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## The educational attainment of the second generation in Germany: social origins and ethnic inequality

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## **The Educational Attainment of the Second Generation in Germany Social Origins and Ethnic Inequality**

*Cornelia Kristen, Nadia Granato*

# **The Educational Attainment of the Second Generation in Germany Social Origins and Ethnic Inequality**

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Auch mit seiner neuen Reihe „IAB-Discussion Paper“ will das Forschungsinstitut der Bundesagentur für Arbeit den Dialog mit der externen Wissenschaft intensivieren. Durch die rasche Verbreitung von Forschungsergebnissen über das Internet soll noch vor Drucklegung Kritik angeregt und Qualität gesichert werden.

Also with its new series "IAB Discussion Paper" the research institute of the German Federal Employment Agency wants to intensify dialogue with external science. By the rapid spreading of research results via Internet still before printing criticism shall be stimulated and quality shall be ensured.

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## **Abstract**

With the German Microcensus we study the second generation's educational attainment in Germany focusing on the descendants of classic labour migrants. Our results show that educational outcomes in terms of attending or completing the highest schooling track leading to the Abitur considerably vary among different ethnic groups. Second generation young adults, in particular Turks and Italians, experience pronounced disadvantages in comparison to their German peers. The central question in this context is to what extent ethnic stratification in the German school system is related to educational and social background. Our findings suggest that ethnic disadvantages primarily result from social rather than from specific ethnic inequalities, since initial differences in the chances of attaining the Abitur disappear after considering educational and social origin, the only exception being Italian young adults.

**JEL classification:** I21, J61, J62

# 1 Introduction

Ethnic educational inequality is a widespread empirical phenomenon characterizing numerous schools systems throughout the world. In Germany too these differences are very pronounced. They are reflected in measures of attainment (Baumert/Schümer 2001; Müller/Stanat 2006; Schwippert et al. 2003, 2004; Stanat 2003, 2006), teacher assessments (Bos et al. 2004; Kristen 2006), transition rates (Bos et al. 2004), track placement (Alba et al. 1994; Haisken-DeNew et al. 1997), and eventually in the qualifications achieved (Konsortium Bildungsberichterstattung 2006). While members of the second generation attain better results than those of the first generation, compared to their German age peers without a migration background, children of immigrants still experience considerable disadvantages.

Without doubt, educational attainment is of key importance for the integration of immigrants and their descendants. As for the native-born population, education substantially shapes immigrants' labour market outcomes (Granato/Kalter 2001; Kalter/Granato 2007) as well as the subsequent generation's educational performance (Alba et al. 1994; Müller/Stanat 2006). A German peculiarity, however, concerns the strength of these linkages which, as comparative mobility research has demonstrated, are more pronounced than in other countries (Erikson/Goldthorpe 1992; Müller et al. 1998). In other words, not only in general is the education of the second generation essential for their structural integration but probably even more so in a context in which educational attainment is an especially strong predictor of labour market success and children's schooling outcomes.

Ethnic educational disadvantages can result from the mechanisms of social reproduction that apply to the explanation of educational inequality in the majority population. Another family of explanations are minority specific, i.e. their mechanisms only apply to immigrants and might enhance ethnic educational disadvantages. For various countries it has been shown that ethnic disparities in education are largely the result of differences in educational and social background and, accordingly, are a matter of social rather than of specific ethnic inequalities (Hustinx 2002; Kao/Thompson 2003: 431; Marks 2005; Vallet/Caille 1999). While in some contexts this

seems to be almost entirely the case, in others ethnic differences persist after taking parental education and social origin into account. The finding that ethnic educational inequality is primarily due to differences in social background applies to Germany as well (Baumert/Schümer 2001: 378; Kristen/Granato 2004) but, depending on the performance indicator and the immigrant group under consideration, ethnic disadvantages do not always vanish completely (e.g., Alba et al. 1994; Müller/Stanat 2006). In view of these findings we take a closer look at ethnic stratification in the German school system and investigate to what extent the disadvantages in educational attainment of the second generation are related to differences in educational and social origin, i.e. related to social inequality, and to what extent minority specific mechanisms are at work.

The paper proceeds as follows. First, we provide information on the German context regarding its school system as well as the main immigrant groups. In order to account for ethnic educational disadvantages we then consider both processes of social class reproduction as well as mechanisms which apply in particular to immigrant families. Thereafter, with the German Microcensus (GMC) we investigate ethnic differences in education focusing on the educational performance of second generation Turks, (Ex-)Yugoslavs, Italians, Greeks, Spaniards, and Portuguese. Starting with some descriptive findings on ethnic variation in the completion of upper secondary education we continue with multivariate analyses which focus on the impact of social background on the second generation's educational attainment. Finally, we summarize the main results and discuss them.

## 2 The German Context

In Germany, after four years of comprehensive education in primary schools, the first educational transition into three different tracks of secondary education follows (Anweiler 1996; Cortina et al. 2003). While 'Hauptschule' (general elementary education, grades 5-9) leads to a minimum qualification, 'Realschule' (general intermediate education, grades 5-10) leads to a medium-level qualification. Both tracks have traditionally constituted the preparation for an apprenticeship, even if typically for different realms of apprenticeship. In contrast, the 'Gymnasium' (grades 5-13), with the 'Abitur' (maturity certificate), traditionally leads to university studies.

Compared to other countries, Germany's school system is highly stratified (Allmendinger 1989). Students are sorted early on into different educational tracks which lead to distinct qualifications with the differences between these qualifications being well recognised in the labour market (Müller/Shavit 1998: 10). Upon the completion of upper secondary education, however, the German system of higher education is relatively less stratified suggesting that the options for those who 'made it' and leave school with the Abitur are increased (Allmendinger 1989: 237). In other words, the central matter for educational inequality in the German context seems to be whether individuals enter and accomplish one of the more demanding forms of secondary schooling. In the empirical study, we will focus on this distinction and investigate whether individuals attend or complete the highest German schooling track.

With rising numbers of immigrants and their children ethnic differences in education are becoming an increasingly important issue. According to a recent report of the Federal Statistical Office nearly 19% of the population have a migration background of some sort (Statistisches Bundesamt 2006: 73-79). Apart from this data source which for the first time includes detailed information on immigration background, available statistics usually identify different ethnic minority groups according to citizenship and therefore underestimate the share of immigrants and their children.

Considering Germany's post-war immigration history, one can distinguish roughly four groups which make up today's population of immigrants and their descendants. These are the classic labour migrants and their families, Ethnic Germans (i.e., individuals with German ancestry from Eastern European states, the so-called 'Aussiedler'), asylum seekers and refugees, as well as recent labour migrants from Eastern Europe (Kalter/Granato 2007; Sachverständigenrat für Zuwanderung und Integration 2004). In this paper, we focus on the group of classic labour migrants who, starting in the late 1950s, have been recruited mainly from Turkey, former Yugoslavia, Italy, Greece, Portugal, and Spain to fill shortages of labour in the lower and less qualified sectors of the economy resulting in a strongly negatively selected inflow (Kalter/Granato 2007). With 56%, classic labour migrants and their descendants still comprise the largest proportion among foreign nationals in Germany; the Turkish share taken alone amounts to 26% (Ausländerzentralregister 2005).



### 3 Accounting for Ethnic Differences in Education

In general, educational outcomes can be conceived as the result of a continuous process of developing and accumulating school-relevant skills which stretches from birth onwards throughout the different stages of the pre-school and school career. Specific conditions associated with an individual's social and ethnic background not only shape this process but also may influence the educational decisions which individuals make at different transition points in their educational careers (Boudon 1974). With regard to the completion of the highest schooling track in Germany, the *Abitur*, this would require the investigation of the transition from primary to secondary schooling as well as the decision of whether to enter the most demanding educational path after the completion of one of the two lower tracks of secondary education. This undertaking is beyond the scope of this paper both theoretically as well as with respect to the currently available data. Nonetheless, in this section we attempt to briefly address the mechanisms which may be responsible for the intergenerational transmission of ethnic disadvantages in education. In view of the central finding that ethnic differences in educational attainment are above all an issue of social inequality we start with arguments which centre on the processes by which social and educational origin affect children's school achievement and thereafter continue with the question of why social background taken alone may be insufficient to account fully for the disadvantages the second generation experiences.

Probably the most important argument connecting social background with children's educational attainment refers to differences in the distribution of resources and characteristics which are relevant for school success. That is, childhood conditions systematically vary with the financial, cultural, and social resources available within the family and the immediate environment. For example, better educated parents can provide more qualified help with the learning of cognitive and other types of skills that improve performance in schools in terms of test results or teacher-assigned grades (Erikson/Jonsson 1996: 26). In addition such parents have a better strategic knowledge about the educational system which puts them in a favourable position at the main educational transitions (Kristen 2005). They may have a better understanding when selecting among tracks and may have more precise knowledge about the grades necessary for making a

certain transition or about other requirements (and therefore are able to interfere in time when difficulties arise – even long before the actual transition takes place). In sum, for families with more favourable resources it is much easier to continuously support and secure their offspring's educational career whereas for those in a less beneficial position it is more difficult to pursue equally promising and efficient educational strategies.

In addition to these family-based differences the general resources argument can be applied to educational resources available outside the family as well. For example, social disadvantages in education may be further reinforced by contextual conditions which influence scholastic achievement, such as differential learning environments in schools due to social (and ethnic) segregation (Dronkers/Levels 2006; Stanat 2006; Portes/Hao 2004).

A second group of arguments concerns class differences in educational aspirations with the higher social classes favouring the more demanding and prestigious qualifications (Boudon 1974; Breen/Goldthorpe 1997; Erikson/Jonsson 1996; Esser 1999; Gambetta 1987). According to Boudon (1974), when choosing between different educational alternatives, families from higher classes have more to lose from not selecting the most demanding educational track because they risk social demotion, whereas children from lower classes do not descend if they attend one of the less ambitious tracks. In the German context, parental aspirations may be particularly relevant at the first educational transition where individuals decide whether or not to pursue the most challenging track which leads to the Abitur.

Institutional arrangements may also shape the degree to which educational and class disadvantages are transmitted across generations. One prominent example is the timing of the first educational transition. At early decision points there is still little actual information about a child's ability. In these instances, choosing a more ambitious educational track might be perceived as more risky by members of the lower social classes because, compared to the higher social classes, these parents may feel less confident that they can provide qualified help if needed (Erikson/Jonsson 1996: 36). At a later point in the school career, however, when more information is available they may feel more confident about the

chances of their child's success in a higher track. In Germany, where the first educational transition from primary to secondary schooling takes place after only four years of comprehensive primary schooling, this early hurdle has been frequently identified as a crucial factor in reproducing social inequality (Allmendinger 1989).

So far, the reasoning linking social origins to educational outcomes applies equally to families with and without a migration background. Since classic labour migrants in Germany were negatively selected in terms of their educational and social origin, social disadvantages may partly account for the observed educational disadvantages of the second generation. However, children of immigrants may face additional problems. To account for these we start once more with the general resources argument, this time considering an additional aspect. That is, the educational resources which are required for the development of school-relevant skills as well as for making advantageous transitions are to some extent specific to the particular educational setting. Therefore, immigrant parents who grew up and attended school in a different context would not have acquired them through their own school careers, and the specific resources they bring from their country of origin may not prove as useful in a different school system (Chiswick 1978; 2004). Hence, restricted transferability of origin-specific educational resources may affect immigrant families' ability to make educational investments. A prime example is language proficiency. Educational knowledge about the functioning of the school system is also an important characteristic which cannot easily be transferred from one context to another. Therefore, even at the same level of parental education, if acquired elsewhere, immigrants may be at a disadvantage. Obviously, this reasoning applies in particular to the first generation but it may also affect the education of the second generation who, especially at younger ages, very much rely upon parent's knowledge and school support. In particular language acquisition may be delayed in contexts in which large numbers of non-native speakers, often of low socioeconomic status, are concentrated (Caldas/Bankston 1998: 554).

A second specific 'ethnic explanation' is discrimination. Discrimination in schools may involve teachers' perceptions and expectations, their assessments or other kinds of behavior. In principle, it may affect both educational transitions (e.g., via teacher recommendations) or, in more subtle

ways, the development of students' competences (Ferguson 1998; Schofield 2006).

Thirdly, institutional conditions may have an impact on the second generation's educational attainment as well. This consideration concerns both institutional regulations which apply to children of immigrants only, such as assigning them to special programmes, tracks or courses, as well as institutional rules which apply to all children but which may have a differential impact on some groups. For example, in Germany in certain federal states parents are institutionally entitled to select among primary schools. It turns out that children of Turkish origin, whose parents frequently do not know about this regulation, may enter a school which offers, with respect to its student composition, a less favourable learning environment (Kristen 2005).

Taken together, the various arguments summarised in this section may account for those ethnic differences in educational attainment which are not associated with social inequalities. Before we will turn to the empirical question of whether these additional explanations are of relevance in the German school system and if so to what extent we will shortly describe the data and variables used in our analyses.

## **4 Data and Variables**

To analyse the second generation's educational attainment we use the German Microcensus (GMC), an annual 1% household survey of the population in Germany (Lüttinger/Riede 1997). For our study, we combine all available scientific use files which for each year consist of a 70% subsample. The combined data set covers the surveys from 1991, 1993 and thereafter for each year from 1995 to 2004 ( $n=12$ ). We restrict our analyses to respondents living in the Western part of Germany because the classic labour migrants and their descendants still mostly live in this area.

Educational attainment is measured with regard to the highest level of general secondary schooling, the Abitur (maturity certificate). Accordingly, we distinguish between individuals who have accomplished the Abitur or are preparing for it (i.e., attending one of the last three years of a track leading to the Abitur) versus individuals who have completed elementary or intermediate general education and are not preparing for the Abitur. A

more comprehensive way to capture differences in educational attainment would be to distinguish between the three different levels of secondary education. Unfortunately, for students who attend grades 5-10 the GMC does not allow for an identification of the type of track. Therefore, by setting the lower age limit to 18, we restrict our analyses to respondents who, at this age, usually have moved beyond grade 10. To describe the educational attainment of the second generation and Germans (Figure 1 and Figure 2 in the next section) we focus on young adults aged eighteen to twentyfive at the time of the GMC.

Another drawback of the GMC data is that information on parents' social background (i.e., their educational and occupational attainment) is only available if respondents still live with their parents. Since with increasing age more and more respondents leave the parental household, in the regression models (Figure 3 in the next section, Table 1 and Table 2 in the Appendix) we exclude older age groups and restrict the account to 18-year-olds who still live with their parents.<sup>1</sup>

The GMC does not include information on parent's country of birth. Therefore, we use citizenship to identify the different ethnic groups. We assign respondents to the second generation if they possess another than the German nationality and were born in Germany or immigrated up until the age of six. Based on citizenship, we further classify them into six groups: Turks, (Ex-)Yugoslavs, Italians, Greeks, a combined group of Portuguese and Spaniards, and a category for all other ethnic groups. German citizens belong to the reference population.<sup>2</sup> We use the CASMIN classification to capture parental educational attainment (Brauns/Steinmann 1999). 'Pa-

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<sup>1</sup> For about 9% of all 18-year-olds information on educational attainment is missing either because the value of the educational variable is missing or because respondents have not yet completed grades 5-10. Among those with valid information on education 93% still live with their parents. One might object that the multivariate results in section 4.2 might be biased as respondents who still live with their parents may perform better than those not living with their parents. This turns out to be true. However, it does not seem to question our findings with respect to the relative disadvantages of immigrants' children. Further to the fact that most 18-year-olds still live with their parents, both Germans and second generation immigrants are positively selected in this regard. Including all respondents at age 18 in the analysis (not shown here) does not affect the ethnic differences displayed in Figure 3 severely.

<sup>2</sup> This group includes respondents with dual citizenship (i.e., those who have the German and another nationality) as well as naturalised persons and 'Aussiedler' who cannot be identified in the currently available scientific use files.

rental' means that we consider the father's education and, if this information is missing, we refer to the mother's educational attainment. Due to the small numbers of cases available for certain categories we combine lower and higher tertiary education into one category as well as the maturity certificate with and without vocational qualification. The remaining categories comprise no completed education, general elementary education, general elementary education with vocational qualification, intermediate general education, and intermediate general education with vocational qualification. In addition we consider parents' social class position in terms of occupational status. We distinguish between four categories: 'retired/unemployed/not looking for work', 'workers and others', 'self-employed', and 'salaried employees/civil servants'. An income variable that sums up all sources of income indicates the level of available financial resources. It distinguishes between 'no income', 'less than 1300€', '1300 to under 2000€', '2000€ and more'. We add a missing value category to all these indicators, except for occupational status. Further to the household income we capture the available financial resources by considering the number of children under the age of 18 who are present in the family. Finally, we include controls for gender, parental age, and the survey year. Table 1 displays the distribution of the various model variables for the different ethnic groups.

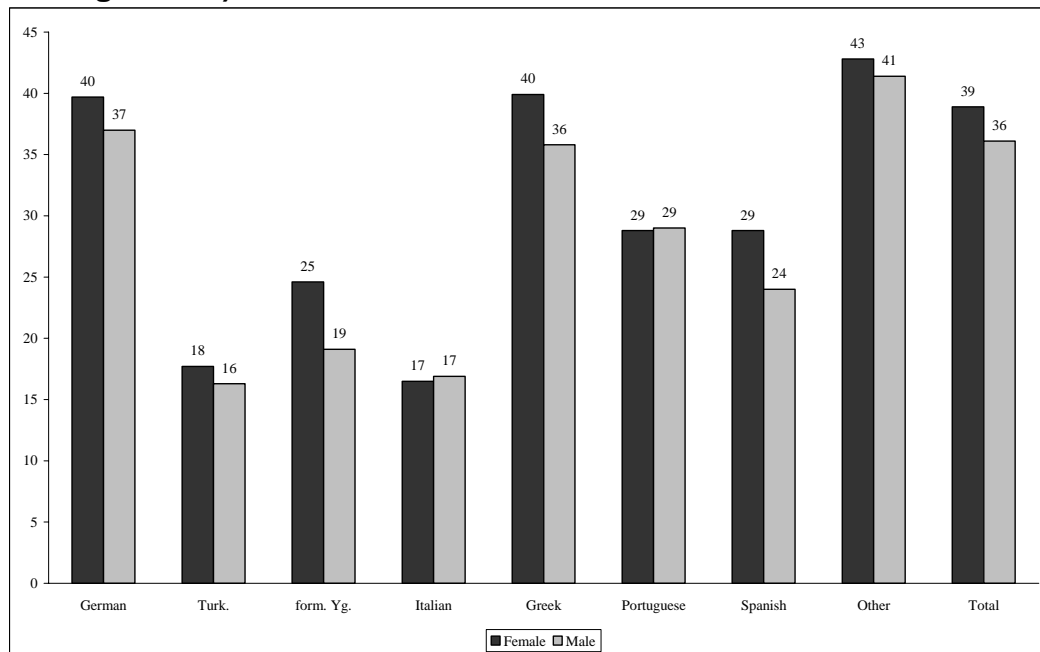
## 5 Empirical Results: The Second Generation's Educational Attainment

As mentioned in the last section describing the level of educational attainment we focus on young people aged eighteen to twentyfive at the time of the Microcensus. Figure 1 illustrates educational outcomes with respect to upper secondary education separately for women and men. For each ethnic group it shows the proportion of individuals who have accomplished the Abitur or are preparing for it.<sup>3</sup>

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<sup>3</sup> For almost 5% of all respondents in this age group information on educational attainment is missing. Another 1% has not yet finished general secondary education (i.e., grades 5-10) and for them information on the track attended is missing as well. These two categories have been omitted from the calculations in Figure 1 and Figure 2.

**Figure 1: Percentage of Abitur by gender (second generation and Germans, age 18-25)**

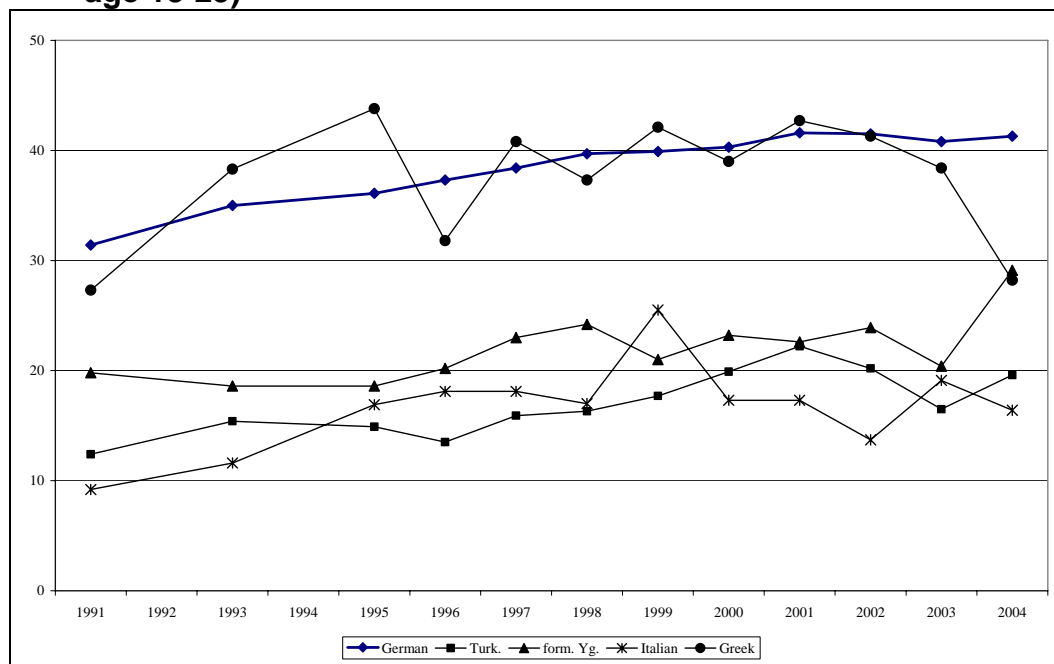


Source: GMC 1991 - 2004, combined datasets,  $n=382,455$

One common pattern for most groups is that women do better than men, with the exception of Italians and Portuguese. Concerning ethnic differences, Italians and Turks show the poorest performance whereas the proportion of Greeks who aspire to or have achieved the Abitur is similar to their German peers. Second-generation Portuguese and Spaniards are somewhat less successful, but still they clearly outperform the remaining immigrant groups. The achievement of Yugoslavs comes next. However, it differs for men and women: Yugoslav women outperform Italian and Turkish women, whereas Yugoslav men are closer to the attainment of Italians and Turks. All in all, the level of educational attainment visibly varies among the different ethnic groups and, except for the Greeks, the second generation experiences pronounced disadvantages in the German school system.



**Figure 2: Percentage of Abitur by year (second generation and Germans, age 18-25)**



Source: GMC 1991 - 2004, combined datasets,  $n=382,455$

Figure 2 illustrates the changes over time.<sup>4</sup> The German population displays a continuous increase in the proportion of young adults who aspire or have accomplished the Abitur. The respective share among Greeks bounces around the German line, with large variations in 1995 and above all in 2004.<sup>5</sup> For the remaining three groups of Turks, Yugoslavs, and Italians the graph shows a slightly positive trend over time, although the distance from the German educational level tends to amplify somewhat. By and large educational attainment increases for all ethnic groups, but for Turks, Yugoslavs, and Italians the rate of change seems to be smaller than for Germans.

Due to the limited information available in the GMC we cannot directly address the mechanisms connected to specific ethnic disadvantages as outlined in the previous section. Instead our account centres on the impact of social background on second generation educational attainment: To what extent is their performance related to differences in social background and to what extent do we need to consider mechanisms which apply specifi-

<sup>4</sup> For the Iberian group, i.e., Portuguese and Spanish respondents, the number of cases is too small to allow for a breakdown by year.

<sup>5</sup> As with the Iberians, the Greek group is rather small (and declining in size) which might in part explain why the percentages change so much from one year to the next.



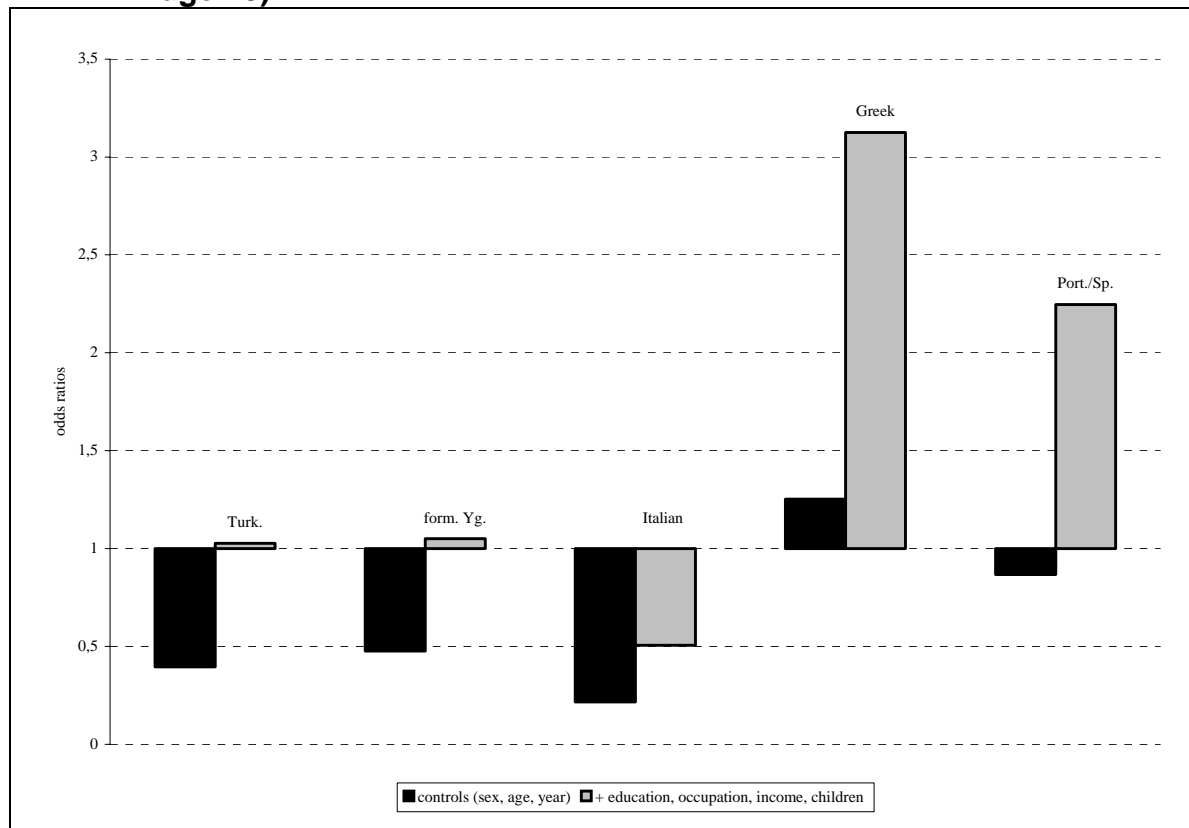
cally to the children of immigrants? Accordingly, in a next step we study whether ethnic differences in the completion of the Abitur persist after controlling for parental educational and social origin. To address this question we estimate several logistic regression models in which we proceed in a stepwise manner. As described in the data section in these analyses we only include 18-year-olds living in the parental home, because we have data both on their own educational achievements and on various characteristics of their families, such as parental education and occupation.<sup>6</sup>

Figure 3 illustrates what happens to the initial ethnic disadvantages when taking the relevant background variables into account. (The full results of the logistic regressions are shown in Table 2 in the Appendix.) The odds ratios (i.e., the bars in Figure 3) identify for each ethnic group the relative chances of obtaining the Abitur (or being in the Abitur track) versus having completed a lower educational track and not preparing for the Abitur. Values below 1 indicate that the second generation's chances of achieving the Abitur are below those of Germans, while values above 1 point to relatively higher chances.

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<sup>6</sup> Table 1 in the Appendix shows the distribution of all relevant variables for this population.

**Figure 3: Relative Chances of Abitur (second generation versus Germans, age 18)**



Source: GMC 1991 - 2004, combined datasets,  $n=39,933$

The white bars in Figure 3 show that Turkish, former Yugoslav, and especially Italian 18-year-olds are much less likely than Germans to pursue the track towards the Abitur, whereas Greek and Iberian young adults do not differ significantly from their German peers. The next step (model 2 in Table 2) takes account of social background. As expected parents' educational attainment is of crucial importance to children's school success. In comparison to all other socioeconomic aspects included here, it has the largest impact on their achievement (not shown here). The higher the parental level of education, the better are young adults' chances of attending or completing the highest school track. Parents' occupational background and the financial resources available in the household also influence their offspring's performance. The more income and the higher the occupational status the better are young adults' schooling outcomes. Figure 3 illustrates that the initial disadvantages for Turks, (Ex)Yugoslavs, and Italians strongly diminish when we control for these aspects of social background. For Turks and former Yugoslavs these differences completely disappear. Only second-generation Italians still encounter disadvantages after taking account of social background. Greeks and Iberians, in contrast, who from

the beginning have shown similar rates of participation, now clearly outperform their German peers. By and large, these results indicate that the story of the second generation's low educational performance in Germany is primarily one of negative selection in terms of parental education and social background.

In a final step, we investigate whether the second generation profits in a similar way as German 18-year-olds from their parents' education. As discussed before, the educational knowledge available in immigrant families may be less useful for school success if parents accomplished their educational careers elsewhere: for these parents it may have been relatively more difficult to acquire the kind of knowledge necessary for a successful navigation of the German school system. This reasoning may apply in particular to families who live in environments in which this knowledge is not readily available or to individuals who come from countries in which the school system differs very much from the German one. In these instances, it may take longer to become familiar with the new system. Again, with the information available in the GMC it is not possible to study how the processes work, but at least we can investigate whether the second generation profits in a similar manner as Germans from their parents' education. For this purpose, we examine the interactions between nationality, parental education and their children's education (Model 3 in Table 2).<sup>7</sup> The interaction turns out to be negative for all immigrant groups, but the coefficient is significant only for Turks. This indicates that higher parental education does not improve the chances of their children reaching the Abitur as much for Turkish young adults as it does for their German peers. For all other groups there is no significant difference in the impact of educational background on school success compared to the German population.

## 6 Concluding Remarks

In this paper, we studied the second generation's educational attainment in Germany focusing on the descendants of classic labour migrants. Our empirical results in large part are consistent with previous findings on immigrants' children performance in the German school system. That is,

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<sup>7</sup> To build the interaction term we treat the CASMIN classification as a continuous variable.

educational outcomes in terms of attending or completing the highest schooling track leading to the Abitur considerably vary among different ethnic groups. Except for the Greeks, second generation young adults, in particular Turks and Italians, at this stage in their school careers experience pronounced disadvantages in comparison to their German peers. These differences, however, primarily result from social rather than from specific ethnic inequalities. Except for Italian 18-year-olds, initial differences in the chances of aspiring or having achieved the Abitur completely disappear after considering educational and social origin. Greeks and Iberians even outperform their German age peers. Accordingly, explanations which apply in particular to immigrant families such as discrimination are of minor relevance for explaining the second generation's relative disadvantages in the German school context. However, since parent's education, or rather the more or less favourable educational conditions associated with certain educational backgrounds, is crucial to children's school success, the educational attainment of immigrants' descendants may only improve slowly and over several generations.

Aside from these central findings, the result that the returns to parental education in terms of reaching the Abitur are lower for second generation Turks than for their German counterparts requires further consideration. Obviously, several interpretations are consistent with this finding. As pointed out before, it might be due to differences in knowledge about the German school system. It may take longer for Turkish families to acquire this kind of profound educational knowledge because the Turkish school system differs very much from the German one or because this knowledge is not always readily available in the ethnically segregated environments in which children of Turkish origin frequently grow up. Another interpretation could be discrimination against better-educated Turkish families, but in this case it would be necessary to further elaborate on the question as to why this assessment might be directed only towards Turkish students but not towards students from other immigrant groups. Since our analyses do not allow for conclusions about which of these alternative explanations accounts for the relatively lower returns to parental education in the Turkish group, understanding this finding needs further research. After all, it should be kept in mind that the crucial result for the group of Turkish 18-year-olds is that the relative disadvantages they experience in upper

secondary education above all are due to the lower educational qualifications their parents have acquired in comparison to Germans.

Although our central results comply with those of other German studies on this subject, there are also differences. For example, after taking social origin and other relevant aspects into account Müller and Stanat (2006) identify a persistent Turkish disadvantage in the reading performance of 15-year-olds. Also Alba et al. (1994), who analyse ethnic variation in the distribution over the three different secondary tracks, find persistent negative effects for Turks and Italians. However, these studies use different indicators of educational attainment and they focus on different stages in the school career and on different age groups. Consequently, it is difficult to compare our results to those somewhat divergent findings. Nonetheless, they illustrate that social origin taken alone is not always sufficient to account for the educational disadvantages certain immigrant groups experience at particular points in their school careers.

In our study, this result applies to second generation Italians who perform well below Germans of comparable educational and social origin. This group's disadvantage seems especially puzzling because Italian labour migrants were the first to be recruited in the late 1950s and thus have been exposed longer than any other group to the German school system. Sometimes it has been argued that during their school careers Italian children stayed for longer periods in Italy and these interruptions may have hampered their educational advancement (ENAIP 1986: 18). However, so far empirical evidence on this subject is rare (e.g., Alba et al. 1994: 232-233; Diehl 2002).

Another 'ethnic puzzle' concerns the Greek students' exceptional school success. Overall they attain results similar to Germans and after considering educational and social background they clearly outperform them. To account for this pronounced advantage it has been suggested that Greek families may be more ambitious to do well in school and hence exhibit higher educational aspirations (Hopf 1987). Also the existence of Greek schools in Germany may contribute to this group's favourable performance (Alba et al. 1994). Aside from Greek instruction, these schools offer a familiar school setting. By attending a Greek school in Germany students of Greek origin encounter an exceptional situation in which the specific edu-

cational resources their families bring from Greece, for example language skills or specific knowledge about the functioning of the school system, remain very useful. In contrast we would expect that Greek students who attend German schools, just like other children of immigrants, profited less from their specific educational resources. If this reasoning applies, the positive Greek effect in our study would overestimate this group's performance in the German school system. To test this argument, however, it would be necessary to study Greek students' attainment separately in German and Greek schools, a task which is not feasible with the GMC.

Obviously, studying educational inequalities with the GMC has its limitations. One of the problems is that we could not distinguish between the three different tracks of secondary schooling and consequently our analyses were restricted to the highest German schooling track leading to the Abitur. It is entirely possible, and findings from other studies seem to suggest this, that the results might be somewhat different if we contrasted the medium with the lowest secondary track (e.g., Alba et al. 1994; Birkenner 2005; Kristen 2002). Moreover, with the information available we were not able to investigate the nature of the linkages between social and ethnic origin and educational outcomes in more detail and accordingly, the empirical study remained mainly descriptive. Nevertheless, the GMC is an important large-scale data source for the study of ethnic educational inequalities in the German school system. It provides information on relevant characteristics such as educational attainment, ethnic origin, and social origin (for those who still live in the parental household), and it includes sufficient numbers of cases to distinguish between different ethnic groups. Especially in a country like Germany, where longitudinal information on educational careers is not available and in which large-scale cross-sectional student assessments only very recently have been introduced, the GMC will remain an important data source for studying the education of the second generation. In particular, the most recent survey of 2005 will provide new opportunities. Although the information on track attendance as well as on other relevant characteristics is still limited, for the first time it contains aside from citizenship additional indicators on migration background and thus will allow a more comprehensive way of capturing immigrants and their descendants in Germany.

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## Appendix

**Table 1: Distribution of Model Variables (second generation and Germans, age 18, in %)**

	German	Turkish	Form. Yg	Italian	Greek	Port./Sp.	Other
<b>percentage preparing for or having Abitur</b>	45.1	25.2	28.6	15.6	51.8	42.7	50.1
<b>gender</b>							
male	51.9	55.4	50.3	50.2	50.6	53.9	51.5
female	48.1	44.6	49.7	49.8	49.4	46.1	48.5
<b>age*</b>	47.9	48.4	48.2	47.7	49.3	49.9	48.7
<b>year</b>							
1991	8.7	7.6	10.2	8.3	10.6	14.6	6.4
1993	7.7	10.2	12.2	5.7	12.4	18.0	7.0
1995	7.7	10.9	12.8	5.4	12.9	12.4	7.9
1996	7.9	10.4	11.3	7.6	8.2	6.7	7.9
1997	8.0	8.4	10.4	8.9	7.1	(1.1)	12.5
1998	8.6	9.2	8.5	8.9	10.6	6.7	8.3
1999	9.2	10.3	8.2	7.9	10.0	11.2	4.9
2000	8.7	8.8	9.1	8.9	7.7	7.9	7.6
2001	8.3	6.3	6.5	8.9	7.1	(4.5)	8.6
2002	8.5	6.4	4.3	11.1	5.9	6.7	9.2
2003	8.2	6.1	3.3	8.3	5.9	6.7	11.6
2004	8.3	5.5	3.3	10.2	(1.8)	(3.4)	7.9
<b>education (CASMIN)</b>							
missing value	5.3	7.3	6.1	6.4	3.5	(2.3)	6.4
no completed education (1a)	0.9	29.4	11.3	25.7	10.0	18.0	14.4
gen. elementary education (1b)	7.9	37.8	23.4	35.9	44.7	32.6	18.3
gen. elementary education + voc. qualif. (1c)	43.8	18.7	46.0	23.8	31.2	32.6	23.5
intermediate gen. education (2a)	1.1	1.1	1.3	(1.0)	2.9	(2.3)	1.8
intermediate gen. education + voc. qualif. (2b)	17.1	3.0	8.0	5.1	2.9	6.7	11.3
gen./voc. maturity certificate (2c_gen, 2c_voc)	5.2	1.9	2.0	(1.0)	(2.4)	(2.3)	9.2
lower/higher tertiary education (3a, 3b)	18.7	0.9	2.0	(1.3)	(2.4)	(3.4)	15.0
<b>occupational status</b>							
retired/unemployed/not looking for work	11.3	34.0	14.3	18.7	16.5	14.6	30.6
workers + other (working, not class. elsewhere)	30.6	59.8	70.7	64.4	58.8	70.8	32.1
civil servants/salaried employees	46.3	3.7	9.8	8.9	11.8	12.4	25.7
self-employed	11.7	2.5	5.2	7.9	12.9	(2.3)	11.6
<b>income</b>							
missing value/no income	5.1	6.2	4.1	4.4	4.1	3.4	5.8
less than 1.300 Euro	23.1	45.8	38.4	41.3	42.9	50.6	41.6
1.300 – 2.000 Euro	35.5	42.9	50.3	42.2	42.9	38.2	27.5
> 2.000 Euro	36.3	5.2	7.2	12.1	10.0	7.9	25.1
<b>number of children under the age of 18*</b>	0.6	1.2	0.6	0.9	0.5	0.5	1.2
n	37,291	1,280	461	315	170	89	327

\* mean

percentage in brackets: n<5

Source: GMC 1991 - 2004, combined datasets, n=39,933

**Table 2: Logistic Regression Models (Dependent Variable: Abitur yes/no)**

	Model 1	se	Model 2	se	Model 3	se
<b>nationality</b>						
<i>ref. German</i>						
Turkish	-.928*	.066	.026	.075	.034	.075
former Yugoslavian	-.742*	.105	.049	.110	.085	.111
Italian	-1.530*	.157	-.681*	.165	-.644*	.163
Greek	.252	.156	1.140*	.162	1.10*	.163
Portuguese/Spanish	-.142	.217	.809*	.227	.797*	.223
other	.166	.113	.496*	.126	.567*	.134
<b>gender</b>						
<i>ref. male</i>						
female	.354*	.020	.396*	.023	.397*	.023
<b>age</b>						
<i>(continuous)</i>	.040*	.002	.029*	.002	.029*	.002
<b>year</b>						
<i>ref. 1991</i>						
1993	.133*	.051	.136+	.057	.135+	.057
1995	.199*	.051	.112+	.057	.111+	.057
1996	.285*	.051	.161*	.056	.159*	.056
1997	.285*	.050	.121+	.056	.120+	.056
1998	.239*	.050	.074	.055	.073	.055
1999	.333*	.049	.119+	.054	.118+	.054
2000	.266*	.049	.015	.055	.015	.055
2001	.348*	.050	.080	.056	.079	.056
2002	.318*	.050	.054	.056	.053	.056
2003	.282*	.050	-.013	.056	-.016	.056
2004	.169*	.050	-.166*	.056	-.167*	.056
<b>education (CASMIN)</b>						
<i>ref. gen. elementary education + voc. qualif. (1c)</i>						
missing value			1.108*	.049	1.138*	.049
no completed education (1a)			-.253*	.092	-.446*	.104
gen. elementary education (1b)			-.230*	.046	-.269*	.048
intermediate gen. education (2a)			.643*	.103	.651*	.103
intermediate gen. education + voc. qualif. (2b)			.734*	.032	.740*	.032
gen./voc. maturity certificate (2c_gen, 2c_voc)			1.369*	.052	1.385*	.053
lower/higher tertiary education (3a, 3b)			1.786*	.038	1.795*	.038
<b>occupational status</b>						
<i>ref. civil servants/salaried employees</i>						
retired/unemployed/not looking for work			-.314*	.043	-.309*	.043
workers + other (working, not class. elsewhere)			-.559*	.030	-.554*	.030
self-employed			.021	.037	.022	.037
<b>income</b>						
<i>ref. less than 1.300 Euro</i>						
missing value/no income			.571*	.055	.569*	.055
1.300 – 2.000 Euro			.274*	.033	.270*	.033
> 2.000 Euro			.676*	.037	.670*	.037
<b>number of children under the age of 18</b>						
<i>(continuous)</i>			.009	.014	.009	.014
<b>interaction nationality x education (continuous)</b>						
Turkish x education					-.150*	.042
former Yugoslavian x education					-.057	.069
Italian x education					-.151	.091
Greek x education					-.206	.113
Portuguese/Spanish x education					-.215	.138
other x education					-.051	.055
$\chi^2$	1342		9307		9327	
Pseudo-R2	.024		.170		.170	

\*  $p < .01$ ; +  $p < .05$ ; se: standard errorSource: GMC 1991 - 2004, combined datasets,  $n=39,933$

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