared to being in cluster 4, i.e. employment in unskilled or mobile working class. To facilitate the interpretation Table 4 below reports predicted probabilities of the cluster membership for two educational profiles, namely persons with low vocational education and those with tertiary qualifications<sup>12</sup> among the native-born German population and deviations from the estimated probabilities for the immigrant groups and the second-generation immigrants<sup>13</sup>.

Table 4: Predicted probabilities (multiplied by 100) of the cluster membership among immigrant groups as compared to the native-born

	White collar	Petty bourgeoisie	Skilled and technical	Unskilled and mobile working class	Unemployed	Inactive
<b>Low vocational education</b>						
Native	<b>28.9</b>	<b>9.8</b>	<b>35.0</b>	<b>21.3</b>	<b>3.4</b>	<b>1.6</b>
Ethnic Germans	-28.1	-9.3	+1.7	+32.5	+4.6	-1.4
Guest workers without Turkey	-27.3	-5.1	-2.1	+35.3	+0.4	-1.2
Guest workers from Turkey	-27.6	-3.5	-8.0	+28.8	+9.8	+0.6
EU and Western (after 1975)	-11.1	+5.1	+5.0	+6.0	-3.4	-1.6
Third-country (after 1975)	-27.3	-4.9	-15.2	+40.0	+7.3	+0.1
Second generation	-7.3	-0.6	-11.4	+11.2	+5.1	+2.9
<b>Tertiary education</b>						
Native	<b>89.0</b>	<b>3.4</b>	<b>3.6</b>	<b>2.6</b>	<b>0.7</b>	<b>0.7</b>
Ethnic Germans	-71.6	-2.4	+22.4	+42.0	+9.7	-0.1
Guest workers without Turkey	-61.8	+5.9	+15.8	+36.4	+3.5	+0.1
Guest workers from Turkey	-88.6	-3.0	+8.4	+60.1	+23.3	-0.2
EU and Western (after 1975)	-7.7	+4.3	+2.5	+2.3	-0.7	-0.7
Third-country (after 1975)	-62.6	+5.6	+7.2	+36.4	+10.1	+3.4
Second generation	-5.6	+0.6	+0.6	+2.3	+1.4	+1.9

Source: GSOEP, Waves L-Q (1995-2000), monthly unweighted data

Notes: \* p<0.05, \*\* p<0.01

From the upper part of Table 4 it emerges that 35 per cent of the German men with low vocational education are expected to enter skilled and technical jobs' cluster. Interestingly, that German men with low vocational education have relatively high predicted probability (about 29 per cent) to be found in the white-collar cluster, whereas about 21 per cent are channelled to the unskilled or mobile working class cluster. About 10 per cent of men with low vocational education are to be found among petty bourgeoisie, while only 3.4 percent - among unemployed and even fewer in inactivity.

<sup>12</sup> The age of persons has been set to the average age in the sample, 38 years old.

<sup>13</sup> The probability that a person with characteristics  $x$  will be found in cluster  $C_j$  can be written:

$$P(C_j) = e^{b_j x} / (e^{b_1 x} + e^{b_2 x} + \dots + e^{b_k x}),$$

where  $k$  is the number of clusters, and  $b_j$  is a set of logic parameters corresponding to cluster membership  $j$ . Since the probabilities of ending up in each of the  $k$  clusters must sum to 1, only  $(k-1)$  independent sets of parameters can be estimated. By convention, the parameters corresponding to the last alternative  $k$  are set equal to 0.

Quite different cluster membership patterns are expected for the immigrant men of the same age and level of education. Immigrants with low vocational education, except those coming from EU countries after 1975 and the second-generation immigrants, have almost zero chances to enter white-collar employment and much lower probability to pursue self-employment activities. At the same time, these have much higher propensity to be found in the unskilled working or mobile working cluster. Interesting that *Aussiedler* with low vocational education manage to have similar probability to enter skilled or technical occupations as the native-born.

As mentioned above, immigrants from EU countries who arrived after 1975 and other westerners with low vocational education having lower probability of entering the white-collar cluster than the native-born are still much better off than the rest of immigrants. Indeed, they have higher (than the native-born and other immigrants) propensity for self-employment and employment in skilled and technical occupations, whereas their chances of unemployment and economic inactivity are approaching zero. Second-generation immigrants are another group, employment patterns of which are somewhat closer to those of native-born Germans. Having received their educational credentials within the German school system, they have the smallest disadvantage as compared to native-born Germans at the entry to white-collar employment. However, the second generation have almost two-fold probability to be unemployed or economically inactive than the comparable group of the native-born. With lower chances of entering skilled or technical employment, they are rather found in the unskilled or mobile working cluster.

Turning now to the lower panel of Table 4, where probabilities of cluster membership for tertiary educated men are presented, one can see that highly educated native-born men are to be found almost exclusively in the white-collar job cluster. Their chances for other career developments are indeed marginal. Among immigrants, again with the exception of those arriving from EU or other western countries and second generation, rather different scenarios are observed for highly educated persons. Irrespective of their high education *Aussiedler*, guest workers and third-country immigrants have rather small probability of entering the white-collar employment cluster. It is of particular notice that for guest workers from Turkey the chances of entering white-collar employment are practically zero.

At the same time, all immigrant groups and particularly ethnic Germans and guest workers from Southern Europe and ex-Yugoslavia, have higher probability to find employment as skilled workers or technicians. Their chances of finding unskilled employment or entering mobile working class cluster are even higher<sup>14</sup>. Tertiary education, however, does not protect immigrants from unemployment. Indeed, the probability of entering unemployment cluster for highly educated immigrants (except EU and second-generation immigrants) is much higher than among the native-born and even higher than among people with low vocational education. Especially disadvantaged are tertiary educated Turks

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<sup>14</sup> The probability of entering this particular cluster are also higher for EU immigrants or second generation, but only marginally.

who arrived prior to 1975. Overall, highly educated immigrants have lower chances to succeed if competing with the native-born for higher status employment and are either pushed to less skilled jobs or unemployment. Their educational credentials appear to be almost fully discounted in the German labour market. Only immigrants from EU or other western countries and second generation with tertiary education seem to more or less follow career scenarios of similarly educated native-born Germans.

In general, results of the pairwise sequence analysis confirm findings of earlier studies pointing to existing labour market segmentation of the majority of immigrants in Germany. Guest workers, third-country immigrants and even more privileged ethnic German immigrants are over-represented in blue-collar occupations, and particularly in unskilled and mobile working class occupations, *ceteris paribus*. The most worrying but by no means new finding is a strong labour market exclusion of Turkish guest worker immigrants. These are either channelled to the unskilled or mobile working class cluster or pushed to unemployment, possessing almost no chances for other career developments. Even though EU nationals who arrived after 1975 are over-represented in the blue-collar employment, they are a single group of immigrants in the German labour market whose educational qualifications are rewarded similarly to those of the native-born Germans. Results also show that second-generation immigrants are able to break through ethnic barriers and enter white-collar and technical jobs in larger numbers. However, as compared to native-born Germans of the similar age and comparable educational level, second-generation immigrants seem to be disadvantaged having a lower probability of entering white-collar employment.

## 7 Summary and discussion

This paper examines immigrants' employment careers and their (dis)similarity with the standard career sequences of native Germans. With the help of the sequence analysis, a relatively new tool in the empirical sociology, it was possible to calculate distances to continuous employment, a dominant pattern among native-born Germans, thus measuring labour marker assimilation of immigrant population in Germany. The analysis shows that none of the immigrant groups have employment patterns identical to the native-born. Career patterns of the two groups of immigrants, namely ethnic Germans and EU immigrants, are closer to the employment patterns of the native-born than in the case of other immigrants; especially distant are career paths of guest workers from Turkey. Second-generation immigrants display employment patterns converging with those of the youngest cohort of native-born Germans, which is indeed an evidence of assimilation occurring in the German labour market, albeit only across generations. Human capital characteristics, namely age and the level of education, are not able to fully account for the dissimilarity in employment patterns of ethnic Germans, third-country immigrants and guest workers from Turkey, but are found responsible for explaining the dissimilarity in career patterns of guest workers from Southern Europe and former Yugoslavia, EU immigrants and second generation. The study establishes that longer unemployment durations and

more frequent unemployment spells are behind the dissimilarity in unemployment patterns of Turkish guest workers, ethnic Germans and third-country immigrants.

Immigrants differ from native Germans not only in their employment careers, defined as a sequence of different states, i.e. employed, unemployed, in education, retirement or other, but also with respect to occupations they pursue, which have been measured here by the EGP class schema. The results show that immigrants are significantly over-represented in the unskilled occupations and only few are found in the service class, while the opposite is evident for the native-born. Self-employment has not become a niche for immigrants' employment in Germany. Some mobility in occupational careers of immigrants is evident, but this mainly occurs between unskilled and skilled employment and transitions from skilled to unskilled jobs are no less frequent than the other way around. Further, the study discusses some peculiarities in occupational patterns of various immigrants groups. It once again ascertains the outsider position of Turkish immigrants, both from the guest-worker immigration wave and those who arrived later, their over-representation in unskilled jobs and long-term unemployment. Second-generation immigrants, children of guest workers, are more often found in white-collar and technical employment, whereas they enter manual, and particularly unskilled manual jobs less often. Even though some similarity in employment careers (measured as a sequence of employment statuses) of certain immigrant groups is evident, hardly any of the immigrant groups are able to pursue occupational paths characteristic to native-born Germans. Education obtained abroad seems to be absolutely discounted in the German labour market for the majority of immigrants except those who arrived from EU or other western countries more recently. Therefore, ethnic Germans, third-country immigrants and guest workers, and particularly guest workers from Turkey, have higher probability of entering the unskilled and mobile working cluster and lower probability of employment in white-collar occupations as compared to the socio-demographically comparable native-born Germans. Second-generation immigrants, especially those with relevant educational qualifications and vocational training, seem to succeed more in the German labour market than their parents. However, as compared to native-born Germans of the similar age and comparable educational level, they are nevertheless disadvantaged displaying lower probability of entering white-collar employment.

By and large, utilizing available longitudinal data and applying sequence analysis tools the findings of this study confirm results of the earlier research. Guest worker immigrants, and particularly Turks, remain segregated in the German labour market and suffer from frequent and long-term unemployment. Ethnic Germans, despite their privileged status do not seem to be fully integrated into the German society, but are however better off than other third-country immigrants who arrived approximately during the same time period. Immigrants from EU countries have employment careers rather similar to the native-born and are more often than other immigrants found in the service class positions; this is particularly true when immigrants from Southern Europe are excluded. Finally, an increasing convergence of employment careers, both in terms of employment and occupations, between second-generation immigrants and the native-born population is evident. This finding is of extreme importance since it suggests that in the German labour market structural assimilation occurs, but only for the second-generation immigrants.

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## 9 Appendix

Table I: Full version of the EGP class schema

<b>I</b>	Higher-grade professionals, administrators, and officials; managers in large industrial establishments; large proprietors
<b>II</b>	Lower-grade professionals, administrators, and officials; higher-grade technicians; managers in small industrial establishments; supervisors of non-manual employees
<b>IIIa</b>	Routine non-manual employees, higher grade (administration and commerce)
<b>IIIb</b>	Routine non-manual employees, lower grade (sales and services)
<b>IVa</b>	Small proprietors, artisans, etc., with employees
<b>IVb</b>	Small proprietors, artisans, etc., without employees
<b>IVc</b>	Farmers and smallholders; other self-employed workers in primary production
<b>V</b>	Lower-grade technicians; supervisors of manual workers
<b>VI</b>	Skilled manual workers
<b>VIIa</b>	Semi- and unskilled manual workers (not in agriculture, etc.)
<b>VIIb</b>	Agricultural and other workers in primary production

Source: Adapted from Erikson, Goldthorpe, 1992.

Table II: Description of the independent variables used in the analyses

<b>Independent Variable</b>	<b>Description</b>
Comparison group	<p><i>A group of dummy coded variables:</i></p> <ol style="list-style-type: none"> <li>1. Native-born Germans – reference category</li> <li>2. Ethnic Germans (<i>Aussiedler</i>) who arrived after 1984</li> <li>3. Guest workers who arrived between 1955-1975 from Southern European countries and former Yugoslavia</li> <li>4. Guest workers who arrived between 1955-1975 from Turkey</li> <li>5. EU and other industrialized Western countries' immigrants (latter including: other Western European countries, the USA, Canada, Australia and Japan) after 1975</li> <li>6. Other non-EU immigrants who arrived after 1975</li> <li>7. Second generation immigrants or people who immigrated to Germany at age 0-6</li> </ol>
Age and age squared	Age in 1995
Level of education (see Table III in appendix for more details on CASMIN classification)	<p>This grouping of CASMIN scale was chosen to fit the categorisation of variables pertaining to education of foreigners. Level of education pertains to 1995.</p> <p><i>A group of dummy coded variable:</i></p> <p>Low general or below – CASMIN 1ab, 2b</p> <p>Low vocational – CASMIN 1c, 2a (reference category)</p> <p>Medium general – CASMIN 2c</p> <p>Medium vocational – CASMIN 2c voc</p> <p>Tertiary short – CASMIN 3a</p> <p>Tertiary long – CASMIN 3b</p> <p>Education missing</p>

Table III: The CASMIN scale of educational qualifications

Qualification	Description
<b>1ab</b>	Level of compulsory education or below
<b>1c</b>	Basic vocational training above and beyond compulsory schooling
<b>2b</b>	Academic or general tracks at the secondary intermediate level
<b>2a</b>	Advanced vocational training or secondary programmes in which general intermediate schooling is combined by vocational training
<b>2c</b>	Full maturity certificates (e.g. the Abitur, A-levels)
<b>2c voc</b>	Full maturity certificates including vocationally-specific schooling or training (e.g. Abitur plus vocational training certificate, BTEC)
<b>3a</b>	Lower-level tertiary degrees, generally of shorter duration and with a vocational orientation (e.g. technical college diplomas, social worker or non-university teaching certificates)
<b>3b</b>	The completion of a traditional, academically-oriented university education

Source: Adapted from Brauns and Steinmann, 1997.

Table IV: Results of the OLS regression analysis on the distance to continuous employment

	Model 1	Model 2	Model 3
<i>Aussiedler</i>	7.41** ( 2.86 )	9.82** ( 2.81 )	8.13** ( 2.90 )
Guest workers (without Turkey)	7.36** ( 2.19 )	7.39** ( 2.22 )	1.41 ( 2.38 )
Guest workers from Turkey	32.68** ( 3.17 )	30.17** ( 3.17 )	24.32** ( 3.26 )
EU immigrants after 1975	7.96* ( 3.88 )	8.77* ( 3.81 )	3.94 ( 3.83 )
Third-country after 1975	17.94** ( 2.30 )	16.87** ( 2.28 )	13.47** ( 2.34 )
Second generation	10.95** ( 2.87 )	6.36* ( 2.89 )	3.91 ( 2.89 )
Age		-8.03** ( 0.67 )	-7.43** ( 0.67 )
Age squared		0.10** ( 0.01 )	0.09** ( 0.01 )
Low general education			12.08** ( 1.98 )
Middle general education			13.29** ( 2.41 )
Middle vocational education			4.25* ( 2.01 )
Tertiary (long) education			0.59 ( 1.92 )
Tertiary (short) education			-1.22 ( 2.38 )
Education missing			27.16** ( 6.83 )
Intercept	22.24** ( 0.73 )	173.10** ( 12.78 )	158.66** ( 12.83 )
R <sup>2</sup>	0.05	0.09	0.11

N=3230

Notes: \* p<0.05, \*\* p<0.01

Table V: Results of the multinomial logistic regression predicting cluster membership

	White-collar vs		Petty bourgeoisie vs		Skilled and technical vs		Unemployed vs		Inactive vs	
	unskilled and mobile working									
Aussiedler	-4.48**	-4.02**	-0.88**	-0.08	-3.00**					
Gastarbeiter without Turkey	-3.90**	-1.71**	-1.04**	-0.87**	-2.58**					
Gastarbeiter from Turkey	-4.00**	-1.30**	-1.12**	0.49**	-0.53					
EU and Western (after 1975)	-0.73	0.17	-0.11	-31.52	-31.98					
Third-country (after 1975)	-3.94**	-1.75**	-1.63**	0.08	-0.97*					
Second generation	-0.71**	-0.48	-0.82**	0.49**	0.64					
Age	0.01	0.02	-0.01**	0.04**	0.09**					
Low general	-1.86**	-0.86**	-1.27**	0.53**	0.75*					
Middle general	0.71**	-0.15	-1.21**	0.68**	1.39**					
Middle vocational	1.18**	0.10	-0.24**	0.17	0.96*					
Tertiary	3.24**	1.07**	-0.15	0.45**	1.34**					
Constant	-0.06	-1.44**	0.93**	-3.21**	-5.87**					

N=2871

Notes: \* p<0.05, \*\* p<0.01

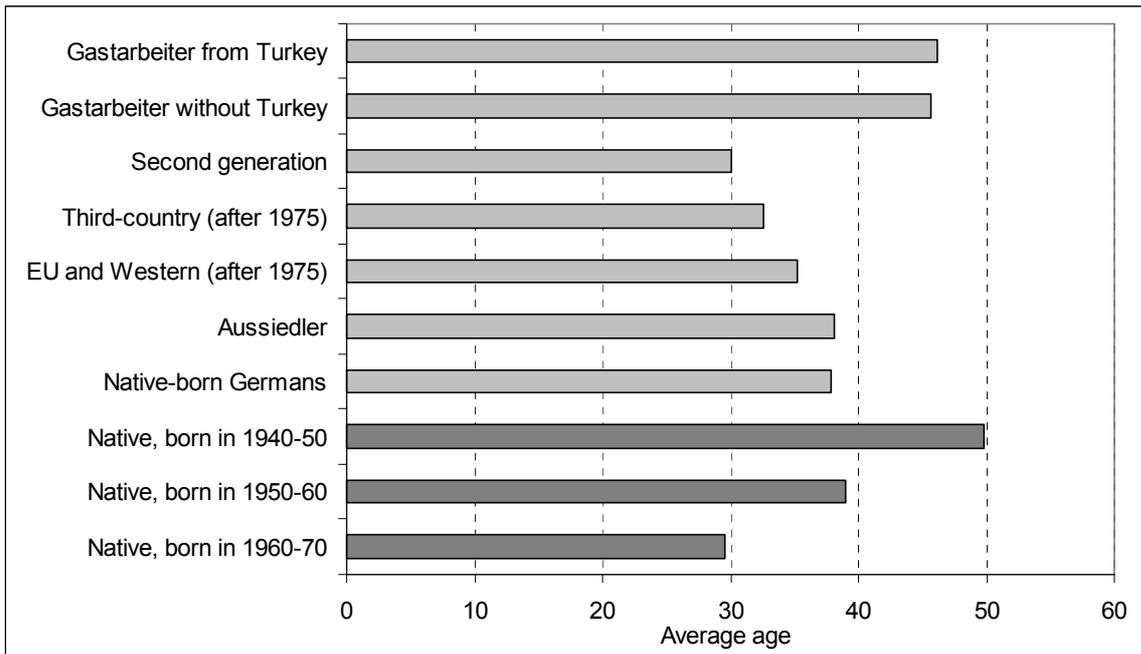


Figure I: Average age of immigrant and the native-born population in 1995  
 Source: GSOEP, Waves L-Q (1995-2000), weighted data

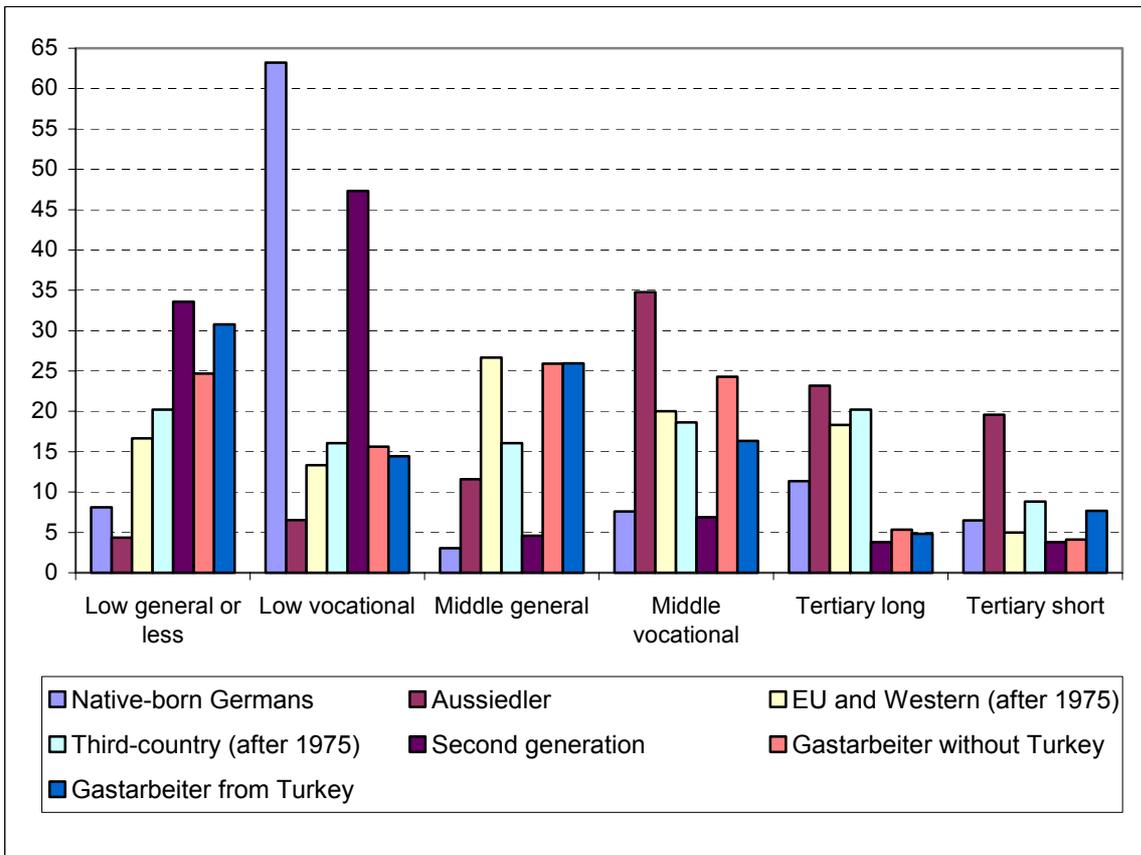


Figure II: Educational level of immigrant and the native-born population in 1995  
 Source: GSOEP, Waves L-Q (1995-2000), weighted data