

**MECHANISMS OF AND BARRIERS TO EDUCATIONAL INTEGRATION OF
IMMIGRANT YOUTH IN GERMANY**

By

Taylan C. Acar

A dissertation submitted in partial fulfillment of
the requirements for the degree of

Doctor of Philosophy

(Sociology)

at the

UNIVERSITY OF WISCONSIN-MADISON

2016

Date of final oral examination: 6/2/16

The dissertation is approved by the following members of the Final Oral Committee:

Myra Marx Ferree, Professor, Sociology

Erik Olin Wright, Professor, Sociology

Eric Grodsky, Associate Professor, Sociology

Jenna Nobles, Associate Professor, Sociology

Cornelia Kristen, Professor, Sociology, University of Bamberg

Nils Ringe, Associate Professor, Political Science

© Copyright by Taylan C. Acar 2016
All Rights Reserved

Acknowledgements

It is true that some say it takes a village to finish writing a dissertation. I have completed this manuscript with the generous support and tremendous patience of many people. I am deeply grateful to my advisor Myra Marx Ferree for her support, guidance and mentorship. Her unequalled patience and trust helped me to become the scholar that I am today. Erik Wright has been an inspiration for me since the time I arrived in Madison. I have learned a lot from Eric Grodsky understanding and conceptualizing social relations; he has also been a great mentor at times I was struggling. I am thankful to Jenna Nobles who agreed to serve on my dissertation committee on her sabbatical year and provided wonderful comments on the manuscript. Cornelia Kristen, whose own research practically inspired this study. She also played a great role in formulating my questions during my time in Bamberg and finally provided detailed comments to the final manuscript. I am also thankful to Nils Ringe who agreed to serve on my dissertation committee during his busy schedule.

I am grateful to Michael Billeaux, Sebastian Daza, Alex Hanna, Jerrett Jones, Hannah Miller, Matt Moehr, Elsa Noterman, David Schelly and Julian Seuring for reading and critiquing parts of the dissertation along the way. Patrick Brenzel, Charlotte Frasca and Toni Schulze were great support in getting through the final years of my degree. Joel Rogers's friendship provided great support toward the end of my time in Madison. My family, Aysel, Ilhan and Algan, never stopped believing in me and never stopped providing financially and emotionally when I was in need. Many thanks are due to my fellow TAA members, as well as Ayça, David, Jana & Loren, Kerem, Matt Reiter, Molly, Katie Zaman, and Lenora for making Madison home. Thank you Iel-Hotel for their support from afar.

I am also grateful to Cornelia Kristen and colleagues at the Chair of Sociology and the Analysis of Social Structures, as well as the Data Center staff of the National Educational Panel Study (NEPS) at the University of Bamberg for hosting me and their support. This research was supported by the Boren Graduate Student Fellowship at University of Bonn, German Academic Exchange Service (DAAD) Dissertation Research Grant (A/12/84653), Center for European Studies, UW-Madison Center for German and European Studies Dissertation Writing Award, European Union Center for Excellence Dissertation Fellowship at European University Institute, Center for German and European Studies Research Travel Award, and UW-Madison Department of Sociology Small Grants. The contents of this dissertation are the responsibility of the author and do not represent the official views of any supporting agency.

Table of Contents

Dissertation Abstract	vi
Introduction to Dissertation	1
 Chapter 1.	
Mechanisms of and Barriers to the Educational Integration of Immigrant	
Youth in Germany	8
Abstract.....	9
Introduction.....	10
Theoretical Framework.....	14
<i>The Political Economy of Immigration</i>	16
<i>Duration of Stay and Generation Status</i>	22
<i>Human Development in the Country of Origin</i>	25
Model Specification and Identification Strategy	28
Data and Methods.....	30
<i>Data and Sample</i>	30
<i>Dependent Variables</i>	33
<i>Socioeconomic Status</i>	34
<i>Human Development in the Country of Origin</i>	35
<i>Analytic Strategy</i>	37
Results.....	39
<i>The Political Economy of Immigration</i>	39
<i>Duration of Stay and Generation Status</i>	43
<i>Human Development in the Country of Origin</i>	46
Discussion.....	49
Conclusion	52
References.....	54
Figure 1.1. Degree attainment of German Population by Migration Background.....	65
Figure 1.2. Path Model for Mechanisms for Educational Integration.....	66
Figure 1.3. Box-Whisker Plots of Reading and Math Scores by Country of Origin.....	67
Figure 1.4. Predicted probabilities of math and reading scores by mother’s highest educational attainment: Labor Migrants.....	68
Figure 1.5. Predicted probabilities of math and reading scores by mother’s highest educational attainment: Recent Eastern European and Turkish Immigrants	69
Figure 1.6. Effect sizes from German use based on Models on Table 10.....	70
Figure 1.7. Predicted probabilities of math and reading scores by number of books.....	71
Figure A1.1. Predicted probabilities of math and reading scores by parental occupation status: Labor Migrants.....	72
Figure A1.2. Predicted probabilities of math and reading scores by parental occupation status: Recent Eastern European and Turkish Immigrants.....	73
Figure A1.3. Genealogy of Generation Status.....	74
Table 1.1. Generation Status by Immigrant Community.....	75
Table 1.2. Socioeconomic Status Variables by Country of Origin.....	76
Table 1.3. Social Integration and Control Variables by Country of Origin.....	77

Table 1.4. Basic Models: Math & Reading Competence Scores by Country of Origin.....	78
Table 1.5.A Math & Reading Competence Scores: Mother's Educational Attainment.....	79
Table 1.5.B. Math & Reading Competence Scores: Parental Occupational Status.....	80
Table 1.6. Math & Reading Competence Scores: Mother's Educational Attainment & Parental Occupational Status.....	81
Table 1.7. Within-Immigrant Group Effects of Generation Status (Basic Models)	83
Table 1.8. Math and Reading Scores by Generation Status (With Parental SES and School Type Controls)	84
Table 1.9. Basic Models: Math & Reading Competence Scores by Immigrant Group.....	85
Table 1.10. Language Use & In-Group Attachment & Number of Books Available at Home.....	86
Table A1.1. The Detailed Measures of Generation Status by Immigrant Community.....	87
Table A1.2: Human Development Index Scores by Country.....	88
Table A1.3: Questions used for constructing the “in-group attachment” variable.....	89
Table A1.4: Math & Reading Competence Scores of the European Immigrant Groups.....	90
Table A1.5 Selected Regression Coefficients by Immigrant Group: Full Model.....	91
Table A1.6. Generation Status by Immigrant Group Coefficients: Full Model.....	93

Chapter 2

School and Classroom-Level Composition and Educational Performance of Immigrant Students in Germany	94
Abstract.....	95
Introduction.....	96
Theoretical Framework.....	98
<i>Tracking and Educational Inequalities</i>	98
<i>Between Immigrant Group Differences</i>	103
<i>Between School Track Differences</i>	107
Model and Identification Strategy	110
Data and Methods.....	114
<i>Dependent Variables</i>	116
<i>Peer Composition Variables</i>	116
<i>Individual and School/Classroom Level Variables</i>	118
<i>Analytic Strategy</i>	120
Results.....	121
<i>Immigrant composition at school and classroom level</i>	121
<i>Immigrant Composition by School Type: Hauptschule & Gymnasium</i>	126
Discussion.....	131
References.....	137
Figure 2.1. Path Model for the Relationship between Immigrant Composition in Schools and Classrooms and Test Scores.....	146
Figure 2.2. Box-Whisker Plots of Reading and Math Scores by Country of Origin.....	147
Figure 2.3. Predicted Reading and Math Scores: Immigrant Schoolfellows.....	148
Figure 2.4. Predicted Reading and Math Scores: Immigrant Classmates.....	149
Table 2.1. Secondary School Track Attendance by Country of Origin.....	150
Table 2.2. Individual Level Control Variables by Country of Origin.....	151
Table 2.3. Immigrant Group Averages & Standard Deviations of Composition Variables.....	153

Table 2.4. Achievement Composition & Socioeconomic Background Composition of Schools and Classrooms.....	154
Table 2.5. Reading and Math Performance by % Immigrant Students at School.....	155
Table 2.6. Immigrant Composition Coefficients from Models with Achievement & Socioeconomic Composition Controls.....	156
Table 2.7. Peer Composition Variables by School Type: <i>Hauptschule & Gymnasium</i>	157
Table 2.8. Immigrant Composition Coefficients with Achievement and Socioeconomic Background Composition: <i>Gymnasium</i>	158
Table 2.9. Immigrant Composition Coefficients with Achievement and Socioeconomic Background Composition: <i>Hauptschule</i>	159
Table A2.1 Math & Reading Scores by School Type.....	160

Chapter 3

The Variation in Educational Aspirations among Immigrant Students in Germany	161
Abstract.....	162
Introduction.....	163
Theoretical Framework.....	164
<i>Formation of Educational Aspirations among Immigrant Families</i>	168
<i>School Tracking and Aspirations</i>	172
Data and Methods.....	174
Descriptive Results.....	176
SES and Achievement Control Variables.....	180
Hypotheses.....	181
Multivariate Results.....	183
<i>Realistic and Idealistic Aspirations of Students</i>	183
<i>Perceived Aspirations of Immigrant Parents</i>	188
Discussion.....	190
References.....	197
Table 3.1. The Generation Status by Immigrant Group.....	205
Table 3.2. Educational Aspirations of Students by Immigrant Group.....	206
Table 3.3. Perceived Educational & Career Aspirations of Parents.....	207
Table 3.4. Logistic Regression Analysis of Students' Realistic and Educational Aspirations: Immigrant Group by Generation Status Dummies.....	208
Table 3.5. Logistic Regression Analysis of Parents' Perceived Educational & Career Aspirations: Immigrant Group by Generation Status Dummies.....	210
Table A3.1. The Detailed Measures of Generation Status by Immigrant Group.....	212
Table A3.2. Secondary School Track Attendance by Immigrant Group.....	213
Table A3.3. Parental Socioeconomic Resources & Control Variables by Immigrant Group.....	214
Table A3.4. Logistic Regression Analysis of the Realistic and Idealistic Educational Aspirations: Models without SES, School Type & Achievement Controls.....	216
Figure A3.1. Genealogy of Generation Status.....	217
Figure A3.2: Box-Whisker Plots of Reading and Math Scores by Country of Origin.....	218
Conclusion to Dissertation	219

Dissertation Abstract

This dissertation examines differential modes of integration among immigrant groups in Germany, by focusing on the educational performance of immigrant youth in high school, in light of the social and historical context of their arrival. In the German context, educational integration is the key mechanism for social mobility among immigrant youth. The analyses focus on students who are descendants of the five largest and politically most relevant immigrant communities: labor migrants from Turkey, the former Yugoslavia, and the Mediterranean countries (Italy, Spain, Portugal, and Greece), as well as recent migrants from Poland, and return migrants with German ancestry from the former Soviet Union. I use a nationally representative sample of ninth-grade native German and immigrant students from data drawn by the National Educational Panel Study (NEPS).

The first empirical chapter shows that the political economy of immigration has important implications for differences between early labor migrants and recent migrants, whereas Turkish students still constitute the most disadvantaged group with patterns of social immobility. Recent migrants enjoy a positive reception at the time of their arrival; however, the educational performance of return migrants with German ancestry suggests that this supportive context might not translate into educational success.

The second chapter shows that a higher proportion of immigrant students among peers has differential associations for the five immigrant groups. These associations also vary by school track; negative associations are larger for labor migrant students in academic tracks. However, controlling for mean-achievement in schools leads to a considerable weakening of the test score-peer network relationship for Turkish students, indicating that they are more likely to attend low achieving schools.

The third chapter finds that secondary school track placement plays a significant role in attenuating the educational aspirations of immigrant students and their families. Turkish and Yugoslavian immigrant groups have the highest aspirations; that achievement-aspiration paradox applies to groups who come from the most disadvantaged socioeconomic backgrounds and from countries with the lowest rates of higher education enrollment.

Overall, with its growing young and young-adult immigrant population and an aging native population, German society still faces challenges of providing educational opportunities to immigrant youth.

Introduction to Dissertation

In this era of mass movement of people around the globe, documenting and understanding incorporation of immigrant communities into the destination social contexts has become increasingly important as the number of immigrants and refugees and asylum-seekers grow in the world. More importantly, with the decline of the welfare state in Europe, growing anti-immigrant sentiments around the world and instability in the Middle East put new pressures on migrants, as well as the host societies the migrants become part of.

Immigration scholars interpret the overall well-being and integration of second-generation immigrant youth to host societies differently (Alba, Kasinitz and Waters, 2011; Haller, Portes and Lynch, 2011; Kasinitz, Mollenkopf, Waters and Holdaway, 2008; Portes, Fernandez-Kelly and Haller, 2009). After two decades of formulation of the theory of segmented assimilation, or TSA, (Gans, 1992; Portes and Rumbaut, 2001, Portes and Zhou, 1993), the key point of debate today is the trajectories of downward assimilation. New-assimilationist scholars criticize the scholars of TSA for exaggerating the prevalence of downward assimilation for second-generation immigrants (Alba and Nee, 2003; Alba et al., 2011), whereas TSA scholars continue to present new evidence on downward assimilation experiences in the United States context, especially that of Mexican-Americans and black Caribbean youth even after controlling for individual and family characteristics (Portes et al., 2009; Haller et al., 2009).

In general, scholars depict new-assimilationist theorists as “deniers of different patterns of assimilation” (Segeritz, Walter and Stanat, 2010, 117). However, the new-assimilationist scholars do not dismiss the possibility of downward assimilation (Alba et al., 2011), but do not find much evidence for it, especially in the recent study on the New York’s second-generation immigrants (Kasinitz et al., 2008).

In light of this scholarly debate and growing political concerns around the topic of immigration, this dissertation offers new perspectives by focusing on the case of Germany and developing a comparative approach to understand the variation in immigration experiences of the five largest immigrant communities in Germany: the descendants of labor migrants with Turkish, Mediterranean (Greek, Italian, Spanish, Portuguese) and former Yugoslavian origins, as well as recent migrants from Poland and return migrants with German ancestry from the former Soviet Union. Using a nationally representative sample of the ninth grade students drawn from the German National Educational Panel Study (NEPS)ⁱ, which provides rich school level information and well-developed measures of immigration background and generation status (Blossfeld, Roßbach, and von Maurice, 2011), the three articles in this dissertation assess the variation in educational performance of immigrant students, by focusing on the differences among these five communities in terms of their immigration experiences, social and historical context of their arrival, and their position in social status hierarchy of Germany (Grodsky and Jackson, 2009; Portes and Rumbaut, 2001; Portes and Zhou, 1993; Xie and Greenman, 2011). Furthermore, given the strong associations between human, economic and social resources in the families and educational outcomes of children, I interpret group level experiences and integration characteristics of immigrant communities under consideration as key determinants of educational performance of immigrant students.

Beginning with the major mechanism of educational integration of immigrant students, the first chapter formulates a series of theoretical mechanisms in light of the social and historical context of arrival in Germany that are specific to these immigrant groups in addition to their particular group characteristics. I test these mechanisms in order to understand how the educational performance of immigrant youth from these groups differs from that of their native

German peers, as well as from each other, measured as their reading and math scores at the ninth grade. My analyses reveal that the political economy of immigration is the strongest mechanism explaining the differences in educational performance, measured as ninth-grade math and reading scores. Human development in the country of origin hypothesis fails to account for the relatively high performance of Polish immigrants relative to Mediterranean. Finally, the generation status hypothesis yields strong within-immigrant group effects showing that a longer duration of stay in Germany is associated with higher levels of performance, except for among Turkish students. My findings suggest labor migration is an important characteristic among immigrant groups in German context; yet, immigrant students from Turkey continue to be the most disadvantaged group among labor migrants in benefiting from higher human and economic resources in the family and from longer duration of stay in German. Results also reveal a surprisingly low performance among return migrants from the former Soviet Union, despite their German ancestry and the settlement support they received from the German federal state.

The second chapter shifts the focus to the school and classroom context and asks whether the composition of immigrant students' peers, operationalized as the proportion of immigrants among schoolfellows and classmates, has a positive or negative association with their educational performance in the ninth grade, measured as reading and math scores. My findings suggest that within the highly differentiated secondary school system in Germany, the immigrant composition of schools and classrooms plays a limited role on the test scores of immigrant students. The major determinants of immigrant students' performance appear to be students' individual socioeconomic status and country of origin, which in turn determine the school type and context the students attend. In these schools and classrooms, the proportion of immigrants plays at most a small role. Once the socioeconomic composition of schools and classrooms and

the achievement composition are taken into consideration the estimated effects of immigrant composition in the previous models disappear.

While the first two chapters offer explanations for the variation in the educational performance of five immigrant groups under consideration and how they differ from their native German peers, the third chapter focuses on educational aspirations. Rather than testing the previous theories developed to explain the high educational aspirations of immigrant families, it compares the variation in students' own and their parents' perceived educational aspirations among immigrant communities, as well as how they differ from the native German population. The findings show that secondary school track placement plays a significant role in attenuating high immigrant aspirations. Moreover, Turkish and Yugoslav immigrant groups, i.e. those who come from the most disadvantaged socioeconomic backgrounds and from countries with lowest rates of higher education enrolment, have the highest aspirations for an academic high school qualification. These results provide evidence that low educational achievement and high educational aspirations can be reproduced over generations, even when the students realistically do not expect to obtain academic high school qualifications. I interpret the difference in realistic and idealistic aspirations among Turkish and Yugoslav students as a conscious appraisal of a higher school qualification, unlike previous researchers who identified high aspirations among immigrant students as "immigrant-optimism" (see Kao and Tienda, 1995). I also find that students from countries with higher education norms – in this sample the Polish, Mediterranean and return migrant students – do not report higher educational idealistic aspirations than their native German peers. I attribute this difference to the nature of aspirations of a better future that immigrant groups embrace.

The three following chapters together offer new perspectives about immigration and educational integration in Germany. That country, with its growing young and young-adult immigrant population and an aging native population, still faces challenges of providing educational opportunities to immigrant youth, and the issue of immigrant integration is an increasingly pressing policy issue for the German political authority. By bringing literature on educational inequalities into dialogue with the immigration and assimilation research, this study contributes to an understanding of the role of immigration experiences of specific immigrant communities in the educational integration of descendants of these groups. These processes together are also strong determinants of later labor market access, as well as the potential for social mobility of immigrant youth, who predominantly come from families with relatively limited human and economic resources.

Finally, the rich and detailed information of the ninth grade sample of the German National Educational Panel Study (NEPS) allows me to compare five largest and politically most relevant immigrant communities in Germany across first, second and third generation immigrants. The rich data of NEPS about the school context of immigrant students are also key for understanding the highly differentiated secondary school system in Germany. Finally, the nationally representativeness of the NEPS ninth grade sample allows making more generalized inferences and applicability of findings; a significant improvement from the most of the previous studies.

References:

- Alba, R., Kasinitz, P., & Waters, M. C. (2011). The kids are (mostly) alright: Second-generation assimilation: Comments on Haller, Portes and Lynch. *Social Forces*, 89(3), 763-773.
- Alba, R., & Nee, V. (2009). *Remaking the American mainstream: Assimilation and contemporary immigration*. Harvard University Press.
- Blossfeld, H. P., Roßbach, H.-G., & von Maurice, J. (Eds.). (2011). Education as a Lifelong Process: The German National Educational Panel Study (NEPS). [Special Issue] *Zeitschrift für Erziehungswissenschaft*, 14.
- Gans, H. J. (1992). Second-generation decline: scenarios for the economic and ethnic futures of the post-1964 American immigrants. *Ethnic and Racial Studies*, 2, 173-192.
- Grodsky, E., & Jackson, E. (2009). Social stratification in higher education. *The Teachers College Record*, 111(10), 2347-2384.
- Haller, W., Portes, A., & Lynch, S. M. (2011). Dreams fulfilled, dreams shattered: Determinants of segmented assimilation in the second generation. *Social Forces*, 89(3), 733-762.
- Kao, G., & Tienda, M. (1995). Optimism and achievement: The educational performance of immigrant youth. *Social Science Quarterly* 76(1), 1-19.
- Kasinitz, P., Mollenkopf, J., Waters, M., & Holdaway, J. (2008). *Inheriting the City: The second generation comes of age*. New York, NY: Russell Sage Foundation.
- Portes, A., Fernández-Kelly, P., & Haller, W. (2009). The adaptation of the immigrant second generation in America: A theoretical overview and recent evidence. *Journal of Ethnic and Migration Studies*, 35(7), 1077-1104.
- Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. University of California Press. Chicago
- Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *The annals of the American academy of political and social science*, 530(1), 74-96.
- Segeritz, M., Walter, O., & Stanat, P. (2010). Muster des schulischen Erfolgs von jugendlichen Migranten in Deutschland: Evidenz für segmentierte Assimilation? *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 62(1), 113-138.
- Xie, Y., & Greenman, E. (2011). The social context of assimilation: Testing implications of segmented assimilation theory. *Social science research*, 40(3), 965-984.

ⁱ This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort 4–9th Grade, doi:10.5157/NEPS:SC4:1.1.0. From 2008 to 2013, NEPS data were collected as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, the NEPS survey is carried out by the Leibniz Institute for Educational Trajectories (LifBi) at the University of Bamberg in cooperation with a nationwide network.

CHAPTER 1

Mechanisms of and Barriers to the Educational Integration of Immigrant Youth in

Germanyⁱ

Abstract

Relying on a nationally representative dataset drawn from the German National Educational Panel Study (NEPS), this article examines the role of three mechanisms in the variation in educational performance between native Germans and the five largest immigrant communities in Germany: the descendants of labor migrants with Turkish, Mediterranean (Greek, Italian, Spanish, Portuguese) and former Yugoslavian origins, as well as recent migrants from Poland and return migrants with German ancestry from the former Soviet Union. My analyses reveal that the political economy of immigration is the strongest mechanism explaining the differences in educational performance among immigrant groups, measured as ninth-grade math and reading scores. The duration of stay hypothesis yields strong within-immigrant group effects showing that a longer duration of stay in Germany is associated with higher levels of performance, except for among Turkish students. Finally, human development in the country of origin hypothesis fails to account for the relatively high performance of Polish immigrants relative to Mediterranean and Western European students. My findings suggest labor migration is an important characteristic among immigrant groups in German context; yet, immigrant students from Turkey continue to be the most disadvantaged group among labor migrants in benefiting from higher human and economic resources in the family and from longer duration of stay in German. Results also reveal a surprisingly low performance among return migrants from the former Soviet Union, despite their German ancestry and the settlement support they received from the German federal state.

Introduction

Germany has received close attention from integration and stratification scholars due to its long history of immigration since the end of the Second World War. Today Germany presents a remarkable case within Europe, not only for its political and economic strength within the European Union but also as a major destination for immigrant populations (Levels, Dronkers and Kraaykamp, 2008; Heath, Rethon and Kilpi, 2008, Kogan, 2011). In addition, the juxtaposition of an aging native population and a still growing young and young adult immigrant population makes the country a highly interesting case from sociological and demographic perspectives (*Statistisches Bundesamt*, 2006, 2011; OECD, 2006, 2009). The changing characteristics of the German population presents pressing policy issues within the German political authority as well.

Scholars interpret the overall well-being and integration of immigrant youth to destination societies by examining their educational and labor-market outcomes relative to comparable peers (Alba, Kasinitz and Waters, 2011; Alba and Nee, 2003; Haller, Portes and Lynch, 2011; Heath and Brinbaum, 2007; Heath, Rethon and Kilpi, 2008; Portes and Rumbaut, 2001; 2005; 2006; Portes, Fernandez-Kelly and Haller, 2009). Moreover, the growth of immigrant populations has led to differential outcomes for immigrants from countries of origin that differ from each other in terms of the social and economic conditions of their arrival (Kroneberg, 2008; Schulz and Leszczensky, 2015), the selectivity of migration (Kalter, Granato, and Kristen, 2007; Kristen and Granato, 2007), cultural and demographic characteristics that influence the context of reception by host country institutions (Diehl and Schnell, 2006; Kalter and Kogan, 2014), the level of human and cultural capital they possess at the time of their arrival (Becker, 2011; Esser, 2004), their cultural proximity and boundaries with respect to the host society (Alba, 2005), and the language skills they possess (Esser, 2006; Kristen and Dollman,

2010). More importantly, these conditions and factors at the point of arrival are strong determinants of the later experiences of immigrant communities, the processes of incorporation, and eventually their position in the social status hierarchy of the destination country (Portes and Rumbaut, 2001; Portes and Zhou, 1993; Xie and Greenman, 2011).

In this article, I examine the role of these factors in explaining the contemporary integration outcomes of immigrant youth from the five largest immigrant communities in Germany: labor migrants from Turkish, Mediterranean (Greek, Italian, Spanish, Portuguese), and former Yugoslavian origins, as well as more recent migrants from Poland and return migrants with German ancestry from the former Soviet Union. I formulate a series of theoretical mechanisms in light of the social and historical context of arrival in Germany that are specific to these immigrant groups in addition to their particular group characteristics. I test these mechanisms in order to understand how the educational performance of immigrant youth from these groups differs from that of their native German peers, as well as from each other, measured as their reading and math scores at the ninth grade. My theoretical assumption is that not only do immigrant youth from these various countries of origin experience differential “modes of incorporation” (Portes and Rumbaut, 2001, 46), but that there are also three central mechanisms which facilitate or hinder the educational integration of these immigrant children: the political economy of immigration, the duration of stay in Germany and the human development in the country of origin relative to Germany. I then develop a series of falsifiable hypotheses to test these mechanisms to explicate the variation, or the lack thereof, in the educational outcomes among the groups under consideration (Alba et al., 2011; Greenman and Xie, 2008, 110).

The educational integration of immigrant youth is a good indicator of the long-term integration of immigrant communities (Kristen and Olczyk, 2013; Kroneberg, 2008; Portes and

Hao, 2004; Schulz, 2013). In a country like Germany, which has a strongly integrated secondary education system and labor market (Kogan, 2011; Solga and Wagner, 2001; von Below, 2007), as well as a highly differentiated secondary education system (Allmendinger, 1989; Buchmann and Park, 2009; Neugebauer et al., 2013), secondary school performance is a good predictor of immigrant youths' potential for later social mobility. Differential educational outcomes among immigrant students from different countries of origin show a variation in immigration experiences across generations.

The gap in educational attainment between immigrant and native populations strongly determines immigrants' labor market integration (Diehl and Schnell, 2006; Geissler, 2006; Levels et al., 2008; Stanat and Christensen, 2006). Immigrant men and women today are far behind the native population in terms of professional and vocational degree attainment (*beruflicher Bildungsabschluss*) beyond compulsory education. The gap between native Germans and the immigrant population is relatively low in terms of tertiary education—college and university degrees—in the applied sciences (see Figure 1.1). However, attaining some vocational and professional qualification beyond compulsory education is still a critical problem for the immigrant population. Previous research shows that immigrant students and families in Germany are less informed about the pathways for professional and vocational training other than comprehensive universities in the German context (Kristen et al., 2008; Zielonka, Relikowski, Kleine et al., 2013). The lack of professional training and education beyond compulsory education continues to be the greatest obstacle for immigrant integration into the German labor market. Despite improvements among second-generation labor migrants relative to first-generation migrants (Heath and Brinbaum, 2007; Heath, Rethon and Kilpi, 2008; Kalter, Granato

and Kristen, 2007, Kristen and Granato, 2007, Seifert, 1992), the immigrant population still lags far behind the comparable native population.

The general picture of immigrant disadvantage, however, does not explain differences in educational outcomes among immigrant groups. In Germany, the school performance and educational attainment of immigrant students vary between groups from different countries of origin as well (Heath and Brinbaum, 2007; Kristen et al., 2011 Levels et al., 2008), in which descendants of labor migrants make up the most disadvantaged group in terms of school performance and track placement at the beginning of secondary schooling. They attend lowest track of secondary education –*Hauptschule*– more often than the higher tracks (Alba et al., 1994; Büchel and Wagner, 1996; Diefenbach, 2008; Nauck, Diefenbach and Petri, 1998).ⁱⁱ

Finally, it is important to note that the immigrant population in Germany still shows growth especially among young and young adults. In 2009, according to PISA study numbers, 25% of 15-year olds in Germany had at least one parent born outside of Germany—a six percent increase from the previous study in 2006 (OECD 2007, 2010). Furthermore, according to 2010 Census figures, 31% of the children between the ages 5 and 15 and 29% of those who are younger than 25 belong to the “population with migration background,” whereas this rate is 19% of the total population (Tarelli, Bos and Bremerich-Vos, 2012).ⁱⁱⁱ Within the context of still growing portion of immigrants among youth in Germany, it is important to understand the relationship between immigration experiences of particular immigrant groups and their educational performance.

In the next section, I present the theoretical mechanisms that I argue can explain the variation in immigration experiences in the German context. I discuss political economy of immigration and selectivity, duration of stay in Germany and the human development in the

country of origin, and how they help to understand the specific immigration experiences of the different immigrant groups.

Theoretical Framework

Since the 1960s, the immigrant population in Germany has grown substantially (Janssen and Schroedter, 2007, Figure 1; Kogan, 2011, 93). To understand the variation in immigrant group experiences and differential educational outcomes, the theoretical mechanisms I propose to explain the variation in the incorporation experiences the five immigrant groups under focus are: (1) the political economy of immigration, (2) duration of stay in Germany, and (3) the human development in the country of origin. This understanding requires a closer investigation of the history of immigration in Germany. It is central to my analysis to understand why not all “persons with migration background” have received the same treatment by the German state after arriving. I examine the role of the immigration experiences of these groups on the educational performance of immigrant students. I use math and reading scores of ninth grade immigrant students as indicators of immigrant student performance and thus of their potential economic integration. My theoretical claim is that immigration experiences of five groups under study should explain the variation in their educational performance in high school and how they differ from the native German students, as high school performance should reflect the social status hierarchy of the German society. Educational achievement and performance of immigrant youth has long been considered to provide an important picture about the difference of immigration experiences among immigrant communities, as they reflect the social and economic opportunities available to them and the ways in which the immigrant youth become more similar to native German youth in terms of the distribution of educational attainment.

Germany presents an interesting case for examining different modes of incorporation among immigrant groups. In the past several decades, Germany has been the main destination country for immigration in Western Europe (Levels, Dronkers and Kraaykamp, 2008). More importantly, Germany has developed its own system of ethnic stratification that differentiates immigrant individuals from the native population. The official German status hierarchy has an equivalent of the “non-white” category in the United States: “persons with migration background” (*Personen mit Migrationshintergrund*). After serving as a major immigrant destination for decades, and as a response to the disappointing results of PISA (Program for International Student Assessment) studies in early 2000s (Hanushek, 2005), the German federal government introduced questions regarding “migration background” in its 2005 census (*Statistisches Bundesamt*, 2006).^{iv} This definition classifies individuals who arrived in Germany after 1949 as “immigrants,” whereas those who arrived before 1950 are considered German because they were predominantly refugees from territories under German occupation during the Second World War. Furthermore, “persons with migration background” are not only the immigrants themselves, but also their direct descendants, i.e. second-generation immigrants (*Statistisches Bundesamt*, 2011, 5). The German census generated a migration background category for all foreigners and naturalized German citizens with non-native backgrounds (*Statistisches Bundesamt*, 2011, 6), making it impossible to escape immigrant status until the third generation.

However, not all “persons with migration background” receive the same treatment from the German state. The migration histories of different communities shape their immigration experiences, which subsequently play an important role in immigrant communities’ claims to German-ness. I discuss three mechanisms in turn that shape immigrant incorporation into

German society that are closely related with the context of their arrival: the political economy of immigration, the duration of stay in Germany, and human development in the country of origin. Below I specify these mechanisms for each immigrant group and develop hypotheses to test their role in the educational performance of their descendants at the ninth-grade level.

The Political Economy of Immigration

The primary axis differentiating immigrant groups in Germany today is whether or not they are descendants of “classical” (Kristen, Reimer and Kogan, 2008) or “traditional” (Schulz and Leszczensky; 2015) labor migrants. The first large wave of immigration to Germany was the massive labor migration that took place throughout the 1960s and 1970s. Due to a shortage of semi- and low-skilled workers during Germany’s post-war industrial expansion, or *Wirtschaftswunder* (Kalter and Granato, 2007; Kristen, Reimer and Kogan, 2008; Söhn and Özcan, 2006), the German state began recruiting workers from Southern European countries, Yugoslavia, and Turkey (Kalter et al., 2007; Kristen et al., 2008). The recruitment of labor migrants was based on a rotation model, whereby mutual agreements indicated that after a few years, recruited workers would return back to their home countries to be replaced by new ones (Kalter and Granato, 2007, 274). However, most of these labor migrants stayed and became permanent members of German society (Rudolph, 1996).

For labor migrants, low levels of human capital in a high human capital destination society presented a major obstacle to their social mobility and higher educational attainment for subsequent generations (Borjas, 1994, 1671-1673; Kalter and Kogan, 2014, 1441). In economic theory this phenomenon is called “negative selectivity,” whereby immigrant populations “arrive from economically depressed areas of their native countries and possess little human capital, including education” (Kogan, 2011, 92; see also Borjas, 1987, 6; Chiswick and Miller, 2008).

For younger generations of labor migrant communities, low levels of human capital and the predominantly rural backgrounds of (especially Turkish) immigrants (Becker, 2011, 429) have undermined opportunities for attending institutions of higher education (Alba, Handl, Müller, 1994; Diehl and Schnell, 2006; Geissler, 2006; Levels et al., 2008; Stanat and Christensen, 2006).

The size of most labor migrant groups in Germany remained stable over the following decades. However, migration from Turkey to Germany presents a special case, as it did not stop after the official labor migration agreements ended with the oil crises in the 1970s. The continuing replenishment of Turks and Kurds from Turkey^v through illegal labor migration and family reunifications (Waters and Jimenez, 2005) has made the Turkish population the largest immigrant community in Germany today (Kalter and Granato, 2007). That these immigrants often choose spouses from the marriage market in Turkey poses an additional obstacle to integration (Becker, 2011; Crul and Vermeulen, 2003; Kalmijn, 1998). Indeed, “imported brides and grooms” (Becker, 2011, 429) have made the cultural and structural boundaries between German society and the Turkish enclave thicker (Portes and Manning, 1986), as immigrants from Turkey continue to live in high immigrant neighborhoods of the large metropolitan areas; especially in industrial urban areas (Kristen, 2005),

Family reunifications constituted 50 to 70% of the migrant influx between 1975 and 1981 (Velling, 1993, cited in Kalter and Granato, 2007), and the most dramatic impact of these family unions (Kogan, 2011) on immigrant children is that at least one parent has no German language skills (see Chiswick and Miller, 1996; Esser, 2006). This process also changed the demographic composition of the immigrant population in Germany from a predominantly adult-male, low-skilled working class group to one that included unemployed women and children with limited

German language skills, most of whom experienced social and economic isolation from the rest of the society. It was during this period that the unemployment rate among the immigrant population exceeded that of the native population for the first time in modern German history (Kalter and Granato, 2007, 276).

At the end of the 1980s, the characteristics of incoming immigrant communities changed dramatically. Shortly before and immediately following the dissolution of the Soviet Union, Germany experienced a new kind of immigration, primarily from the successor states of the USSR, as well as from Poland and Romania. Germany started receiving high numbers of *Spaetaussiedler*—people with German ancestry who lived under socialist rule throughout the Cold War. These ethnic German migrants received unprecedented state-support for integration upon their arrival, as the state facilitated their integration (Euwals et al., 2010, 521; Kalter, 2008a, 303; Wegman, 2014) with rights to naturalize almost immediately after their arrival (Münz, 2002).^{vi} Their German ancestry, that they are more likely to have German language skills than the labor migrants, and they tended to be better educated than previous immigrant groups facilitated a more supportive “mode incorporation” of *Spaetaussiedler* by the German state. These return migrants were not a negatively selected group based on human and economic capital, and their arrival coincided with a time when “the homogenous self-image of German society had begun to change and the integration of immigrants had become a major issue of political debate” in Germany (Schulz and Leszczensky, 2015, 3).

It is estimated that the number of immigrants who arrived in Germany as return migrants between 1950 and 2012 was around 4.5 million (Worbs et al. 2013, 28), with around 2.5 million arriving since the end of the Cold War. Close to 2 million arrived from the former Republics of

the Soviet Union, whereas the large majority of early return migrants who arrived in Germany between 1950 and 1991 came from Poland and Romania.^{vii}

Regarding the relationship between human and economic capital and educational success of immigrant populations, Kalter and his colleagues find that the impact of socioeconomic origin on educational outcomes has weakened over time (Kalter et al., 2007, 237), even though this relationship continues to be strong. Ammermueller (2007) examines whether for immigrant students, the associations between higher levels of parental educational attainment and educational achievement is weaker than it is for German students. Using the results of PISA 2000 and PISA extension study in Germany, Ammermueller's decomposition analysis shows that "the return effect of parental socioeconomic origin" between native German and immigrant students is significantly positive, and on average it explains 37% of the reading and math test score gaps between the two groups (Ammermueller, 2007, 223). Similarly, Schneeweiss (2011) argues that natives and those with migration backgrounds are different populations; immigrant students receive different returns from the human and economic capital available within the family, and that these measures do not have a similar positive influence for immigrant students as they do for natives (Schneeweiss, 2011, 1283).^{viii}

In line with the findings of Ammermueller (2007) and Schneeweiss (2011), it is important to test the lower returns from increasing familial socioeconomic resources hypothesis in the German context, as well as understanding whether it applies to different immigrant communities. The major premise of this is not that immigrant groups, especially those arrived as labor migrants, that returns from increasing parental resources on educational performance of these immigrant children are lower than the non-immigrants; this might be because it reflects

segregation, discrimination or perhaps alienation from the primary institutions of the receiving society such as schools.

Arriving in a destination context within the political economy of labor migration limits the opportunities for social and economic mobility. In addition, residential segregation and reproduction of lack of employment opportunities over generations impedes students from benefiting from higher human capital and economic resources in their families. Another reason might be that because of limited opportunities for social integration and chronic language barriers, these students might experience greater difficulty in signaling their educational potential (Ruhose and Schwerdt, 2015). In other words, the educational disadvantages of immigrant students are relatively larger at the higher end of the parental education distribution than are at the lower end of the distribution.

There are several other reasons why we might observe relatively smaller returns from higher parental human and economic resources on educational performance of students. First, immigrant parents are more likely to have completed their educational careers back in their countries of origin, so measures of their educational attainment might be failing to account for educational quality for the country in which they completed their educational careers. Also, if they did receive their degrees abroad, one might expect the signaling of parental education could be weaker for higher educational performance of their students. Therefore, the relationship of parental resources to student achievement should be tested using alternative measures such as parental occupational status or the number of books available in the household (see Ammermueller and Pischke, 2009).

Second, some immigrant groups' integration experiences might position them at the lower levels of social and racial hierarchy of Germany, and stereotyping might limit their

educational opportunities even if they come from families with relatively higher levels of educational attainment and occupational status. In the German context, the descendants of labor migrants from Turkey are at a particularly disadvantaged position as a group, being at the bottom of the ladder of educational achievement in Germany and most likely to attend the lowest level secondary school track. Due to having rural backgrounds and low levels of parental educational attainment on average, statistical discrimination means they are also more likely to experience reproduction of social immobility and low-educational attainments across generations (Kalter et al., 2007).

Perhaps more importantly, immigrants from Turkey are also more likely to live in segregated neighborhoods. Group size and geographical concentration allows their own immigrant enclaves and increases their on-going problems with using German language. Such segregation is reason to expect that the higher levels of social and economic resources in the family would have lesser returns on educational performance of students with Turkish and Kurdish origin, especially in reading as opposed to math. Finally, the constant growth of the population coming from Turkey following the end of the official labor migration also distinguishes this group from other labor migrant communities. Illegal labor migration and family unifications, as well as an inflow of Kurdish and socialist political refugees after the 1980 military takeover, contributed to the expansion of Turkish immigrant community following the end of the labor migration agreements in late 1970s.

All in all, due to the uniquely disadvantaged position of Turkish community within the German social hierarchy, I expect the higher levels of educational attainment and higher levels of class position to have relatively smaller positive effects on their test scores, in line with Ammermueller's (2007) and Schneeweiss's (2011) arguments.

Hypothesis 1: My first hypothesis extends Kalter et al.'s (2007) Ammermueller's (2007) and Schneeweiss's (2011) findings about differences in returns from higher human and economic capital in family between all native and all immigrant students by taking the political economy of immigration into consideration. In addition to testing whether lower socioeconomic resources in families explain the differences in test scores between native and immigrant students, as well as among immigrant students from different countries of origins, I hypothesize that for immigrant students who are descendants of the negatively selected labor migrant groups, associations between higher socioeconomic resources in their families and their test scores will be weaker compared to native German and non-labor migrant groups. But due to their uniquely disadvantaged position, I expect this to be the case particularly for students who are descendants of immigrant families from Turkey.

Duration of Stay and Generation Status

The second important mechanism that influences the integration potential of immigrant communities in Germany is the duration of stay and the generation status of immigrant students (see Table 1.1). The neo-classical assimilationist theorists, as well as the theorists of segmented assimilation (see Alba and Nee, 2003; Portes and Zhou, 1993) anticipate that the longer an immigrant group spends in the destination context, the more the members of a particular immigrant communities will resemble members of the native community. Immigrant communities in Germany differ from each other in terms their time of their arrival and recurring nature of their immigration patterns (Walter and Jimenez, 2005), as well as in terms of the duration of their stay. In Germany, residency and citizenship status are not accurate measures of immigration because of restrictive and uneven naturalization processes (Diefenbach, 2008, 220; Kalter et al., 2007). Therefore, in this study, I consider a student to have an immigrant

background if the student herself, either one of her parents, or any one of her grandparents were born in one of the countries under examination. In addition, there are group-specific migration characteristics that present a complicated picture of generation formation among these groups. Thus, dichotomizing immigrant communities just as either early labor migrants or recent migrants from Eastern Europe would be conceptually inaccurate.

The immigration experiences of immigrant communities influence their marriage patterns over time. This is particularly relevant for the immigrants from Turkey, in terms of their recurring immigration trends, especially as the phenomenon of choosing spouses from the marriage market in Turkey (see Kalmijn, 1998). First-generation brides and grooms commonly arrive in Germany to marry second-generation spouses. The third-generation Turkish community thus does not form and remains relatively small. Instead, a considerable proportion of Turkish immigrants belong to a “2.5 generation,” consisting of the children born into marriages between one parent born in Germany and the other born abroad (Becker, 2011; Karthick-Ramakrishnan, 2004; Rumbaut, 2004). Children born to a union between a first-generation and a second-generation immigrant typically have one parent with no German skills. Considering this particular marriage pattern and generation formation in Turkish community, as well as the intergenerational reproduction of disadvantage, I expect the duration of stay to operate differently for Turkish students than other immigrant groups. Specifically, due to high residential segregation and less good German skills among parents due to marriage migration, I expect students from Turkey to enjoy smallest improvements in their educational performance from longer duration of stay.

Second, even though they are considered to be a labor migrant group, the Yugoslav community also grew with the influx of refugees from the Yugoslavian Civil War in 1990s, so

first-generation Yugoslavian children are a larger group compared to those from other labor migrant groups. I expect these Civil War refugees to have low levels of educational success considering the traumas of war and displacement, although the German state's policies were relatively inclusive toward them (Kogan, 2011, 3). In addition, Yugoslav labor migration was not followed by a wave of family unifications, as was the case of the Turkish community; on the contrary, Yugoslav and Mediterranean labor migrants were less likely to seek permanent settlement in Germany compared to the Turkish immigrants (Olczyk et al., 2014).

Third, the generation status of Polish and Soviet Union immigrants requires closer examination due to the presence of early (*Aussiedler*) and recent return (*Spaetaussiedler*) migrants with German ethnicity from Eastern Europe. The former group arrived in Germany between 1950 and the end of the 1980s primarily from Poland and Romania, whereas the latter started arriving after the end of the Cold War, primarily from the former Soviet Union (Worbs et al., 2013; Olczyk et al., 2016). Following Olczyk et al. (2014, 1819), I assume third-generation Polish and Soviet Union students with only one or two grandparents who were born outside of Germany are refugees and displaced persons who came immediately after the end of the Second World War. I identify these so-called 3.5- (only two grandparents born abroad) and 3.75-generation (only one grandparent born abroad) Polish and Soviet students as early return migrants of German ethnicity, so they are not included in my analysis (Table A1.1).^{ix}

Hypothesis 3: My hypothesis regarding duration of stay is based on neo-classical assimilation theories (Alba and Nee, 1997, 2003; Alba et al., 2011), and tests whether immigrant youth are reaching levels of educational performance that are similar to their native peers when the time they spend in German increases. I test this hypothesis among the first, second and third generations of immigrant communities. Following Becker (2011) and Rumbaut (2004), I

generate a separate category for students, who belong to the 2.5-generation with one parent born abroad and one parent born in Germany in order to test whether marriages to imported partners play a different role than being a second generation does. I also anticipate within-group improvement of educational performance to be the smallest among the Turkish group due to their unique disadvantages such as residential segregation and patterns of marriage migration. For the Polish students, I also expect the longer of duration have minimum returns on educational performance, given the fact that Polish students come from relatively high SES families. Thus, the longer duration of stay would make little effect on improving the test scores of Polish students.

Human Development in the Country of Origin

The political economy of immigration and duration of stay in Germany are two mechanisms focused on how the arrival context in Germany shapes the immigration experiences of communities. By examining human development in the country of origin, my objective is to shift the focus to the context of origin, and search for counter evidence to my first two mechanisms. In addition, human development in the country of origin is a collective level mechanism that would influence the experiences of all members of a particular immigrant community. In addition, this mechanism might offer alternative explanations whether immigrants from within and outside of Europe differ from each other in terms of their integration experiences by considering their language use, socialization preferences, and proximity to German society.

I use the 2014 development index (HDI) to assess differences in human development between Germany and countries of origin, based on the Human Development Report of the United Nations Development Programme (UNDP, 2014, Table 1, 208). If human development in

the country of origin is a mechanism that significantly influences the educational outcomes of immigrant students, then we should observe a linear relationship showing that the closer the country of origin is to Germany on the HDI scale, the higher the immigrant student performance should be. According to HDI scores, the Western European countries are most similar to Germany, so I include them in this part of my analysis to permit a linear comparison to the countries with lower HDI scores: The Mediterranean countries, Poland, the former Yugoslavian Republics, Russia and Turkey (see Table A1.2).

Immigrant groups from Mediterranean countries present an interesting case here. Following the end of formal labor migration to Germany, the number of labor migrants from these countries has remained fairly stable over the years. The integration of migrants from these countries was never seen as a problem, neither in the literature nor from the point of view of policy makers (Schulz and Leszczensky, 2015). There are a few political explanations for this. After the overthrow of their respective military regimes in the 1980s, Greece, Spain and Portugal joined the European Economic Community (EEC)—the predecessor to the European Union—bringing migrants from these countries closer to the German society, both culturally and economically. Italy was already a founding member of the EEC.^x

In addition, Haug (2003) found that compared to Turkish immigrants, labor migrants from Mediterranean countries are more likely to marry Germans. The Mediterranean group also developed stronger ties with native Germans than those with Turkish or Yugoslavian origins (Diehl and Schnell, 2006; Haug, 2003; Schulz and Leszczensky, 2015; Steinbach, 2013). Further evidence for cultural proximity is that Mediterranean and Yugoslavian immigrants report lower levels of discrimination than Turkish immigrants do; presumably, Germans feel less social distance toward the former than the latter (Ganter, 2003, 133, cited in Schulz and Leszczensky,

2015, 9). Moreover, the four Mediterranean countries have higher rates of tertiary education enrollment compared to Turkey and former Yugoslavian republics, and even Germany itself (UNESCO, 2004; Statistical Annex, Table 9: 318-325).

Human development in the country of origin has different implications for return migrants with German ancestry from the Soviet Union. Even though they arrived from former republics of the Soviet Union, due to their German origins they would more easily adopt a German ethnic identity, and are more likely to grow up learning German in the household and experience fewer barriers for social integration. But they were more likely to be marginalized in the Soviet Union and thus the HDI score may reflect their experience less well. The issue of human development is less clear for Polish immigrants. Although Polish immigrants are reportedly willing to integrate into German society and have plans to stay in Germany long-term (Boldt, 2011; Pallaske, 2012, cited in Schulz and Leszczensky, 2015), the historically tense political relationship between the two countries makes cultural proximity between native Germans and Polish immigrants more complicated and unpredictable (Schulz and Leszczensky, 2015).^{xi}

Hypothesis 3: The human development in the country of origin hypothesis tests whether the context of origin can explain some of the differences in educational performance among immigrant communities under consideration. In order to test whether the human development differences between home countries and Germany in fact play a role, I test the effects on immigrant group variation in educational performance of three social integration variables: the use of German language, the number of the books available in the household and attachment to co-immigrant community. If the development differential hypothesis holds, these proximate variables should have the largest effects on the test scores of immigrant students who are from

the countries with the lowest human development. In other words, those who originate from countries in which human development score is further away from Germany should benefit the most from resources that integration into German society offers. In this section, I also consider a sixth group, a Western European immigrant category, where the human development is closest to Germany. This is relevant for setting a baseline for how much migration without any human development differential could be expected to influence the effects of these three social integration measures.

To sum up, the history of immigration to Germany shows that the largest immigrant groups in Germany today differ from each other in terms of political economy of immigration, which determines their position in the social status hierarchy of Germany, the generational composition of the group, and the human development in their countries of origin. The policies of the German state vary according to migrant group, their reasons for immigration, as well as their historical ties to German society. While return migrants received tremendous integration support, the long-term political neglect of labor migrants has undermined their children's potential social mobility (Faist, 1994; Diehl and Schnell, 2006; Geissler, 2006; Levels et al. 2008; Stanat and Christensen, 2006). These factors have shaped the ways in which the descendants of these immigrant groups are able to integrate into Germany's social hierarchy.

Model Specification and Identification Strategy

The objective of this article is to understand the variation in educational achievement levels among ninth graders from five different immigrant groups in Germany, by examining the role of various background factors regarding their immigration experiences. I call these factors 'mechanisms' influencing the educational integration of immigrant students under consideration.

There are two key points in my attempt to understand the role of these mechanisms on the variation of educational performance of immigrant students from different countries of origin. First, I anticipate these mechanisms to have differential effects on my outcome variables due to the differences in immigration experiences and the reception context in Germany for immigrant communities under consideration. These mechanisms are key for educational integration of all immigrant students, but I focus on the ways in which they influence the educational performance of descendants of immigrant groups from different countries of origin. For example, according to both neo-classical and segmented assimilation theories (Alba and Nee, 2003; Portes and Rumbaut, 2001; Portes and Zhou, 1993), a longer duration of stay is a key mechanism for descendants of an immigrant groups to incorporate to the host societies. However, I expect the longer duration of stay to lead to smaller improvements in the performance of immigrant students from Turkey, not only because of intergenerational reproduction of social disadvantages but also higher likelihood of residential segregation for immigrant students from Turkey. For Polish students, on the other hand, the duration of stay might also play minimum role for higher performance of second generation, because Polish students come from relatively high SES families, so that even the first generation Polish students might not be disadvantaged in terms of educational performance. Similarly, I expect the returns from higher human and economic capital in families to differ among immigrant groups that are descendants of labor migrants. Those from Turkey enjoy the relatively lowest returns from higher parental educational attainment and occupation status because they are more embedded in communities with higher proportions of first generation immigrants and face more statistical discrimination because of their group's lower average human resource level.

Second, although these mechanisms are closely interrelated, I am primarily interested in understanding their predictive power separately from each other. Therefore, not until the end of the article do I test their effects on outcome variables in a single full model. The path model in Figure 1.2 shows that how these mechanisms influence the test scores of immigrant students. In addition to the mechanisms, the figure depicts the variables that I use to operationalize them. Here, the relationship between these mechanisms and individual test scores of immigrant students should primarily vary by the country of origin of students because of differential immigration among these groups. In addition, the secondary school type immigrant students attend is a strong mediator of the effects of these mechanisms on the outcome variables. Therefore, the estimated effects of variables that I use for operationalization of these mechanisms should be attenuated when I add the school type into my analysis. The mechanisms I test in this article are also strong determinants of school track placement at the end of the fourth grade; thus the school type mediates the relationship between these background factors and the math and reading scores.

Data and Methods

Data and Sample

In this article, I use data from the first and second waves of the ninth-grade cohort drawn from the German National Educational Panel Study (NEPS) collected in Fall 2010 and Spring 2011 (Blossfeld, Roßbach, and von Maurice, 2011). The NEPS ninth-grade sample was chosen based on a multi-stage stratification method: first, the six school types in the German secondary education are sampled, followed by a sampling of schools within each strata (von Maurice, Sixt and Blossfeld, 2011). The total sample consists of 12,155 ninth-grade students from 545 schools.^{xiii} Compared to previous German datasets and the census, the NEPS dataset collects

more accurate information on the generation status of immigrants by including country of origin—not only of students’ parents but also of their grandparents (Kalter, 2008b; Kemper, 2010).^{xiii} The detailed immigration history information in the NEPS data allows me to differentiate between the five immigrant communities on a national scale, between early and recent return migrants, as well as between first-, second- and third-generation children from these communities (Kristen et al., 2011).

The primary reason for choosing the ninth grade sample of NEPS over other is that it provides a relatively large group of immigrant students, which allows comparing the largest and politically important immigrant communities, who arrived in Germany under different social and historical contexts. The large sample also allows to differentiate between generational groups within immigrant groups. Second, in the German secondary schooling system it is key to understand whether and to what extent the mechanisms that I examine are mediated through secondary school tracks into which the students have already been sorted. One potential disadvantage of choosing the ninth grade sample of NEPS, however, is that it does not allow modeling the selection effects to secondary school tracks, because track placement had taken place at the end of the fourth grade. Therefore, I treat the school type the students attend as mediators through which the mechanisms that I test influence the outcome variables.

Using list-wise deletion with the NEPS sample leads to bias due to the large reductions in the sample size, as well as the high degree of missing information among immigrant students (Zinn, 2013; 2014). Thus, I use the method of multiple imputation using chained equations to impute the missing values of the independent variables (StataCorp, 2013; White, Royston and Wood, 2011). I created 30 multiple imputation files to ensure the robustness of my estimates (M=30). In order to avoid creating “new” immigrant students, I did not impute students’ country

of origin variables, nor the students' gender. Furthermore, I used the unimputed test scores as dependent variables (see White et al., 2011).

The immigrant students in this study are those with Turkish, Mediterranean (Greek, Italian, Spanish, Portuguese),^{xiv} former Yugoslavian and Polish origins, as well as return migrants with German ancestry who migrated from the former Soviet Union (see Table 1.1; Olczyk et al., 2014). This leaves me with a sample of 2,704 immigrant students, whereas the native German sample includes 9,435 students. According to 2010 Census Data, these five groups correspond to 58% of the entire "population with migration background" (*Bevölkerung mit Migrationshintergrund*) in Germany (*Statistisches Bundesamt*, 2011, 64). These five immigrant groups represent three separate and historically significant waves of immigration to Germany: the labor migration throughout the 1960s, the family reunifications of the late 1970s and early 1980s, and the return migration that took place after the end of the Cold War (Kalter and Granato, 2007; Kristen et al., 2008; Stanat and Christensen, 2006).

As discussed above, I consider Polish and Soviet Union students with one or two grandparents born abroad as displaced persons and refugees immediately following the Second World War and grouped them as early return migrants (Olczyk et al., 2014), i.e. *Aussiedler*, whereas first- and second-generation students with Soviet Union backgrounds are return migrants who arrived after the end of the Cold War, i.e. *Spätaussiedler*. This leaves only a single return migrant with Soviet Union and twelve students with Polish immigrants in my sample. I remove these students from my sample for my analysis of duration of stay and examine generation differences within immigrant groups. I do not include early return migrants—*Aussiedler*—to my immigrant student sample, because they are ethnic Germans who lived in Germany since the end of the Second World War.

Dependent Variables

The dependent variables in the following analysis are mathematics and reading competency scores. These tests are conducted by the NEPS data collecting agencies in classroom environments using a paper-and-pencil method, and the scores are normalized and weighted based on a series of competency tests (see Figure 1.3). I assert that math and reading competence test scores are good measures of educational performance for ninth grades. These test scores are more accurate indicators of educational performance than grades reported by the students or their parents. More importantly these test scores are standard across school types of the highly differentiated secondary school system in Germany, providing good indicators for between track differences in performance. They are not directly biased by teachers' grading attitudes towards students with migration backgrounds; however, they are not robust to potential variation in teaching philosophies of teachers toward immigrant students. These scores may reflect teacher bias to the extent that teachers reduce their expectations or the rigor of their instruction for immigrant students. The math and reading competency tests are administered during different semesters, which affect the number of students present to take the tests. Therefore, the sample sizes for math (N=11,759) and reading (N=11,239) scores are different from each other.

I use both math and reading scores as dependent variables because I expect the math scores to be more closely associated with students' socioeconomic origins, as well as the school type they attend, whereas for reading scores, immigrant students should experience larger disadvantages depending on their German language ability; relative to math scores, immigration background is more likely to have an effect on the reading scores independent of the socioeconomic origins.

Socioeconomic Status

Stratification researchers have measured socioeconomic origin in several ways. The NEPS student questionnaire does not provide information on family income, and the relevant questions in parental interviews have very high missing response rates.^{xv} Instead, I use the highest maternal educational attainment and parental occupational status as measures of familial socioeconomic origin.^{xvi} The maternal education variable stratifies the students into six categories according to the mother's highest completed degree of education: no formal education, primary school diploma/lower secondary track diploma, intermediate secondary track diploma, academic secondary track diploma, tertiary education, and other.

The second SES variable groups the students into five categories of EGP class scheme (Erikson, Goldthorpe and Potocarero, 1979; Erikson and Goldthorpe 1992; Jackson 2013), which classifies occupational positions according to employment relations (Goldthorpe, 2007). I use a five-category version of the EGP scheme that differentiates between high-professionals (EGP category I), low-professionals (EGP II), routine non-manual employees (including the self-employed) (EGP III & IV), skilled workers (EGP V & VI), and unskilled workers (EGP VII).^{xvii} I use the highest EGP category of the two parents to determine the occupational status of the family. If one of the parents' information is missing, I use the other parent's class position. The EGP scheme allows me to distinguish between service and the manual working-class occupations in the German context, given the existence of highly paid industrial jobs in the German labor market.

The reason I use both maternal educational attainment and occupational status as measures of socioeconomic status is that for immigrants, higher educational attainments might not necessarily translate into higher-status jobs due to reasons such as discrimination, language

barriers, or the varying degree of reciprocity between host and destination countries (Becker, 2011; Esser, 2004; Kristen et al., 2011). Moreover, distinct types of socioeconomic measures contribute to educational performance of students in different ways (Duncan and Magnusson, 2005). They might also have varying predictive power to explain the differences in test scores between native and immigrant students because educational attainment also reflects parents' commitment to their children's education, even if the occupational standing of the family is not high (Crosnoe, 2009, 712; Heath et al., 2008; Schulz, 2013; Verhaeghe, Li and Van de Putte, 2013, 685).

Human Development in the Country of Origin

I use the 2014 human development index (HDI) to determine the differences in underlying national resource differences between Germany and countries of origin. The HDI scores are based on the Human Development Report of the United Nations Development Programme (UNDP, 2014, Table 1, 208). If human development in the country of origin is a mechanism that significantly reduces the challenges of migration for immigrant students, then we should observe that the closer the country of origin is to Germany on the HDI scale, the higher the immigrant student performance should be. According to HDI scores, Western European countries are closest, followed by the Mediterranean countries, Poland, the former Yugoslavian Republics, and Turkey (see Table A1.2). Immigrant students from the former Soviet Union are overwhelmingly return migrants with German ethnicity, so I might expect them to be closer to German natives than other immigrant groups. However, the Soviet HDI may also be a weaker proxy for them as a marginalized and stigmatized group there.

To test this hypothesis, I use measures of social integration to German society (Table 1.3) that would reflect both language use (a difference regardless of development level) and human

development investments in Germany (books and friends). Once social integration measures are controlled, a lower human development index may matter less, but lower human development levels should also be expected to make social integration into Germany harder. Language use is a key measure of social integration, which I operationalize as the language spoken with each student's best friend and whether or not the student grew up learning German in the household. I also use a measure for students' attitudes on socializing with others from their own country of origin. I construct a measure of "attachment to co-immigrant community" (α : .92) according to the students' level of agreement with eight statements such as "It is important to me to have friends from my culture of origin" and "I like doing things with people from my country of origin." This variable provides information about the students' preferences for being around individuals from their countries of origin (see Table A1.3).^{xviii} The higher the scores of in-group attachment, the more culturally distant they are from German society.

Scholars often use the number of the books in the household as an indicator of the learning environment for children or as a cultural resource within the family (Becker, 2011; Borgna and Contini, 2013). The number of the books in the household also "explains about a third of the poverty effect" (Duncan and Magnusson, 2005, 40), and this measure is highly correlated with parental income, education, and how highly parents value literary skills (Ammermueller and Pischke, 2009, 322). Thus, I also use the number of books available at home as a variable based on a six-category scale to operationalize social integration between immigrant communities and native Germans.^{xix} This measure is entered in the analyses as an ordered categorical variable (see Table 1.3).^{xx}

In this section, I add immigrant students from twelve advanced economies of Western and Northern Europe (Austria, Belgium, Denmark, Finland, France, Ireland, Luxembourg, the

Netherlands, Norway, Sweden, Switzerland, and the United Kingdom) into my sample as a separate category, as the average human development in these countries are closest to Germany (See Table A1.2). If human development in the country of origin is a relevant mechanism for explaining between-group differences, then the Western European students' advantages should be explained by these characteristics. Here, the language use would be an important measure. Even though the Western Europeans have high human development in their countries of origin, the students from these countries (except for Austria) still have to learn German.

Analytic Strategy

The main purpose of this article is to test the role of various mechanisms in the educational outcomes of ninth-grade immigrant students in Germany. Educational performance in high school is a strong determinant of immigrant students' later educational success and social mobility. My question is how do immigrant students from different countries of origin differ from their native German peers—and among each other—in their educational performance, as measured by their math and reading scores, and what mechanisms explain the variations in these educational outcomes. My focus is on the associations among the variables I use to operationalize my theoretical mechanisms, and more importantly how the associations between these background factors and test scores vary by country of origin.

To test my first two hypotheses, I use OLS regressions of ninth-grade students' math and reading test scores on parental socioeconomic resources and cultural characteristics by country of origin interactions, to test the marginal effect coefficients for each immigrant group compared to the native German (or Turkish, for the second hypothesis) students; as well as how country of origin moderates the associations between explanatory and outcome variables (Fairchild and MacKinnon, 2009, 89). To test the role of generation status, I run models on the subsamples of

immigrant groups separately because my analytical interest lies in the within-immigrant group differences of longer duration of stay in Germany.

The NEPS ninth-grade sample is selected based on a stratified multi-stage sampling design; first, the schools are sampled and then two classes from the sampled schools are selected. This may create non-responses both at the school and individual levels (Aßmann et al., 2012). In order to adjust for the sampling probability of the students, I included the sampling weights provided by the NEPS dataset in my imputation models, in addition to identifiers of students' schools and classrooms (Wenzig, 2012).

The dependent variables in these analyses are standardized, and my explanatory variables are nominal, ordinal, categorical, and continuous variables. Therefore, the coefficients of the regression results are interpreted as the standard deviation difference from the reference category of German (or Turkish for the third hypothesis) male students.

In the following analyses, I conceptualize the country of origin variables as indicators of the context of arrival for specific immigrant communities. Instead of an ethnic classification of communities, the country of origin variables corresponds to the varying experiences of immigrant groups in Germany since their arrival, which I discussed in detail in the previous section. Therefore, a "Turkish" and a "Soviet" student not only differ in terms of the countries of origin of their families. They also differ by the fact that the latter group received tremendous support from German state to integrate, and was allowed to naturalize upon arrival to Germany, whereas the former was politically neglected for decades, and today is a member of the largest immigrant community in Germany, which continues to experience considerable problems integrating in schools and the labor market.

Results

The Political Economy of Immigration

The basic models show that there are significant differences between immigrant students and native Germans in terms of both math and reading scores (Table 1.4). Turkish students are behind their German peers close to one standard deviation in both domains, whereas Polish students appear to be the most successful immigrant group; the interaction coefficients for them become very small when the models include controls for gender and age of students.

Mediterranean students have half a standard deviation disadvantage in reading, and around a third of a standard deviation disadvantage in math, compared to their German peers. Without gender controls Yugoslav students are over half a standard deviation behind in both domains. Surprisingly, return migrants from the former Soviet Union are also at least half a standard deviation behind their native German peers in both domains. Despite their German ancestry and the large settlement support from German state, as well as a more welcoming context of reception, they experience around half a standard deviation disadvantage in reading.

Next, I test the maternal educational attainment and parental occupational status separately to estimate how much difference in math and reading scores between native German and immigrant students they explain (Table 1.5.A & 1.5.B). In both the parental occupation and mother's education models, the Turkish group's math performance is around a third of a standard deviation (-.39; -.36), and over half a standard deviation (-.57; -.64), behind German students' reading performance. In all models the interaction effect coefficients for Polish students have positive signs, and they are very small. It appears that controlling for parental human and economic capital completely explains the differences between them and native Germans. For other immigrant groups' math scores, the interaction effects are similar to those for Turkish

students, at around a third of a standard deviation for Mediterranean and (-.33) and Soviet (-.38) migrants, but none of them are significant in the model with maternal educational attainment. With measure of parental occupational attainment, all differences between native German and immigrant students lose significance except for the Turkish and Mediterranean students.

In terms of reading scores, the interaction effects coefficients for Mediterranean, Yugoslav and Soviet immigrants are relatively large in models with maternal educational attainment, but they are not significant (Table 1.5.A). Models with parental occupational status, these interaction effects are still large and marginally significant (Table 1.5.B) For Mediterranean and Yugoslav students small sample sizes might be explain my inability to reject the hypothesis of no differences. However, the differences in significance levels and interaction effect coefficients between two models for Soviet students suggest the maternal education attainment variable might contain measurement error. Nonetheless, these models provide strong evidence that even after taking parental SES measures into consideration, large disadvantages for students from Turkey persist.

The models reveal striking differences among labor migrant groups in terms of returns from higher maternal educational attainment and parental occupation status. Figure 1.4 shows the predicted probabilities of math and reading scores of native German and three labor migrant groups by mothers' highest educational attainment. The returns from higher educational attainment are minimal for Turkish students, whereas for Mediterranean students the marginal effects are close to those of Germans. The slope for Yugoslav students is similar to that of Turkish students, but differences from returns are apparent for them as well. The differences are particularly large with the model with reading scores, where the difference between Turkish and other two labor migrant groups at the category of tertiary education is almost a full standard

deviation. A similar relationship of lower returns for Turkish students can be observed with models accounting for parental occupation status (Figure A1.1). Thus, it is clear that the findings are not due to the problems of measurement with maternal educational attainment variable due to the fact that the mothers have completed their education in their countries of origin. Furthermore, the finding systematically only applies to students with Turkish origins, indicating that the issue is less of a measurement error, but these students do not enjoy large returns as the Mediterranean and native German students do.

For recent immigrant groups, a slightly different picture appears. Figure 1.5 indicates that return migrants from Soviet Union also receive relatively similar returns from higher maternal educational attainment, and this variable explains the difference in test scores between them and Turkish students at the lower end of the maternal education distribution. However, the returns from having a mother with a tertiary educational attainment are dramatically higher for the return migrants at the end of right hand of the distribution. This gap is larger for both reading and math scores. However, for Polish students, maternal educational attainment does not appear to have a substantial relationship with their math and reading scores, as the predicted probabilities of their test scores remain unchanged between the lowest and highest categories of maternal education. The math and reading scores of Polish students increase at similar rates to that of native Germans students with higher levels of parental occupational status (see Figure A1.2). For return migrants the slopes are similar to those of Turkish students in both domains, but the large differences between the two groups persist among all categories of occupational status.

Next, I add both mother's educational attainment and parental occupation status, as well as the school type to my model (Table 1.6). Taking the school type and parental composition into consideration, the differences between recent migrant groups –from Poland and the Soviet

Union– and native Germans almost completely disappear in both domains, in fact the interaction effect coefficients for Polish immigrants have positive signs. Turkish (-.25) and Mediterranean (-.26) students still have a quarter of a standard deviation disadvantage in math scores relative to German students, but the interaction coefficient is only statistically significant for Turkish group. In terms of returns from resources in the family, having professional parents have around a quarter smaller returns on the math scores of Turkish and return migrants from the former Soviet Union (Table 1.6, Panel 1). The associations between math scores and school type indicates that only Turkish students have significantly smaller returns from attending an academic – *Gymnasium*– school type relative to native Germans. In terms of reading scores, the interaction effect coefficients are negative and sizable for all three labor migrant groups (Table 1.6, Panel 2); however Turkish students have the largest (-.47) and the only statistically significant interaction effect. The interaction coefficients for relative returns from parental resources are negative and large in size for Turkish, Polish and return migrant students but none of these coefficients are statistically significant. Therefore, the results are inconclusive in terms of between group differences in returns from parental resources. The associations between school type and reading scores also appear to be similar, except for Yugoslav students who enjoy half a standard deviation (.46) advantage from attending an academic school type on their reading scores.

All in all, the clear difference between labor and recent migrant groups in terms of the explanatory power of parental resources and school type provide a strong support for the political economy of immigration hypothesis. Negative and statistically significant immigrant group interaction coefficients persist for the Turkish groups in both domains; negative coefficients in reading scores are also observed for Mediterranean and Yugoslav students; however, due to their

small sample sizes, I cannot reach to the same conclusion for them as for the Turkish students. My findings also point to the continuing disadvantage of Turkish students, even if they come from families with relatively higher resources and attend higher school tracks. The political economy of immigration appears to be relevant for Turkish group as I hypothesized; due to their uniquely disadvantaged position in Germany, whereas the other labor migrant groups do not experience the same disadvantage in lower returns. Moreover, similar patterns of lower returns also apply to return migrants from the former Soviet Union, even though to a lesser extent. This indicates that a positive reception context for them does not translate into positive associations between resources in family and educational performance. More importantly, this finding poses a challenge to the relevance of the mechanism of political economy of immigration. This finding is puzzling because return migrants from the Soviet Union are generally considered to possess good language skills due to their German origins and due to the unprecedented settlement support they received from the German state.

Duration of Stay and Generation Status

Table 1.7 shows the results from regressions of math and reading scores on separate subsamples of immigrant groups using the measures of generation status. The results reported here do not take any other predictors into consideration besides the generation status. The first line in each model reports the test scores of first generation students by the country of origin. Unsurprisingly, all generation status coefficients have positive signs among all immigrant groups. However, there are striking within group differences among immigrant groups in terms of effect sizes and significance levels of these estimates, even though the coefficients are results from separate estimations.

For descendants of labor migrant communities, the second generation advantage is very small in both domains that the coefficients are very small and not significant. The striking finding is that for Mediterranean and Yugoslav students, there are very large advantages for 2.5 and third generation students: around a full standard deviation both for math and reading scores (.97 and .83 for Mediterranean and .73 and 1.31 for Yugoslav students, respectively). The same relationship applies for the math scores of Yugoslav students. This can be explained by the relative deprivation of first-generation Yugoslavian students, who are largely refugees and asylum-seekers from the Yugoslavian Civil War, rather than the high performance of Yugoslavian third-generation students. Nonetheless, it is apparent from the estimations that longer duration of stay is strongly associated with Mediterranean and Yugoslav students' reading scores. For Turkish students, the longer duration of stay has almost no positive association with math scores, and unlike other labor migrant groups, has only moderate positive associations with reading scores.

For recent migrants from Poland, there is a large advantage of longer duration of stay for both math and reading scores, though the returns for reading scores are larger in size. For return migrants from the former Soviet Union I removed the single third-generation student from the sample (see Table 1.1), because that student is an outlier in terms of achievement in both domains and skews the achievement distribution of the group. For return migrants, the advantage of longer duration of stay is moderate for the second generation students, but large in size for the 2.5-generation students (.64 for math and .78 for reading scores).

Finally, the 2.5-generation status, –having one parent born in Germany and one parent born abroad– has no particular disadvantage relative to second generation students. In fact, except for the Turkish group (.25 & .38), the effect sizes for 2.5-generation students are

significantly larger than second generation students in terms of reading scores. This might be due to the fact that 2.5-generation Turkish are born into families with “imported brides and grooms” from Turkey, which is reportedly not a tradition among other immigrant communities. Another interpretation is that for the 2.5-generation Mediterranean and Yugoslav groups, the parent, who is born in Germany, in fact might be a native German rather than an immigrant born in Germany, given the substantially high coefficients in reading scores (.97 and .73 S.D., respectively). Thus, the 2.5-generation Mediterranean and Yugoslav students might be enjoying the advantage of having one native German parent and their German proficiency in reading.

Next I estimate, the generation status by country of origin differences relative to native German students. Table 1.8 reports the coefficients for generation status of each immigrant group under focus. The models also include socioeconomic background predictors –mother’s educational attainment and parental occupational status– and the school type the students attend. The results are striking among immigrant groups in how they differ from the reference category of native German group. After controlling for the resources in family and school type, all generation groups, except the third generation of Turkish students are behind their German peer both in math (around a quarter of a standard deviation) and reading scores (around half a standard deviation). The sizes of interaction coefficients are very close to each other; supporting my hypothesis that longer duration of stay has limited advantage for students of Turkey descent. A similar relationship is observed for the reading scores of Mediterranean students; probably due to their small sample size, the confidence intervals are too large to provide evidence for the limited duration of stay. For students with Yugoslav and Polish origins and return migrants from the Soviet Union, all differences from the native German students are explained once the models include socioeconomic resources in family and school type.

All in all, the findings provide strong indications for the limited advantage of duration of stay for Turkish students in both domains, except for the third generation. Moderate in size, but statistically insignificant coefficients also exist for reading scores of Mediterranean students.

Human Development in the Country of Origin

The basic models in Table 1.9 report the math and reading scores among the five immigrant groups under focus, as well as the Western European immigrants, which I include for this section. Once again the estimations reveal that Turkish students have the lowest test scores in both math and reading; falling behind at least a third of a standard deviation in math, and half a standard deviation from all immigrant groups. Again to my surprise, return migrants from the former Soviet Union have the smallest advantage in terms of the size of the interaction coefficient over the Turkish group compared to other immigrant groups. As expected, Western European immigrant students have the largest interaction coefficients in both domains. Polish students reveal a clear advantage over Mediterranean students in math scores (also indicated by pairwise tests), which represents a clear challenge to the human development in the country of origin; it is the high human and economic resources in the Polish families, i.e., the political economy of their immigration, as opposed to differences in their country of origin makes them perform higher than their Mediterranean peers. Finally, the differences in the estimates for Yugoslav and Polish students' math scores between Models 1 and 2 are due to the substantially larger discrepancies between boys and girls within these two groups: Yugoslav and Polish girls have lower math performances relative to boys, compared to the difference within the Turkish group.

In the next set of models (Table 1.10), I add the German language use, attachment to immigrant community and the number of the books available in the household. In terms of math

scores, the model explains most of the differences between the main category of Turkish and other immigrant groups. The previous advantage of Western European immigrant students disappears, and the advantage of Polish students diminishes substantially. A significant interaction coefficient is observed for male Yugoslav students (.35 S.D. with a -.35 S.D. marginal effect for female Yugoslav students), a marginally significant interaction coefficient remains for Soviet migrants (.25). Polish students also reveal an advantage (.35), however due to the small sample size the coefficient is not significant. In terms of reading scores, Yugoslav (.39 S.D) Polish (.62 S.D.) and return German migrant students (.53 S.D.) maintain their advantages over Turkish students, whereas the model explains the differences between Turkish and Mediterranean and Western European students away almost completely. However, the returns from higher number of books in the household are substantially larger for these two European groups relative to the Turkish group.

The model reveals that for Turkish students, who originate from the country with lowest HDI score, speaking German with their best friend and growing up learning German in the household, have substantial advantages in reading scores (.40 and .35 S.D., respectively) and modest advantages in math (.15 and .20 S.D.) over their co-nationals who do not. In line with my hypothesis, the use of German language has the largest positive returns on the scores of Turkish students. However, the associations for other immigrant groups do not support the hypothesis that those with the lowest HDI scores would benefit the most from use of German. The bar chart in Figure 1.6 depicts the combined effect sizes of two variables of German use –German use with best friend and growing up learning German at home– from the reading model in Table 1.10. The total returns from German use are highest for the labor migrants as opposed to the recent migrants from Poland and Soviet Union, indicating that speaking German with best friend

and speaking German in the household have significantly stronger associations of reading scores of descendants of labor migrant groups. This finding once again to the importance of the political economy of immigration.

Another finding of this model is the between-group differences in marginal effects of the higher number of books in the household on student performance. Figure 1.7 illustrates the predictive probabilities of math and reading scores of male students who stated that they speak German with their best friend and grew up learning German in their households, based on the number of books available to them in the household. The lower ends of the graphs indicate that once I control for language use and the number of books, the differences among immigrant groups are minimal. However, at the higher end of the distribution, there are large differences in marginal returns from higher number of books in the household. These return also challenge my hypothesis that those immigrants with lowest HDI scores would benefit the most from higher number of books. Turkish students experience the smallest returns from having more books at home. Western European and Polish students have a clear advantage over all other groups in terms of math scores, and Western European, Yugoslav, Polish and Mediterranean students have largest associations with their test scores and higher number of books at home.

All in all, findings provide limited support for the human development in the country of origin hypothesis. Controlling for the use of German language and the number of the books in the household offers an explanation for the performance differences between those who come from where the HDI scores is lowest –Turkey, and those who originate from countries with highest HDI scores –Mediterranean and Western European. However, students with Polish origins and those with German ancestry who recently migrated from the former Republics of the Soviet Union have clear advantages over other groups after I control for these social integration

variables. Polish and return migrants from the former Soviet Union have the highest group interaction coefficient both in reading and math after controlling for books and German use. Additional calculations also show the advantage of Eastern European immigrants in both domains over Western European immigrants (Table A1.4). In fact, after controlling for books and language use, their advantage in math remains, and the sizes of their positive coefficients in models on reading scores become even larger. Findings on Eastern European immigrants pose a significant challenge to the human development in the country of origin hypothesis, but instead points to the political economy of immigration: the advantages of Eastern Europeans are rather related to their arrival context as nonlabor migrants.

Discussion

The main argument in this article is that the academic achievement levels of immigrant students in Germany from different countries of origin can be explained through three mechanisms: a) the political economy of migration, i.e. whether or not the immigrant communities arrived in Germany as labor migrants; b) the duration of stay since the first time of arrival; c) the human development in the country of origin and social integration. These mechanisms are not mutually exclusive from each other but analytically provide separate explanations for the differences in educational performance observed between native German and immigrant students, as well as among immigrant groups. In fact, the full model with all predictors of these mechanisms appear to be over-fitted with very large confidence levels to reach clear conclusions (See Table A1.5); according to same model, the coefficients for the generation status variables are not substantial in size, nor statistically significant (Table A1.6).

My analyses focus on understanding the educational integration of the five largest and politically most important immigrant communities in Germany: the descendants of labor

migrants from Turkey, four Mediterranean countries (Greece, Italy, Spain and Portugal), and former Yugoslavia, as well as recent migrants from Poland and the former Soviet Union. There is strong evidence to consider those who migrated from the USSR are *Spaetaussiedler*, return migrants with German ancestry who began returning back to Germany after the end of the Cold War in 1990 (Worbs et al., 2013; Schulz and Leszczensky, 2015).

My findings provide substantial support for the political economy of immigration hypothesis that arriving in Germany as labor migrants as opposed to arriving as nonlabor migrants to a relatively more receptive environment plays a significant role for the future prospects of incorporation; at least catching up with the test scores of native German students. There are however indicators of differences within labor migrant groups as well. For Turkish students, higher levels of family SES do not result in higher educational performance among ninth graders, whereas for other labor migrants of Mediterranean and Yugoslav origins the socioeconomic resources in the family have stronger associations with higher educational performance at the high school level. This finding should not be explained as the poor educational attainment and lower class position of parents, which have relatively less adverse impacts on Turkish children than native German children, given the large and negative group interaction effects for Turkish students.

A similar difference also emerges when I test the duration of stay hypothesis. In line with neo-classical theories of assimilation, longer duration of stay has substantially positive associations with the performance of students with Yugoslav, Polish and Soviet Union backgrounds, whereas for Turkish students the longer duration of stay makes a smaller influence in improving their math and reading scores.

In the German context, the Turkish disadvantage in education is not a novel finding (see Kristen and Dollman, 2010; Kalter, 2011; Kristen et al., 2008). However, the lower returns from higher levels of human capital and occupational status in the family on educational performance provide new evidence for the exceptional position of Turkish immigrants in Germany (see Kalter, 2011). My analysis suggests the perpetuation of educational disadvantage for Turkish students, and demonstrates that the negative selectivity of labor migrants has had lasting effects only on the Turkish community. Almost half a century after their initial arrival to Germany, Turkish immigrants continue to occupy the lowest strata of the German social status hierarchy, pointing to a potential “pattern of intergenerational immobility” (Grodsky and Jackson, 2009, 2348).

Another key finding of this study is the relatively lower educational performance of return migrants with German ancestry from the former Soviet Union compared to native Germans and other immigrant groups except those from Turkey. I found that higher levels of familial socioeconomic resources result in weaker associations with math and reading scores, which poses an important challenge to the political economy of immigration hypothesis. Previous research has emphasized that the support for integration and settlement return migrants received from the German state and their German ancestry acted as facilitators for their integration (Euwals et al., 2010; Kalter, 2008a; Schulz and Leszczensky, 2015; Wegman, 2014). This study suggests that return migrant students do not perform better than descendants of the labor migrants with Mediterranean and Yugoslav origins, at least at the high-school level. However, my models are not detailed enough to suggest interpretations for the reasons behind the lower levels of performance of the ninth graders from the former Soviet Union.

Finally, findings about Polish students indicate that they are a highly selective group in terms of parental socioeconomic resources and that they have the highest performance levels among the immigrant groups under consideration. By outperforming both Western European and Mediterranean immigrant students, my findings confirm recent findings about the willingness of Polish immigrants to integrate into German society and their long-term plans to stay in the country (Boldt, 2011; Pallaske, 2012, cited in Schulz and Leszczensky, 2015).

All in all, the political economy of immigration and the selectivity of immigrant groups appears to be the most relevant mechanism for explaining differences between native German and immigrant students, as well as among immigrant groups. I found partial support for the cultural proximity hypothesis, which explains the variation between the most culturally distant group, Turkish immigrants, and the culturally closest groups to German society, Mediterranean and Western European immigrants. However, the findings on Eastern European immigrants challenge this hypothesis.

Conclusion

Based on the findings of this article, I can offer two suggestions for the future of immigration research in the German context. First, there appears to be a great necessity for further empirical studies on the immigration experiences of recent return migrants from the former Soviet Union. It should be examined whether the positive context of reception discussed in previous studies leads to higher educational achievement and increasing rates of attendance in academic-level secondary schools among return migrant youth. Second, the continuing disadvantage of Turkish immigrants in reading scores and German language skills, as well as the strong associations between higher German use among Turkish students, suggests an avenue for policy-makers. Specifically, students with Turkish backgrounds would greatly benefit from early

childhood training in German language. It appears that segregated neighborhood structures, the Turkish students grow up, continues to hinder their ability to develop strong language skills. Given that the youth and young adult immigrant population is still growing in Germany, while the native population is aging, improving German language skills among the most disadvantaged groups in Germany appears to be increasingly necessary.

References

- Alba, R. D., Handl, J., & Müller, W. (1994). Ethnische Ungleichheit im deutschen Bildungssystem. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 46(2), 209-237.
- Alba, R., & Nee, V. (2003). *Remaking the American mainstream: Assimilation and contemporary immigration*. Harvard University Press.
- Alba, R., Kasinitz, P., & Waters, M. C. (2011). The kids are (mostly) alright: Second-generation assimilation: Comments on Haller, Portes and Lynch. *Social Forces*, 89(3), 763-773.
- Allegro, L. G. (2006). Deportations in an age of Neoliberalism. *AmeriQuests*,3(1). Available at: <http://ejournals.library.vanderbilt.edu/ameriquests/archive.pbp>.
- Allmendinger, J. (1989). Educational systems and labor market outcomes. *European sociological review*, 5(3), 231-250.
- Ammermueller, A. (2007). Poor background or low returns? Why immigrant students in Germany perform so poorly in the programme for international student assessment. *Education Economics*, 15(2), 215-230.
- Ammermueller, A., & Pischke, J. S. (2009). Peer effects in European primary schools: Evidence from the progress in international reading literacy study. *Journal of Labor Economics*, 27(3), 315-348.
- Baser, B. (2013). Diasporada Türk-Kürt Sorunu: Almanya ve İsveç'te İkinci Kusak Göçmenler. İletişim Yayınları.
- Becker, B. (2011). Cognitive and Language Skills of Turkish Children in Germany: A Comparison of the Second and Third Generation and Mixed Generational Groups1. *International Migration Review*, 45(2), 426-459.
- Boldt, T. D. (2012). *Die stille Integration: Identitätskonstruktionen von polnischen Migranten in Deutschland*. Campus Verlag.
- Borjas, G. J. (1994). The economics of immigration. *Journal of economic literature*, 32(4), 1667-1717.
- Borjas, G. J. (1987). Self-Selection and the Earnings of Immigrants. *NBER Working Paper No. 2248*.
- Blossfeld, H. P., Roßbach, H. G., von Maurice, J. (2011). Education as a Lifelong Process. *Kölner Zeitschrift für Soziologie und Sozialpsychologie Special Issue*, 14.
- Buchmann, C., & Park, H. (2009). Stratification and the formation of expectations in highly differentiated educational systems. *Research in Social Stratification and Mobility*, 27(4), 245-267.
- Büchel, F., & Wagner, G. (1996). Soziale Differenzen der Bildungschancen in Westdeutschland- Unter besonderer Berücksichtigung von Zuwandererkindern. *Lebenslagen im Wandel: Sozialberichterstattung im Längsschnitt*, 7, 80.

- Chiswick, B. R., & Miller, P. W. (1996). Ethnic networks and language proficiency among immigrants. *Journal of Population Economics*, 9(1), 19-35.
- Chiswick, B. R., & Miller, P. W. (2008). Why is the payoff to schooling smaller for immigrants? *Labour Economics*, 15(6), 1317-1340.
- Crosnoe, R. (2009). Low-income students and the socioeconomic composition of public high schools. *American Sociological Review*, 74(5), 709-730.
- Crul, M., & Vermeulen, H. (2003). The second generation in Europe. *International migration review*, 37(4), 965-986.
- Diefenbach, H. (2008). Bildungschancen und Bildungs (miss) erfolg von ausländischen Schülern oder Schülern aus Migrantenfamilien im System schulischer Bildung. *Bildung als Privileg: Erklärungen und Befunde zu den Ursachen der Bildungsungleichheit*, 221-245.
- Diehl, C., & Schnell, R. (2006). "Reactive ethnicity" or "assimilation"? Statements, arguments, and first empirical evidence for labor migrants in Germany. *International Migration Review*, 40(4), 786-816.
- Magnuson, K. A., & Duncan, G. J. (2005). Can family socioeconomic resources account for racial and ethnic test score gaps? *The future of children*, 15(1), 35-54.
- Erikson, R., Goldthorpe, J. H., & Portocarero, L. (1979). Intergenerational class mobility in three Western European societies: England, France and Sweden. *The British Journal of Sociology*, 30(4), 415-441.
- Erikson, R., & Goldthorpe, J. H. (1992). Individual or family? Results from two approaches to class assignment. *Acta Sociologica*, 35(2), 95-105.
- Esser, H. (2004). Does the "New" Immigration Require a "New" Theory of Intergenerational Integration? *International Migration Review*, 38(3), 1126-1159.
- Esser, H. (2006). Sprache und Integration. *Die sozialen Bedingungen und Folgen des Spracherwerbs von Migranten*. Frankfurt am Main: Campus.
- Euwals, R., Dagevos, J., Gijsberts, M., & Roodenburg, H. (2010). Citizenship and labor market position: Turkish immigrants in Germany and the Netherlands. *International Migration Review*, 44(3), 513-538.
- Fairchild, A. J., & MacKinnon, D. P. (2009). A general model for testing mediation and moderation effects. *Prevention Science*, 10(2), 87-99.
- Faist, T. (1994). States, markets, and immigrant minorities: second-generation Turks in Germany and Mexican-Americans in the United States in the 1980s. *Comparative Politics*, 439-460.
- Ganter, S. (2003). *Soziale Netzwerke und interethnische Distanz: theoretische und empirische Analysen zum Verhältnis von Deutschen und Ausländern*. Springer-Verlag.

- Gans, H. J. (1996). Second-generation decline: scenarios for the economic and ethnic futures of the post-1965 American immigrants. In *Immigration and Integration in Post-Industrial Societies* (pp. 65-85). Palgrave Macmillan UK.
- Geißler, R. (2006). Bildungschancen und soziale Herkunft. *Archiv für Wissenschaft und Praxis der sozialen Arbeit*, 37(4), 34-49.
- Goldthorpe, J. H. (2007). *On sociology* (Vol. 2). Stanford University Press.
- Grascia, A. M. (2004). Gang Violence: Mara Salvatrucha- "Forever Salvador." *Journal of Gang Research*, 11(2), 29-36.
- Greenman, E., & Xie, Y. (2008). Is assimilation theory dead? The effect of assimilation on adolescent well-being. *Social Science Research*, 37(1), 109-137.
- Grodsky, E., & Jackson, E. (2009). Social Stratification in Higher Education. *Teachers College Record*, 111(10), 2347-2384.
- Heath, A. & Brinbaum, Y. Guest editorial: Explaining ethnic inequalities in educational attainment. *Ethnicities*, 7(3), 291-304.
- Heath, A. F., Rethon, C., & Kilpi, E. (2008). The second generation in Western Europe: Education, unemployment, and occupational attainment. *Annual Review of Sociology*, 34, 211-235.
- Haller, W., Portes, A., & Lynch, S. M. (2011). Dreams fulfilled, dreams shattered: Determinants of segmented assimilation in the second generation. *Social Forces*, 89(3), 733-762.
- Haug, S. (2003). Interethnische Freundschaftsbeziehungen und soziale Integration. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 55(4), 716-736.
- Jackson, M. (2013). Introduction. In M. Jackson (ed.), *Determined to succeed? Performance versus choice in educational attainment* (pp. 1-33). Stanford, CA: Stanford University Press.
- Janssen, A., & Schroedter, J. H. (2007). Kleinräumliche Segregation der ausländischen Bevölkerung in Deutschland: eine Analyse auf der Basis des Mikrozensus. *Zeitschrift für Soziologie*, 36(6), 453-472.
- Kalmijn, M. (1998). Inter-marriage and homogamy: Causes, patterns, trends. *Annual review of sociology*, 395-421.
- Kalter, F. (2008a). Ethnische Ungleichheit auf dem Arbeitsmarkt. In *Arbeitsmarktsoziologie* (pp. 303-332). VS Verlag für Sozialwissenschaften.
- Kalter, F. (2008b). Stand, Herausforderungen und Perspektiven der empirischen Migrationsforschung. *Migration und Integration. Kölner Zeitschrift für Soziologie und Sozialpsychologie. Special Issue*, 11-36.
- Kalter, F. (2011). The Second Generation in the Labor Market: Explaining the Turkish Exception. In R. Alba & M. C. Waters (eds.), *The Next Generation: Immigrant Youth in a Comparative Perspective* (pp. 166-184), New York, NY: NYU Press.

- Kalter, F., & Granato, N. (2007). Educational hurdles on the way to structural assimilation in Germany. In *Proceedings of the British Academy*, vol. 137 (pp. 271-319). Oxford, UK: Oxford University Press Inc.
- Kalter, F., Granato, N. & Kristen, C. (2007). Disentangling Recent Trends of Second Generation's Structural Assimilation in Germany. In S. Scherer et al. (eds.), *From Origin to Destination: Trends and Mechanisms in Social Stratification Research* (pp. 214-245), Frankfurt, Germany: Campus.
- Kalter, F., & Kogan, I. (2014). Migrant networks and labor market integration of immigrants from the former Soviet Union in Germany. *Social Forces*, 92(4), 1435-1456.
- Karthick Ramakrishnan, S. (2004). Second-Generation Immigrants? The "2.5 Generation" in the United States. *Social Science Quarterly*, 85(2), 380-399.
- Kasinitz, P., Mollenkopf, J. H., Waters, M. C., & Holdaway, J. (2008). Inheriting the city. *The children of immigrants come of age*. New York: Russell Sage Foundation.
- Kemper, T. (2010). Migrationshintergrund-eine Frage der Definition!. *Die Deutsche Schule*, 102(4), 315-326.
- Kogan, I. (2011). New immigrants—old disadvantage patterns? Labour market integration of recent immigrants into Germany. *International Migration*, 49(1), 91-117.
- Kristen, C. (2002). Hauptschule, Realschule oder Gymnasium?. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 54(3), 534-552.
- Kristen, C. (2003). *School choice and ethnic school segregation: Primary school selection in Germany*. Waxmann Verlag.
- Kristen, C., & Granato, N. (2007). The educational attainment of the second generation in Germany Social origins and ethnic inequality. *Ethnicities*, 7(3), 343-366.
- Kristen, C., Reimer, D., & Kogan, I. (2008). Higher education entry of Turkish immigrant youth in Germany. *International Journal of Comparative Sociology*, 49(2-3), 127-151.
- Kristen, C., & Dollmann, J. (2010). *Sekundäre Effekte der ethnischen Herkunft: Kinder aus türkischen Familien am ersten Bildungsübergang* (pp. 117-144). VS Verlag für Sozialwissenschaften.
- Kristen, C., Edele, D. P. A., Kalter, F., Kogan, I., Schulz, B., Stanat, P., & Will, D. P. G. (2011). 8 The education of migrants and their children across the life course. *Zeitschrift für Erziehungswissenschaft*, 14(2), 121-137.
- Kristen, C., & Olczyk, M. (2013). Ethnische Einbettung und Bildungserfolg. In *Bildungskontexte* (pp. 353-403). Springer Fachmedien Wiesbaden.
- Kroneberg, C. (2008). Ethnic communities and school performance among the new second generation in the United States: Testing the theory of segmented assimilation. *The Annals of the American Academy of Political and Social Science*, 620(1), 138-160.

- Levels, M., Dronkers, J., & Kraaykamp, G. (2008). Immigrant children's educational achievement in western countries: origin, destination, and community effects on mathematical performance. *American Sociological Review*, 73(5), 835-853.
- Münz, R. (2002). Ethnos or demos? Migration and citizenship in Germany. *Challenging ethnic citizenship: German and Israeli perspectives on immigration*, 15-35.
- Müller, A. G., & Stanat, P. (2006). Schulischer Erfolg von Schülerinnen und Schülern mit Migrationshintergrund: Analysen zur Situation von Zuwanderern aus der ehemaligen Sowjetunion und aus der Türkei. In *Herkunftsbedingte Disparitäten im Bildungswesen: Differenzielle Bildungsprozesse und Probleme der Verteilungsgerechtigkeit* (pp. 221-255). VS Verlag für Sozialwissenschaften.
- Nauck, B., Diefenbach, H., & Petri, K. (1998). Intergenerationale Transmission von kulturellem Kapital unter Migrationsbedingungen. Zum Bildungserfolg von Kindern und Jugendlichen aus Migrantenfamilien in Deutschland. *Zeitschrift für Pädagogik*, 44(5), 701-722.
- Olczyk, M., Seuring, J., Will, G., & Zinn, S. (2016). Migranten und ihre Nachkommen im deutschen Bildungssystem: Ein aktueller Überblick. In *Ethnische Ungleichheiten im Bildungsverlauf* (pp. 33-70). Springer Fachmedien Wiesbaden.
- Olczyk, M., Will, G., & Kristen, C. (2014). *Immigrants in the NEPS: Identifying generation status and group of origin* (No. 41a). NEPS Working Paper.
- Pallaske, C. (2002). *Migrationen aus Polen in die Bundesrepublik Deutschland in den 1980er und 1990er Jahren: Migrationsverläufe und Eingliederungsprozesse in sozialgeschichtlicher Perspektive*. Internationale Hochschulschriften, 394. Münster, New York: Waxmann.
- Portes, A. (1995). Economic Sociology and the Sociology of Immigration: A Conceptual Overview. In A. Portes (ed.), *The Economic Sociology of Immigration: Essays on Networks, Ethnicity, and Entrepreneurship* (pp. 1-41). New York, NY: Russell Sage Foundation.
- Portes, A., & Hao, L. (2004). The schooling of children of immigrants: Contextual effects on the educational attainment of the second generation. *Proceedings of the National Academy of Sciences of the United States of America*, 101(33), 11920-11927.
- Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *The annals of the American academy of political and social science*, 530(1), 74-96.
- Portes, A. & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Los Angeles, CA: University of California Press.
- Portes, A., & Rumbaut, R. G. (2005). Introduction: The second generation and the children of immigrants longitudinal study. *Ethnic and Racial Studies*, 28(6), 983-999.
- Portes, A., & Rumbaut, R. G. (2006). *Immigrant America: a portrait*. Los Angeles, CA: University of California Press.

- Portes, A., Fernández-Kelly, P., & Haller, W. (2009). The adaptation of the immigrant second generation in America: A theoretical overview and recent evidence. *Journal of Ethnic and Migration Studies*, 35(7), 1077-1104.
- Programme for International Student Assessment. (2007) *PISA 2006: Science Competencies for Tomorrow's World. Volume I, Analysis*. OECD Publishing.
- Programme for International Student Assessment. (2010) *PISA 2009 Results: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science*. OECD Publishing.
- Relikowski, I. (2012). *Primäre und sekundäre Effekte am Übertritt in die Sekundarstufe I: Zur Rolle von sozialer Herkunft und Migrationshintergrund*. Springer-Verlag.
- Ruhose, J. and Schwerdt, G. (2015). *Does Early Educational Tracking Increase Migrant-Native Achievement Gaps? Differences-In-Differences Evidence Across Countries*. IZA Discussion Paper 8903.
- Rumbaut, R. G. (2004). Ages, life stages, and generational cohorts: Decomposing the immigrant first and second generations in the United States I. *International Migration Review*, 38(3), 1160-1205.
- Schulz, B. (2013). Social embedding and educational achievement of immigrants. *Mannheimer Zentrum für europäische Sozialforschung, Mannheim*. Available at: <http://www.mzes.uni-mannheim.de/publications/wp/wp-152.pdf>
- Schulz, B., & Leszczensky, L. (2015). Native friends and host country identification among adolescent immigrants in Germany: The role of ethnic boundaries. *International Migration Review*.
- Segeritz, M., Walter, O., & Stanat, P. (2010). Muster des schulischen Erfolgs von jugendlichen Migranten in Deutschland: Evidenz für segmentierte Assimilation?. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 62(1), 113-138.
- Skopek, J., Pink S. & Bela, D. (2013). Starting Cohort 4: 9th Grade (SC4). SUF Version 1.1.0. Data Manual. NEPS Research Data Paper. *In National Educational Panel Study (NEPS)*. Bamberg, University of Bamberg. https://www.neps-data.de/Portals/0/NEPS/Datenzentrum/Forschungsdaten/SC4/1-1-0/SC4_1-1-0_DataManual_en.pdf
- Solga, H., & Wagner, S. (2001). Paradoxie der Bildungsexpansion. *Zeitschrift für Erziehungswissenschaft*, 4(1), 107-127.
- Söhn, J., & Özcan, V. (2006). The educational attainment of Turkish migrants in Germany. *Turkish Studies*, 7(1), 101-124.
- Stanat, P., & Christensen, G. (2006). *Where immigrant students succeed: A comparative review of performance and engagement in PISA 2003*. OECD.
- StataCorp. (2013). *Stata 13 Base Reference Manual*. College Station, TX: Stata Press.

- Statistisches Bundesamt. (2006). *Statistisches Jahrbuch 2005 für die Bundesrepublik Deutschland*. Statistisches Bundesamt.
- Statistisches Bundesamt. (2011). *Statistisches Jahrbuch 2010 für die Bundesrepublik Deutschland*. Statistisches Bundesamt.
- Steinbach, A. (2013). Family structure and parent–child contact: A comparison of native and migrant families. *Journal of Marriage and Family*, 75(5), 1114-1129.
- Tarelli, I, Bos, W. & Bremerich-Vos, A. Germany. (2012). In PIRLS 2011 Encyclopedia: Education Policy and Curriculum in Reading. Volume 1: AK." *International Association for the Evaluation of Educational Achievement*.
- Telles, E. M., & Ortiz, V. (2008). *Generations of Exclusion: Mexican-Americans, Assimilation, and Race: Mexican-Americans, Assimilation, and Race*. Russell Sage Foundation.
- UNESCO (2004). *Education for all. The quality imperative. EFA global monitoring report 2005*. Paris: United Nations Educational, Scientific and Cultural Organization.
- United Nations Development Programme, UNDP (2014). *Human Development Report 2014 Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience*. Available at: <http://hdr.undp.org/sites/default/files/hdr14-report-en-1.pdf>
- Velling, J. (1994). The determinants of family reunification among German guest-workers. In *Proceedings of the 1993 international conference of German Socio-Economic Panel Study users*. Berlin: Duncker & Humblot (pp. 126-132).
- Verhaeghe, P. P., Li, Y., & Van de Putte, B. (2013). Socio-economic and ethnic inequalities in social capital from the family among labour market entrants. *European sociological review*, 29(4), 683-694.
- von Below, S. (2007). What are the chances of young Turks and Italians for equal education and employment in Germany? The role of objective and subjective indicators. *Social Indicators Research*, 82(2), 209-231.
- Wegmann, K. M. (2014). Shaping a new society: Immigration, integration, and schooling in Germany. *International Social Work*, 57(2), 131-142.
- Wenzig, K. (2012) Starting Cohort 4: 9th Grade (SC4) SUF Version 1.0.0 Data Manual [Supplement]: Codebook (en). In *National Educational Panel Study (NEPS)*. Bamberg: University of Bamberg. https://www.neps-data.de/Portals/0/NEPS/Datenzentrum/Forschungsdaten/SC4/1-0-0/SC4_1-0-0_Codebook_en.pdf.
- White, I. R., Royston, P., & Wood, A. M. (2011). Multiple imputation using chained equations: issues and guidance for practice. *Statistics in medicine*, 30(4), 377-399.
- Worbs, S., Bund, E., Kohls, M., & Babka von Gostomski, C. (2013). *(Spät-) Aussiedler in Deutschland. Eine Analyse aktueller Daten und Forschungsergebnisse*. Universität Tübingen.

Xie, Y., & Greenman, E. (2011). The social context of assimilation: Testing implications of segmented assimilation theory. *Social science research*, 40(3), 965-984.

Zielonka, M., Relikowski, I., Kleine, L., Luplow, N., Yilmaz, E., & Blossfeld, H. P. (2013). Migrations-und geschlechtsspezifische Disparitäten in der Primar-und Sekundarstufe. Befunde aus der Längsschnittstudie BiKS-8-14.

Zinn, S. (2013). An Imputation Model for Multilevel Binary Data. *National Educational Panel Study (NEPS) Working Papers*.

Zinn, S. (2014). Assessing Design Effects & Application of Sampling Weights. 2nd Colloquium, *Education as a Lifelong Process*, Florence, Italy. April 10, 2014.

Endnotes:

ⁱ This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort 4–9th Grade, doi:10.5157/NEPS:SC4:1.1.0. From 2008 to 2013, NEPS data were collected as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, the NEPS survey is carried out by the Leibniz Institute for Educational Trajectories (LifBi) at the University of Bamberg in cooperation with a nationwide network.

ⁱⁱ Early studies on the educational achievement of immigrant students found Turkish and Italian students to be the lowest performing groups (Alba et al., 1994; Büchel and Wagner, 1996). In addition, Turkish and Yugoslavian students were found to be the least likely to attend an academic secondary-school track (Kristen, 2002; Kristen and Granato, 2007; Kristen et al., 2008). Studies also found that once parental socioeconomic status is controlled for, students with Greek and Polish origins outperform their German peers in high school grades (Alba et al., 1994; Kristen and Granato, 2007; Müller and Stanat, 2006, Segeritz et al., 2010; Walter and Stanat, 2008). Finally, consistent with the findings on the increasing female advantage in education in recent decades (Buchman, DiPrete and McDaniel, 2008; Fleischman and Kristen et al., 2014), girls from immigrant families are more successful than their male peers in terms of educational success and secondary-track placement (Autorengruppe Bildungsberichterstattung, 2010, 72; Becker and Müller, 2011; Blossfeld, 1993; Hadjar and Berger, 2011; Kristen and Granato, 2004).

ⁱⁱⁱ In Germany, the official term for immigrants is “persons with migration background” (*Personen mit Migrationshintergrund*).

^{iv} The German Census defines “persons with migration background” in the following way: “All those who migrated to the present territory of the Federal Republic of Germany after 1949, as well as all foreigners born in Germany; and all those who were born in Germany as Germans with at least one parent, who migrated after 1949, or all those who was born as foreigners with at least one non-German-born parent” (*Statistisches Bundesamt*, 2006, 5).

^v Integration scholars treat migrants from Turkey as a single group, yet Turks and Kurds are the two main ethnic groups that compose the immigrant population with Turkish background in Germany, as well as in the rest of the Europe. Başer (2013) provides a detailed account of relations between the younger generations of Turkish and Kurdish groups in Germany and Sweden.

^{vi} Later, the German government started issuing a series of restrictions to naturalizations of return migrants. These include both limiting the number of return migrants using an annual quota, and imposing a stricter definition of who belongs to the *Spaetaussiedler* group (Kalter and Granato, 2007; Wegman, 2014).

^{vii} Recent migrants also include about 200,000 Jewish immigrants from the former Soviet Union, who were given refugee status and who also enjoyed very extensive support for integration, similar to that provided to return migrants with German ethnicity (Kogan, 2011, 3). However, I am unable to identify the Jewish population among the return migrant population.

^{viii} In the United States, Chiswick and Miller show that relative to native-born students, the

payoff from each additional year of education is significantly smaller for foreign-born individuals educated in the American system (Chiswick and Miller, 2008, 1323).

^{ix} Given that generation status is determined according to the country of birth, it is almost impossible to differentiate students with native German parents and students with immigrant parents who were born in Germany. I overcome this limitation by making the following assumption: if a student has one parent born in Germany and one parent born abroad, and if the German-born parent was born to parents both born in Germany (the 2.75-generation), then I assume that the German-born parent is a native German, as opposed to a second generation immigrant born in Germany (see Figure A1.3; Table A1.1). However, I could not find any evidence that 2.75-generation immigrant students have higher test scores than other second and 2.5-generation students (results not shown).

^x In Spain, Portugal and Greece, the dictatorships were overthrown in 1970s, and soon after these countries joined the European Economic Community. The regime in Italy was democratized with the end of the Second World War, and Italy was a founding member of the European Economic Community, enshrined by the 1957 Treaty of Rome.

^{xi} In 2006, when I was an undergraduate senior, for a class project I interviewed the Polish Consul General to Istanbul about the Polish accession to the European Union. He saw Poland and Polish society “at the very center of the Europe,” and the socialist period as “a brief interruption of long-term membership of Poland to the European community.” This is an anecdotal but an official remark regarding the position of Polish society within the European community, if not Germany.

^{xii} I exclude students attending special needs schools, because they answer a reduced questionnaire and did not participate in the NEPS competency assessment test, which is standard for all other school types.

^{xiii} In addition to Blossfeld et al. (2011), the NEPS data center provides users with rich information regarding sampling procedures, instruments for competence score assessments, and design weights (See Skopek, Pink and Bela, 2013).

^{xiv} I group immigrants from four Mediterranean countries (Greek, Italian, Spanish and Portuguese) into a single category because the case numbers from these four countries in the sample are small. In addition, these four countries are currently members of the European Union, and they are Mediterranean countries with similar political histories and cultural characteristics.

^{xv} The two questions (one open-ended and one binary) in the parent questionnaire about household income has a 65% missing-response rate among the five immigrant categories under consideration.

^{xvi} Estimations based on highest paternal educational attainment yielded similar results; however, I use mother’s attainment because of the lower number of missing values.

^{xvii} Jackson (2013) and Relikowski (2012) use a three-class categorization of the EGP scheme; Kristen and Dollman (2010) use a four-class categorization. Exploratory analyses suggest that the aggregation to three or four class discards too much information. Moreover, previous research focused largely on “ethnic economies” in the form of self-employment (see Portes,

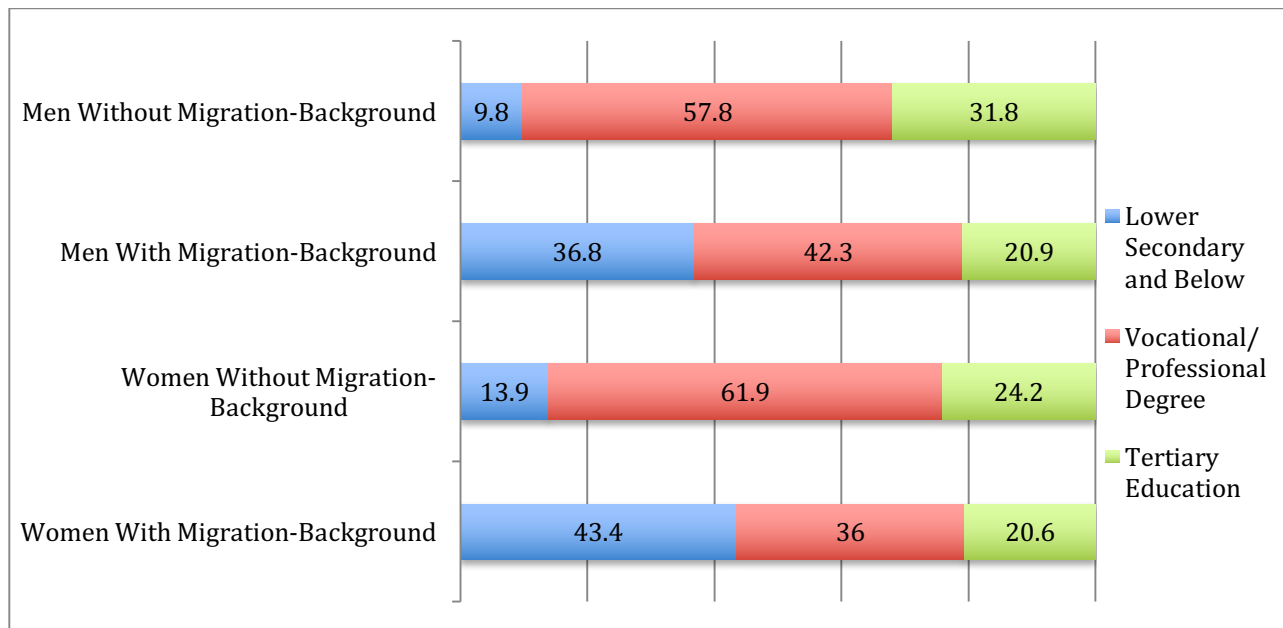
1995). However, according to NEPS data, self-employed parents compose only one-percent of both German and immigrant student samples. Thus, I merge them with routine non-manual employees, which includes commerce, sales, and service-sector employees.

^{xviii} Schulz and Leszczensky (2015: 12) use a similar variable based on students' answers to questions regarding their feelings about belonging to Germany; their measures are also internally consistent, with high Cronbach's Alpha scores across and within immigrant groups.

^{xix} In the NEPS student questionnaire the variable is constructed this way: 1: None or only very few (0-10 books); 2: Enough to fill one-shelf (11-25 books); 3: Enough to fill several shelves (26-100 books); 4: Enough to fill a small set of shelves: (101-250 books); 5: Enough to fill a large set of shelves (251-500 books); 6: Enough to fill shelf units (more than 500 books) (Wenzig, 2012, 629). The measurement according to shelves, rather than the number of the books minimizes the risk of measurement error.

^{xx} F-tests show that the linearity assumption is violated for immigrant students when I use the number of books at home as a continuous variable. Only for German students, the relationship between number of the books available at home and the test scores holds the linearity assumption. Therefore, I operationalize this variable as an ordinal categorical variable.

Figure 1.1. Degree attainment of German Population by Migration Background



Source: *DGB Bildungswerk* based on 2010 German Census.

Figure 1.2. Path Model for Mechanisms for Educational Integration (Mechanisms and Variables)

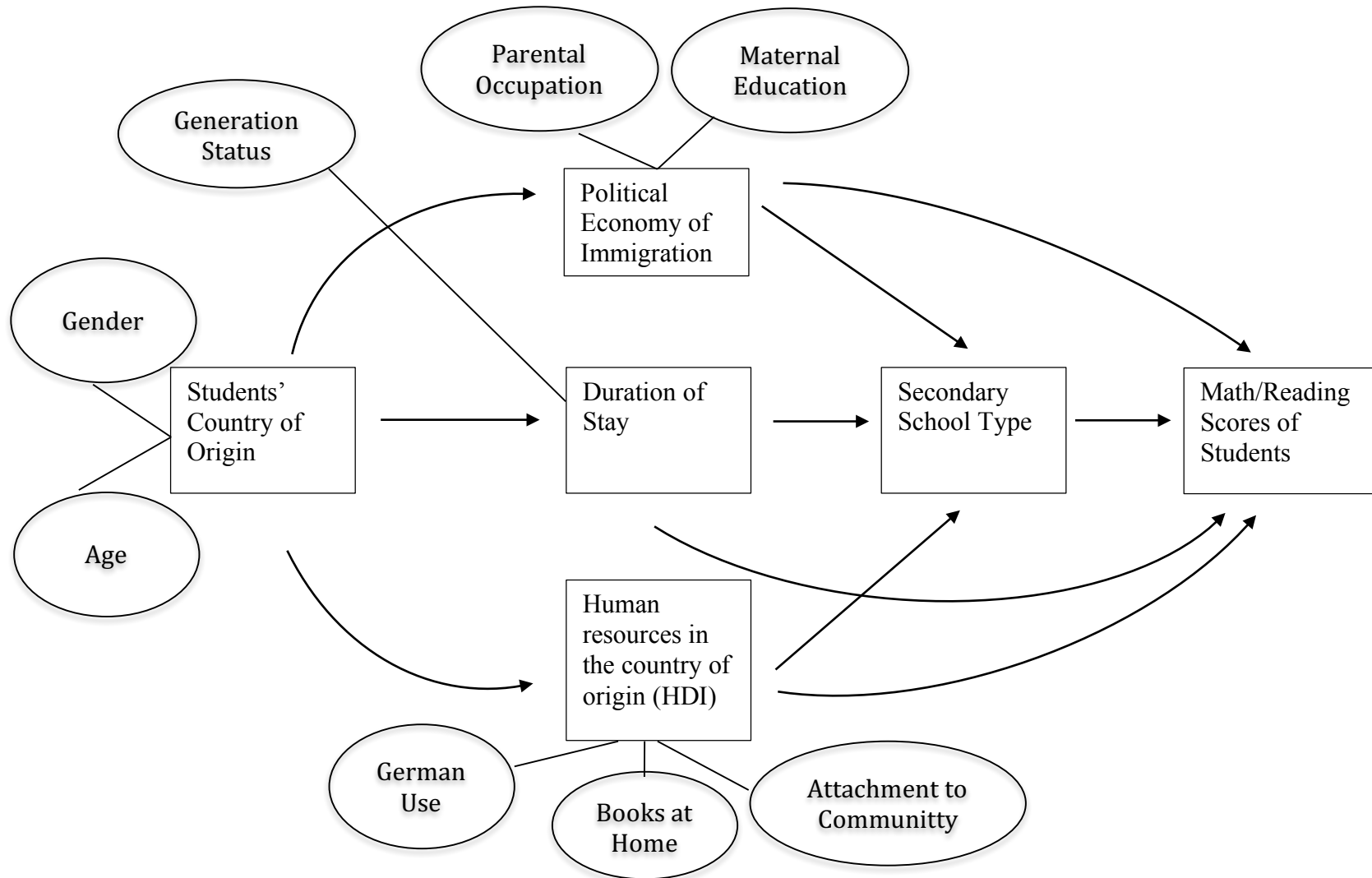
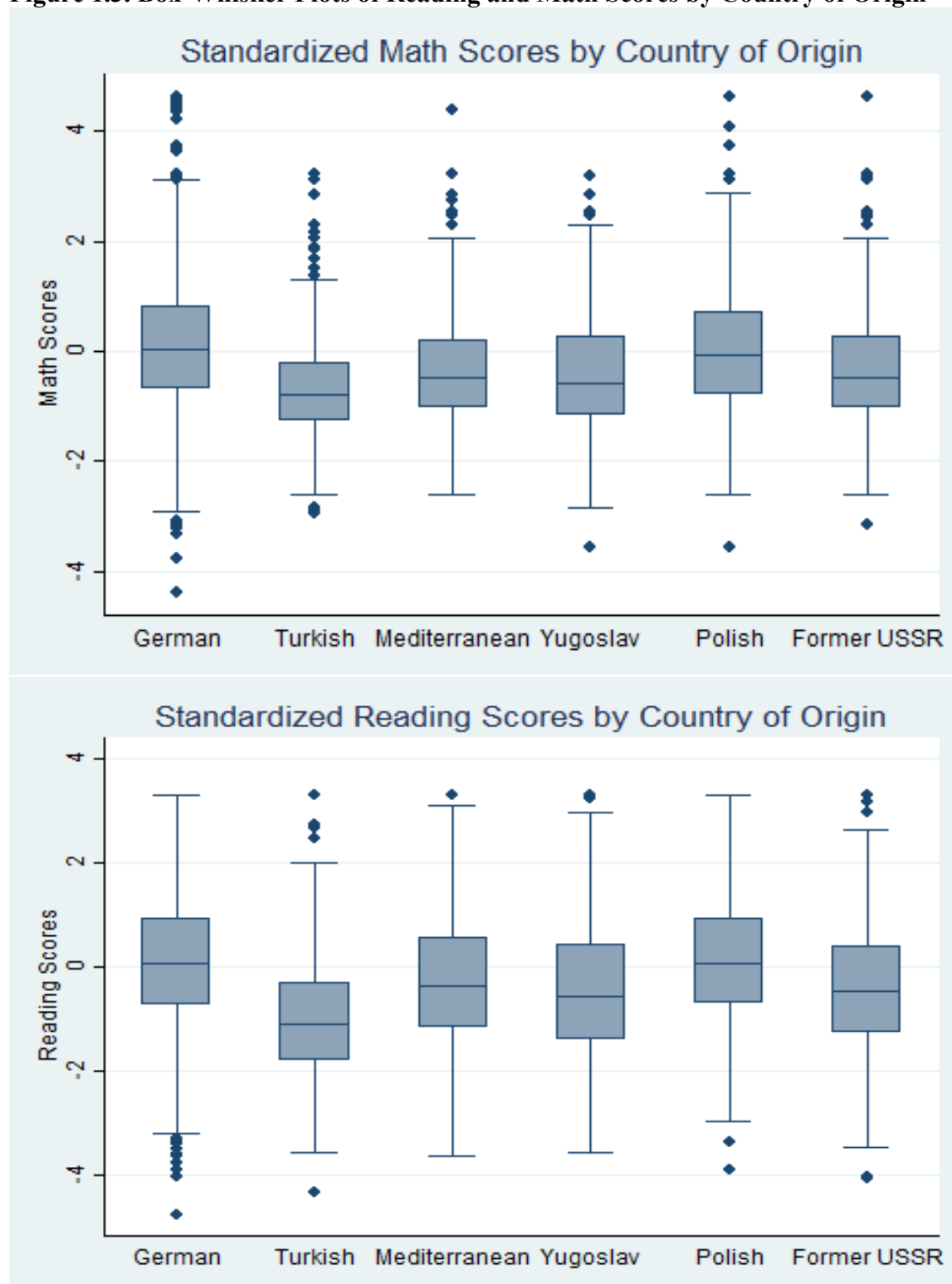
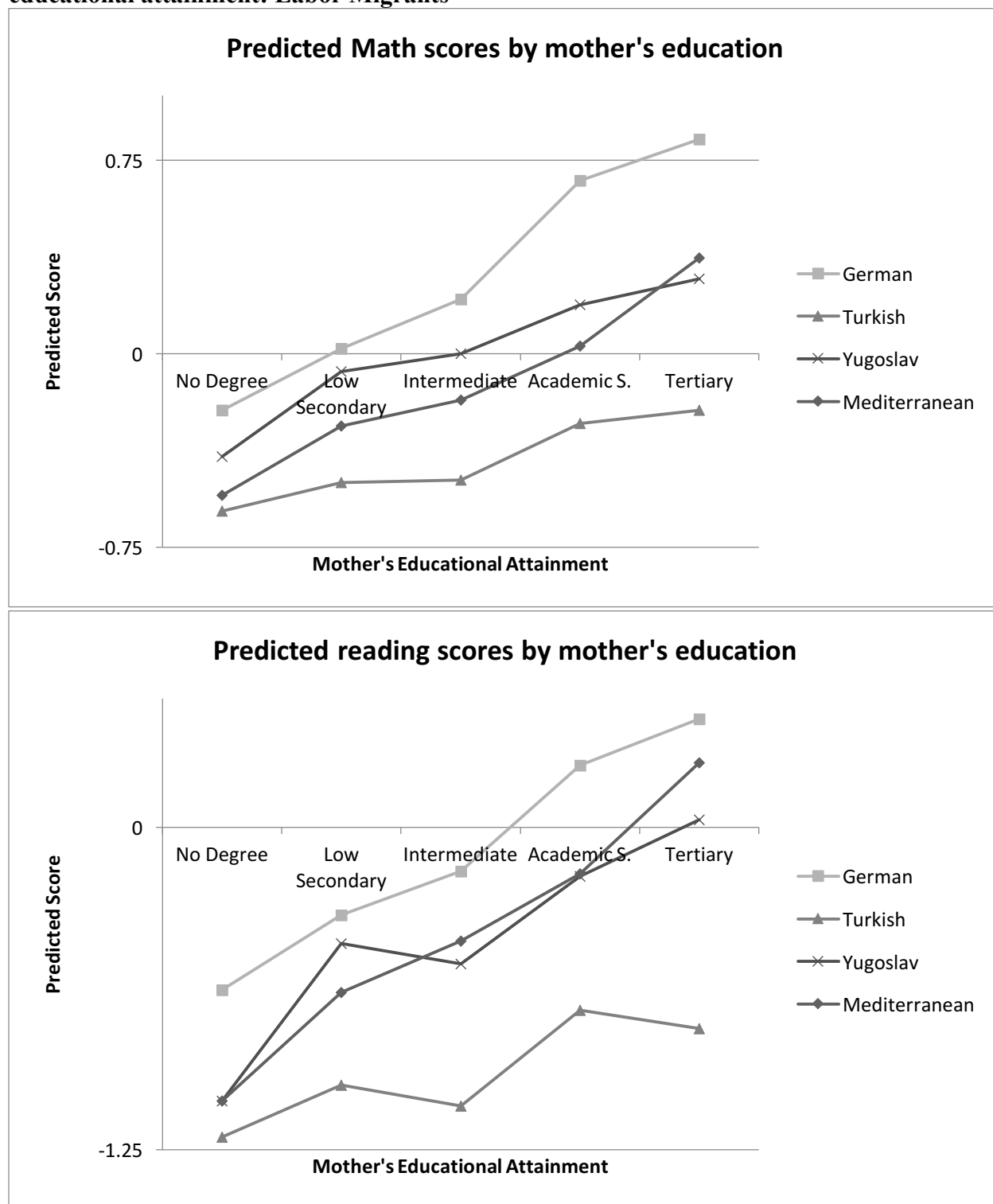


Figure 1.3. Box-Whisker Plots of Reading and Math Scores by Country of Origin



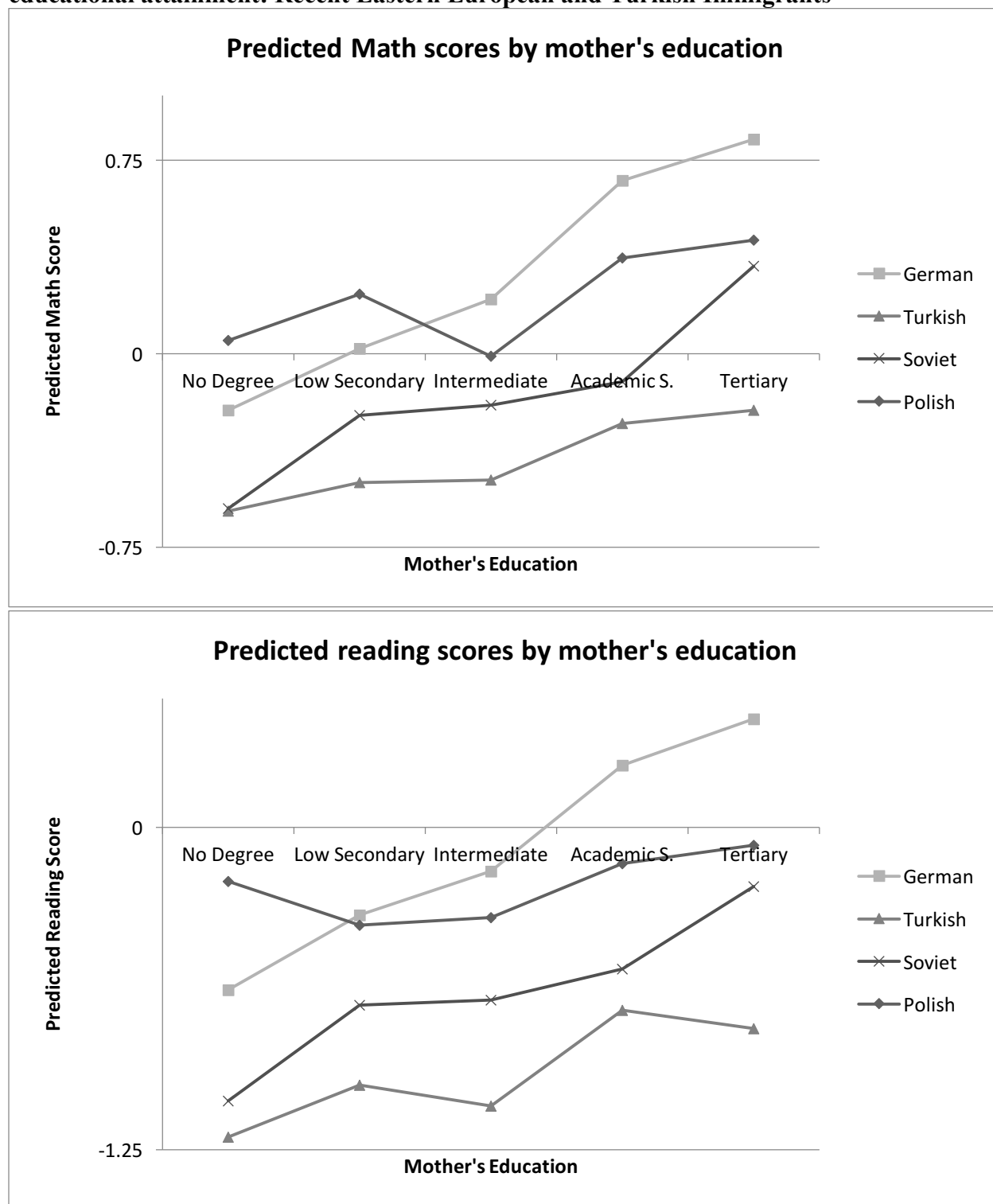
Source: National Educational Panel Study; Waves 1 & 2.

Figure 1.4. Predicted probabilities of math and reading scores by mother's highest educational attainment: Labor Migrants



Note: Models control for the gender, age and mother's educational attainment of students.

Figure 1.5. Predicted probabilities of math and reading scores by mother's highest educational attainment: Recent Eastern European and Turkish Immigrants



Note: Models control for the gender, age and mother's educational attainment of students.

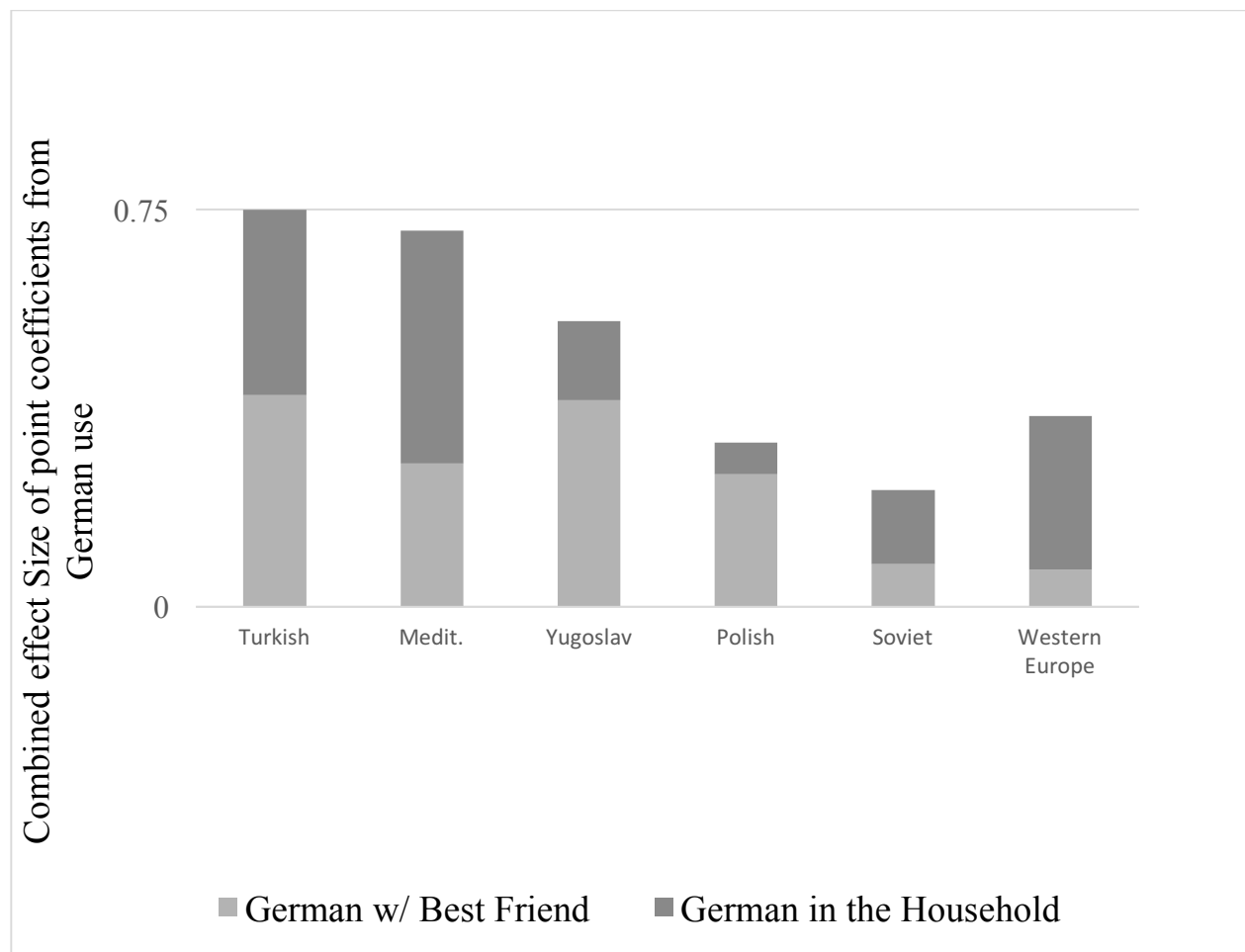
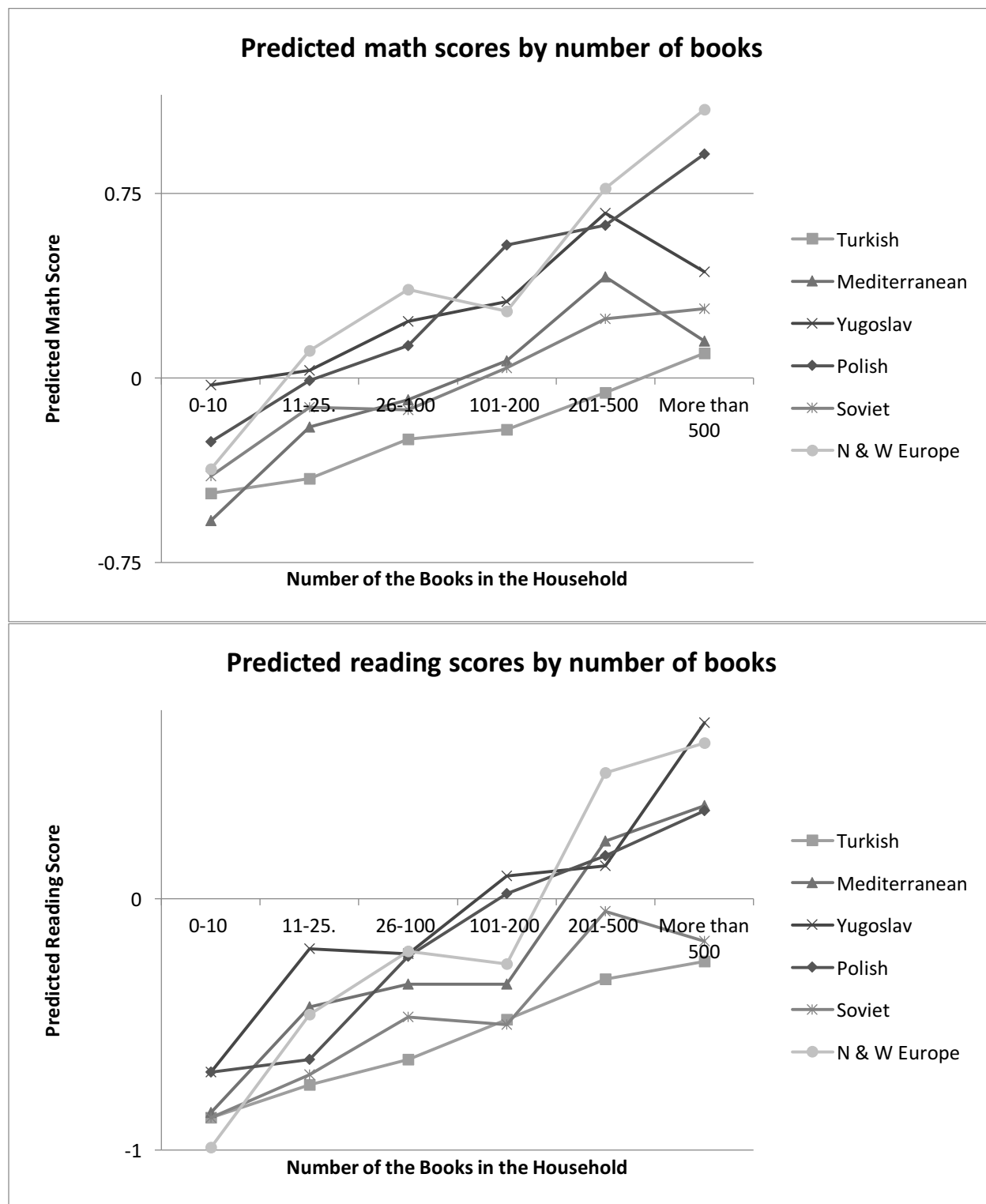
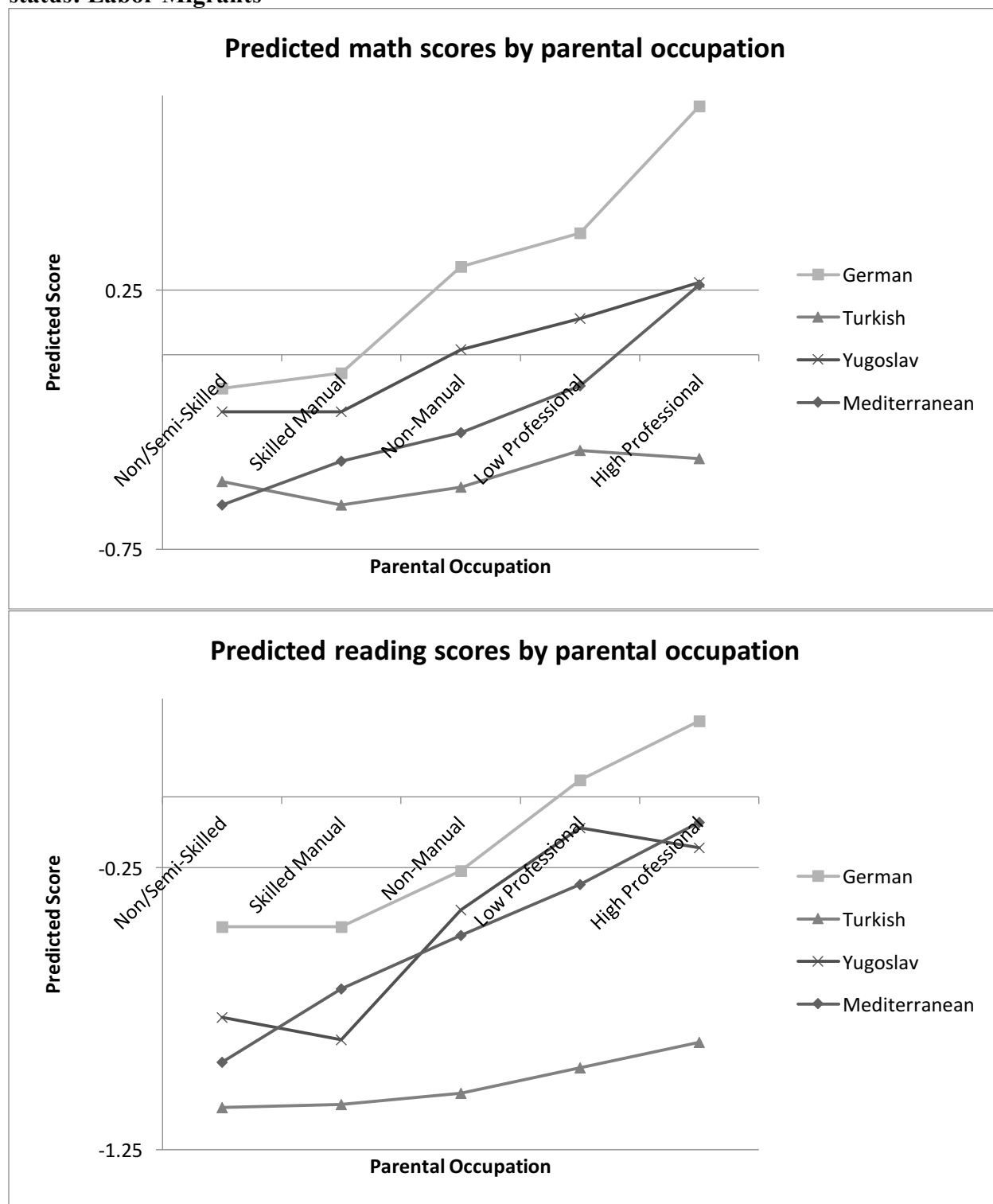
Figure 1.6. Effect sizes from German use by Immigrant Group based on Table 10

Figure 1.7. Predicted probabilities of math and reading scores by number of books



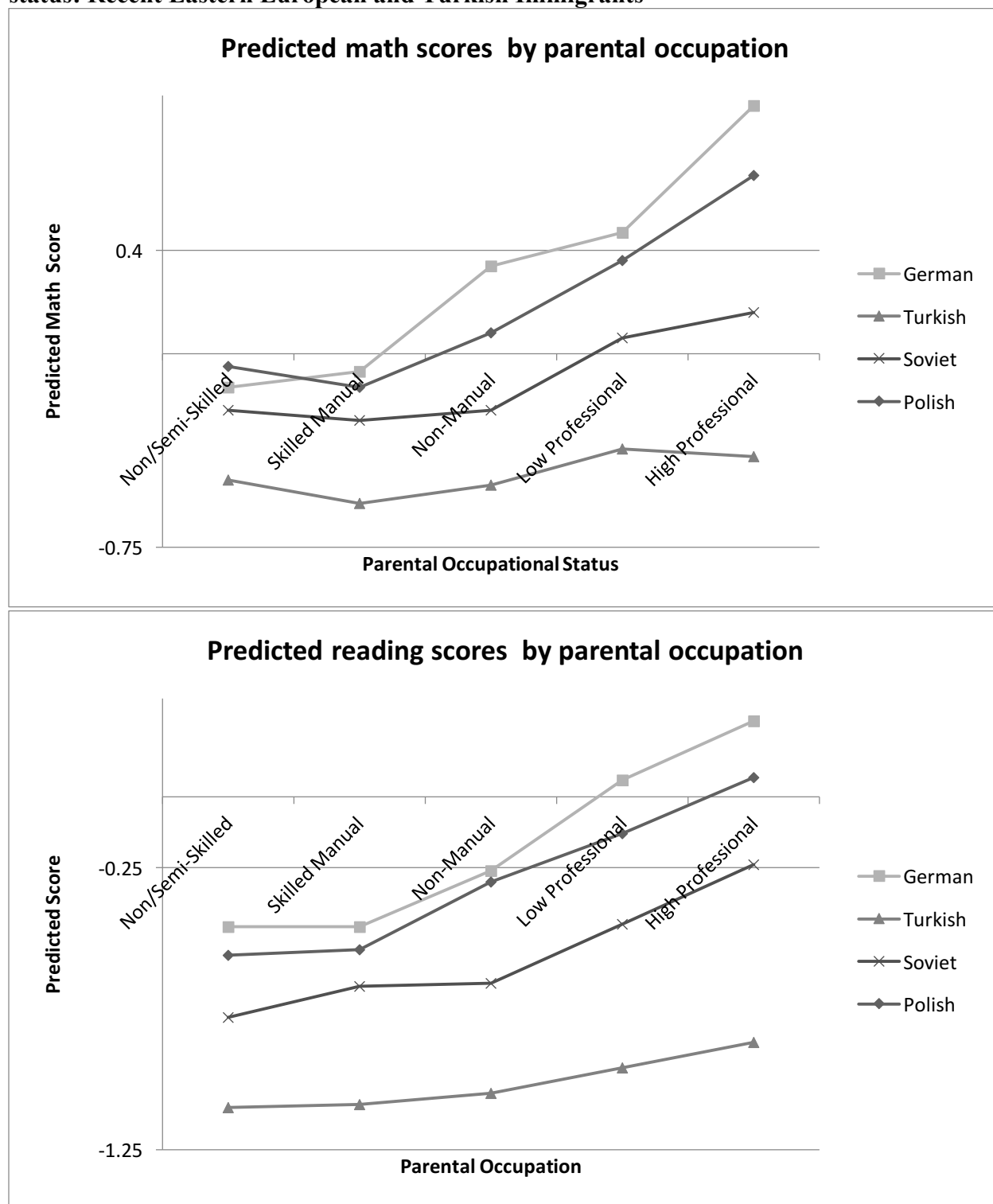
Note: The probabilities report male students' scores who state they speak German with their best friends and grew up learning German in their households. Models also control for students' age, gender and attachment to co-immigrant community.

Figure A1.1. Predicted probabilities of math and reading scores by parental occupation status: Labor Migrants



Note: Models control for the gender, age and parental occupation status of students.

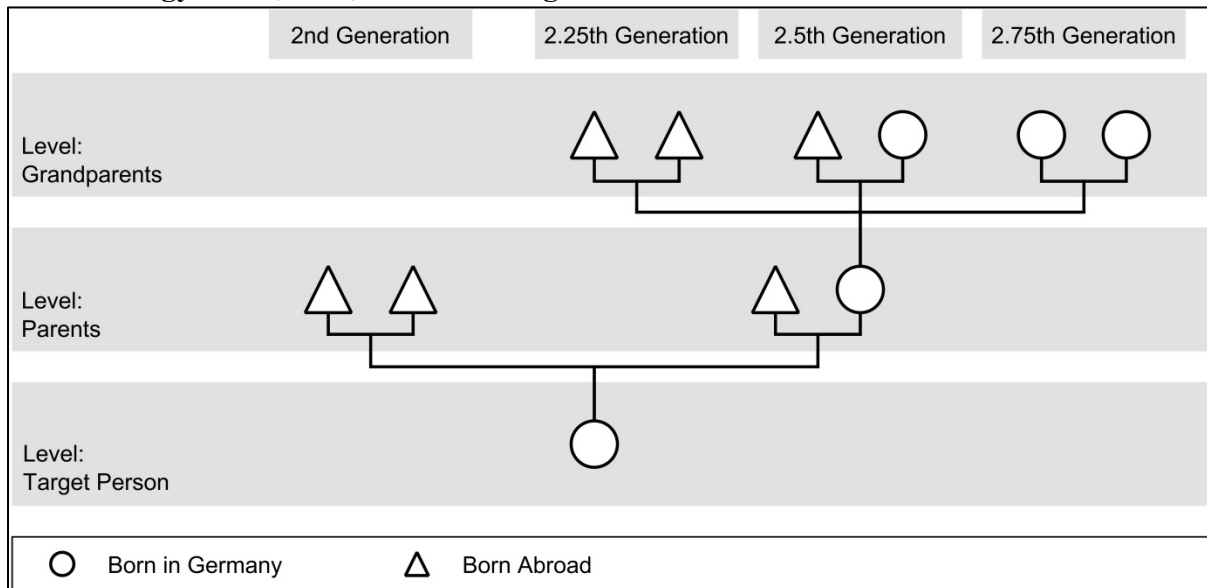
Figure A1.2. Predicted probabilities of math and reading scores by parental occupation status: Recent Eastern European and Turkish Immigrants



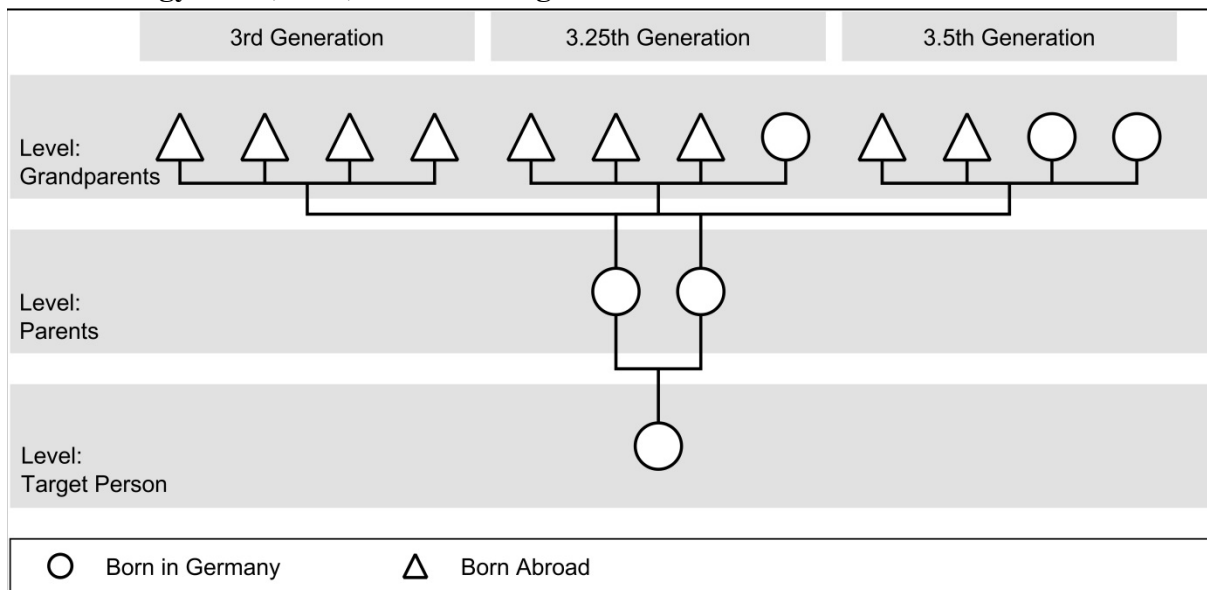
Note: Models control for the gender, age and parental occupation status of students.

Figure A1.3. Genealogy of Generation Status

A: Genealogy of 2nd; 3.25; 3.5 and 3.75-generation status.



B: Genealogy of 3rd; 3.25; 3.5 and 3.75 generation status.



Source: Olczyk, Will & Kristen, 2014, Figure 2, P. 6; Figure 3, P. 7.

Table 1.1. Generation Status by Immigrant Community

Generation Status							
	German	Turkish	Mediterranean	Yugoslav	Polish	Former USSR	TOTAL
1 st Generation	N/A	53 (6%)	21 (4%)	28 (7%)	38 (11%)	141 (22%)	281 (2.3%)
2 nd Generation	N/A	563 (67%)	112 (24%)	181 (5%)	182 (52)	438 (67%)	1,476 (12.1%)
2.5-Generation	N/A	196 (23%)	175 (37%)	95 (25%)	121 (34%)	69 (11%)	656 (5.4%)
3 rd Generation	N/A	35 (4%)	162 (35%)	81 (21%)	12 (4%)	1 (0.2%)	291 (12.4%)
Total	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)

Note: The first generation students are born abroad and migrated to Germany after the age of 5; those who were born abroad but migrated before the age of 6 are considered as second generation because they spend their entire educational careers in Germany. The second generation are those born in Germany to foreign born parents. The 2.5-generation are those who have one parent born abroad and parent born in Germany. The third generation are those who are born to parents born in Germany, who are themselves with parents born abroad.

Table 1.2. Socioeconomic Status Variables by Country of Origin

	German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union	TOTAL
Mother's Educational Attainment							
No Qualification	154 (2%)	213 (25%)	30 (6%)	36 (10%)	13 (4%)	13 (2%)	459 (4%)
Elementary	1,756 (19%)	261 (31%)	118 (25%)	93 (25%)	50 (14%)	68 (11%)	2,346 (19%)
Intermediate High-School	4,529 (48%)	252 (30%)	196 (42%)	134 (35%)	124 (35%)	282 (44%)	5,517 (46%)
Academic High-School	1,812 (19%)	53 (6%)	72 (15%)	59 (16%)	94 (27%)	119 (19%)	2,209 (18%)
Tertiary Education	1,074 (11%)	30 (4%)	41 (9%)	42 (11%)	53 (15%)	121 (19%)	1,361 (11%)
Other Education	100 (1%)	35 (4%)	13 (3%)	16 (4%)	17 (5%)	42 (7%)	223 (2%)
Parental Occupational Status							
Upper Professionals	2,487 (26%)	99 (12%)	110 (23%)	69 (18%)	54 (15%)	86 (13%)	2,905 (24%)
Lower Professionals	2,786 (30%)	154 (18%)	126 (27%)	65 (17%)	89 (25%)	127 (20%)	3,347 (28%)
Routine Non-Manual	2,961 (31%)	285 (34%)	147 (31%)	114 (30%)	145 (41%)	218 (34%)	3,870 (32%)
Skilled Manual W.	760 (8%)	184 (22%)	55 (12%)	70 (19%)	42 (12%)	123 (19%)	1,234 (10%)
Semi-Skilled & Unskilled Workers	439 (5%)	119 (14%)	32 (7%)	61 (16%)	23 (7%)	93 (14%)	767 (6%)
TOTAL	9,425 (100%)	844 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)

Table 1.3. Social Integration and Control Variables by Country of Origin

	German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union	TOTAL
Number of Books Available at Home							
None/ Very few (0-10)	566 (6%)	144 (17%)	58 (12%)	72 (19%)	36 (10%)	75 (12%)	951 (8%)
Fill one shelf (11-25)	899 (10%)	213 (25%)	77 (16%)	81 (21%)	65 (18%)	121 (19%)	1,456 (12%)
Fill several shelves (26-100)	2,041 (22%)	260 (31%)	111 (24%)	90 (23%)	95 (27%)	223 (34%)	2,820 (24%)
Fill small set of shelves (101-200)	2,078 (23%)	133 (16%)	84 (18%)	66 (17%)	77 (22%)	123 (19%)	2,561 (22%)
Fill large set of shelves (201-500)	2,118 (23%)	66 (8%)	85 (18%)	47 (12%)	56 (16%)	67 (10%)	2,439 (20%)
Fill shelf units (More than 500)	1,536 (17%)	30 (4%)	55 (12%)	28 (7%)	24 (7%)	40 (6%)	1,713 (14%)
TOTAL	9,425 (100%)	844 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)
German w/ Best Friend	N/A	388 (46%)	340 (72%)	277 (72%)	268 (76%)	362 (56%)	1,635 (61%)
German in Household	N/A	401 (47%)	375 (80%)	184 (48%)	265 (75%)	327 (50%)	1,552 (57%)
Attachment to Community	N/A	.37 (.80)	.29 (.75)	.30 (.95)	-.04 (.99)	-.06 (.88)	.18 (.88)
Gender							
Female	4,600 (49%)	413 (49%)	242 (52%)	191 (50%)	198 (57%)	343 (53%)	5,987 (49%)
Male	4,851 (51%)	434 (51%)	228 (48%)	194 (50%)	155 (43%)	306 (47%)	6,168 (51%)
Mean Age							
In Months	185.6	188.7	187.7	188.3	187.1	190.1	186.2
In Years	15.5	15.7	15.6	15.7	15.6	15.8	15.5

Table 1.4. Basic Models: Math & Reading Competence Scores by Country of Origin

	Math		Reading	
	Model 1	Model 2	Model 1	Model 2
Turkish	-.87*** (.04)	-.83*** (.06)	-1.08*** (.05)	-.99*** (.07)
Mediterranean	-.50*** (.06)	-.49*** (.08)	-.38*** (.06)	-.35*** (.08)
Yugoslav	-.53*** (.06)	-.33*** (.09)	-.57*** (.07)	-.39*** (.09)
Polish	-.31*** (.07)	-.14 (.09)	-.30*** (.07)	-.20† (.10)
Soviet Union (Return Germans)	-.55*** (.05)	-.46*** (.07)	-.60*** (.05)	-.53*** (.08)
Female		-.45*** (.02)		.27*** (.03)
Age		-.34*** (.01)		-.31*** (.01)
Intercept (native German)	.16*** (.01)	.34*** (.02)	.11*** (.01)	-.05** (.02)

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The reference category in the models are native German students. The immigrant group variables report the standard deviation differences from the native Germans. Gender and age controls by immigrant group interaction coefficients are not reported.

Table 1.5.A. Math & Reading Competence Scores: Mother's Educational Attainment

	Math						Reading					
	German	Turkish	Medit.	Yugoslav	Polish	Soviet	German	Turkish	Medit.	Yugoslav	Polish	Soviet
	N=9131	N=830	N=449	N=376	N=344	N=629	N=8807	N=751	N=419	N=359	N=317	N=586
Immigrant Group Interaction	-.22† (.12)	-.39** (.15)	-.33 (.25)	-.18 (.24)	.27 (.46)	-.38 (.41)	-.63*** (.12)	-.57** (.17)	-.43 (.28)	-.43 (.27)	.42 (.40)	-.43 (.40)
Female	-.43*** (.02)	.10 (.08)	.14 (.11)	-.19 (.12)	-.16 (.13)	.08 (.09)	.28*** (.03)	.00 (.09)	.09 (.12)	-.16 (.13)	-.14 (.14)	.05 (.10)
Mother's Educational Attainment (Reference: No Education)												
Elementary	.24* (.12)	-.13 (.17)	.03 (.26)	.09 (.26)	-.06 (.50)	.12 (.44)	.29* (.13)	-.10 (.19)	.13 (.31)	.32 (.30)	-.46 (.53)	.08 (.46)
Intermediate High-school	.43*** (.12)	-.31* (.16)	-.06 (.26)	-.03 (.24)	-.49 (.47)	-.03 (.41)	.46*** (.12)	-.35† (.18)	.16 (.30)	.07 (.29)	-.60 (.51)	-.07 (.41)
Academic High-school	.89*** (.12)	-.55** (.21)	-.31 (.30)	-.30 (.28)	-.57 (.47)	-.40 (.42)	.87*** (.13)	-.39 (.25)	.01 (.32)	.00 (.31)	-.80 (.51)	-.36 (.43)
Tertiary Education	1.05*** (.13)	-.66** (.25)	-.13 (.30)	-.36 (.30)	-.66 (.47)	-.11 (.43)	1.05*** (.13)	-.64* (.29)	.26 (.35)	.04 (.33)	-.91† (.52)	-.22 (.42)
Other Education	.74*** (.18)	-.55* (.27)	-.60 (.44)	-.21 (.39)	-.54 (.55)	-.42 (.48)	.73*** (.18)	-.43 (.30)	-.23 (.49)	-.14 (.42)	-.75 (.57)	-.35 (.47)
Age in Months	-.29*** (.01)	.10** (.04)	.08 (.05)	.05 (.05)	.00 (.07)	.08 (.04)	-.26*** (.01)	.03 (.04)	-.02 (.06)	.05 (.06)	.00 (.07)	.10* (.04)

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The first columns in math and reading panels report the main effect coefficients for the reference category of native German students. The immigrant group variables report the standard deviation differences from the native Germans.

Table 1.5.B. Math & Reading Competence Scores: Parental Occupational Status

	Math						Reading					
	German	Turkish	Medit.	Yugoslav	Polish	Soviet	German	Turkish	Medit.	Yugoslav	Polish	Soviet
	N=9131	N=830	N=449	N=376	N=344	N=629	N=8807	N=751	N=419	N=359	N=317	N=586
Immigrant Group Interaction	-.13* (.06)	-.36** (.13)	-.45† (.24)	-.09 (.20)	.08 (.27)	-.09 (.14)	-.46*** (.07)	-.64*** (.15)	-.48† (.14)	-.32 (.17)	-.10 (.10)	-.32† (.15)
Female	-.43*** (.02)	.09 (.08)	.11 (.11)	-.20† (.12)	-.16 (.13)	.10 (.09)	.28*** (.03)	0.0 (.09)	.06 (.12)	-.18 (.13)	-.07 (.09)	.11 (.09)
Parental Occupational Status (Reference: Semi-Skilled & Unskilled Workers)												
Skilled Manual W.	.06 (.08)	-.15 (.16)	.11 (.30)	-.06 (.24)	-.14 (.33)	-.10 (.18)	.00 (.09)	.01 (.18)	.26 (.34)	-.08 (.28)	.02 (.37)	.11 (.25)
Routine Non-Manual W.	.21** (.06)	-.23 (.15)	.07 (.26)	.03 (.23)	-.08 (.29)	-.21 (.16)	.20** (.07)	-.15 (.18)	.25 (.28)	.18 (.26)	.06 (.34)	-.08 (.20)
Low Professionals	.60*** (.06)	-.48** (.17)	-.14 (.26)	-.24 (.24)	-.19 (.29)	-.32† (.18)	.52*** (.07)	-.38* (.19)	.11 (.28)	.15 (.27)	-.09 (.34)	-.19 (.21)
High Professionals	.83*** (.06)	-.74*** (.17)	.02 (.27)	-.33 (.24)	-.09 (.32)	-.45* (.19)	.73*** (.08)	-.50* (.21)	.12 (.29)	-.13 (.27)	-.10 (.36)	-.19 (.24)
Age in Months	-.29*** (.01)	.10** (.04)	.09† (.05)	.08 (.05)	.02 (.07)	.09* (.04)	-.27*** (.01)	.04 (.04)	-.01 (.06)	.10† (.06)	.03 (.07)	.11† (.04)

Note: *p<0.05 **p<0.01 ***p<0.001; †p<0.10. Robust standard errors are in parentheses. The figures under the first column in both math and reading panels are the main effect estimates for Germans. Other values are the interaction effects for the immigrant groups.

Table 1.6. Math & Reading Competence Scores: Mother's Educational Attainment & Parental Occupational Status

	Math						Reading					
	German N=9131	Turkish N=830	Medit. N=449	Yugoslav N=376	Polish N=344	Soviet N=629	German N=8807	Turkish N=751	Medit. N=419	Yugoslav N=359	Polish N=317	Soviet N=586
Immigrant Group Interaction	-.57*** (.10)	-.25* (.12)	-.26 (.26)	-.05 (.20)	.17 (.44)	-.07 (.29)	-.79*** (.14)	-.47** (.18)	-.39 (.35)	-.35 (.29)	.15 (.52)	-.21 (.33)
Female	-.50*** (.02)	.14* (.06)	.13 (.08)	-.01 (.09)	-.15 (.11)	.03 (.07)	.22*** (.02)	.02 (.08)	.05 (.11)	.03 (.11)	-.16 (.12)	-.04 (.09)
School Type (Reference: <i>Hauptschule</i>)												
<i>Realschule</i>	.59*** (.03)	-.11 (.08)	-.09 (.11)	.06 (.12)	-.08 (.14)	-.16† (.09)	.67*** (.04)	.16 (.11)	.14 (.17)	.17 (.15)	.02 (.17)	.10 (.11)
<i>Gymnasium</i>	1.54*** (.03)	-.28** (.10)	-.20 (.13)	.02 (.14)	-.15 (.17)	-.02 (.12)	1.40*** (.04)	.03 (.13)	.11 (.16)	.46** (.15)	.22 (.18)	.22† (.13)
Other School Type	.23*** (.03)	-.07 (.08)	-.17 (.13)	.10 (.14)	.00 (.13)	-.07 (.10)	.53*** (.04)	-.14 (.12)	-.10 (.20)	-.06 (.20)	.06 (.18)	-.14 (.14)
Mother's Educational Attainment (Reference: No Education)												
Elementary School	.08 (.09)	.02 (.12)	.04 (.20)	-.14 (.19)	.12 (.44)	.20 (.30)	.15 (.11)	-.02 (.17)	.11 (.30)	-.05 (.27)	-.30 (.48)	.12 (.34)
Intermediate High- School	.07 (.09)	-.03 (.12)	.06 (.20)	-.13 (.18)	-.14 (.42)	.19 (.28)	.11 (.11)	-.15 (.16)	.28 (.30)	-.19 (.281)	-.25 (.46)	.04 (.31)
Academic High- School	.20* (.10)	-.17 (.16)	-.11 (.23)	-.14 (.23)	-.17 (.42)	.03 (.28)	.24* (.11)	-.19 (.25)	.13 (.32)	-.07 (.30)	-.47 (.46)	-.16 (.33)
Tertiary Education	.31** (.10)	-.11 (.22)	-.12 (.26)	-.25 (.23)	-.11 (.42)	.13 (.31)	.38** (.12)	-.19 (.26)	.28 (.36)	-.15 (.32)	-.41 (.46)	-.23 (.33)
Other Education	.26† (.15)	-.03 (.21)	-.37 (.31)	.00 (.28)	.01 (.47)	-.25 (.34)	.29 (.18)	.02 (.25)	-.05 (.43)	-.01 (.38)	-.25 (.51)	-.32 (.37)

Parental Occupational Status (Reference: Semi-Skilled & Unskilled Workers)												
Skilled Manual W.	.00 (.06)	-.14 (.11)	.07 (.25)	-.07 (.19)	-.05 (.25)	-.10 (.14)	-.06 (.08)	-.01 (.17)	.16 (.33)	-.06 (.26)	.06 (.31)	.10 (.21)
Routine Non-Manuel	.01 (.05)	-.11 (.10)	.09 (.22)	-.07 (.18)	-.08 (.21)	-.17 (.13)	.02 (.07)	-.09 (.17)	.05 (.29)	.02 (.23)	.02 (.29)	-.03 (.19)
Low Professionals	.12* (.05)	-.17 (.13)	-.03 (.23)	-.11 (.19)	-.05 (.22)	-.20† (.15)	.11 (.07)	-.14 (.17)	-.06 (.31)	.14 (.27)	-.04 (.30)	-.09 (.22)
High Professionals	.15** (.05)	-.23† (.13)	.18 (.24)	-.09 (.20)	.08 (.26)	-.31† (.16)	.13† (.07)	-.11 (.20)	-.03 (.31)	-.06 (.25)	-.02 (.32)	-.04 (.24)
Age in Months	-.13*** (.01)	.03 (.03)	.06 (.04)	.03 (.04)	-.04 (.06)	.01 (.03)	-.12*** (.01)	-.01 (.04)	.01 (.06)	.09* (.05)	-.02 (.06)	.04 (.04)
F-Test Score	35.14 (0.0000)						26.79 (0.0000)					

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The first columns in math and reading panels report the main effect coefficients for the reference category of native German students. The immigrant group variables report the standard deviation differences from the native Germans.

Table 1.7. Within-Immigrant Group Effects of Generation Status on Math & Reading Competence Scores (Basic Models)

	Generation Status	
	Math	Reading
Generation Status (Reference: 1st Generation)		
Turkish	-.89*** (.14)	-1.25*** (.16)
(2 nd Generation)	.20 (.14)	.25 (.17)
(2.5-Generation)	.14 (.16)	.38* (.19)
(3 rd Generation)	.37 (.26)	.58† (.30)
Mediterranean	-.56** (.21)	-.99** (.34)
(2 nd Generation)	-.07 (.24)	.28 (.36)
(2.5-Generation)	.33 (.23)	.97** (.36)
(3 rd Generation)	.33 (.22)	.83* (.35)
Yugoslav	-.82*** (.13)	-1.01*** (.29)
(2 nd Generation)	.24 (.16)	.18 (.30)
(2.5-Generation)	.58** (.18)	.73* (.31)
(3 rd Generation)	.91*** (.18)	1.31*** (.31)
Polish	-.56*** (.13)	-.79*** (.17)
(2 nd Generation)	.44** (.16)	.56** (.19)
(2.5-Generation)	.47** (.17)	.85*** (.20)
(3 rd Generation)	.58 (.38)	1.13** (.33)
Soviet Union	-.65*** (.07)	-.71*** (.10)
(2 nd Generation)	.27** (.09)	.22† (.11)
(2.5-Generation)	.64*** (.17)	.78*** (.18)
(3 rd Generation)	N/A	N/A
Western European	-.13 (.22)	-.40 (.26)
(2 nd Generation)	.12 (.28)	.39 (.33)
(2.5-Generation)	.39† (.24)	.69* (.27)
(3 rd Generation)	.47* (.23)	.62* (.27)

Note: The models are estimated separately on subsamples of six immigrant groups. The first lines in each model (“1st Generation”) are the constant terms from separate estimations, whereas other lines report the within group generation differences in math and reading scores by immigrant group. *p<0.05 **p<0.01 ***p<0.001; †p<0.10. Robust standard errors are in parenthesis.

Table 1.8. Math and Reading Scores by Generation Status (With Parental SES and School Type Controls)

	MATH	READING
Intercept (German)	-.57*** (.10)	-1.03*** (.12)
Turkish 1 st Gen	-.28† (.16)	-.49* (.22)
Turkish 2 nd Gen	-.23† (.12)	-.47** (.18)
Turkish 2.5-Gen	-.32* (.14)	-.43* (.19)
Turkish 3 rd Gen ^t	-.12 (.20)	-.20 (.28)
Mediterranean 1 st Gen	-.21 (.30)	-.75† (.41)
Mediterranean 2 nd Gen	-.34 (.26)	-.49 (.34)
Mediterranean 2.5-Gen	-.16 (.28)	-.24 (.36)
Mediterranean 3 rd Gen ^t	-.19 (.28)	-.14 (.35)
Yugoslav 1 st Gen	-.15 (.23)	-.28 (.36)
Yugoslav 2 nd Gen	-.02 (.21)	-.33 (.30)
Yugoslav 2.5-Gen	.05 (.24)	-.12 (.32)
Yugoslav 3 rd Gen ^t	.20 (.25)	.15 (.33)
Polish 1 st Gen	.39 (.44)	.08 (.54)
Polish 2 nd Gen	.19 (.43)	.13 (.50)
Polish 2.5-Gen	.20 (.45)	.37 (.53)
Polish 3 rd Gen ^t	-.21 (.50)	.14 (.61)
Soviet Union 1 st Gen	-.06 (.29)	-.17 (.34)
Soviet Union 2 nd Gen	-.07 (.29)	-.20 (.33)
Soviet Union 2.5-Gen	.03 (.31)	.02 (.36)
Female	-.50*** (.02)	.22*** (.02)
F-Test Score	57.11 (0.0000)	46.51 (0.0000)

Note: *p<0.05 **p<0.01 ***p<0.001; †p<0.10. Robust standard errors are in parenthesis. The models control for maternal educational attainment, parental occupational status, school type, gender and the age of students. The reference category is male German students. The country of origin by generation status variables report the interaction effect coefficient indicating how country of origin by generation groups differ from the reference category.

Table 1.9. Basic Models: Math & Reading Competence Scores by Immigrant Group

	Math		Reading	
	Model 1	Model 2	Model 1	Model 2
Intercept (Turkish; N= 830 / 751)	-.72*** (.04)	-.49*** (.05)	-.97*** (.01)	-1.04*** (.06)
Mediterranean (N= 449 / 419)	.37*** (.06)	.35*** (.09)	.70*** (.07)	.63*** (.10)
Yugoslav (N= 376 / 356)	.34*** (.07)	.50*** (.09)	.51*** (.06)	.59*** (.11)
Polish (N= 344 / 317)	.56*** (.07)	.70*** (.10)	.79*** (.07)	.78*** (.12)
Soviet Union (N= 629 / 586)	.32*** (.07)	.38*** (.08)	.48*** (.07)	.46*** (.10)
Western Europe (N= 456 / 440)	.97*** (.06)	.96*** (.09)	1.17*** (.07)	1.04*** (.10)
Female		-.33*** (.02)		.28*** (.09)
Female X Medit.		.02 (.12)		.06 (.14)
Female X Yugoslav		-.31* (.13)		-.21 (.15)
Female X Polish		-.26* (.13)		-.14 (.16)
Female X Soviet		-.01 (.11)		.05 (.13)
Female N&W Europe		-.15 (.12)		.06 (.14)
Age*		-.19*** (.03)		-.24*** (.04)

* Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The reference category in the models are Turkish students. The immigrant group variables report the standard deviation differences from Turkish students. The coefficients for age by immigrant group interactions are not reported.

Table 1.10. Language Use & In-Group Attachment & Number of Books Available at Home

	Math						Reading					
	Turkish N=830	Medit. N=449	Yugoslav N=376	Polish N=344	Soviet N=629	W. Europe N=456	Turkish N=751	Medit. N=419	Yugoslav N=356	Polish N=317	Soviet N=586	W. Europe N=440
Immigrant Group Interaction	-.82*** (.09)	-.18 (.17)	.35* (.18)	.35 (.24)	.25† (.14)	.00 (.26)	-1.62*** (.11)	.06 (.25)	.39† (.24)	.62* (.30)	.53* (.20)	.27 (.32)
Female	-.33*** (.06)	-.03 (.11)	-.35** (.12)	-.32* (.14)	-.02 (.10)	-.19 (.13)	.29*** (.08)	-.01 (.14)	-.31* (.14)	-.16 (.15)	.03 (.12)	-.03 (.13)
In-Group Attachment	-.06 (.04)	-.02 (.07)	-.03 (.07)	-.01 (.08)	-.07 (.06)	-.03 (.20)	-.07 (.05)	-.01 (.10)	-.08 (.09)	-.00 (.09)	-.08 (.08)	-.06 (.08)
German in Household	.15** (.06)	.00 (.13)	.03 (.14)	.01 (.14)	-.07 (.10)	-.01 (.16)	.40*** (.08)	-.13 (.18)	-.01 (.16)	-.15 (.18)	-.32* (.13)	-.33* (.15)
German w/ Best Friend	.20** (.07)	.07 (.14)	.06 (.15)	-.15 (.16)	-.11 (.11)	.11 (.19)	.35*** (.09)	.09 (.20)	-.20 (.19)	-.29 (.20)	-.21 (.14)	-.06 (.19)
Age in Months	-.16*** (.03)	.02 (.05)	-.02 (.06)	-.02 (.07)	.00 (.04)	-.18** (.06)	-.19** (.04)	-.02 (.06)	-.08 (.06)	.06 (.08)	.10† (.06)	-.08 (.06)
Number of Books available at home (Reference: 0-10 Books)												
11-25 books	.06 (.09)	.32† (.17)	-.00 (.18)	.19 (.22)	.22 (.15)	.42 (.28)	.13 (.13)	.29 (.26)	.36 (.23)	-.08 (.28)	.04 (.22)	.40 (.34)
26-100 books	.22* (.09)	.27 (.17)	.04 (.18)	.17 (.23)	.05 (.14)	.51* (.24)	.23† (.13)	.28 (.24)	.24 (.23)	.23 (.27)	.17 (.20)	.55† (.29)
101-200 books	.26* (.10)	.39* (.18)	.08 (.21)	.54* (.25)	.18 (.16)	.38 (.25)	.39** (.15)	.12 (.26)	.39 (.25)	.32 (.28)	-.02 (.23)	.34 (.29)
201-500 books	.41** (.15)	.58** (.22)	.29 (.27)	.47† (.28)	.23 (.23)	.73** (.26)	.55** (.18)	.53† (.28)	.27 (.29)	.31 (.31)	.27 (.27)	.94** (.32)
More than 500 books	.57* (.22)	.16 (.29)	-.11 (.32)	.60* (.41)	.11 (.30)	.89** (.32)	.62* (.24)	.60† (.34)	.77* (.36)	.42 (.42)	.08 (.34)	.99** (.36)

Note: *p<0.05 **p<0.01 ***p<0.001; †p<0.10. Robust standard errors are in parentheses. The first columns in panels for math and reading report the main effect coefficients for the reference category of Turkish students. The immigrant group variables report the standard deviation differences from the referent category.

Table A1.1. The Detailed Measures of Generation Status by Immigrant Community

	German	Turkish	Mediterranean	Yugoslav	Polish*	Former USSR*	TOTAL
1 st Generation	N/A	53	21	28	38	141	281
1.5 Generation	N/A	41	37	41	39	216	374
2. Generation	N/A	522	75	140	143	222	1,102
2.25 Generation	N/A	101	19	7	2	2	131
2.5 Generation	N/A	20	10	11	8	3	52
2.75 Generation	N/A	75	146	77	111	64	473
3 rd Generation	N/A	11	1	1	4	1	18
3.25 Generation	N/A	1	2	0	8	0	11
3.5 Generation	N/A	10	33	14	94	7	158
3.75 Generation	N/A	13	126	66	439	95	805
TOTAL	9,451	847	470	385	886	751	12,790

*The 3.5 & 3.75 Generation with Polish and Soviet Union origins; those with two or three grandparents born in Germany are considered early return–*Aussiedler*–migrants who arrived to Germany immediately after the World War II. Therefore, they are not included in the immigrant sample (see Olczyk et al., 2014 & Worbs et al., 2013 for a detailed discussion). 1st Generation: Student born abroad and migrated after the age of 6; 1.5 Generation: Student born abroad and migrated before the age of 6 and started education in Germany. See Figure A.1 for the genealogy of other generation groups.

Table A1.2: Human Development Index Scores by Country

Country or Country Group	HDI Score in 2014
Germany	0.916
Northern & Western Europe (Austria, Belgium, Denmark, Finland, France, Ireland, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom)	0.907
Mediterranean (Greece, Italy, Portugal, Spain)	0.861
Poland	0.843
Russian Federation*	0.798
Former Yugoslavia (Average of six former Republics of Yugoslavian Federation: Bosnia & Herzegovina, Croatia, Macedonia, Montenegro, Serbia, Slovenia)	0.792
Turkey	0.761

Note: The country Human Development Index scores are based on the 2014 Human Development Report (UNDP, 2014).

*Given the fact that the large majority immigrants from former USSR are return migrants with German ancestry, the country of origin HDI is not a good indicator for cultural proximity of this group.

Table A1.3: Questions used for constructing the “in-group attachment” variable

Now questions on your relationship to the culture of origin you have just mentioned. To what extent the following statements apply to you?	% of Students answered “completely applies”
I feel closely related to this culture of origin.	32%
I feel I am part of this culture of origin.	32%
I feel content in this culture of origin.	42%
I feel content with being part of this culture of origin.	46%
I like doing things with people from this culture of origin.	39%
I often show a behavior typical of this culture of origin.	19%
I consider it important to live according to the traditions of this culture of origin.	19%
It is important to me to have friends from this culture of origin.	28%

Table A1.4: Math & Reading Competence Scores of the European Immigrant Groups

	Math	Reading
Polish (N= 344 / 317)	53† (.27)	.56† (.34)
Soviet Union (N= 629 / 586)	.43* (.18)	.47† (.25)
Northern and Western Europe (N= 456 / 440)	.18 (.28)	.20 (.28)
Constant (Mediterranean; N= 830 / 751)	-1.00*** (.15)	-1.56*** (.21)

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Standard errors are in parentheses. The figures under the first column in both math and reading panels are the main effect estimates for Turkish students. Other values are the interaction effects for other immigrant groups. The models control for gender, age, in-group attachment, German language in household and German with best friend and the number of books available in the household.

Table A1.5 Selected Regression Coefficients of Math & of Reading Scores by Immigrant Group: Full Model

	Math					Reading				
	Turkish N=830	Medit. N=449	Yugoslav N=376	Polish N=344	Soviet N=629	Turkish N=751	Medit. N=419	Yugoslav N=359	Polish N=317	Soviet N=586
Immigrant Group Interaction	-.94*** (.10)	-.24 (.27)	.29 (.22)	.41 (.44)	.09 (.29)	-1.75*** (.14)	-.17 (.38)	.16 (.31)	.74 (.50)	.30 (.36)
Female	-.36*** (.06)	-.02 (.10)	-.15 (.11)	-.32* (.12)	-.12 (.09)	.25** (.07)	.01 (.13)	-.05 (.13)	-.19 (.14)	-.07 (.11)
German w/ Best Friend	.14* (.06)	.02 (.14)	.07 (.13)	-.14 (.15)	-.13 (.10)	.24** (.08)	.09 (.18)	-.15 (.16)	-.25 (.19)	-.17 (.13)
German in Household	.12* (.06)	.00 (.12)	.03 (.12)	-.15 (.12)	-.01 (.09)	.35*** (.07)	-.18 (.16)	.04 (.14)	-.24 (.16)	-.25* (.11)
School Type (Reference: <i>Hauptschule</i>)										
<i>Realschule</i>	.45*** (.07)	-.01 (.13)	.17 (.14)	.03 (.16)	-.04 (.11)	.74**** (.10)	-.08 (.19)	.02 (.18)	-.06 (.20)	-.01 (.15)
<i>Gymnasium</i>	1.23*** (.10)	.01 (.16)	.29 (.18)	.06 (.15)	.25 (.15)	1.30*** (.13)	-.02 (.21)	.37† (.21)	.20 (.23)	.25 (.18)
Number of Books available at home (Reference: 0-10 Books)										
201-500 books	.08 (.13)	.33 (.20)	.15 (.24)	.31 (.29)	.14 (.21)	.29 (.19)	.22 (.30)	.05 (.28)	.00 (.31)	.14 (.26)
More than 500 books	.24 (.21)	-.12 (.29)	-.52† (.32)	.34 (.39)	.03 (.26)	.30 (.27)	.28 (.38)	.32 (.36)	.11 (.41)	-.04 (.35)
Mother's Educational Attainment (Reference: No Education)										
Intermediate High-School	.02 (.08)	.04 (.20)	-.17 (.19)	-.17 (.42)	.22 (.27)	-.09 (.12)	.36 (.31)	-.08 (.29)	-.12 (.44)	.18 (.33)
Academic High-School	-.01 (.08)	.04 (.23)	-.02 (.26)	-.08 (.43)	.21 (.29)	-.03 (.21)	.27 (.36)	.05 (.34)	-.28 (.46)	.03 (.37)
Tertiary Education	.13 (.20)	.01 (.31)	-.09 (.29)	-.03 (.46)	.30 (.34)	.03 (.22)	.49 (.42)	.03 (.37)	-.15 (.50)	.05 (.38)

Parental Occupational Status (Reference: Semi-Skilled & Unskilled Workers)										
Low Professionals	-.08 (.11)	.13 (.25)	-.01 (.23)	.12 (.24)	-.05 (.20)	-.09 (.15)	.10 (.34)	.15 (.29)	.13 (.34)	.11 (.24)
High Professionals	-.12 (.12)	.40 (.26)	.12 (.23)	.33 (.29)	-.01 (.17)	-.06 (.18)	.12 (.35)	.02 (.29)	.13 (.37)	.13 (.29)
Age in Months	-.09** (.03)	.05 (.05)	.01 (.05)	-.05 (.06)	-.03 (.04)	-.22*** (.04)	-.04 (.07)	.05 (.07)	-.02 (.08)	.07 (.06)
F-Test Score	12.19 (0.0000)					12.72 (0.0000)				

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The full model includes country of origin, gender, age, mother's educational attainment, parental occupational status, number of books at home, German use with best friend, speaking German at home while growing up, and the school type the students attend. The first columns in the math and reading panels report the main effect coefficients for the reference category of Turkish students. The immigrant group variables report the standard deviation differences from the native Germans.

Table A1.6. Generation Status by Immigrant Group Coefficients of Math & of Reading Scores: Full Model

	MATH	READING
Intercept (Turkish 1 st)	-.96*** (.14)	-1.71*** (.19)
Turkish 2 nd Gen	.04 (.112)	-.04 (.15)
Turkish 2.5-Gen	-.10 (.14)	-.11 (.17)
Turkish 3 rd Gen ^t	.08 (.20)	.07 (.25)
Mediterranean 1 st Gen	-.09 (.32)	-.37 (.45)
Mediterranean 2 nd Gen	-.25 (.30)	-.17 (.41)
Mediterranean 2.5-Gen	-.14 (.32)	-.02 (.44)
Mediterranean 3 rd Gen ^t	-.19 (.33)	.03 (.45)
Yugoslav 1 st Gen	.25 (.27)	.18 (.40)
Yugoslav 2 nd Gen	.33 (.24)	.14 (.34)
Yugoslav 2.5-Gen	.34 (.28)	.18 (.36)
Yugoslav 3 rd Gen ^t	.41 (.30)	.33 (.38)
Polish 1 st Gen	.65 (.45)	.70 (.54)
Polish 2 nd Gen	.40 (.46)	.74 (.52)
Polish 2.5-Gen	.36 (.48)	.93† (.56)
Polish 3 rd Gen ^t	.04 (.54)	.77 (.62)
Soviet Union 1 st Gen	.16 (.31)	.36 (.38)
Soviet Union 2 nd Gen	.10 (.29)	.29 (.38)
Soviet Union 2.5-Gen	.15 (.34)	.46 (.41)
Female	-.35*** (.06)	.25*** (.07)
F-Test Score	11.90 (0.0000)	14.58 (0.0000)

Note: *p<0.05 **p<0.01 ***p<0.001; †p<0.10. Robust standard errors are in parentheses. The full model includes country of origin, generation status, gender, age, mother's educational attainment, parental occupational status, number of books at home, German use with best friend, speaking German at home while growing up, and the school type the students attend. The first columns in the math and reading panels report the main effect coefficients for the reference category of Turkish students. The immigrant group variables report the standard deviation differences from the native Germans.

CHAPTER 2**School and Classroom-Level Composition and Educational Performance of
Immigrant Students in Germanyⁱ**

Abstract

School and classroom composition is key to understanding the educational disadvantages the immigrant and minority students face. In this article, I examine the associations between immigrant composition at the school and classroom level and the educational performance of immigrant students in ninth grade, measured as reading and math scores. Using nationally representative data of ninth graders drawn from the German National Educational Panel Study (NEPS), I analyze the immigrant composition of peers among children of the five largest immigrant communities in Germany: labor migrants from Turkey, former Yugoslavia and Mediterranean countries, as well as recent migrants from Poland and return migrants from the former Soviet Union. My findings suggest that within the highly differentiated secondary school system in Germany, the immigrant composition of schools and classrooms plays a limited role on the test scores of immigrant students. The major determinants of immigrant students' performance appear to be students' individual socioeconomic status and country of origin, which in turn determine the school type and context the students attend. In these schools and classrooms, the proportion of immigrants plays at most a small role.

Introduction

School environments have been found to have a significant impact on the educational success of the students (Coleman et al., 1966; Kristen, 2003; Oakes, 1985; Solga and Wagner, 2008). Both in American and European contexts, researchers have reported a close relationship between the student composition of schools and educational outcomes (Bygren and Szulkin, 2010; Cebolla-Boado and Medina, 2011; Harris, 2010; Portes and Hao, 2004). School-level characteristics, as well as the social and racial composition of the student body, affect the development of behaviors, attitudes, and values regarding the importance of education (Borman and Dowling, 2010, 1206) and generate variation among schools in educational achievement.

In Germany, the growing population of immigrant youth and the continuing sorting of immigrant and low-income students into lowest of the highly differentiated secondary school types present challenges for policy-makers. Today, nearly half a century after the large wave of labor migration in 1960s and 1970s, and despite the German political authority's attempts to limit new immigration, the foreign-born and immigrant population in Germany has become more diverse and younger than ever. Studies show that the lower socioeconomic status (SES) of immigrant families and the placement of immigrant students in lower secondary school tracks contribute to the limited educational opportunities of immigrant students in Germany (Alba et al., 1994; Büchel and Wagner, 1996; Diefenbach, 2008; Kalter, Granato and Kristen, 2007; Kristen and Granato, 2007; Nauck, Diefenbach and Petri, 1998).

The role of school and classroom composition has been less examined in the German schooling context. This study examines the relationship between immigrant

composition in classrooms and schools and the educational performance of immigrant students' in Germany, using a nationally representative sample of ninth grade students drawn from the National Educational Panel Study (NEPS; Blossfeld, Roßbach, and von Maurice, 2011). My main question is whether the composition of immigrant students' peers, operationalized as the proportion of immigrants among schoolfellows and classmates, has a positive or negative association with their educational performance in the ninth grade, measured as reading and math scores.

Previous studies on the institutional structure of schooling indicate that student achievement in highly differentiated, early tracking educational systems like Germany's depend strongly on social class and the racial/ethnic backgrounds of students (Ammermueller, 2005; Van de Werfhorst and Mijs, 2010, 421). Network composition, immigrant or other, appears to play a minimal role (Buchmann and Dalton, 2002). However, a few studies found that high immigrant composition among classmates and schoolfellows has negative effects on the educational achievement of immigrant students in Germany, especially within school tracks in the highly differentiated secondary-school system (Ammermueller and Pischke, 2009; Schümer, 2004; Ruhose and Schwerdt, 2015; Walter, 2008; Walter and Stanat, 2008). More importantly, the immigrant composition of peers seems to play a different role in educational achievement among immigrants from different countries of origins, who differ from each other with respect to socioeconomic backgrounds, immigration experiences in the German context, as well as their level of German-language skills (Ammermueller and Pischke, 2009; Ruhose and Schwerdt, 2015; Walter and Stanat, 2008).

Using German data, this study offers a generalizable framework to show that within a highly differentiated schooling system, the role of peer composition varies among descendants of the five largest immigrant groups in Germany: labor migrants from Turkey, Mediterranean countries (Italy, Greece, Spain and Portugal) and former Yugoslavia, as well as recent immigrants from Poland and return migrants with German ancestry from the former Soviet Union. These five immigrant communities differ from each other in terms of their immigration histories, their demographic and cultural characteristics, and their integration experiences to German society. Focusing on these five groups provides a picture of the current state of integration of immigrant youth, considering how their communities differ from each other in terms of their immigration experiences, language skills and incorporation into the social status hierarchy of their host country (Diehl and Schnell, 2006; Kroneberg, 2008; Portes and Rumbaut, 2001). Because they are differently positioned in German society, the relationship between peer composition and educational performance should vary among these immigrant groups.

Theoretical Framework

Tracking and Educational Inequalities

Germany has a highly differentiated secondary schooling system, in which students are placed in different tracks very early in their education—generally after the fourth grade. More importantly, this system generates a segregated structure between school tracks on the basis of socioeconomic and migration background of students. In Germany, immigrant students disproportionately attend the lowest secondary school type, *Hauptschule*; 40% of the students from immigrant families attend one these school types, whereas only 23% of students with an immigration background attend an academic

school type, *Gymnasium* track (*Statistisches Bundesamt*, 2011). The NEPS ninth-grade sample I use in this study confirms this uneven distribution of track placement between native German and immigrant students and further shows differences among immigrant groups in secondary school placement (see Table 2.1). Half of the students with Turkish origins, and four out of ten students with Mediterranean and former Yugoslavian origins attend the *Hauptschule* track, and less than a fifth of the Turkish students and only a quarter of Mediterranean and Yugoslav students attend academic track school types. Polish students are the most successful immigrant group; three out of ten Polish immigrant students attend an academic school track. Despite their German ancestry and assumed strong German skills, fewer than twenty percent of return migrants from the former Soviet Union attend the academic school track, and four out of ten of them attend lowest *Hauptschule* track. Finally, the secondary school placement among native Germans show that 38% of them attend academic high school track, whereas only one out of five of them attend the lowest school track.

There is convincing evidence that highly differentiated schooling systems like that of Germany reinforce educational inequalities based on socioeconomic and ethnic/immigrant origins without improving the educational performance of those who come from disadvantaged backgrounds (Alba et al., 2011; Ammermueller, 2005; Bauer and Riphahn, 2006; Hanushek and Wößmann, 2006; Müller and Kogan, 2010; Van de Werfhorst, and Mijs, 2010). These studies report that early ability tracking increases the effects of parental background on educational outcomes.ⁱⁱ Moreover, educational opportunities are unevenly distributed within rigid school tracking systems, especially if the placement into tracks takes place early on the educational careers of students (Pfeffer,

2008; Van de Werfhorst, and Mijs, 2010). In Germany, once track placement takes place at the transition to lower secondary school, only 21 percent of students with parents with lower educational attainments—a category to which immigrant students overwhelmingly belong—enter the academic track (Hillmert and Jacob, 2010, 69).

Buchmann and Dalton (2002) show that the influence of peers and parents is negligible in differentiated secondary-education systems, and there is little room for interpersonal effects among students. They argue that school type is the major determinant of educational aspirations, which is the dependent variable in their study (Buchmann and Dalton, 2002). In line with Buchmann and Dalton's argument that peer effects are more present in less differentiated and comprehensive secondary schooling, a series of studies over the past decade have found ample evidence that in the American context, peer decisions and peer characteristics play major roles in academic outcomes, such as predicting school achievement (Hanushek et al., 2003; Hoxby and Weingarth, 2005; Lavy and Schlosser, 2011; Sacerdote, 2011), educational aspirations (Cheng and Starks, 2002), and high school dropout rates (Bifulco et al., 2011). Research also shows that peer characteristics have causal effects on non-academic outcomes among youth, such as smoking rates (Gaviria and Raphael, 2001; Fletcher, 2010), alcohol consumption (Fletcher, 2012), as well as disruptive behavior in class (Carrell and Hoekstra, 2010).

Despite the evidence Buchmann and Dalton (2002) provide regarding the minimal role played by peers in highly differentiated systems, it should be noted that their focus is on educational aspirations instead of educational performance. Peer composition might be limited determinants of educational aspirations in early tracking systems, because the school type that students attend sets them on an almost irreversible educational trajectory

with very limited opportunities for changing their tracks, which imparts “a dose of realism into [students’] expectations” (Buchmann and Park, 2009, 246; Parker et al., 2016). Peer composition might still play a role in the educational performance of students, since it may relate to trying hard to learn or not in the specific context of the school. There are few studies in the German context that examine the relationship between the immigration/ethnic background of students’ peers and educational outcomes (see Kristen and Olczyk, 2013 for a review of recent studies). These studies focus on composition effects in elementary schools before track placement takes place (Bellin, 2009; Bellin, Dunge and Gunzenhauser, 2010; Dollman, 2010; Schulze, Wolter and Unger, 2009; Stanat et al., 2010).

There are few studies in Kristen and Olczyk’s (2013) review providing evidence that compositional factors might play a role once students are tracked into the differentiated secondary schooling system of Germany. Based on the extension study of first Programme for International Student Assessment (PISA) study, Schümer (2004) finds negative effects of higher number of classmates who do not speak German at home on reading skills of immigrant students. Using data from the 2003 and 2006 PISA studies (OECD, 2004; 2007), Walter (2008) and Walter and Stanat (2008) also report negative effects of increasing the proportion of students with a migration background in classrooms.

The underlying mechanisms between composition of peers and test scores differ whether the focus of analysis is on classmates or schoolfellows. If the immigrant composition of schoolfellows is high, then the particular school should be located in a high immigrant residential area because secondary school placement in Germany is

tightly related to students' residence (Kristen, 2003; Solga and Wagner, 2008).

Accordingly, the immigrant composition in classrooms is also expected to be high in a high immigrant population school. However, high immigrant composition of classrooms might be independent from the immigrant composition of schools if majority non-immigrant schools assign students with migration backgrounds within cohorts to particular classrooms or if the remedial students –who are more likely to be low income and immigrant students– are assigned to same classes all together. Another possibility is that schools might be sorting students into classes according to their previous achievement levels. Given that immigrant students are more likely to be among the relatively low achieving students in Germany, the vicious circle of tracking means that they might find themselves among classmates with immigration backgrounds, even if the immigrant composition in school is not high.

The mechanisms that influence the relationship between immigrant composition of peers and test scores should accordingly differ among the different measures of immigrant composition at the school and classroom levels. Schools with high immigrant populations will be less preferred by the better quality teachers (Hanushek et al., 2004), and these schools might be employing teachers with shortest tenures and limited experience (Orfield and Lee, 2005). These schools might be less likely to have resources to generate a healthy learning environment because of the high immigrant population of the school in general.

A similar mechanism might be applied to classrooms as well. Ammermueller and Pischke (2009; 329) show that the higher the level of students with migration background in a class, the lower the teachers' educational attainment. Another mechanism by which

classroom immigrant composition might influence learning is related to the German language skills. In classrooms with high population of immigrant students, not only would the average German skill of the classroom be lower, but developing German language skills would be harder since mistakes might be reinforced. High immigrant composition in classrooms might also lead teachers to lower their expectations and to modify their curriculum to a less-demanding ones, or they might slow the pace of their instruction even if they do not modify them.

Hypothesis 1: In light of these concerns, my first hypothesis is that high immigrant composition of immigrant students' classmates and schoolfellows will be negatively associated with immigrant students' test scores. In general, I do not anticipate any circumstance, in which high immigrant composition of peers in schools and classrooms would have a positive relationship with immigrant students' test scores. Moreover, I expect the negative associations to be stronger for reading scores, because of the strong relationship between the use and learning of German language and having high immigrant composition of classmates and schoolfellows.

Between Immigrant Group Differences

I also expect that the relationship between composition of peers and educational performance would vary among immigrant groups, who differ from each other in terms of their immigration histories and the opportunities that are available to them according to their position in the German social status hierarchy. Walter and Stanat (2008) report that the relationship between high immigrant composition at school and classroom levels and student performance varies among immigrant students from different countries of origin: they found that increasing immigrant composition at the school level has negative

associations with Turkish students' reading competencies, while they could not find a significant relationship for students from the former Soviet Union (Walter and Stanat, 2008, 99-100). Similarly, Ruhose and Schwerdt (2015) report that immigrant students from less integrated immigrant communities –though what makes an immigrant community “less integrated” remains undertheorized– experience greater difficulty in signaling their educational potential. In addition, they argue that language-skill differences among immigrant groups might create additional barriers for educational success at the secondary school level. Ammermueller and Pischke's (2009) six-country cross-national comparative study using the Progress in International Reading Literacy Study (PIRLS) finds moderately large negative patterns between high immigrant peer composition in the classroom and reading competence among immigrant students in Germany (Ammermueller and Pischke, 2009, 330-331).

These studies indicate that there is reason to test whether composition effects play a differential role in the educational performance of immigrant students from different countries of origins. In Germany, the largest immigrant groups differ from each other in terms of the time and the context of their arrival, as well as their experiences of integration since their arrival. Descendants of labor migrants from Turkey, the Mediterranean and former Yugoslavia differ significantly from recent migrants from Poland and return migrants with German ancestry from the former Soviet Union in terms of their parental socioeconomic resources, as measured by the educational attainment and occupational standing of the parents (Kalter and Kogan, 2014; Kristen and Dollman, 2010; see Table 2.2). Furthermore, the immigrant population with Turkish backgrounds reveals a different integration trajectory than other labor migrant groups in terms of

higher levels of residential segregation –living in immigrant enclaves– in major metropolitan areas, and their German-language skills are also lower (Esser, 2006; Kristen, 2003; Söhn and Özcan, 2006). Turkish students in Germany are the most likely immigrant group to drop out of high school (Çelik, 2011), and the most likely to attend special-needs schools for reading (Powell and Wagner, 2001). The Turkish community also differs from other immigrant groups in terms of their high-immigrant network composition and relatively limited social connections with native Germans (Kalter, 2011, 176-177). Therefore, we might expect a stronger negative relationship between immigrant composition of classmates and schoolfellows and test scores of Turkish students; not only relative to the more recent and more privileged migrant groups, but also lower than the other two labor migrant groups.

Immigrants from the former Soviet Union are largely return migrants—*Spaetaussiedler*—with German ancestry (Olczyk et al., 2014; Worbs et al., 2013). They lived under socialist regimes throughout the Cold War and started migrating back to Germany in the early 1990s. These return migrants not only received significant support for naturalization and settlement immediately after their arrival (Euwals et al., 2010; Kalter, 2008a; Münz, 2002; Wegmann, 2014), but they also come from families with higher educational attainments. Most importantly, they are more likely to have learned German while growing up. Therefore, one might expect them not only to be better represented in low-immigrant composition schools but to be less negatively influenced by a high immigrant composition of their schools and classrooms. They identify as German and so would be more likely to develop social ties with native German peers. Recent Polish migrants are not return migrants with German ancestry (Worbs et al., 2013, 28),

and there are very few studies that examine the educational and social integration of Polish immigrant youth in Germany (see Schulz and Leszczensky, 2015). Their socioeconomic characteristics indicate that along with return migrants from Soviet Union, they are more likely to have mothers with academic high-school diplomas and tertiary education degrees; however, they are less likely than students of Mediterranean background to come from professional families (see Table 2.2). Finally, considering the fact that the recent migrant groups from Poland and the former Soviet Union did not arrive as labor migrants, they would be less likely to reside in the high immigrant neighborhoods of the large industrial areas of Germany. Thus, on average, they should be attending schools with smaller immigrant populations relative to labor migrants. Finally, the fact that the return migrants with German ancestry received state support for settlement makes them even less likely to reside in high immigrant populated areas of Germany.

Hypothesis 2: Given the persistent disadvantage of Turkish youth in terms of German-language skills and limited social connections with the native German population, I hypothesize that not only will they have the highest level of immigrant composition among their schoolfellows and classrooms, but also for this composition to have the largest negative associations with their reading and math scores. For descendants from other two labor migrant groups –Mediterranean countries and former Yugoslavia, I expect lower levels of immigrant composition of the school and classroom, but similarly negative associations between high immigrant composition in schools and classrooms and their educational performance. I expect these associations to be weaker relative to the Turkish students, because these two groups are not as disadvantaged as the Turkish

immigrants; nor they are as likely to live in segregated neighborhoods. For return migrants from the former Soviet Union, I expect the associations between high immigrant composition of peers and their test scores to be small to non-existent, due their legal privileges and support for integration upon migration, and their higher German language skills. Due to the limited understanding of the immigration experiences of recent migrants from Poland, I do not hypothesize any positive or negative relationship for this group.

Between School Track Differences

Secondary-school track is of key importance in terms of immigrant composition of schools both because it strongly predicts student performance in high school and sets students on a trajectory for the rest of their school careers –only graduates of the *Gymnasium* school track earn the certificates required to continue on to higher education -- and because school tracks differ from each other in terms of their characteristic immigrant student compositions. The highly differentiated secondary schooling in Germany concentrates immigrant students in the lower school tracks, especially the lowest *Hauptschule* track. This concentration is relevant for my analysis for two reasons. First, because school tracks differ in terms of their average immigrant composition, the variation in immigrant composition of schools and classrooms falls in different ranges for each track. At the lower school tracks, students attend schools and classes with high concentration of immigrant students. However, depending on the location of schools, the proportion of immigrant students in any particular school might fall more to the high or low end of the range for that track of schools. This would hold not only for the lowest track but also for schools on the academic track. Depending on the immigrant population

of the location that the school serves, some academic school tracks will have higher population of immigrant students relative to others. For example, immigrant composition of academic track should vary among the federal states and cities of Germany, which differ in terms of their immigrant populations, but I do not have access to geocoded data.

My analyses do not take student selection into schools into consideration since they focus on the role of immigrant composition few years after the students are sorted into their secondary school tracks. The students in my analytic sample are already in ninth grade. However, the selection into secondary school tracks at the end of the fourth grade may still influence immigrant composition of schools within the same track. Federal states in Germany differ whether teachers' recommendations for secondary school track placement are binding or not; in the latter case the final decision for track placement is made by parents and students. In states where policy allows parental influence on track placement, the decision to comply with teacher recommendations or choose a different path might be a factor that reflects or reinforces variation in immigrant student composition within school tracks.

Second, there is a substantial positive association between high school track and test scores already embedded in the tracking system. The OLS regressions of school type on test scores indicate that all immigrant groups, as well as native German students attending an academic school track (*Gymnasium*) show around 1.5 standard deviation advantage both in reading and math scores relative to those attending a lowest track high school (*Hauptschule*). Attending an intermediate (*Realschule*) school track also has strong positive associations with reading (.67 S.D.) and math (.59 S.D.) scores (Table A2.1). The estimates for native German students are very close to these figures (results

not shown). I cannot determine whether this association is due to instructional quality at the higher school tracks or to student performance prior to track placement, because the data do not allow me disentangle school effects from student performance prior to track placement. What is clear, however, is that higher school track placement is strongly associated with higher test scores.

This suggests that at the lowest track, *Hauptschule*, there will be less opportunity to detect a relationship between immigrant composition of schoolfellows and classmates, since the average educational performance is low. At this level, the individual socioeconomic status and immigration status of students are the main determinants of educational performance. At the academic track, *Gymnasium*, where average test scores are higher, variation among schools may be more important and immigrant student concentration might have stronger associations with immigrant student performance. Relating this to my previous hypothesis, I argue that students from labor migrant groups, especially Turkish students, who are successful enough to be placed in academic track schools should still be face greater odds of being placed with other immigrants and to experience the largest negative associations between immigrant composition of schoolfellows and classmates and their test scores. An “immigrant-serving” *Gymnasium* may simply not be as academically rich as one that few immigrant students have the opportunity to access.

Hypothesis 3: In terms of between track differences, I hypothesize that the immigrant composition of classmates and schoolfellows will have weaker associations with immigrant students’ reading and math scores at the lowest (*Hauptschule*) school track. In this track, average educational performance is relatively low, thus I expect to observe a

ceiling effect of immigrant composition on these low performing students. In the academic (*Gymnasium*) school track, on the contrary, I expect immigrant composition to have substantial negative associations with immigrant student performance. I expect these negative associations to be strongest with reading scores because the higher composition of immigrant schoolfellows and classmates might lead to less developed German skills and less frequent use of German with peers. Another reasoning for this hypothesis is that *Gymnasium* school types with high immigrant compositions are located in areas with high immigrant populations; therefore, they are more likely to have limited resources, less likely to attract experienced and high-quality teachers and less likely to provide good learning environments for students.

Model and Identification Strategy

Testing these hypotheses requires understanding what factors contribute to a high immigrant composition at the school and classroom levels. The path diagram in Figure 2.1 posits that individual factors, such as country of origin and socioeconomic status of students' parents, determine the secondary school types the students attend and that track placement is a major determinant of the school and classroom environments in which the students find themselves throughout their high school education. School and classroom immigrant composition, then, can influence individual test scores directly or act indirectly through their association with the achievement composition and the socioeconomic composition at the school and classroom level.

According to this model, the country of origin of students and students' familial socioeconomic status are the most important determinants of the students' secondary school placement. In the aggregate, the immigrant groups in this study differ from each

other in terms of secondary school track placement (see Table 2.1). Turkish students are more likely to attend the high-immigrant populated lower school tracks (*Hauptschule*) but due to their integration history in Germany and the fact that they are more likely to reside in neighborhoods with high immigrant populations, Turkish students are also more likely to attend an academic school track (*Gymnasium*) with high immigrant student populations.

In this model, the first set of predictors are students' individual level characteristics such as the country of origin and socioeconomic status of their family, which determines the variation in secondary school track placement among immigrant groups, as well as the immigrant composition of schoolfellows and classmates between and within school tracks. My expectation is that high immigrant composition in schools and classrooms will affect the test scores of descendants of labor migrant groups negatively, since they have been relatively more disadvantaged in terms of their educational opportunities and achievement and because high-immigrant composition of schools may be associated with a lower commitment of educational resources there. Additionally, high immigrant composition in schools and classrooms is not differentiated by actual ethnic heritage and would have stronger negative associations with the educational performance of Turkish, Mediterranean and Yugoslavian students (who are clustered in cities and communities where their parents settled), whereas high immigrant composition would have a smaller influence on the test scores of the recent migrants from Poland and the return migrants from the former Soviet Union, who are both fewer in number and less likely to have been settled in large diasporic communities.

The second key point in the model is to disentangle the effects of achievement and socioeconomic composition of peers from their immigration background. As the model suggests, immigrant composition in schools is related to two other school and classroom level factors: achievement composition and socioeconomic background composition. Thus the estimated effects of immigrant composition on test scores might be spurious, if the model omits school and classroom level achievement and socioeconomic composition. In other words, low SES composition and low achievement composition in schools and classrooms might more directly responsible for low individual test scores than the immigrant composition at the school and classroom levels, which would work primarily through these other sorting mechanisms. To show this relationship, my analyses first estimate the effects of immigrant composition on test scores only taking the individual level predictors into consideration; at the next step I include school and classroom level predictors to my model to estimate the direct role of immigrant composition on test scores once achievement and SES composition of schools and classrooms into composition.

This approach attempts to disentangle the effects of immigration background of schoolfellows and classmates on immigrant students' test scores from their socioeconomic origins and achievement composition, once the individual student characteristics are taken into consideration. In other words, my focus is on whether the low SES background and achievement of immigrant peers at the school and classroom level or the immigration background of their peers play a role in the individual performance of immigrant students.

My primary interest is not in identifying these composition effects, but comparing differences among composition effects across immigrant groups. Given their communities' continuing disadvantages in educational opportunities, I expect immigrant composition, SES composition and achievement composition of schools and classrooms to have negative associations with the educational performance of students who descend from labor migrants. Within the labor migrant groups, the direct effects of immigrant composition on test scores are more likely to be absorbed by the more proximate effects of achievement and socioeconomic composition when they are added to my model. This, I expect to be particularly true for the Turkish students, since they share a collectively disadvantaged educational position and are more likely to attend schools with high immigrant populations regardless of school track. Therefore, for them achievement and socioeconomic composition in schools and classrooms are more proximate indicators of where they are placed in the German system and thus likely to mediate the relationship between the immigrant composition of their schools and their individual educational performance. For Mediterranean and Yugoslav students, who are less numerous and segregated, this might not necessarily be the case. For these two groups, SES and achievement composition of the schools and classrooms where they are placed may vary more independently of the immigrant composition of their schools and classrooms even if all three are indications of a less supportive environment for individual achievement.

As discussed above, the relationship between immigrant composition at the school level and classroom level are probably not independent from each other. However, we can expect to see cases where the number of immigrant students in a classroom would be high, even though immigrant composition of school is low, especially if the immigrant

status plays an explicit or implicit role in how students are assigned to classrooms by the school administrations. Therefore, I treat these as independent tests of the hypothesis of immigrant composition having an effect. My model does not consider the relationship between immigrant students in schools and immigrant students in classrooms, shown with a dashed line in Figure 2.1, even though there is unsurprisingly a strong correlation between these two variables. If both were included in the same model, the estimates would be harder to interpret. Since theoretically the mechanisms influencing test scores should be different at the school and the classroom level, the two separate tests can be useful. School level immigrant composition is primarily a function of the geographical location of the schools, whereas at the classroom level there are additional unmeasured factors related to the learning environment, both the preparation and attitudes teachers bring to a high immigrant classroom and the nature of student interactions within classrooms. Thus I decided that it is reasonable to estimate the relationship between test scores and these two measures of immigrant composition independently, while acknowledging that in practice both would be operating in partially overlapping ways.

Data and Methods

This article uses data from the first and second waves of the ninth-grade probability sample drawn from the German National Educational Panel Study (NEPS) collected in Fall 2010 and Spring 2011 (Blossfeld, Roßbach, and von Maurice, 2011). The immigrant students in this study are those with Turkish, Mediterranean (Greek, Italian, Spanish, Portuguese)ⁱⁱⁱ, former Yugoslavian, Polish and former Soviet Union backgrounds.^{iv} This corresponds to a sample of 2,704 immigrant students nested in 471 schools.

The NEPS ninth-grade sample was chosen based on a multi-stage stratification method: first, six school types in the German secondary education are sampled, followed by a sampling of schools within each strata (von Maurice, Sixt and Blossfeld, 2011).^v Compared to previous German datasets and the census, the NEPS dataset collects more accurate information on generation status of immigrants by including country of origin, not only of students' parents but also of their grandparents (Kalter, 2008b; Kemper, 2010).^{vi} The detailed immigration history information in the NEPS data allows me to differentiate between the five immigrant communities on a national scale, as well as between early and recent migrant communities (Kristen et al., 2011). The nationally representative characteristic of the data is key for making generalized inferences about immigration experiences of the groups under focus.

Using list-wise deletion with the NEPS sample leads to bias due to the large reductions in the sample size, as well as the high degree of missing information among immigrant students (Zinn, 2013; 2014). Thus, I use the method of multiple imputation using chained equations to impute missing values of the explanatory variables (White, Royston and Wood, 2011) following the advice of the statisticians who manage the NEPS data collection. I created 30 multiple imputation files to ensure the robustness of my estimates (M=30). In order to avoid creating "new" immigrant students, I decided not to impute students' country of origin variables, and removed these students (N=140) from my sample. Due to the sampling method, information identifying students' classrooms and schools, as well as the school type they attend are available, although not in geocoded form at present. Furthermore, I used the unimputed test scores as dependent variables.^{vii}

Dependent Variables

The dependent variables in the following analysis are reading and mathematics competency scores. These tests are conducted by the NEPS data-collecting agencies in classroom environments using a paper-and-pencil method. The scores are normalized and weighted based on a series of competency tests (see Figure 2.2). These test scores are more accurate indicators of educational performance than grades reported by the students or their parents; moreover, they are not biased by differential teacher attitudes towards students with a migration background. The tests are administered on the Fall and Spring semesters of the 2010-2011 academic year, which affect the number of students present to take the tests. Therefore, the sample sizes for reading (N=2,432) and math (N=2,628) scores are different from each other.

The reason I use both math and reading scores as dependent variables is that I expect the math scores to be more closely associated with students' socioeconomic origins, as well as the school type they attend, whereas for reading scores, immigrant students should experience larger disadvantages depending on their German language ability; relative to math scores, immigration background is more likely to have an effect on the reading scores independent of the socioeconomic origins.

Peer Composition Variables

The NEPS ninth grade sample provides rich information about the composition of students' peers by asking the students about the migration origin of their schoolfellows, classmates, as well as their friends (Skopek, Pink and Bela, 2013). Here I only focus on the composition effects, because focusing on the role of friends requires an alternative set of considerations regarding selecting and availability of friends; and methodologically it

is more difficult to account for these issues with the available information. Table 2.3 reports the mean averages of the composition variables by immigrant group. I use two different variables for measuring the immigrant composition of students' schoolfellows and classmates. It should be noted that these measures ask students about their peers' "migration background," and they do not specifically ask whether they are from the same country of origin or belong to the same immigrant community.

I use two variables measuring the proportion of immigrant classmates and schoolfellows, respectively. Both variables are measured on a five-point scale based on the students' answer to questions "How many of your classmates/schoolfellows have immigration background, i.e. they themselves or at least one parent were born abroad?" (1: None; 5: All). In order to eliminate students' over- and underestimations, I take the averages of the responses of students who are in the same classrooms and who attend the same schools. The immigrant composition of classmates should reflect accurate information because students would have a better sense about their classmates' immigration background. It might be expected that the immigrant composition of schoolfellows based on student questionnaire might be less accurate because students are less likely to have accurate information about the immigration background of their schoolfellows. Thus, I estimate the same models with a "percent of immigrant students in school" variable, based on the interviews with school principals. The proportions reported by students are reflections of how students perceive the immigrant composition at their schools, whereas those reported by school principals reflect actual percentages of the immigrant composition of schools. Yet, as my findings indicate, the estimations using information from students and principals yield very similar results.

Table 2.3 shows that the immigrant peer composition is highest for Turkish students for every measure. This is not surprising that Turkish students are more likely to attend high immigrant populated *Hauptschule* school types; they are also more likely to reside in high immigrant neighborhoods. Another interesting point is that for return migrant students from the former Soviet Union the average composition of immigrant schools peers is not substantially lower than labor migrant groups, who might be expected to reside in high-immigrant neighborhoods of large metropolitan centers of Germany. In fact, in terms of percentage of immigrants in their schools and immigrant classmates, they have the third highest among the five groups under focus.

Individual and School/Classroom Level Variables

Table 2.2 shows the breakdown of individual background variables by the five immigrant communities (Olczyk et al., 2014).^{viii} At the individual level country of origin and socioeconomic background of students are two key predictors of immigrant students' test scores. My models include two measures for students' socioeconomic background: mother's highest educational attainment and parental occupation status based on a five-category version of EGP class scheme. I control for students' age, gender and the generation status. The generation status varies between five groups due to different migration histories and the initial time of arrival. The large majority of the labor migrant groups—Turkish, Mediterranean and Yugoslav—are second-generation immigrants, whereas the large majority of return migrants and recent migrants from Poland are first and second-generation. What differentiates the labor migrant groups is that the size of the third-generation students: one out of three (35%) Mediterranean and one out of five

(21%)Yugoslav students are third-generation students, whereas only 4% of Turkish students are third generation.

In addition to the school type students attend, at the school and classroom level I introduce two measures: achievement composition and socioeconomic background composition of schoolfellows and classmates (see Table 2.4). I anticipate them to mediate the relationship between immigrant composition and test scores of students. They clarify whether the correlation between low levels of mean SES and mean achievement and high composition in their schools and classrooms vary among immigrant groups as well. For the achievement composition, I use mean reading and math scores at schools and classrooms. My socioeconomic background variables –families’ occupational status and mother’s highest educational attainment—are constructed as nominal ordinal variables, so using their mean values would lead to measurement error. My analytical interest is whether low average socioeconomic background plays a role in low educational performance rather than immigrant composition. Therefore, I use the percent of students who come from working class families based on the EGP scale of occupation status. I use the percentage of the fourth and fifth categories in the EGP scale, which corresponds to students for whom the highest occupation status in family is “skilled manual worker” or “semi-skilled and unskilled worker.” My second variable for socioeconomic background of classmates and schoolfellows is the average number of the books available in the household. I use this as a measure that would not be affected by any labor market discrimination that could exist in Germany.

Analytic Strategy

In order to estimate the between group variation in terms of immigrant peer composition and educational performance, I use OLS regressions of students' math and reading performances on immigrant group by peer composition interactions on the pooled data. I use school and classroom level clustered standard errors to account for the multi-stage sampling method. First, I examine whether the associations between a higher proportion of classmates and schoolfellows who are immigrants (from anywhere) and educational performance vary by the five immigrant groups to which students may belong, taking the individual student characteristics and school type into consideration. At the next step I add the school and classroom level achievement and socioeconomic composition to my models to understand whether the estimated relationship between immigrant composition in schools and classroom and test scores could be seen as spurious, with these two composition variables playing the more direct role. Finally, I estimate school and classroom level immigrant composition effects within school tracks by running the same models on the subsamples of lowest (*Hauptschule*) and academic school (*Gymnasium*) tracks separately.

The full model specification is the following:

$$(1) \quad Y = \alpha X_0 + \gamma X_1 \times Imm. Group + \beta X_2 \times Imm. Group + \beta X_{School/Classrom} \times Imm. Group + u$$

In this models, all individual level (βX_2), school and classroom level ($\beta X_{School/Classrom}$), variables, as well as the immigrant composition variables (γX_1) are interacted with the immigrant group dummies, in which the Turkish group is the reference category. In the tables, the coefficients for the Turkish group indicate the main-

effect coefficients for the models; the coefficients reported under the other four immigrant communities are the interaction effect coefficients; how they differ from the base category of male Turkish student. Because reading and math scores are standardized, the main effect coefficients represent the average change in Y resulting from one standard deviation immigrant composition increase for the reference category of Turkish group; the interaction effect coefficients for other four immigrant represent the average change in math and test scores relative to Turkish group. The composition variables are in ordinal scales, and all other measures for gender, parental socioeconomic resources, generation status and school type are nominal categorical variables.

Results

Immigrant composition at school and classroom level

My first set of models examines the association between proportion of immigrant schoolfellows, classmates and percentage of immigrant students and students' test scores by immigrant group. The models control for parental occupational status, highest educational attainment of mothers, gender, age and the generation status of students, as well as the school track they attend. Figure 2.3 shows the overall relationship between the proportion of schoolfellows who have a migration background and the individual immigrant student's reading and math scores. The results partly confirm my first hypothesis. For Turkish students, their reading scores are a fifth of a standard deviation (- .19) lower for every standard deviation in the measure of immigrant schoolfellows. For the students from other two labor-migrant groups—Mediterranean and Yugoslavian—the interaction effect coefficients are very small, meaning that the relationships are very similar to those found for Turkish students. For Polish students the interaction effect

coefficient has a positive value, however, it is not statistically significant. This might be due to small sample size of Polish students ($N=353$). For return migrants from former Soviet Union, the interaction coefficients are positive and statistically significant, thus differing from the negative associations for the labor migrant groups (Figure 2.3). A similar relationship is observed between higher proportion of immigrant schoolfellows and math scores (-.15 S.D. for Turkish students and similar for the other two labor migrant groups) The interaction effect is statistically significant and positive for return migrants from former Soviet Union, again meaning that unlike the other labor migrants, having a higher number of immigrant schoolfellows has no negative relationship with their test scores. For all other groups math scores have negative associations with increasing proportions of immigrant schoolfellows, making them not different from the Turkish group. Once again, for Polish students the interaction coefficient is positive, but is not statistically significant, which is an ambiguous finding.

Figure 2.4 reports results from models with immigrant classmates. Immigrant composition of classrooms has negative associations with reading and math performance of students from all groups. For the reference category of Turkish students, one degree of increase in the measure of immigrant classmates has a weak but statistically significant negative effect for both reading and math scores (-.14 and -.11 of a S.D respectively). None of the interaction effects for the other four immigrant groups are statistically significant, which means there are no differences between them and the referent group of Turkish students. For Polish and return migrant students, the interaction coefficients have positive signs, but the results cannot reject the hypothesis that the association between immigrant classmates and test scores is the same as for labor migrants. Thus in terms of

immigrant composition in classroom, there is no evidence for between immigrant group differences.

A similar picture appears when I estimate the models with the percentage of immigrant students in school based on the interviews with school principals (see Table 2.5). For the main category of Turkish students, 10% increase in immigrant student population in school translates into 8% lower reading scores. The interaction effect coefficients are small and statistically not significant for most other students but the return migrants from the Soviet Union are statistically significantly different from the others -- the interaction effect coefficient is positive and statistically significant, meaning that the negative effect felt in the Turkish referent group and echoed in the others is not found among return migrants from the former Soviet Union. In terms of math scores, there is a small and marginally significant negative association among Turkish students of 4% with the 10% increase of immigrant students; and all interaction effect coefficients for other immigrant groups are substantially small, meaning that they are not demonstrably different from this.

Without controlling for achievement and socioeconomic composition of classrooms and schools, the results indicate immigrant composition of schoolfellows and classmates have moderate but significant associations with reading and math scores of students from immigrant communities. Unsurprisingly the coefficients are larger for reading than math scores, because higher numbers of immigrant classmates and schoolfellows should result in less developed German skills. The only exception to this finding is the return migrants with German ancestry. Even though they do not have the highest achievement level among the five immigrant groups, experiencing a higher

immigrant proportion at school or classroom level has no negative associations with their reading and math scores. For Polish students the results are less clear. In all of the estimations, their interaction effect coefficients have positive values, but they are never statistically significant. This might be due to the small number of Polish students in my sample, but the evidence that they are spared any negative effect from having more immigrant schoolmates is lacking.

Next, I estimate the same models but adding the more proximate measures of achievement composition and mean average socioeconomic composition in schools and classrooms. Table 2.6 reports the results from these models. Models 0 report the coefficients from the previous models in Figures 2.3 and 2.4 without measures of achievement and socioeconomic composition. Model 1 includes the socioeconomic composition of schoolfellows and classmates; Model 2 is the full model with both socioeconomic background and achievement compositions in schools and classrooms. The order of adding these school and classroom context variables is important. I add the socioeconomic background composition first in order to disentangle the role of migration background from socioeconomic origins of students, because the two are highly interdependent in the German context. In substantive terms, the Model 1 shows whether the immigrant students have lower test scores due to the low average SES of students in their schools and classroom whether immigrant or not, and leaves only the effect of immigration status after controlling for their higher than average rates of disadvantage. In the next step, I include the achievement composition, because it is also an outcome variable: that is, both migration background and socioeconomic origin of students together predict the achievement composition in a school and classroom.

The association between immigrant composition and test scores changes dramatically with these additional composition variables. For the main category Turkish students, the moderate but significant associations in the previous models disappear. In fact, in Model 2 with both achievement and socioeconomic composition controls, the signs of the association changes from negative to positive. This might be interpreted that individual Turkish students' performance is lower not because of the influence of the immigrant background of their peers; but because their peers have relatively lower average SES as well as lower levels of average achievement. For Polish and return migrant students from the Soviet Union, the associations between immigrant composition of peers and test scores remain negligibly small as it was the case in Model 0 without school and classroom level achievement and socioeconomic composition variables.

Finally, the moderate negative interaction coefficients for immigrant composition remain only for the reading and math scores of Mediterranean students and reading scores of Yugoslavian students. Although these interaction coefficients are moderate in size and only marginally significant they are systematically negative making their comparison with Turkish students (for whom the coefficients are now positive) more problematic. Because the negative main effect coefficients for the referent category of Turkish students disappear in Models 1 and 2, the interaction effect coefficients for immigrant composition effects on performance for the Mediterranean and Yugoslav students are larger in size. While this suggests that the immigrant composition of schoolfellows and classmates might have an independent negative effect on the test scores of these two groups, the statistical significance of this finding is marginal. In other words, once the two other compositional factors –achievement and socioeconomic

background— of classrooms or schools are taken into consideration, the immigrant background of these students' schoolfellows and classmates still might play a negative role in their performance. However, this finding should be interpreted very cautiously and requires further verification because the coefficients are small in size and they are only marginally significant. Nonetheless, the estimations with different measures of immigrant composition support this and the interaction effect coefficients increase in size with additional school and classroom level predictors.^{ix}

Immigrant Composition by School Type: Hauptschule & Gymnasium

Finally, I turn to models examining the within school track associations between immigrant composition and educational performance. The previous models include school type as a control variable. For the present models, I remove these controls and estimate the same models separately on the subsamples of the lowest —*Hauptschule*— and the academic —*Gymnasium*— school tracks of the German secondary education system. I anticipate that any association between the composition of peers and a student's test scores will be limited at the lowest school type by the low average educational performance of students attending these schools. Immigrant students are less well represented in the academic school track, and both the SES and achievement composition will be higher as a function of track placement, so the immigrant share of a school or classroom is a more distinguishing feature. I expect that a higher proportion of immigrant students in schools and classrooms would play a negative role in immigrant students' performance at this school track above and beyond the tendency for immigrant students to average low SES and low achievement levels. For the academic track schools, I separately estimate the effect of three immigrant composition variables (immigrant

classmates, immigrant schoolfellows and percent immigrant in school) on the reading and math scores of individual immigrant students. Like previous models, first I only take the student's individual level predictors into consideration; at the next step I include the compositional factors of socioeconomic background and achievement into my models.

Table 2.7 reports estimates from these models on separate sub-samples of immigrant students, those attending either academic or lowest track schools, omitting students from all other school types. The results for the *Hauptschule* track students largely confirms my hypothesis that due to low average educational performance, the models will not be able to detect any relationship between immigrant composition and students' test scores. Most coefficients for the variables of focus are very small (Table 2.7, Panel 1). There are, however, exceptions to this finding. As it was the case with models on pooled sample, Mediterranean and Yugoslav students' reading scores and Mediterranean students' math scores have larger negative associations with higher proportion of immigrant students in their classrooms and schools than the Turkish student (reference group) do. The information collected from school principals –percent of immigrant students in school– confirms this finding that interaction effect coefficients are moderate in size and statistically significant for Mediterranean students in both math and reading, and for Yugoslav students' reading scores. At the lowest track, the descendants of the arguably best integrated labor migrant group –Mediterranean students– face the largest disadvantages when their schoolfellows and classmates contain a high proportion of immigrants. This partially applies to Yugoslavian students as well. In this regard, it is also worth noting that for the Turkish reference group there is no relationship between

immigrant composition and test scores above and beyond that which was captured in the SES and achievement measures of their peers.

At the academic –*Gymnasium*– track a different picture emerges. Higher numbers of immigrant classmates (-.33), immigrant schoolfellows (-.40) and percent of immigrant students in school (-20% for a 10% increase) have substantially negative and significant associations with reading scores of the referent category of Turkish students (Table 2.7, Panel 2). For other four immigrant groups, interaction effect coefficients are positive, but they are only statistically significant for the reading scores of Polish group. Thus, the models do not provide the confidence levels to claim a relationship between immigrant composition and reading scores are different across immigrant groups, but unlike in the *Hauptschule* subsample, the baseline effects of immigrant composition (seen in the Turkish group) are negative. The reason for a failure to find differences might be the small sample size of immigrant students in academic school types, but it could also reflect a generally less supportive climate for students of migration background in these more elite schools. The coefficients for the Turkish referent group from models with math scores are moderate but still statistically significant. In terms of math performance differences among immigrant groups, a similar picture appears in that interaction effect coefficients tend to be positive (indicating weakly that the negative effect of immigrant peers could be less than for the Turkish students) but only statistically significant for a single measure of schoolfellows for return migrants from the Soviet Union. Thus, for both reading and math scores I cannot reject the hypothesis that there no differences between the main category of Turkish and the other immigrant students.

Next, I add school and classroom level socioeconomic and achievement composition variables to the models. When the models include school and classroom level socioeconomic composition (Models 1), the large coefficients and statistically significant negative associations for reading and math scores disappear almost completely for the referent category of Turkish students at the academic school –*Gymnasium*– track (Table 2.8). This finding challenges my hypothesis that the relationship between immigrant composition and test scores would be more pronounced in the academic track schools, showing that school and classroom level socioeconomic composition are the major explanatory factors. The previous immigrant composition effects appear to be spurious, since immigrant composition operates only indirectly through the school and classroom level socioeconomic background of students in the academic track schools. I infer from this that Turkish students are attending academic track schools with students from relatively lower levels socioeconomic origins even when not immigrant in origin. All in all, it appears that not a higher immigrant population in a school, but their greater likelihood of having lower SES resources and achievement levels are more directly determinants of Turkish students' individual low test scores.

The reading scores of Yugoslav and math scores of Mediterranean and Polish students are distinguished from this Turkish baseline – the strong negative relationship between high immigrant composition and low test scores is maintained even after taking the socioeconomic composition of schools and classrooms into consideration. For return migrant students from the former Soviet Union, once again, there appears to be very limited relationship if any between high immigrant composition and test scores. Finally, including the achievement composition (Model 2) does little to change the effect of

immigrant composition variables; most of the effect of immigrant background is being expressed through the SES composition of the school. This is not very surprising because achievement composition among schools within same tracks should have little variation.

The finding that the disadvantages from high immigrant composition persists for some students is particularly interesting. Mediterranean students' scores both in lowest and academic school tracks are lower for high immigrant composition schools even after controlling for achievement and socioeconomic composition. In addition, for Yugoslav students at the lower tracks there appears a positive association between higher immigrant composition of school and classroom and their math scores. However, with the information at hand, it is hard to develop convincing explanations for these findings.

The key finding of this section is that the estimated effects of high immigrant composition of schoolfellow and classmates disappear for most students, once the socioeconomic composition of schools and classrooms taken into consideration. The direct paths between immigrant composition variables in Figure 2.1 become substantially smaller and insignificant for the Turkish referent group and the differences between them and the others are largely very small and insignificant. This suggests that the effects of high immigrant composition on immigrant student performance are primarily mediated by the low socioeconomic composition of their schools and classrooms. For the subsample of those attending an academic school track, it also suggests that even at the academic school track, students with Turkish backgrounds attend those schools with relatively lower levels of socioeconomic backgrounds. The findings indicate that immigration composition effects could be partly direct for other the labor migrants,

because the negative associations persist for Mediterranean students' math scores and Yugoslav students' reading scores.

Discussion

The reaction of the German state to the PISA tests results of early 2000s was proactive, introducing measures to improve school quality and student performance (Hanushek, 2005). The educational expansion of the academic track in the 1970s, however, may have contributed to net educational inequality between native and immigrant population by disproportionately increasing the educational opportunities of native Germans, while denying access to those with immigration backgrounds (Kalter and Granato, 2002). My results suggest that this immigration penalty still persists for today's students with a migration background largely by their track placement, which is heavily influenced by SES and even within tracks by the SES of their school and classmates.

Today, Germany undergoes a demographic change with an aging native population and growing young and young adult immigrant population. The 2010 Census figures show that one out five individuals in Germany has an immigration background, whereas this rate is over 32% among those who are younger than fifteen years of age. Considering the growing population of immigrant youth, and the educational disadvantages they continue to experience, I think this article points to some crucial factors that predict the performance of the rising generation of immigrant students.

The findings of this study do not suggest that within the highly differentiated secondary schools and early tracking system in Germany, immigrant composition of schoolfellows and classmates plays a negative role in the educational performance of

immigrant students. Socioeconomic origins and country of origin of individual students determine the school context the individuals find themselves in; and in turn the socioeconomic background of the student population in schools and classrooms appear to be the major determinants of test scores in the highly differentiated secondary schooling of German education. This finding is in line with Buchmann and Dalton's (2002) findings that once students are placed on the highly differentiated school tracks, the other composition effects are minimal (see also Bauer and Riphahn, 2006; Van de Werfhorst, and Mijs, 2010). My findings suggest that the individual SES and immigration background characteristics of student are the primary determinants of their educational performance, but that the SES background of fellow students even within school tracks is not irrelevant.

My findings point to variation in the relationships between immigration background and socioeconomic composition and educational performance. The descendants of labor migrant groups differ from those of the two groups who arrived in Germany more recently; the Polish students and the return migrants from the former Soviet Union. For the more recent immigrant groups, I was unable to identify any significant composition effects. Especially for the return migrants from the former Soviet Union, the first-order associations between immigrant composition of schoolfellows and classmates appear to be the smallest, even though they are not the highest performing group. For small Polish group, the results are less conclusive. At the classroom level, all first-order negative associations are at best moderate but still significant. Once again, these negative associations between immigrant composition and student performance are probably eliminated among the Polish students and return migrants (positive but

nonsignificant interaction effect coefficients). My hypothesis was that there would be little relationship between high immigrant composition and test scores for the recent migrant groups. This was only confirmed for the return migrant groups from the former Soviet Union at the school level; I could not show this with confidence at the classroom level, where they are not statistically significantly different from the Turkish group.

Findings regarding for labor migrant communities – Turkish, Mediterranean and Yugoslavian – require further study. The models controlling for achievement and socioeconomic composition of schools and classrooms suggest that immigrant composition operates through different mechanisms among the three labor migrant groups (Turkish, Mediterranean and Yugoslav). Figures 2.3 and 2.4 and Table 2.4 show that without controlling for achievement and socioeconomic composition, there is a strong negative association between their reading and math scores and immigrant composition in schools and classrooms. For Turkish students, however, the estimated effects of immigrant composition in schools and classrooms disappear, once the models take the achievement composition and socioeconomic background of schoolfellows and classmates into consideration. According to my theoretical model (See Figure 2.1), this finding indicates that the socioeconomic background of the student body and school type in fact mediates the estimated effects of immigrant composition. Thus, for Turkish students the direct paths between immigrant composition and test scores become substantially smaller when the models include the indirect paths through school SES and achievement composition.

For Mediterranean and Yugoslavian students, my findings indicate the immigrant composition operates directly as well. For reading and math scores of Mediterranean

students and the reading scores of Yugoslavian students, with school and classroom level controls, the decreases in the size of the coefficients of immigrant composition measures are more moderate relative to Turkish students; although they are only significant in models with “percent of immigrant students in school” variables, measures based on interviews with school principals. For students from Mediterranean and former Yugoslavian countries, the immigrant composition of their schoolfellows and classmates is not mediated by achievement and socioeconomic composition but have moderately negative associations with their test scores, whereas for Turkish students the negative associations between immigrant schoolfellows and classmates and test scores are mediated by achievement and socioeconomic composition of their peers.

This difference, i.e., how the immigrant composition in classroom and schools operates for Turkish students on the one hand, and the Mediterranean and Yugoslavian students on the other hand, is important. For Turkish students, it appears that the estimated effects of immigrant composition disappear, once the socioeconomic background and achievement composition of schools and classrooms is included in the model. This suggests that the Turkish students are more likely to attend schools with high immigrant populations that are also relatively low achievers and come from families with lower socioeconomic origins. For Mediterranean and Yugoslavian students this may be less likely to be the case, because the effects of immigrant composition on test scores remain even after taking the achievement composition in schools and classrooms and socioeconomic background of peers into consideration. Findings from models on between track differences of immigrant composition partially confirm this finding: even at the academic – *Gymnasium* – school track, the students with Turkish origins attend

relatively low achieving schools which explains their low achievements. However, given the small sample size of immigrant students in academic school tracks, this finding needs further examination.

Moreover, in line with my third hypothesis, high immigrant composition in schools and classrooms plays a minimal role in the educational performance of lowest track students regardless of country of origin. In the lowest track, students of all migration backgrounds have low test scores regardless of composition of schools and classrooms. The only exception to this finding is the case of Mediterranean students, for whom higher immigrant composition in schools and classrooms at lowest track has negative associations with their test scores. Combined with the other findings above, Mediterranean students; descendants of the arguably better integrated group of the labor migrant communities (Haug, 2003; Schulz and Leszczensky, 2015; Steinbach, 2013), appears to experience the strongest negative associations between immigrant composition of their schoolfellow and classmates and their test results. This may suggest that those who are still being sorted into immigrant-heavier schools are treated more as immigrant others than their SES might predict. In terms of this relationship they not only differ from other two labor migrant groups but also from recent migrants from Poland and the former Soviet Union.

Despite offering insights about the variation of composition effects and the mechanisms for how they operate among labor migrant groups, this study also has major limitations. First, for Yugoslavian and return migrants from the former Soviet Union attending lowest school track, the relationship between immigrant composition and their math scores appear to be substantially positive relative to Turkish students once

achievement and socioeconomic composition of the schools are controlled. With the information at hand, I cannot explain why this is the case for these two groups' math scores.

Having information about the residence of students would further justify the mechanisms I offer to interpret the difference between Turkish and the other two labor migrant groups. My findings indicate that there is between school variation in achievement within school tracks. It is plausible that within the same school tracks the immigrant population varies among schools that are located in high immigrant populated metropolitan areas and areas with low immigrant populations.

Another limitation of this study is the unobserved heterogeneity between schools due to teacher and school characteristics. The NEPS dataset also provides a rich set of information on teacher and school characteristics. Therefore, the findings about the relationship between composition and test scores might be just an unobserved effect of learning environments and the quality of teachers in high immigrant schools. The schools with high immigrant and low income student populations have been found to be less preferred by better quality teachers (Hanushek et al., 2004), and these schools might be employing teachers with shortest tenures and limited experience (Orfield and Lee, 2005). Ammermueller and Pischke (2009; 329) empirically shows that the higher level of immigrants in a class, the lower the teacher's education. Thus, the next step for this study should articulate the findings more fully in relation to particular teacher and school characteristics.

References

- Alba, R. D., Handl, J., & Müller, W. (1994). Ethnische Ungleichheit im deutschen Bildungssystem. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 46(2), 209-237.
- Alba, R., Kasinitz, P., & Waters, M. C. (2011). The kids are (mostly) alright: Second-generation assimilation: Comments on Haller, Portes and Lynch. *Social Forces*, 89(3), 763-773.
- Ammermueller, A. (2005). Educational opportunities and the role of institutions. *ZEW-Centre for European Economic Research Discussion Paper*, (05-044).
- Ammermueller, A., & Pischke, J. S. (2009). Peer effects in European primary schools: Evidence from the progress in international reading literacy study. *Journal of Labor Economics*, 27(3), 315-
- Bauer, P., & Riphahn, R. T. (2006). Timing of school tracking as a determinant of intergenerational transmission of education. *Economics Letters*, 91(1), 90-97.
- Bellin, N. (2009). *Klassenkomposition, Migrationshintergrund und Leistung. Mehrebenen- analysen zum Sprach- und Leseverständnis von Grundschulern*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Bellin, N., Dunge, O. & Gunzenhauser, C. (2010). The importance of class composition for reading achievement: Migration background, social composition, and instructional practices. *IERI Monograph Series*, 9.
- Bifulco, R., Fletcher, J. M., & Ross, S. L. (2011). The effect of classmate characteristics on post-secondary outcomes: Evidence from the Add Health. *American Economic Journal: Economic Policy*, 25-53.
- Blossfeld, H.-P., Roßbach, H.-G., & von Maurice, J. (Eds.). (2011). Education as a Lifelong Process: The German National Educational Panel Study (NEPS). [Special Issue] *Zeitschrift für Erziehungswissenschaft*, 14.
- Bol, T., Witschge, J., Van de Werfhorst, H. G., & Dronkers, J. (2014). Curricular tracking and central examinations: Counterbalancing the impact of social background on student achievement in 36 countries. *Social Forces*, doi: 10.1093/sf/sou003.
- Borman, G., & Dowling, M. (2010). Schools and inequality: A multilevel analysis of Coleman's equality of educational opportunity data. *Teachers College Record*, 112(5), 1201-1246.
- Buchmann, C., & Dalton, B. (2002). Interpersonal influences and educational aspirations in 12 countries: The importance of institutional context. *Sociology of education*, 99-122.
- Buchmann, C., & Park, H. (2009). Stratification and the formation of expectations in highly differentiated educational systems. *Research in Social Stratification and Mobility*, 27(4), 245-267.

- Büchel, F., & Wagner, G. (1996). Soziale Differenzen der Bildungschancen in Westdeutschland-Unter besonderer Berücksichtigung von Zuwandererkindern. *Lebenslagen im Wandel: Sozialberichterstattung im Längsschnitt*, 7, 80.
- Bygren, M., & Szulkin, R. (2010). Ethnic environment during childhood and the educational attainment of immigrant children in Sweden. *Social Forces*, 88(3), 1305-1329.
- Carrell, S. E., & Hoekstra, M. L. (2010). Externalities in the classroom: How children exposed to domestic violence affect everyone's kids. *American Economic Journal: Applied Economics*, 2(1), 211-228.
- Cebolla-Boado, H., & Medina, L. G. (2011). The impact of immigrant concentration in Spanish schools: school, class, and composition effects. *European Sociological Review*, 27(5), 606-623.
- Cheng, S., & Starks, B. (2002). Racial differences in the effects of significant others on students' educational expectations. *Sociology of Education*, 306-327.
- Coleman, J. S. (1966). *Equality of educational opportunity [summary report](Vol. 2)*. US Department of Health, Education, and Welfare, Office of Education.
- Çelik, Ç. (2011). *The Process of Leaving School and Meaning of Schooling: The Case of Turkish School Leavers in Germany*. Unpublished Dissertation, University of Bremen.
- Diefenbach, H. (2008). Bildungschancen und Bildungs (miss) erfolg von ausländischen Schülern oder Schülern aus Migrantenfamilien im System schulischer Bildung. *Bildung als Privileg: Erklärungen und Befunde zu den Ursachen der Bildungsungleichheit*, 221-245.
- Diehl, C., & Schnell, R. (2006). "Reactive ethnicity" or "assimilation"? Statements, arguments, and first empirical evidence for labor migrants in Germany. *International Migration Review*, 40(4), 786-816.
- Dollmann, J. (2010). *Türkischstämmige Kinder am ersten Bildungsübergang*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Esser, H. (2006). Sprache und Integration. *Die sozialen Bedingungen und Folgen des Spracherwerbs von Migranten*. Frankfurt am Main: Campus.
- Esser, H., & Relikowski, I. (2015). Is Ability Tracking (Really) Responsible for Educational Inequalities in Achievement? A Comparison between the Country States Bavaria and Hesse in Germany. *IZA Discussion Paper* (No. 9082).
- Euwals, R., Dagevos, J., Gijsberts, M., & Roodenburg, H. (2010). Citizenship and labor market position: Turkish immigrants in Germany and the Netherlands. *International Migration Review*, 44(3), 513-538.

Fletcher, J. M. (2010). Social interactions and smoking: Evidence using multiple student cohorts, instrumental variables, and school fixed effects. *Health Economics*, 19(4), 466-484.

Fletcher, J. M. (2012). Peer influences on adolescent alcohol consumption: evidence using an instrumental variables/fixed effect approach. *Journal of Population Economics*, 25(4), 1265-1286.

Gaviria, A., & Raphael, S. (2001). School-based peer effects and juvenile behavior. *Review of Economics and Statistics*, 83(2), 257-268.

Hanushek, E. A. (2005). The economics of school quality. *German Economic Review*, 6(3), 269-286.

Hanushek, E. A., Kain, J. F., Markman, J. M., & Rivkin, S. G. (2003). Does peer ability affect student achievement? *Journal of applied econometrics*, 18(5), 527-544.

Hanushek, E. A., Kain, J. F., & Rivkin, S. G. (2004). Why public schools lose teachers. *Journal of human resources*, 39(2), 326-354.

Hanushek, E. A., & Wößmann, L. (2006). Does early tracking affect educational inequality and performance? Differences-in-differences evidence across countries. *Economic Journal*, 116(510), C63-C76.

Harris, D. (2010). How do school peers influence student educational outcomes? Theory and evidence from economics and other social sciences. *The Teachers College Record*, 112(4), 1163-1197.

Haug, S. (2003). Interethnische Freundschaftsbeziehungen und soziale Integration. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 55(4), 716-736.

Hillmert, S., & Jacob, M. (2010). Selections and social selectivity on the academic track: A life-course analysis of educational attainment in Germany. *Research in Social Stratification and Mobility*, 28(1), 59-76.

Hoxby, C. & Weingarth, G. (2005). *Taking race out of the equation: School reassignment and the structure of peer effects*. Working paper.

Haug, S. (2003). Interethnische Freundschaftsbeziehungen und soziale Integration. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 55(4), 716-736.

Kalter, F. (2008a). Ethnische Ungleichheit auf dem Arbeitsmarkt. In *Arbeitsmarktsoziologie* (pp. 303-332). VS Verlag für Sozialwissenschaften.

Kalter, F. (2008b). Stand, Herausforderungen und Perspektiven der empirischen Migrationsforschung. *Migration und Integration. Kölner Zeitschrift für Soziologie und Sozialpsychologie. Special Issue*, 11-36.

- Kalter, F. (2011). The Second Generation in the Labor Market: Explaining the Turkish Exception. In R. Alba and M.C. Waters (Eds.). *The Next Generation: Immigrant Youth in a Comparative Perspective* (pp. 166-184). New York: NYU Press, 2011.
- Kalter, F., & Granato, N. (2002). Demographic change, educational expansion, and structural assimilation of immigrants: The case of Germany. *European Sociological Review*, 18(2), 199-216.
- Kalter, F., Granato, N. & Kristen, C. (2007). Disentangling Recent Trends of Second Generation's Structural Assimilation in Germany. In S. Scherer et al. (eds.), *From Origin to Destination: Trends and Mechanisms in Social Stratification Research* (pp. 214-245), Frankfurt, Germany: Campus.
- Kalter, F., & Kogan, I. (2014). Migrant networks and labor market integration of immigrants from the former Soviet Union in Germany. *Social Forces*, 92(4), 1435-1456.
- Kemper, T. (2010). Migrationshintergrund-eine Frage der Definition! *Die Deutsche Schule*, 102(4), 315-326.
- Kristen, C. (2003). *School choice and ethnic school segregation: Primary school selection in Germany*. Waxmann Verlag.
- Kristen, C. (2008). Schulische Leistungen von Kindern aus türkischen Familien am Ende der Grundschulzeit. Befunde aus der IGLU-Studie. In Kalter, F. (ed.), *Migration und Integration. Special Issue 48, Kölner Zeitschrift für Soziologie und Sozialpsychologie* (pp. 230–251). Wiesbaden: VS Verlag für Sozialwissenschaften.
- Kristen, C., & Dollmann, J. (2010). *Sekundäre Effekte der ethnischen Herkunft: Kinder aus türkischen Familien am ersten Bildungsübergang* (pp. 117-144). VS Verlag für Sozialwissenschaften.
- Kristen, C., Edele, D., Kalter, F., Kogan, I., Schulz, B., Stanat, P., & Will, G. (2011). 8 The education of migrants and their children across the life course. *Zeitschrift für Erziehungswissenschaft*, 14(2), 121-137.
- Kristen, C., & Granato, N. (2007). The educational attainment of the second generation in Germany Social origins and ethnic inequality. *Ethnicities*, 7(3), 343-366.
- Kristen, C., & Olczyk, M. (2013). Ethnische Einbettung und Bildungserfolg. In *Bildungskontexte* (pp. 353-403). Springer Fachmedien Wiesbaden.
- Kristen, C., Reimer, D., & Kogan, I. (2008). Higher education entry of Turkish immigrant youth in Germany. *International Journal of Comparative Sociology*, 49(2-3), 127-151.
- Kroneberg, C. (2008). Ethnic communities and school performance among the new second generation in the United States: Testing the theory of segmented assimilation. *The Annals of the American Academy of Political and Social Science*, 620(1), 138-160.

- Lavy, V., & Schlosser, A. (2011). Mechanisms and impacts of gender peer effects at school. *American Economic Journal: Applied Economics*, 1-33.
- Levels, M., Dronkers, J., & Kraaykamp, G. (2008). Immigrant children's educational achievement in western countries: origin, destination, and community effects on mathematical performance. *American Sociological Review*, 73(5), 835-853.
- Münz, R. (2002). Ethnos or demos? Migration and citizenship in Germany. *Challenging ethnic citizenship: German and Israeli perspectives on immigration*, 15-35.
- Nauck, B., Diefenbach, H., & Petri, K. (1998). Intergenerationale Transmission von kulturellem Kapital unter Migrationsbedingungen. Zum Bildungserfolg von Kindern und Jugendlichen aus Migrantenfamilien in Deutschland. *Zeitschrift für Pädagogik*, 44(5), 701-722.
- Oakes, J. (2005) [1985]. *Keeping Track: How Schools Structure Inequality*. New Haven, CT: Yale University Press.
- Olczyk, M., Will, G., & Kristen, C. (2014). *Immigrants in the NEPS: Identifying generation status and group of origin* (No. 41a). NEPS Working Paper.
- Orfield G, & Lee C. (2005). *Why Segregation Matters: Poverty and Educational Inequality*. Cambridge, MA: Civil Rights Proj., Harvard Univ.
- Parker, P. D., Jerrim, J., Schoon, I., & Marsh, H. W. (2016). A Multination Study of Socioeconomic Inequality in Expectations for Progression to Higher Education The Role of Between-School Tracking and Ability Stratification. *American Educational Research Journal*, 53(1), 6-32.
- Pfeffer, F. T. (2008). Persistent inequality in educational attainment and its institutional context. *European Sociological Review*, 24(5), 543-565.
- Portes, A., & Hao, L. (2004). The schooling of children of immigrants: Contextual effects on the educational attainment of the second generation. *Proceedings of the National Academy of Sciences of the United States of America*, 101(33), 11920-11927.
- Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Univ of California Press.
- Powell, J. J., & Wagner, S. (2001). Daten und Fakten zu Migrantenjünglichen an Sonderschulen in der Bundesrepublik Deutschland. *Berlin: Max-Planck-Institut für Bildungsforschung*.
- Ruhose, J. and Schwerdt, G. (2015). *Does Early Educational Tracking Increase Migrant-Native Achievement Gaps? Differences-In-Differences Evidence Across Countries*. IZA Discussion Paper 8903.
- Sacerdote, B. (2011). Peer effects in education: How might they work, how big are they and how much do we know thus far?. *Handbook of the Economics of Education*, 3, 249-277.

- Schulz, B. (2013). Social embedding and educational achievement of immigrants. *Mannheimer Zentrum für europäische Sozialforschung, Mannheim*. Available at: <http://www.mzes.uni-mannheim.de/publications/wp/wp-152.pdf>
- Schulz, B., & Leszczensky, L. (2015). Native friends and host country identification among adolescent immigrants in Germany: The role of ethnic boundaries. *International Migration Review*. Online publication, 1–34. doi:10.1111/imre.12163
- Schulze, A., Wolter, F., & Unger, R. (2009). Bildungschancen von Grundschulern: Die Bedeutung des Klassen- und Schulkontextes am Übergang auf die Sekundarstufe I. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 61(3), 411-435.
- Schümer, G. (2004). Zur doppelten Benachteiligung von Schülern aus unterprivilegierten Gesellschaftsschichten im deutschen Schulwesen. In *Die Institution Schule und die Lebenswelt der Schüler. Vertiefende Analysen der PISA-2000-Daten zum Kontext von Schülerleistungen*, (pp. 73–114). Wiesbaden: VS Verlag für Sozialwissenschaften.
- Skopek, J., Pink S. & Bela, D. (2013). Starting Cohort 4: 9th Grade (SC4). SUF Version 1.1.0. Data Manual. NEPS Research Data Paper. In *National Educational Panel Study (NEPS)*. Bamberg, University of Bamberg. https://www.neps-data.de/Portals/0/NEPS/Datenzentrum/Forschungsdaten/SC4/1-1-0/SC4_1-1-0_DataManual_en.pdf
- Solga, H., & Wagner, S. (2008). Die Zurückgelassenen—die soziale Verarmung der Lernumwelt von Hauptschülerinnen und Hauptschülern. In *Bildung als Privileg* (pp. 191-219). VS Verlag für Sozialwissenschaften.
- Söhn, J., & Özcan, V. (2006). The educational attainment of Turkish migrants in Germany. *Turkish Studies*, 7(1), 101-124.
- Stanat, P., Schwippert, K., & Gröhlich, C. (2010). Der Einfluss des Migrantenanteils in Schulklassen auf den Kompetenzerwerb. Längsschnittliche Überprüfung eines umstrittenen Effekts. In *Migration, Identität, Sprache und Bildungserfolg*. (pp. 147-164).
- Statistisches Bundesamt (2011). *Statistisches Jahrbuch 2010 für die Bundesrepublik Deutschland*.
- Steinbach, A. (2013). Family structure and parent–child contact: A comparison of native and migrant families. *Journal of Marriage and Family*, 75(5), 1114-1129.
- Van de Werfhorst, H. G., & Mijs, J. J. (2010). Achievement inequality and the institutional structure of educational systems: A comparative perspective. *Annual review of sociology*, 36, 407-428.
- von Maurice, J., Sixt, M., & Blossfeld, H.-P. (2011). The German National Educational Panel Study: Surveying a cohort of 9th graders in Germany (NEPS working paper no. 3). Bamberg, Germany: National Educational Panel Study, University of Bamberg

- Walter, O. (2008). Ethno-linguale Kompositionseffekte in neunten Klassen: Befunde aus der Klassenstichprobe von PISA 2006. *Zeitschrift für Erziehungswissenschaft* 11:169-184.
- Walter, O, und Stanat, P. (2008). Der Zusammenhang des Migrantenanteils in Schulen mit der Lesekompetenz: Differenzierte Analysen der erweiterten Migrantenstichprobe von PISA 2003. *Zeitschrift für Erziehungswissenschaft* 11:84–105.
- Wegmann, K. M. (2014). Shaping a new society: Immigration, integration, and schooling in Germany. *International Social Work*, 57(2), 131-142.
- White, I. R., Royston, P., & Wood, A. M. (2011). Multiple imputation using chained equations: issues and guidance for practice. *Statistics in medicine*, 30(4), 377-399.
- Worbs, S., Bund, E., Kohls, M., & Babka von Gostomski, C. (2013). *(Spät-) Aussiedler in Deutschland. Eine Analyse aktueller Daten und Forschungsergebnisse*. Universität Tübingen.
- Zinn, S. (2013). An Imputation Model For Multilevel Binary Data. NEPS Working Paper.
- Zinn, S. (2014). Assessing Design Effects & Application of Sampling Weights. Paper presented at 2nd Colloquium, *Education as a Lifelong Process*, Florence. April 10.

Endnotes:

ⁱ This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort 4–9th Grade, doi:10.5157/NEPS:SC4:1.1.0. From 2008 to 2013, NEPS data were collected as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, the NEPS survey is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg in cooperation with a nationwide network.

ⁱⁱ Recently, few studies have qualified this view by examining additional institutional features of schooling systems (Bol et al., 2014), the variation among the federal states in Germany (Esser and Relikowski, 2015), and by controlling for achievement gaps before track placement takes place (Ruhose and Schwerdt, 2015).

ⁱⁱⁱ I group the immigrants from four Mediterranean countries (Greek, Italian, Spanish and Portuguese) into a single category. Separately, the case numbers of students from these four countries in the sample are small. These four countries are currently members of the European Union, and Mediterranean countries with similar trajectories of political histories and cultural characteristics. They all have strong center-right and center-left traditions in politics, and with the exception of Italy, they democratized their regimes in 1970s. Besides Italy, who was a founding member of the European Economic Community in 1957, other three countries joined the EEC in 1980s following their democratization.

^{iv} Those students whose country of origin cannot be determined (n=140), or whose country of origin is different than these five groups (n=2240), are removed from the sample. These 2240 students with “other” countries of origin consist of a large number of nationalities, with small case numbers. Following the five largest immigrant groups under focus, the Western European countries such as France, Austria, Netherlands have the highest numbers of students.

^v Due to different measures of academic performance and their position in the German secondary schooling, the special needs schools are excluded from the analyses.

^{vi} In addition, the NEPS data center provides users with rich information regarding sampling procedures, instruments for competence score assessments, and design weights (see Skopek, Pink and Bela, 2013).

^{vii} University of Wisconsin-Madison’s Social Science Computing Cooperative’s training suggests not to use “imputed values of the dependent variable in the analysis model” that the imputed values add no information to the analysis because they are already used in the imputation model (Social Science Computing Cooperative, 2014).

^{viii} A student is a first generation immigrant if they are born outside of the territories of German Federal Republic. Those students who are born in Germany to foreign-born parents or migrated before they were six years old make up the second-generation

immigrant students. The students whose age of migration was below six are considered as second-generation migrants, because they attend German institutions for their entire educational career (Kristen et al., 2011). Finally, if the students are born to German-born immigrant parents or have at least one grandparent born in one of the origin countries, they are considered third generation immigrants.

^{ix} An alternative interpretation of this finding regarding Mediterranean and Yugoslav students might be the measurement bias in immigration background. The peer composition variables are based on the following question: “How many of your classmates/schoolfellows have immigration background, i.e. they themselves or at least one parent were born abroad?” This definition, however, does not capture the third generation immigrants, which compose the third of Mediterranean and the fifth of Yugoslav student groups, which might skew the performance distribution of these two groups. It is, however, almost impossible to clarify whether the students in the sample consider the third generation Mediterranean and Yugoslav students as immigrants or not.

Figure 2.1. Path Model for the Relationship between Immigrant Composition in Schools and Classrooms and Test Scores

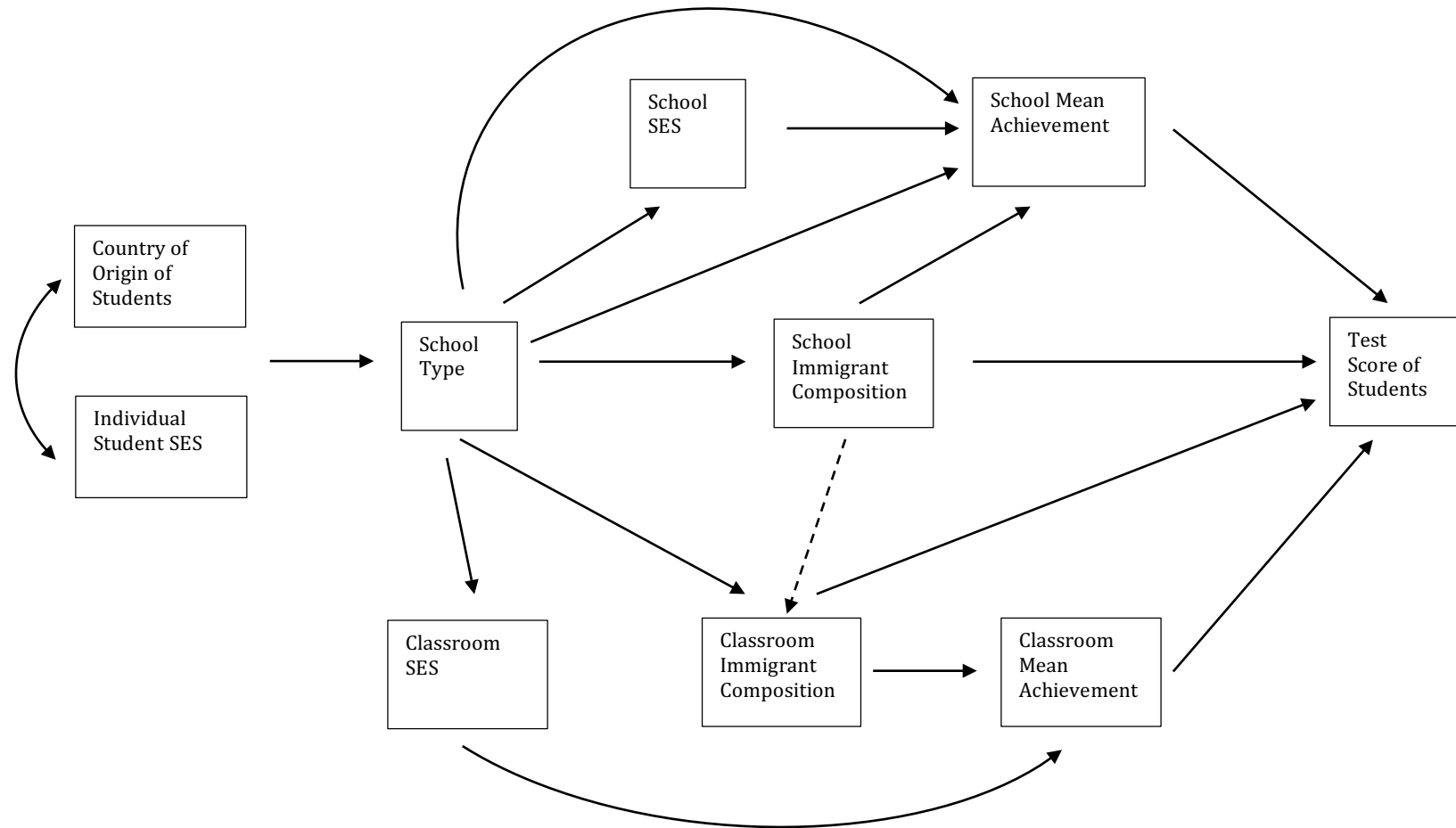
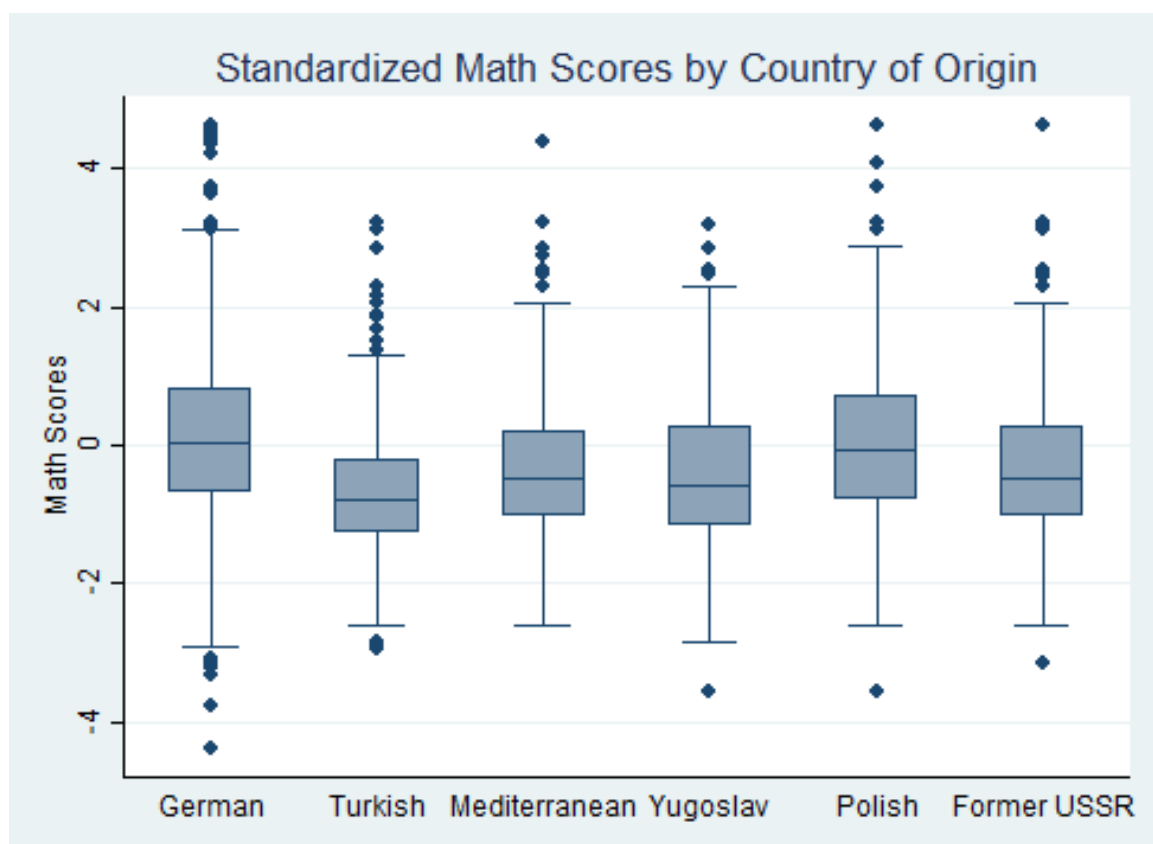
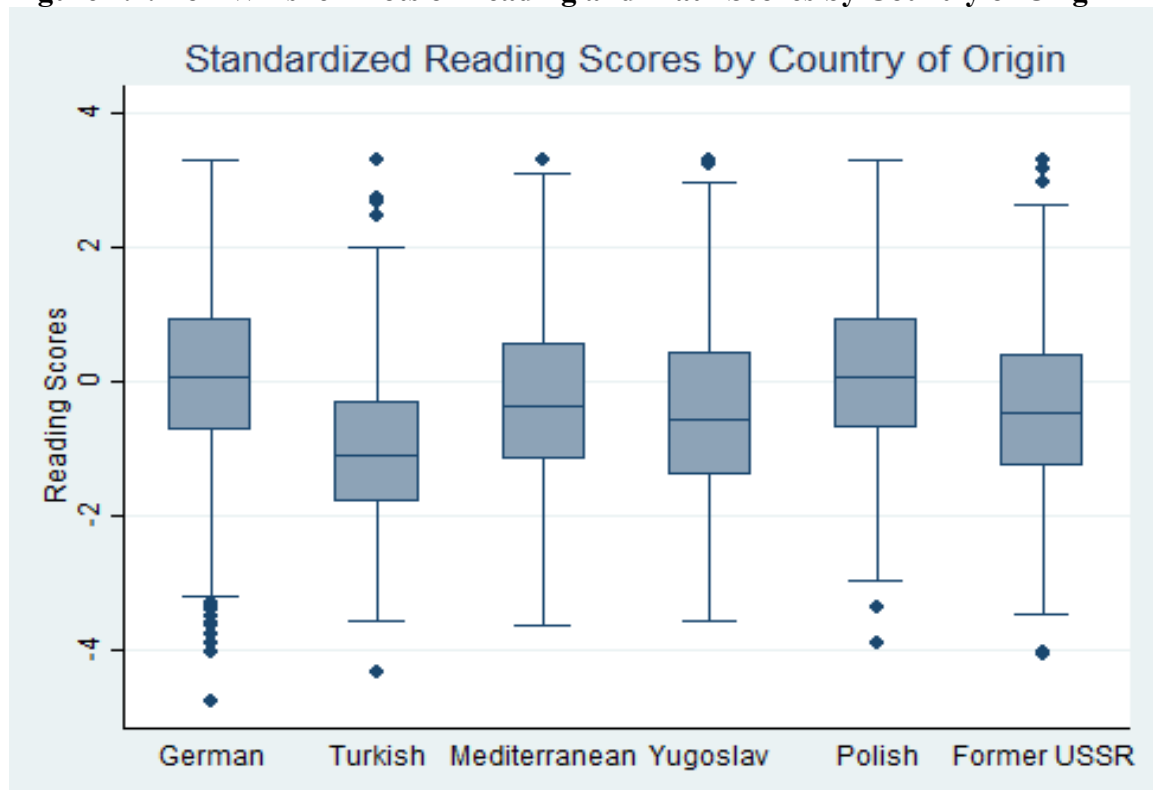
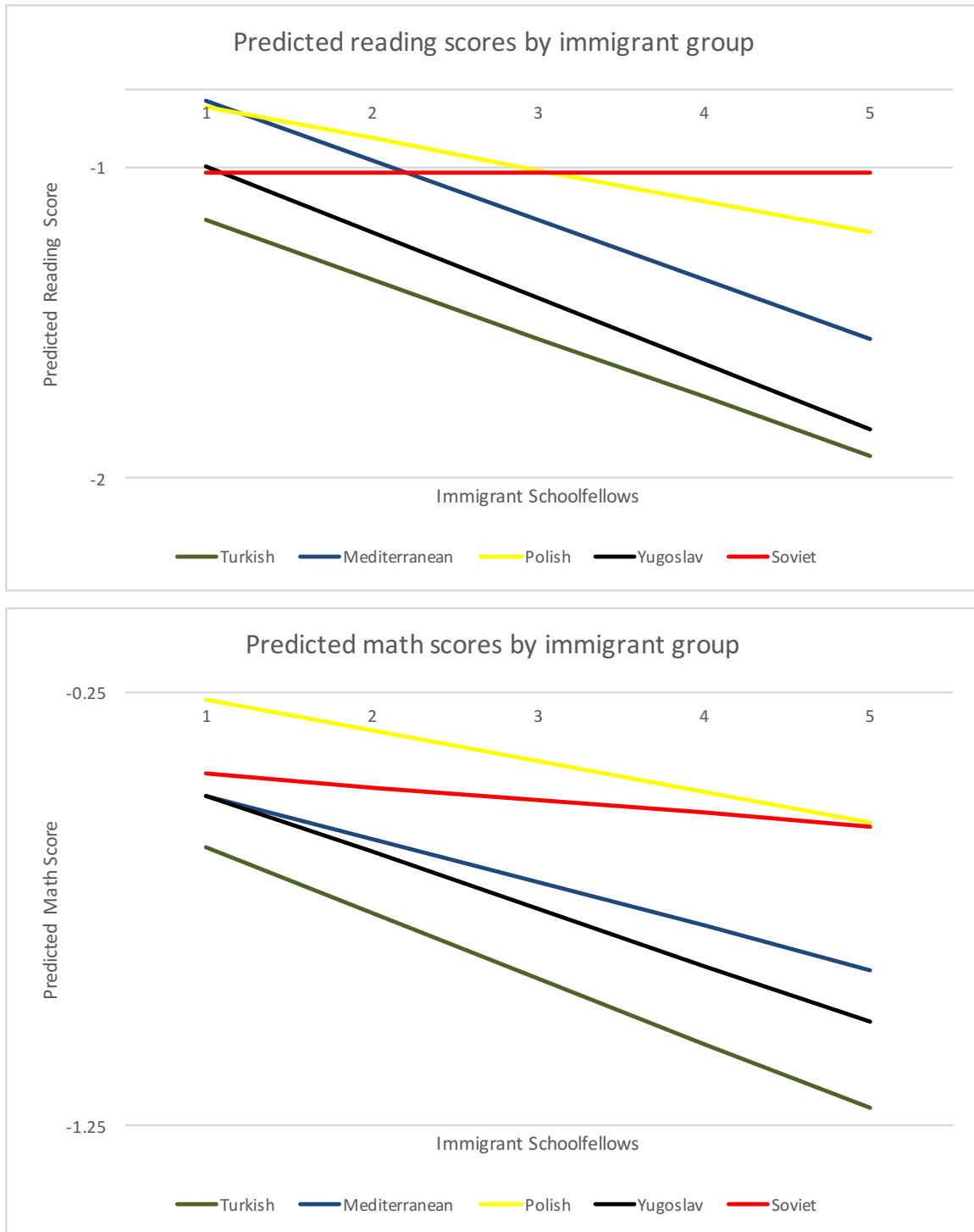


Figure 2.2. Box-Whisker Plots of Reading and Math Scores by Country of Origin

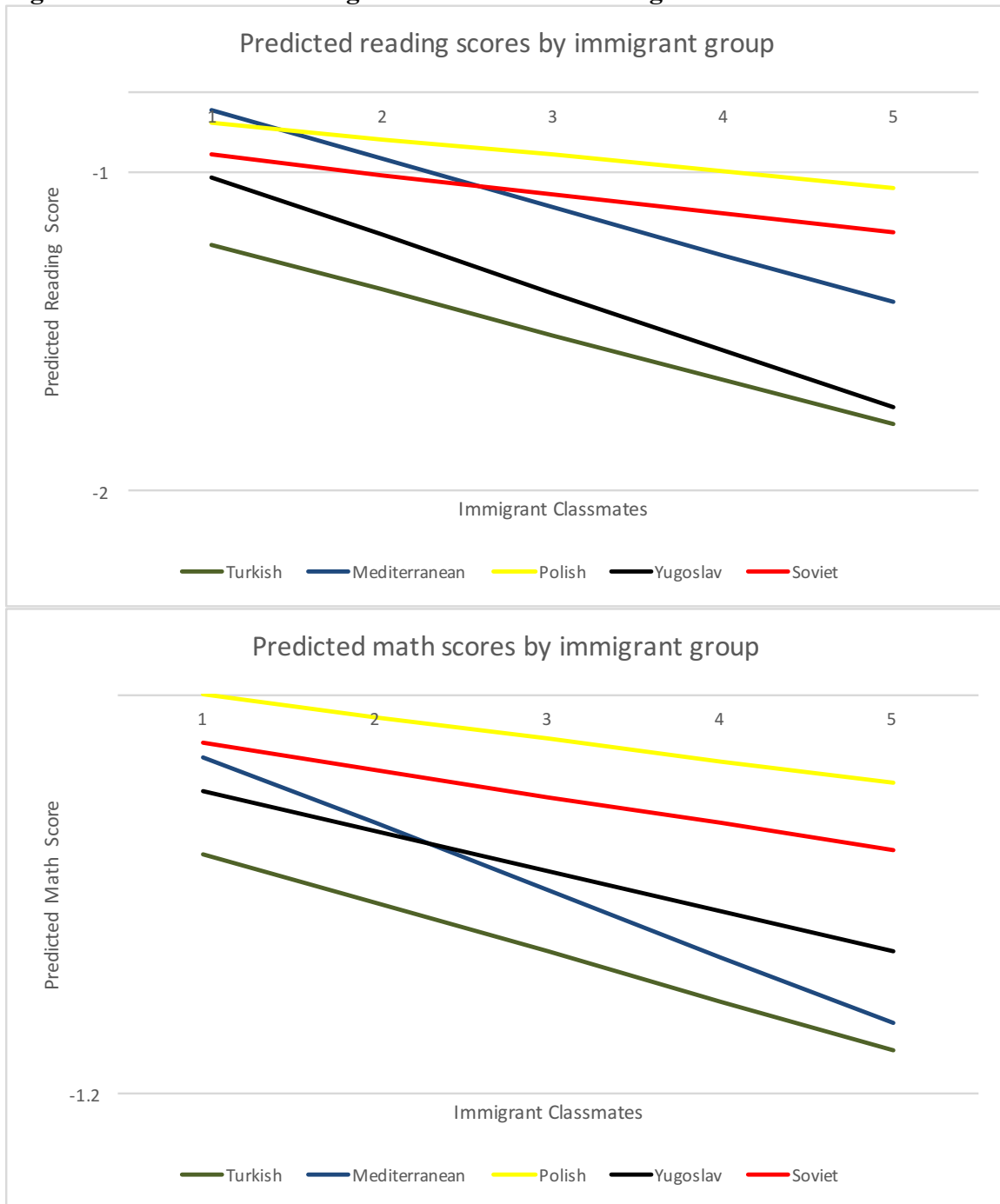


Note: The distribution for German natives is provided as a reference.

Figure 2.3. Predicted Reading and Math Scores: Immigrant Schoolfellows



* The models control for students' age, gender, parental occupational status and mother's educational attainment, generation status and school type they attend, and use cluster standard errors. The proportion of immigrant schoolfellow is the mean values of individual students attending the same schools.

Figure 2.4. Predicted Reading and Math Scores: Immigrant Classmates

* The models control for students' age, gender, parental occupational status and mother's educational attainment, generation status and the school type they attend, and use cluster standard errors. The proportion of immigrant classmates is the mean values of individual students instructed in the same classrooms.

Table 2.1. Secondary School Track Attendance by Country of Origin

	German†	Turkish (N=847)	Mediterranean (N=470)	Yugoslavian (N=385)	Polish (N=353)	Soviet Union (N=649)	Sample Mean (N=2,704)
<i>Hauptschule</i> (Lowest High School Track)	1,953 (21%)	409 (48%)	192 (41%)	149 (39%)	83 (24%)	270 (42%)	3,056 (25%)
<i>Realschule</i> (Intermediate Track)	2,082 (22%)	152 (18%)	93 (20%)	81 (21%)	76 (22%)	151 (23%)	2,635 (22%)
<i>Gymnasium</i> (Academic Track)	3,573 (38%)	146 (17%)	116 (25%)	95 (25%)	101 (29%)	120 (19%)	4,151 (34%)
Other School Type*	1,843 (20%)	140 (17%)	69 (15%)	60 (16%)	93 (26%)	108 (17%)	2,313 (19%)
TOTAL	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	751 (100%)	12,155 (100%)

* Other School Type includes two school types, which combine more than one curricular tracks in the same school: *Gesamtschule* (combines all three curricular tracks) and *Schulen mit mehrere Bildungsgaenge* (combines the lower two curricular tracks).

† Distribution for German students are provided as reference.

Table 2.2. Individual Level Control Variables by Country of Origin

	Turkish (N=847)	Mediterranean (N=470)	Yugoslavian (N=385)	Polish (N=353)	Soviet Union (N=649)	Sample (N=2,704)
Generation Status						
1 st Generation	53 (6%)	21 (4%)	28 (7%)	38 (11%)	141 (22%)	281 (10%)
2 nd Generation	759 (90%)	287 (61%)	276 (72%)	303 (86%)	507 (78%)	2,132 (79%)
3 rd Generation	35 (4%)	162 (35%)	81 (21%)	12 (3%)	1 (0%)	291 (11%)
TOTAL	847 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	2,704 (100%)
Mother's Highest Educational Attainment						
No Formal Qualification	213 (25%)	30 (6%)	36 (10%)	13 (4%)	13 (2%)	305 (11%)
Elementary	261 (31%)	118 (25%)	93 (25%)	50 (14%)	68 (11%)	590 (22%)
Intermediate High-School	252 (30%)	196 (42%)	134 (35%)	124 (35%)	282 (44%)	988 (37%)
Academic High-School	53 (6%)	72 (15%)	59 (16%)	94 (27%)	119 (19%)	397 (15%)
Tertiary Education	30 (4%)	41 (9%)	42 (11%)	53 (15%)	121 (19%)	287 (11%)
Other Education	35 (4%)	13 (3%)	16 (4%)	17 (5%)	42 (7%)	123 (5%)
TOTAL	844 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	2,704 (100%)

Parental Occupational Status (EGP)						
Upper Professionals	99 (12%)	110 (23%)	69 (18%)	54 (15%)	86 (13%)	418 (16%)
Lower Professionals	154 (18%)	126 (27%)	65 (17%)	89 (25%)	127 (20%)	561 (21%)
Routine Non-Manual	285 (34%)	147 (31%)	114 (30%)	145 (41%)	218 (34%)	909 (34%)
Skilled Manual Workers	184 (22%)	55 (12%)	70 (19%)	42 (12%)	123 (19%)	474 (18%)
Semi-Skilled & Unskilled Workers	119 (14%)	32 (7%)	61 (16%)	23 (7%)	93 (14%)	328 (12%)
TOTAL	844 (100%)	470 100%	385 (100%)	353 (100%)	649 (100%)	2,704 (100%)
Gender						
Female	413 (49%)	242 (52%)	191 (50%)	198 (57%)	343 (53%)	1,387 (51%)
Male	434 (51%)	228 (48%)	194 (50%)	155 (43%)	306 (47%)	1,317 (49%)
Mean Age						
In Months	188.7	187.7	188.3	187.1	190.1	186.2
In Years	15.7	15.6	15.7	15.6	15.8	15.5

Table 2.3. Immigrant Group Averages & Standard Deviations of Composition Variables

	Turkish (N=847)	Mediterranean (N=470)	Yugoslavian (N=385)	Polish (N=353)	Soviet Union (N=649)	Sample Mean (N=2,704)
Immigrant Classmates†	2.86 (1.38)	2.41 (1.28)	2.69 (1.46)	2.24 (1.21)	2.43 (1.24)	2.57 (1.34)
Immigrant Schoolfellows†	3.17 (1.24)	2.80 (1.12)	2.88 (1.26)	2.66 (1.06)	2.81 (1.06)	2.91 (1.17)
% Immigrant Student in School*	37.7% (26.4)	24.8% (21.8)	31.5% (27.3)	20.7% (19.3)	26.5% (21.2)	29.6% (24.4)
Immigrant Friends†	3.42 (1.44)	2.49 (1.40)	3.03 (1.55)	2.66 (1.43)	3.29 (1.47)	3.07 (1.50)

†The numbers show the immigrant group averages of students' answers to the three questions "How many people from your (circle of friends/students at your school/your classmates) have an immigration background, i.e. they or at least one parent was born abroad?" (Scale: 1: None; 5: All).

*Percent of immigrant students of the school based on interviews with school principals.

Table 2.4. Achievement Composition & Socioeconomic Background Composition of Schools and Classrooms

	Turkish (N=847)	Mediterranean (N=470)	Yugoslavian (N=385)	Polish (N=353)	Soviet Union (N=649)	Sample (N=2,704)
Achievement Composition in School						
Mean Reading Score	-.6187 (.7604)	-.2859 (.8153)	-.3659 (.8568)	-.1147 (.7632)	-.3867 (.7537)	-.4018 (.8005)
Mean Math Score	-.5186 (.6903)	-.2321 (.7763)	-.2441 .8119	-.1301 .7618	-.3129 .7497	-.3297 .7595
Achievement Composition in Classroom						
Mean Reading Score	-.6406 (.7881)	-.3201 (.8724)	-.3634 (.8766)	-.1045 (.7833)	-.4037 (.8054)	-.4170 (.8377)
Mean Math Score	-.5360 (.7075)	-.2669 (.8054)	-.2535 (.8473)	-.1148 (.7878)	-.3287 (.7773)	-.3442 (.7858)
Socioeconomic Composition in School						
% Student from Working Class Families	28.0%	21.8%	23.7%	20.2%	24.7%	24.5% (2.76)
Mean Number of Books in Household	149.0 (85.5)	196.3 (113.6)	183.3 (105.5)	204.5 (102.9)	178.6 (96.6)	176.5 (100.7)
Socioeconomic Composition in Classroom						
% Student from Working Class Families	27.9%	22.2%	24.1%	20.1%	25.1%	24.7% (2.67)
Mean Number of Books in Household	146.6 (91.8)	195.6 (122.2)	181.2 (110.9)	200.2 (110.9)	177.1 (101.6)	174.3 (107.1)

* Achievement composition measures are the mean reading and math test scores at the school and classroom level. % Working Class is calculated based on the percent of students whose highest occupational status in the family is either “Skilled Manual Workers” or “Semi-Skilled & Unskilled Workers” of the EGP scale.

Table 2.5. Reading and Math Performance by % Immigrant Students at School (Based on Interviews with School Principals)

	Reading					Math				
	Turkish	Mediterranean	Yugoslav	Polish	Soviet	Turkish	Mediterranean	Yugoslav	Polish	Soviet
Immigrant Group Interaction	-.98*** (.19)	.39† (.22)	.33† (.19)	.17 (.27)	-.06 (.17)	-.64*** (.15)	.23 (.18)	.18 (.16)	.54** (.20)	.22 (.15)
% Immigrant Student in School	-.008** (.003)	-.004 (.004)	-.003 (.003)	.007 (.005)	.010** (.003)	-.004† (.002)	-.003 (.003)	-.001 (.002)	.002 (.005)	.002 (.003)

Note: The percentages of immigrant students in schools are based on the interviews with school principals. I use unimputed values for this variable, in cases of non-response the values are treated as missing for the entire student population in that school. The models control for the school track, parental occupational status, mother's educational attainment, gender, generation status and age of the students.

Table 2.6. Immigrant Composition Coefficients from Models with Achievement & Socioeconomic Composition Controls

	Reading					Math				
	Turkish	Mediterranean	Yugoslav	Polish	Soviet	Turkish	Mediterranean	Yugoslav	Polish	Soviet
Model 0: Immigrant Schoolfellows	-.19*** (.05)	.00 (.08)	-.02 (.07)	.09 (.08)	.19** (.07)	-.15*** (.04)	.05 (.07)	.02 (.05)	.08 (.08)	.12* (.05)
Model 1: Immigrant Schoolfellows + SES	-.06 (.05)	-.06 (.08)	-.10 (.08)	.02 (.09)	.11 (.07)	-.04 (.04)	-.03 (.06)	-.04 (.06)	-.01 (.08)	.04 (.06)
Model 2: Immigrant Schoolfellows + SES + Mean Achievement	.05 (.04)	-.09 (.07)	-.10 (.08)	-.02 (.08)	.06 (.06)	.01 (.03)	-.04 (.06)	.01 (.07)	.00 (.07)	.05 (.06)
Model 0: Immigrant Classmates	-.14** (.04)	-.01 (.07)	-.04 (.06)	.09 (.07)	.08 (.05)	-.11** (.03)	-.04 (.06)	.02 (.05)	.06 (.07)	.05 (.05)
Model 1: Immigrant Classmates + SES	-.05 (.04)	-.07 (.07)	-.08 (.07)	.06 (.08)	.03 (.06)	-.04 (.03)	-.08 (.06)	-.02 (.05)	.02 (.07)	.01 (.05)
Model 2: Immigrant Classmates + SES + Mean Achievement	.05† (.03)	-.08 (.06)	-.08 (.06)	.04 (.07)	.02 (.05)	.02 (.02)	-.08 (.05)	.01 (.05)	.04 (.06)	.03 (.05)
Model 0: % Immigrant in School	-.008** (.003)	-.004 (.004)	-.003 (.003)	.007 (.005)	.010** (.003)	-.004† (.002)	-.003 (.003)	-.001 (.002)	.002 (.005)	.002 (.003)
Model 1: % Immigrant in School + SES	.002 (.002)	-.008* (.004)	-.006† (.003)	.000 (.005)	.005 (.003)	.002 (.001)	-.006† (.003)	.000 (.003)	-.001 (.004)	.000 (.003)
Model 2: % Immigrant in School + SES + Mean Achievement	-.002 (.003)	-.008† (.004)	-.007* (.004)	.003 (.005)	.006† (.004)	.000 (.006)	-.006† (.004)	-.003 (.003)	-.001 (.004)	-.002 (.003)

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Cluster standard errors in parentheses. Values under Turkish category report main effect coefficients; all other values report the interaction coefficients. Models 0 only include individual level controls; Models 1 control for socioeconomic status (SES) composition of schools and classrooms; Models 2 control for both SES composition and achievement controls at school and classroom levels.

Table 2.7. Peer Composition Variables by School Type: *Hauptschule* & *Gymnasium*

	Reading					Math				
	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union
<i>Hauptschule</i> (Reading, N= 944; Math, N=1,064)										
Immigrant Classmates	.00 (.05)	-.13 (.10)	-.18* (.08)	-.02 (.13)	.00 (.07)	.01 (.03)	-.19** (.07)	-.02 (.07)	-.21* (.09)	-.05 (.06)
Immigrant Schoolfellows	-.04 (.05)	-.09 (.11)	-.19* (.09)	.00 (.15)	.11 (.09)	.00 (.04)	-.13† (.08)	-.03 (.08)	-.27* (.11)	.03 (.07)
% Immigrant in School	-.002 (.002)	-.010* (.005)	-.009* (.004)	-.001 (.007)	.006† (.004)	.001 (.002)	-.012*** (.003)	-.003 (.003)	-.005 (.007)	-.001 (.003)
<i>Gymnasium</i> (Reading, N= 510; Math, N= 560)										
Immigrant Classmates	-.33*** (.08)	.17 (.18)	.19 (.14)	.27** (.13)	.12 (.12)	-.22** (.08)	-.25 (.15)	.21 (.15)	.19 (.16)	.26* (.12)
Immigrant Schoolfellows	-.40*** (.09)	.20 (.22)	.26† (.16)	.32* (.16)	.20 (.14)	-.25** (.08)	-.24 (.19)	.25 (.18)	.21 (.20)	.24† (.14)
% Immigrant in School	-.020*** (.004)	.011 (.012)	.007 (.008)	.013 (.013)	.012 (.010)	-.013*** (.004)	-.018 (.011)	.005 (.010)	-.008 (.014)	.013 (.011)

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Cluster standard errors are in parentheses. The models control for parental occupational status, mother's educational attainment, gender, generation status and age of the students. The figures under the first column in both math and reading panels are the main effect estimates for Turkish students. Other coefficients are the interaction effects for other immigrant groups.

Table 2.8. Immigrant Composition Coefficients with Achievement and Socioeconomic Background Composition: *Gymnasium*

	Reading					Math				
	Turkish	Medit.	Yugoslav	Polish	Soviet	Turkish	Medit.	Yugoslav	Polish	Soviet
<i>Gymnasium</i> (Reading, N= 510; Math, N= 560)										
Model 1: Schoolfellows	-.03 (.06)	-.05 (.12)	-.16 (.11)	.19 (.16)	.10 (.10)	.01 (.04)	-.07 (.09)	.06 (.10)	-.23† (.13)	.07 (.08)
Model 2: Schoolfellows	.05 (.05)	-.05 (.11)	-.21* (.10)	.09 (.15)	.06 (.09)	.05 (.04)	-.08 (.08)	.03 (.09)	-.19 (.13)	.06 (.07)
Model 1: Classmates	.02 (.05)	-.07 (.11)	-.15† (.09)	.06 (.13)	-.03 (.07)	.01 (.04)	-.11 (.07)	.05 (.08)	-.19* (.09)	-.03 (.06)
Model 2: Classmates	.07 (.04)	-.03 (.09)	-.19* (.08)	.03 (.11)	.01 (.07)	.04 (.03)	-.10 (.07)	.03 (.07)	-.11 (.10)	.01 (.06)
Model 1: % Immigrant Students in School	-.001 (.003)	-.010† (.005)	-.010* (.004)	.003 (.008)	.004 (.004)	.002 (.002)	-.009** (.004)	-.002 (.004)	-.001 (.008)	.000 (.003)
Model 2: % Immigrant Students in School	.003 (.002)	-.007 (.005)	-.012** (.004)	-.002 (.008)	.003 (.004)	.003 (.002)	-.009** (.003)	-.002 (.004)	.001 (.007)	.001 (.003)

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Cluster standard errors in parentheses. Values under Turkish category report main effect coefficients; all other values report the interaction coefficients. Models 1 control for socioeconomic status (SES) composition of schools and classrooms; Models 2 control for both SES composition and achievement controls at school and classroom levels.

Table 2.9. Immigrant Composition Coefficients with Achievement and Socioeconomic Background Composition: *Hauptschule*

	Reading					Math				
	Turkish	Mediterranean	Yugoslav	Polish	Soviet	Turkish	Mediterranean	Yugoslav	Polish	Soviet
<i>Hauptschule</i> (Reading, N= 944; Math, N=1,064)										
Model 1: Schoolfellows	-.13 (.13)	.01 (.25)	.00 (.18)	.13 (.22)	.03 (.18)	-.09 (.28)	-.39† (.22)	.24 (.19)	.10 (.25)	.14 (.16)
Model 2: Schoolfellows	-.03 (.13)	-.03 (.26)	.11 (.18)	.15 (.24)	-.03 (.18)	-.02 (.11)	-.42† (.23)	.30† (.17)	.08 (.24)	.09 (.15)
Model 1: Classmates	-.21† (.11)	.07 (.21)	.09 (.16)	.22 (.16)	.12 (.15)	-.11 (.09)	-.36* (.17)	.24 (.17)	.12 (.18)	.26* (.13)
Model 2: Classmates	-.02 (.09)	-.03 (.21)	.11 (.14)	.14 (.16)	-.05 (.14)	-.02 (.09)	-.39* (.16)	.29* (.15)	.11 (.17)	.14 (.13)
Model 1: % Immigrant Students in School	-.009 (.010)	-.006 (.016)	.001 (.013)	.000 (.016)	.005 (.014)	-.002 (.008)	-.031 (.013)	.000 (.013)	-.018 (.016)	.001 (.014)
Model 2: % Immigrant Students in School	.002 (.010)	-.016 (.016)	-.002 (.014)	-.009 (.015)	-.001 (.014)	-.002 (.008)	-.028† (.015)	.016 (.013)	-.015 (.016)	.005 (.013)

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Cluster standard errors in parentheses. Values under Turkish category report main effect coefficients; all other values report the interaction coefficients. Models 1 control for socioeconomic status (SES) composition of schools and classrooms; Models 2 control for both SES composition and achievement controls at school and classroom levels.

Table A2.1 Math & Reading Scores by School Type

	Math						Reading					
	German N=9131	Turkish N=830	Medit. N=449	Yugoslav N=376	Polish N=344	Soviet N=629	German N=8807	Turkish N=751	Medit. N=419	Yugoslav N=359	Polish N=317	Soviet N=586
Immigrant Group Interaction	-.57*** (.10)	-.25* (.12)	-.26 (.26)	-.05 (.20)	.17 (.44)	-.07 (.29)	-.79*** (.14)	-.47** (.18)	-.39 (.35)	-.35 (.29)	.15 (.52)	-.21 (.33)
Female	-.50*** (.02)	.14* (.06)	.13 (.08)	-.01 (.09)	-.15 (.11)	.03 (.07)	.22*** (.02)	.02 (.08)	.05 (.11)	.03 (.11)	-.16 (.12)	-.04 (.09)
School Type (Reference: <i>Hauptschule</i>)												
<i>Realschule</i>	.59*** (.03)	-.11 (.08)	-.09 (.11)	.06 (.12)	-.08 (.14)	-.16† (.09)	.67*** (.04)	.16 (.11)	.14 (.17)	.17 (.15)	.02 (.17)	.10 (.11)
<i>Gymnasium</i>	1.54*** (.03)	-.28** (.10)	-.20 (.13)	.02 (.14)	-.15 (.17)	-.02 (.12)	1.40*** (.04)	.03 (.13)	.11 (.16)	.46** (.15)	.22 (.18)	.22† (.13)
Other School Type	.23*** (.03)	-.07 (.08)	-.17 (.13)	.10 (.14)	.00 (.13)	-.07 (.10)	.53*** (.04)	-.14 (.12)	-.10 (.20)	-.06 (.20)	.06 (.18)	-.14 (.14)
F-Test Score	35.14 (0.0000)						26.79 (0.0000)					

Note: *p<0.05 **p<0.01 ***p<0.001; †p<0.10. Robust standard errors are in parentheses. Models control for parental occupational status, mother's educational attainment and the age of the students. The figures under the first columns of both math and reading panels are the main effect estimates for the native German students. Other coefficients are the interaction effects for other immigrant groups.

CHAPTER 3**The Variation in Educational Aspirations among Immigrant Students in Germanyⁱ**

Abstract

This study examines the variation in the educational aspirations of five largest immigrant groups in Germany: labor migrants from Turkey, four Mediterranean countries and the former Yugoslavia, as well as more recent migrants from Poland and return migrants with German ancestry from the former Soviet Union. Rather than testing the previous theories developed to explain the high educational aspirations of immigrant families, I compare the variation in students' own and their parents' perceived educational aspirations among immigrant communities. I also consider how they differ from the native German population. The findings show that secondary school track placement plays a significant role in attenuating high immigrant aspirations. Moreover, Turkish and Yugoslavian immigrant groups, i.e. those who come from the most disadvantaged socioeconomic backgrounds and from countries with lowest rates of higher education enrolment, have the highest aspirations for an academic high school qualification. These results provide evidence that low educational achievement and high educational aspirations can be reproduced over generations, even when the students realistically do not expect to obtain academic high school qualifications. I interpret the gaps in realistic and idealistic educational aspirations among Turkish and Yugoslav students as a conscious appraisal of a higher school qualification, unlike previous researchers who identified high aspirations among immigrant students as "immigrant-optimism." I also find that students from countries with higher education norms – in this sample the Polish, Mediterranean and return migrant students – do not report higher educational idealistic aspirations than their native German peers. I attribute this difference to the nature of aspirations of a better future that immigrant groups embrace.

Introduction

The educational aspirations of students and their parents has received close scholarly attention since Sewell and his colleagues included measures of educational and occupational aspirations, mental ability, and influence from significant others to Blau and Duncan's (1967) original model of the intergenerational attainment process (Sewell, Haller and Ohlendorf, 1970; Sewell, Haller and Portes, 1969). Sewell and his collaborators adopt the temporal ordering of events in the earlier model, which examines the variation in educational and occupational attainment in a population (Grodsky and Jackson, 2009, 2360); but their Wisconsin model of status attainment further adds educational and occupational aspirations as mechanisms affected by students' socioeconomic status and mental ability, determining the eventual educational and occupational attainment.

Existing research shows that minority and immigrant students hold higher levels of educational aspirations than their native born and white counterparts in the United States (Glick and White 2004; Kao und Tienda 1995; 1998; Mickelson, 1990; Rosenbaum and Rochford 2008), Germany (Ditton et al. 2005; Gresch, Maaz, Becker and MacElvany, 2012; Relikowski, Yilmaz and Blossfeld, 2012; Schuchart und Maaz 2007; Roth and Salikutluk, 2012). Similar differences have been found in cross-national research (Stanat, Segeritz and Christensen, 2010)ⁱⁱ in comparison to majority and native peers, controlling for social backgrounds. Thus, among immigrants, socioeconomic resources in the family are weaker determinants of educational aspirations (cf. Sewell et al. 1969; 1970) possibly because immigrants tend to overestimate the available

opportunities for educational and occupational attainment in the destination country context (Grodsky and Jackson, 2009; Nauck, Diefenbach & Petri, 1998).

Elaborating on the existing literature, the objectives of this study are threefold. First, using a recently published nationally representative sample of German ninth grade students drawn from the National Educational Panel Study (NEPS), I describe the variation among educational aspirations among native German and immigrant students from five immigrant communities in Germany. Second, I estimate whether the aspirations of ninth grade students and their perception of their parents' aspirations differ when taking into account the dose of realism that early school tracking in the highly differentiated German secondary education system imposes. Finally, I discuss the reasons for variation in educational aspirations among immigrant communities by focusing on the ways in which these groups have integrated into the social status hierarchy of German society.

Theoretical Framework

This study builds on previous research by examining the interplay among factors that influence the formation of educational aspirations and experiences of immigrant youth from the five largest immigrant communities in Germany: descendants of labor migrants from Turkey, former Yugoslavia, and Mediterranean countries, as well as more recent migrants from Poland and return migrants with German ancestry from the former Soviet Union, i.e., the *Spaetaussiedler*. According to the 2010 German Census, these groups compose approximately 60% of the immigrant population in Germany (*Statistisches Bundesamt*, 2011). Therefore, this sample allows me to assess the question of immigrant aspirations for the majority of the largest and the politically most relevant

immigrant populations in the German context. This requires a closer investigation of the history of immigration in Germany.

To understand the variation in educational aspirations among immigrant communities, I build on previous theories of assimilation, which emphasize the role of social and historical context of arrival of the immigrant groups, the particular characteristics of immigrant communities, and the discrepancy between country of origin and Germany in terms of educational opportunities (Diehl and Schnell, 2006; Portes and Rumbaut, 2001; Relikowski et al., 2012; Schulz and Leszczensky, 2015; Segeritz et al., 2010). Central to my analysis is trying to understand why and how the arrival context of immigration explains why not all “persons with migration background”ⁱⁱⁱ have the same immigration experiences. I argue that the differences in immigrant experiences among these groups (Haller et al., 2011; Portes et al., 2009), and their group incorporation into the social status hierarchy of Germany (Kroneberg, 2008; Schulz, 2013) explain the variation in the educational aspirations of current students.

The important axis that differentiates the context of arrival and selectivity of these five immigrant groups in Germany is whether or not they descend from a labor migrant community. “Traditional” (Schulz and Leszczensky; 2015) or “classical” (Kristen, Reimer and Kogan, 2008) labor migrants in the German context are those who arrived during Germany’s post-war industrial expansion in the 1960s and 1970s (Kalter and Granato, 2007; Söhn and Özcan, 2006). In order to meet the shortage of semi- and low-skilled workers, the German state recruited workers from Southern European countries (Greece, Spain, Portugal and Italy) as well as Yugoslavia, and Turkey (Kalter, Granato and Kristen et al., 2007; Kristen and Granato, 2007; Kristen et al., 2008). Even though

the mutual agreements between the German and sending governments defined the migrants as temporary workers, most of them stayed and became permanent members of German society, bringing wives and children (or less often husbands and children) with them. For labor migrants, low levels of human capital in a high human capital destination society present a major obstacle to socioeconomic mobility and higher educational attainment for subsequent generations (Kalter and Kogan, 2014, 1441). For second-generation immigrants, low human capital in their families and their predominantly rural backgrounds (Becker, 2011, 429) undermine opportunities for attending higher education institutions (Alba, Handl, Müller, 1994; Diehl and Schnell, 2006; Levels et al., 2008; Stanat and Christensen, 2006).

For recent immigrant groups from the successor states of the former Soviet Union and from Poland, the social and historical context was dramatically different (Schulz and Leszczensky, 2015; Kalter and Granato, 2007). These migrant groups, especially the ethnically German return migrants – *Spaetaussiedler* – who lived under socialist rule throughout the Cold War, received unprecedented state support for integration upon their arrival. The German state facilitated the integration of these migrants (Euwals et al., 2010, 521; Kalter, 2008a, 303; Wegmann, 2014), giving them the right to naturalize almost immediately after their arrival (Dietz, 2006; Münz, 2002). Recent immigrants from Eastern Europe (Poles as well as *Spaetaussiedler* from the former Soviet Union) also tend to come from families with higher levels of educational attainment (Kogan, 2011; Kristen et al., 2016). Moreover, these recent immigrants arrived at a time when “the homogenous self-image of German society had begun to change and the integration of immigrants had become a major issue of political debate” in Germany (Schulz and

Leszczensky, 2015, 3). All in all, return migrants from the former Soviet Union have historical ties to German society and stronger German language skills, and they experienced a more supportive “mode of incorporation” than the labor migrants (Portes and Rumbaut, 2001, 46).

There are differences among the recent immigrant groups as well. The proportion of Polish students with only one or two grandparents who were born abroad (3.5- and 3.75- generation, respectively) is significantly higher than among students with Soviet Union origins (Table A3.1; Figure A3.1). The reason for this is that the early return migrants with German ancestry – *Aussiedler*, who arrived immediately after the end of the Second World War – came overwhelmingly from Poland and Romania, whereas the majority of return migrants who arrived following the end of the Cold War – *Spaetaussiedler* – emigrated from the former republics of the Soviet Union (Worbs et al., 2013, 28). Thus, I consider students whose “migration background” consists only of having one or two grandparents born in Poland or the former Soviet Union as early return migrants and remove them from my immigrant student sample.^{iv} Moreover, there is clear evidence that students with later Soviet Union migration backgrounds are those with ethnic German ancestry (Olczyk et al., 2014; Schulz and Leszczensky, 2015; Worbs et al., 2013). However, according to the calculation of migration trends by Worbs et al. (2013, 28), more recent Polish migrants by and large tend not to have German ethnic origins, and they are not considered as return migrants. Their parents – and they themselves – are more readily able to immigrate because of the European Union’s insistence on freedom of movement for citizens of member states, which includes Poland and the Mediterranean states.

Finally, the contemporary position of labor migrants in the German social status hierarchy warrants extra attention. Today, the large majority of labor migrant communities are second and third generation. The exception to this is the Turkish community; only the 4% of them are third generation students. Poles and return migrants from the former Soviet Union include 11% and 22% first generation students, respectively (see Table 3.1).

In terms of parental educational attainment and occupational status, students with Turkish background in particular are still far behind their German peers, as well as being behind those immigrant children with Polish and Soviet Union backgrounds (Table A3.3). Turkish students largely come from families with relatively low levels of educational attainment. Fifty years since their initial arrival, they have largely integrated into the low-income and low-education strata of German society. The distribution of parental socioeconomic resources among the second and third generations reveals that the descendants of labor migrants with Turkish origins show a “persistence of [their unequal] positions in [the German] hierarchy” (Duncan, 1968: 681, cited in Grodsky and Jackson, 2009: 2347). Although they are most likely to be second generation, Turkish immigrants lack a “second-generation advantage” in terms of educational achievement (Farley and Alba, 2002; Kao and Tienda, 1995).

Formation of Educational Aspirations among Immigrant Families

Previous studies have formulated several theoretical mechanisms to explain the high educational and occupational aspirations of immigrant parents and their children (Becker, 2010; Becker and Gresch, 2016). In this study, my aim is to examine how these five immigrant groups differ from each other in terms of their children’s aspirations, and

also discuss whether educational aspirations hold the same significance for each immigrant group (Kao and Tienda, 1998, 375). Given the specific histories of immigration and the opportunity structures available to them after immigration, immigrant groups develop different expectations (see, Becker and Gresch, 2016, 110).

All in all, my central hypothesis is that aspiration levels vary by immigrant group in relation to the extent to which the social and historical context of their arrival provided them with opportunities for higher levels of education than had been available at home, how they interpret these available opportunities, as well as how their duration of stay in Germany changes their interpretations of opportunity structures.

The characteristic misinterpretation of available opportunities is called “immigrant optimism,” defined as the development of high expectations after arrival in a new country seen to provide greater potential for successive generations (Kao and Tienda, 1995; Heath and Brinbaum, 2007; Stanat et al., 2010). Immigrant optimism provides a useful framework for understanding the variation in educational aspiration levels among immigrant students of different countries of origins, who form aspirations based on how they interpret the stratified opportunity structures Germany makes available to them in light of their own academic opportunities (Grotsky and Jackson, 2009, 2362).

Previous work on second-generation immigrants in Germany shows that the immigrant optimism indeed operates differently among immigrant communities. Becker’s logistic regression analysis based on 2000 PISA (Program for International Student Assessment) data shows that compared to German parents, Turkish parents are 2.5 times more likely to want their children to complete the academic high school track,

whereas those with former Soviet Union backgrounds are 1.1 times more likely to do so (Becker, 2010: 2). Becker's striking finding is that once the socioeconomic status of the family and the students' reading achievements are controlled, the odds ratio for Turkish parents increases to 46:1 for Turkish parents, and 4.9:1 for Soviet parents, compared to the native Germans (Becker, 2010, Figure 1). Based on the 2003 PISA Study, Stanat et al. (2010, 54) similarly show that fifteen-year-olds with Turkish backgrounds have the highest aspiration levels for a tertiary education degree of any group when compared to their native German peers. Their immigrant optimism hypothesis is supported for all immigrant groups in their (including the former Soviet Union, Polish students and a group composed of those from all other countries of origin).^v Furthermore, they found a reduction in motivation and aspiration levels between the first- and second-generation Turkish students.

Generation status may also be also a key factor in understanding how immigrant students and parents interpret the availability of opportunities in their host country. For example, optimism of immigrant communities might disappear over time, after they have faced the realities of the destination society, such as blocked opportunities and discrimination (Kao and Tienda, 1998). Indeed, the findings of Stanat et al. (2010, 53) from thirteen destination countries show that high aspirations weaken between first- and second-generation students from the same countries of origin. I thus focus on the generation status of immigrant students to examine whether a longer duration of stay is relevant for explaining the "adjustment process" bringing aspirations down to meet the social conditions of the German context (Becker and Gresch, 2016, 79).

The high educational aspirations among immigrant parents and students arise despite (or perhaps because of) their low educational levels of achievement. Becker and Gresch (2016, 74) refer to the discrepancy between the high educational aspirations of immigrant families and the relatively low educational performance of immigrant children as the “achievement-aspiration paradox” (see also Becker, 2010, 1; Mickelson, 1990, 44). In Germany, there is compelling evidence for the juxtaposition of high educational aspirations with low educational achievement among immigrant students, especially among the Turkish population (Ditton et al. 2005; Nauck et al., 1998; Relikowski, 2012; Roth et al., 2010; Roth and Salikutluk, 2012).

Scholars have focused on Turkish families to understand the reasons behind high educational expectations co-existing with continuing low academic performance among their children. Goldberg et al. (2004) explain the aspiration-achievement gap by pointing to the predominantly rural social origins of Turkish immigrants, who had very limited opportunities for higher education prior to immigration. Indeed, the act of immigration to a Western European country like Germany has been found to increase their hopes of a better future for their children and boosts their aspirations (Relikowski, 2012). Similarly, Roth et al. (2010) and Roth and Salikutluk (2012) also find high educational aspirations among mothers of students with Turkish and Soviet Union origins; however, the measures of social capital they use, do not explain why immigrant mothers have higher aspirations than mothers of native students (Roth et al., 2010, 210; Roth and Salikutluk, 2012, 715-716).

Erbil Yılmaz’s qualitative case study provides a clearer explanation (see Relikowski, 2012; Relikowski, Yılmaz and Blossfeld, 2012). Yılmaz’s interviews with

parents of students from the BiKS Study^{vi} from the federal states of Bavaria and Hesse reveal that immigrant optimism is not enough to explain the high educational expectations of Turkish families. Besides optimism, Turkish parents also revealed informational deficits due to their limited familiarity with the German educational system (Relikowski et al., 2012: 117-118). The responses from Turkish parents show that once their children go to school, they think that the institution and teachers are responsible for guiding them. They delegate educational responsibilities to institutional actors, similar to Laureau's findings among American working class families (2003, 3). Thus, in the German context, Becker (2010; Becker and Gresch, 2016) has argued that for immigrant families, and especially those with Turkish origins, immigrant optimism and an information deficit operate together to reinforce each other, creating an irremediable gap between the high educational expectations of parents and the low academic achievement of their children.

School Tracking and Aspirations

In Germany, there is a continuing segregationist tendency between native German students and students from immigrant families across secondary school tracks. Students with migration backgrounds are overwhelmingly placed in the lowest secondary school track, which denies them opportunities for continuing higher education later in their educational careers (Alba et al., 1994; Buchmann and Park, 2009; Büchel and Wagner, 1996; Diefenbach, 2008; Nauck et al., 1998). Recent census data reveal that immigrant students disproportionately attend the lowest secondary school type, *Hauptschule*: 40% of the students in these schools come from immigrant families, whereas they only compose 23% of students in the academic, or *Gymnasium*, track (*Statistisches*

Bundesamt, 2011). The NEPS ninth grade sample I use in this study confirms this uneven distribution of track placement between native German and immigrant students. Half of the students with Turkish origins, and four out of ten students with Mediterranean and former Yugoslavian origins attend the *Hauptschule* track. Polish students are the most successful immigrant group; three out of ten Polish immigrant students attend an academic school track. Despite their German ancestry and presumed good German skills, less than twenty percent of return migrants from the former Soviet Union attend the academic school track (Table A3.2).

Once the initial track placement at the transition to lower secondary school happens, we find that only 21 percent of students with parents with low educational attainments – a category to which immigrant students overwhelmingly belong – have been placed in the academic track, which leads to an *Abitur* degree for college entrance (Hillmert and Jacob, 2010: 69).^{vii} The combined effect of socioeconomic disadvantages and immigration background reproduces the inequality immigrant children face in this highly differentiated secondary education system. In the long run this system serves as a major obstacle for the social mobility of the large majority of immigrant youth in Germany (Buchmann and Park, 2009, Maaz, Trautwein, Lüdtke and Baumert, 2008; von Below, 2007).

In these studies, socioeconomic background itself is not a good predictor of the educational aspirations of immigrant families. However, I argue that the socioeconomic background of students should operate through the secondary school tracks the students attend. Early curricular tracking at the end of the fourth grade (Parker et al., 2016; Stocké, 2007) and the highly differentiated^{viii} secondary education system (Allmendinger,

1989, 236; Blossfeld, 1990; 169; Turner, 1960) would impart “a dose of realism into [students’ educational] expectations” (Buchmann & Park, 2009: 246). In other words, once students are sorted into differentiated secondary school tracks, students with migration backgrounds might “develop a realistic view of credentials they will obtain” (Buchmann & Park, 2009: 248). Therefore, I expect that immigrant student aspirations are more likely to reflect their secondary school tracks while they will continue to see their parents as maintaining high expectations for their children’s future success, as their immigrant optimism would suggest. After taking the secondary school track in to consideration, the mismatch between academic standing and educational aspirations should be higher for parents’ aspirations reported by students, but largely disappear for students’ own aspirations.

Data and Methods

In this study, I use data from the first and second waves of ninth grade cohort drawn from the German National Educational Panel Study (NEPS) collected in Fall 2010 and Spring 2011 (Blossfeld, Roßbach, and von Maurice, 2011). The NEPS ninth grade sample was chosen based on a multi-stage stratification method: first, the six school types in the German secondary education are sampled, followed by sampling schools within each strata (von Maurice, Sixt and Blossfeld, 2011). The total sample consists of 12,155 ninth grade students from 545 schools.^{ix} Compared to previous datasets in Germany and the national census, the NEPS dataset collects more extensive information on the generation status of students with any “migration background” by inquiring about the country of origin not only of students’ parents but also grandparents (Kalter, 2008b; Kemper, 2010).

Another important reason for choosing the ninth grade sample is that in Germany, ninth grade students have already been attending highly differentiated schools for at least four years. Ninth grade is another point in students' educational career where some change is still possible but by this point they should have a realistic sense of anticipating what educational attainment they will receive in the future. More importantly, the school track strongly determines whether or not students will obtain an academic high school qualification, which is necessary for higher education. Examining ninth grade immigrant students in relation to their German peers allows me to differentiate between the realistic expectations and idealistic aspirations of students, given this strong association between their current school tracks and their eventual degree.

Using list-wise deletion with the NEPS sample generates bias due to the large reductions in sample size, as well as high levels of missing information among immigrant students (Zinn, 2013; 2014). Thus, I use the multiple imputation method with chained equations to impute the missing values of socioeconomic status (SES); highest occupational status in the family and highest educational attainment of mothers (White, Royston and Wood, 2011). I created 30 multiple imputation files to ensure the robustness of my estimates (M=30). In order to avoid creating "new" immigrant students, I did not impute students' country of origin variables and therefore removed students, whose country of origin could not be identified (N=140). In my estimations, I use unimputed versions of measures of aspirations, because they are nominal categorical variables and the numbers of cases missing these values are small enough to allow unbiased estimations.^x

The immigrant students in this study are those with Turkish, Mediterranean (Greek, Italian, Spanish and Portuguese),^{xi} former Yugoslavian, and Polish backgrounds, as well as return migrants with German ancestry from the former Soviet Union. A student is considered to be an immigrant if the student herself, either one of her parents, or any of her four grandparents were born in one of these countries. The exception to this is recent migrants from Poland and the Soviet Union with either one or two grandparents born abroad. I do not include these students to my immigrant sample, because they are the early return migrants who emigrated from Eastern Europe immediately after the end of Second World War (Olczyk et al. 2014, 18-19). This leaves me with a sample of 2,704 students who would be understood in Germany as having a “migration background” and treated as immigrants. Native German students (N=9,435) are the reference category, and the analyses are based on whether and how immigrant students and their perceptions of their parents differ from native Germans in their educational aspirations.

Descriptive Results

In the German context, studies usually operationalize educational aspirations as the expectation of receiving an academic (*Gymnasium*) high school qualification, because it is the only school track in the German secondary education that offers the *Abitur* degree, required for access to higher education. In this study I use two dependent variables for students’ aspirations, and two dependent variables for parental aspirations. The NEPS ninth grade dataset incorporates a difference between idealistic and realistic educational aspirations (Becker and Gresch, 2016: 89; Stocké, 2005a; 2005b) by specifically asking students what high school qualification they would like to have and what qualification they will actually obtain (Wenzig, 2012). The tracking system in the

German secondary education “gives an unambiguous indication of what educational expectations [students] should hold” (Parker et al., 2016: 8). Given the existence of the early tracking system (Buchmann and Park, 2009), those students who attend the lowest (*Hauptschule*) and intermediate (*Realschule*) school tracks should not ever realistically expect to attend college, unless they manage to pursue an academic qualification after graduation, which is very rare in the German system (Hillmert and Jacob, 2010; Neugebauer et al., 2013).

Table 3.2 reports students’ realistic and idealistic aspirations for an academic level high-school qualification. The idealistic aspirations are measured by the question: “No matter what school you are attending and how good your grades are, what school-leaving qualification would you like to have?” whereas realistic aspirations are measured by the question: “When you consider everything you know now: what qualification will you actually obtain when you finish school?”

The idealistic aspirations for an *Abitur* degree vary between 43% (Mediterranean) and 60% (Polish) for the entire group. The rates for other groups are scattered around fifty percent for the same category. Realistic aspirations for an academic high school education are substantially lower for all groups. This indicates that students already have a clear sense about their chances for receiving an *Abitur* degree. In fact, the distribution of responses roughly reflects the school types they attend. However, aspirations for obtaining an intermediate high school (*Realschule*) qualification is relatively high among the lowest level school (*Hauptschule*) students who have Turkish, Mediterranean, and Yugoslav origins, and migrants from the Soviet Union. They still hope to continue an

intermediate school track after graduation from this lowest level school, which is possible but unusual via a transfer around age fifteen.

Unlike their children, parents are less likely to have the first-hand experience of attending a German school and develop the sense of realism of the highly differentiated secondary school system in Germany. Their children may therefore continue to see them as holding higher aspirations for them. The children's perception of parental aspirations in this data is thus an indirect measure of the parents' own beliefs, which are not measured. I believe it is valid to consider what students think their parents' aspirations are since this is what they have communicated to their children. It is not really my objective to understand what parents' aspirations are, without reference to their children's perceptions. This, however, has the potential bias of students over or underestimating their parents' actual beliefs. Although interviews with parents were conducted as part of the NEPS, the non-response rate among immigrant parents is very high. This does not allow for an unbiased comparison between immigrant groups. So this analysis relies solely on the indirect measure.

The first panel of Table 3.3 reports the students' responses to the question: "What is the highest school-leaving qualification your parents would like you to obtain?" The distribution of their perceptions of their parents' idealistic aspirations is the same as their own reported aspirations.

The second perception of parental aspirations that I use is the student's belief in how much importance parents give to students' future success based on the question "How important is it for your parents that you rise up in the ladder of success in the future?" (Table 3.3, Panel 2). This is not necessarily a realistic account of whether the

student will achieve an academic credential but since “success” in Germany is strongly related to degrees. At least an intermediate degree is needed, but this is a qualification to which students in the lowest track have only little and irregular (post-graduation) access. Students were least likely to answer that success was “very important” to their parents when the students were native Germans. For immigrant students, the perceived importance to their parents of “rising up the ladder of success” is remarkably high: 70% of Turkish students, 59% of Yugoslav and return migrant students from the former Soviet Union responded that the phenomenon is “very important” for their parents.^{xii}

This measure can be interpreted as an indicator of “immigrant optimism” and thus reveals the paradox that the value of success to parents is seen as highest among those who are least likely to achieve it themselves. This might reflect some information deficit on the parts of the parents, since despite their children’s low achievement in high school, they are believed to continue to want them to succeed in the future. Students may believe that their parents are simply committed optimists or may think that their parents fail to connect the student’s current school type to their later occupational opportunities. In line with this, parents may not associate “rising up the career ladder” with their children obtaining better high-school qualifications, assuming that any position after graduation will count as an occupational success. Thus, they might be seen as remaining optimistic regardless of their children’s school track by scaling down what “rising up” might mean. Another way of interpreting the gap between immigrant and native German students is that more of the Germans may perceive themselves and their parents as high enough up on the career ladder that “rising up” further seems less important to them. Since for native German families, the majority are in the middle of the occupational distribution, so rising

from middle to the top might not be very important, whereas immigrant families (both parents and children) are more likely to be at the lower end of the distribution, where rising from the bottom to the middle might be very important.

SES and Achievement Control Variables

Other studies have found that high levels of immigrant aspirations are especially apparent, once factors such as socioeconomic background and student achievement are accounted for (Becker and Gresch, 2016: 108). In this study I use three measures of socioeconomic origin for students: highest educational attainment of the mother, parental occupational status measured using a five-category version of the EGP class scheme (Erikson and Goldthorpe 1992; Jackson et al., 2007), and the number of the books in the household (see Table A3.3). I measure books as an ordinal categorical variable since using it as a continuous variable is violates the linearity assumption. I use the reading and math test scores of the students to measure achievement (see Figure A3.2). I also add the school-type to my models in order to test whether track placement imparts more realism to students' aspirations. All models control for the gender and the age of students; I also control for whether the student has a sibling.

I expect the generation status of the students to play a major role in their educational aspirations (see, Table 3.1). If there is indeed optimism that leads to higher educational aspirations, then a longer duration of stay should weaken it. Experience may teach immigrant families the difficulties posed by the German secondary school system, which is highly differentiated and reproduces inequalities of access to higher education over generations. Using interaction models with generation status and immigrant group dummies separately is not a correct specification for my models, because native German

students are the reference category. Thus, I constructed dummy variables for each immigrant community by generation status: first, second and the third. This specification also renders the estimated coefficients easier to interpret, but it reduces the statistical power and increases the standard errors substantially for immigrant group-generation categories that are relatively uncommon.

Hypotheses

Hypothesis 1.A: The first hypothesis focuses on how the immigrant groups differ from each other in terms of their educational aspirations. Considering that Turkish and to a certain extent Yugoslavian immigrant students have the lowest levels of maternal educational and parental occupational status, I expect Turkish and Yugoslavian students to have the highest levels of idealistic educational aspiration relative to German natives and to see their parents as putting the most stress on their career success. In terms of their countries of origin, Turkey and former Yugoslavia have very low rates of enrolment in tertiary education; which would also contribute to the optimism of students from these countries, and them to develop relatively higher educational aspirations and see their parents as also having high ideals for them academically and placing more importance on their success.

In terms of more recent groups, I expect the return migrant students whose families emigrated from the former Soviet Union to have higher aspirations than their German peers, because their immigration from the former socialist republics of the Soviet Union should boost their optimism, since even though the former Soviet Union had a strong educational system and culture, families of German ethnicity were typically marginalized and discriminated against in access to higher education. To my knowledge,

there are no studies that previously examined the educational aspirations of Polish immigrants, but given their relatively high SES origins and relatively higher academic success in high school, I expect their educational aspirations to be similar to that of native Germans.

Hypothesis 2: Longer duration of stay in Germany should attenuate the high aspirations associated with the act of immigration to a country with greater educational opportunities, and thus have a diminishing influence on the high aspirations of immigrant students. I expect that both idealistic and realistic educational aspirations will decrease in each immigrant group as the generation status of the students shifts from the first to the third generation.

Hypothesis 3: Immigrant parents should be seen by their children as having higher idealistic aspirations for their academic high-school degree than native German parents, and the gap between what the children ideally aspire to and what they say their parents ideally want should be greater than found in German families. Unlike their children, immigrant parents are less likely to personally experience the highly differentiated secondary education system in Germany directly, and so their children may see them as still having greater aspirations for an academic high school qualification for their children than their actual track would make realistic.

Hypothesis 4: The fourth hypothesis follows from Buchman and Park's (2009; see also Parker et al., 2016) contention that a highly differentiated education system imparts a sense of realism on the formation of educational aspirations. I thus do not expect that when controlling for their actual track placement the ninth grade immigrant students will differ from their German peers when asked about their realistic aspirations.

Multivariate Results

Realistic and Idealistic Aspirations of Students

In the first set of models, I use logistic regressions of realistic and idealistic aspirations for immigrant students by generation status/country of origin dummy variables. In order to account for the between-group variation in the estimates of the control variables, I interact all SES and achievement controls with the generation status/country of origin dummies. All models control for students' age, gender and whether they have a sibling, specific in their effects for the groups formed by the country of origin dummies. The first models in both panels control for students' achievement levels, measured as reading and math scores. The second model adds the school type the students attend as a control variable. The third model only controls for the socioeconomic background of students. Finally, the fourth column reports the estimates from the models with all the controls for SES, student achievement, and school type together.

All models report the logistic regression results with the coefficients representing how the immigrant group by generation status subgroup is estimated to differ from the reference category of native German students. Because I use multiply imputed data, STATA's *mi estimate* command uses Rubin's combination rules to obtain the estimates, and reports *t* and *F* statistics for inference, although logit would usually report *Z* and χ^2 statistics (StataCorp, 2014). Thus, the estimations do not report odds ratios.

Table 3.4 reports results from logistic regression models of the realistic and idealistic educational aspirations of immigrant group by generation status dummies compared to native German students. The first panel on the realistic aspirations for an academic high-school qualification fully supports my fourth hypothesis: immigrant

students already have a realistic sense of what high school qualification degree they are going to obtain once they reach the ninth grade in their educational career. When the models control for socioeconomic origin, almost none of the country of origin by generation status group coefficient estimates are significant, which indicates that none of the immigrant groups reliably reports higher (or lower) aspirations on average compared to native German students. The only exception to this is first-generation return migrants from the former Soviet Union; in Models 2 and 4 they report higher realistic educational aspirations than their German peers. Thus, the realism imposed by the school track the students actually attend seems to have smallest impact on the aspirations of the first-generation students from the former Soviet Union.

The models on idealistic educational (Table 3.4, Panel 2) aspirations partially support the first hypothesis. The Turkish group has the highest ideal aspirations when the models include student achievement and school tracks, indicating that Turkish students are the most likely to express that they would idealistically receive an academic high school education. Students with Yugoslavian origins follow closely in terms of the size of the interaction coefficients for idealistic aspirations for an *Abitur* degree, however the coefficients in Model 4 are very close to each other for these two groups. This is an important finding, because the Yugoslavian immigrants typically remained unexamined in previous studies on immigrant aspirations in the German context. Yugoslavians, who originally started arriving to Germany as labor migrants, have a complex immigration history. Besides the ethnic and national diversity within group, the community also includes a relatively larger group of first-generation immigrants who arrived as refugees from the Yugoslavian Civil War in the early 1990s. First-generation return migrants from

the former Soviet Union also reveal high educational aspirations, idealistically receiving an academic high school qualification.

The estimates for the idealistic aspirations of Polish students do not fully support the first hypothesis that Polish students would not differ from native Germans in terms of idealistic aspirations. Neither generation group among Polish immigrants appears to have systematically high levels of educational aspirations compared to German native students, however they all interaction coefficients have positive signs. The Mediterranean group is possibly too small to reliably reveal the high idealistic aspirations of other labor migrant groups, with any set of controls.

The Mediterranean group has the smallest interaction coefficients and in some models the coefficients have negative signs. Their lack of higher-than-German idealistic aspirations might be explained, on the one hand, with the fact that in terms of access to higher education all four countries listed under Mediterranean category have higher rates of tertiary education enrollment compared to Germany (UNESCO, 2004; Statistical Annex, Table 9: 318-325).^{xiii} Thus, migrating to Germany might not be interpreted as an improvement of opportunities for higher education and thus not necessarily boost their aspirations for higher education. On the other hand, despite their labor migrant origins the Mediterranean group is the culturally closest group to the Germans and have developed stronger ties with the native Germans than other labor migrants with Turkish and Yugoslavian origins (Diehl and Schnell, 2006; Haug, 2003; Schulz and Leszczensky, 2015; Steinbach, 2013). Italy is a founding member of the European Economic Community (the organization preceded European Union before 1993), and the other three countries have been members since 1980s, which has led to greater cultural alignment.

Finally, the findings regarding generation status are somewhat surprising in that there are few substantive differences among idealistic educational aspirations of immigrant students. For Polish and Mediterranean students, the comparability of their aspirations with those of the German students applies to all generational groups; thus generation status does not generate a change in their aspirations. For return migrant students the Soviet Union, the size of the point coefficients of idealistic aspirations decreases and the statistical significance disappears as the immigrant families' duration of stay increases, suggesting weakly that they may be becoming more like German students in their idealistic aspirations. Turkish and Yugoslavian third generation students have the smaller point coefficients relative to the newer cohorts when estimating how much more idealistic aspirations they might have than the German students, even these maintain statistical significance under certain models (Table 3.4; Rows 1-3; 7-9). More importantly, while the coefficients for first- and second-generation students for these two immigrant groups are very close, the attenuation of the coefficients in the third generation is pretty small in size. Especially for Turkish students, the results from Model 4 with all SES and achievement controls, the difference between the coefficients between the first and third generation students is very small and not statistically significant ($1.76 - 1.52 = .24$). The attenuation is larger and statistically significant for the Yugoslavian students ($1.63 - 1.18 = .45$).

This is a very striking finding. A longer duration of stay has a very limited attenuating role on the high idealistic aspirations of Turkish and Yugoslavian students for an academic high school qualification. Considered with the results from models on realistic aspirations, this finding might be interpreted as a conscious appraisal of an

academic high school qualification. As immigrant groups in Germany, who are less likely to achieve an academic high school qualification and less likely to attend university, the Turkish and Yugoslavian students might be attributing especially high value to an academic high school qualification. Even though realistically, they are aware of the fact that they are not actually going to receive such an academic high school qualification, they continue to define it as an ideal. This, in fact, might be interpreted as a reflection of the continuing disadvantage of the Turkish students in terms of their realistic higher education access, since they are implicitly reporting a thwarted ambition to study that they were realistically unable to access. These ambitious aspirations remain regardless of the length of their families' duration of stay in Germany, i.e. their generation status. Although the attenuation of high aspirations by generations is relatively larger for Yugoslavian students, they also remain highly likely to aspire for an academic qualification relative to their German peers. Controlling for where they are (as in models 2-4) underlines that they are not as resigned as the German students are to being stratified educationally.

All in all, the results provide limited support for my second hypothesis that the longer duration of stay has an attenuating role on the initial optimism regarding educational aspirations. This appears to be only the case between first and second generation return migrant students from Soviet Union. Polish and Mediterranean students do not significantly differ from their German peers in terms of their idealistic aspirations regardless of their generation status, which I see as most likely reflecting the higher educational opportunities also available in their countries of origin. Turkish students have high idealistic aspirations for an academic high school qualification across

generations. This is consistent with a lack of second-generation advantage in achievement levels for Turkish and Yugoslavian students, since the models controlling for test scores and school type show second-generation students from these two groups still revealing a large gap between achievement and aspiration for them (Kao and Tienda, 1995; Farley and Alba 2002; Landale et al., 1998).

Perceived Aspirations of Immigrant Parents

Table 3.5 reports the logistic regression estimates from models with two measures of children's beliefs about what their parents want for them: The idealistic school qualification students think their parents hold and the perceived importance to their parents of them rising up the career ladder.

The most remarkable finding of the first panel of Table 3.5 is that relative to immigrant students' report about their own idealistic aspirations, they report that their parents have substantially stronger aspirations for an academic high school qualification than the native German students report about their parents. When asked about their own aspirations, no generation of Mediterranean and Polish students report significantly higher aspirations than their German peers do, as the previous set of models showed (Table 3.4, Panel 2). However, when asked what their parents want, first-generation Mediterranean students and first and second-generation Polish students report substantially higher educational aspirations than what their native German peers report about their parents. One possible interpretation is that experience with the German stratification system attenuates high levels of idealistic aspirations. For students whose parents were less likely to attend German schools themselves, they report that their parents have much higher aspiration levels than German students. Immigrant students

perceive their parents as having more aspirations for them to get an academic high school qualification than they have even ideally for themselves.

Further evidence for this interpretation is the large coefficient point estimates and their statistical significance disappear for third-generation students' reports about their parents. Parents of third-generation students were both born in Germany and presumably grew up in Germany and attended German schools. Thus, these parents are the most likely to be informed about Germany's highly differentiated secondary schooling and most likely to be aware of the difficulty for their children to receive academic school qualifications. Turkish and Yugoslavian students appear again to be the exceptions (though the number of Turkish 3rd generation students is very small) Although the point estimates for idealistic aspirations attributed to parents of third-generation students are lower than those of the first and second generation students, they are still significantly higher than the reference category of native Germans.

Finally, compared to German students, all immigrant students except for those from the Mediterranean countries, are more likely to report that it is very important for their parents that they rise up the ladder of success in the future (Table 3.5, Panel 2). Model 4 adds all the controls for socioeconomic background, track and student achievement but still indicates that first and second generation students are more likely than German students to report that it is very important for their parents them to have successful careers. However, these higher aspirations disappear for the third-generation immigrant students, indicating support for the hypothesis that duration of the stay may reduce the parents' unrealistic expectations for the students. In line with the findings from previous measures of aspirations, the largest coefficients and strongest significance are

observed for Turkish and Yugoslavian students; with any combination of control variables the likelihood of students from these two groups reporting that their parents see their future career as very important remains higher than what their German peers report about their parents. However, by the third-generation students, these exceptionally high career aspirations among Turkish and Yugoslavian students fall back closer to the German norm and are no longer statistically significant. Similarly, for return migrants from the Soviet Union and Polish students, the point estimates for the perceived importance of career success to parents decrease between the first and second generations of students.^{xiv}

Discussion

The existing scholarly research is in agreement that immigrant communities hold higher levels of educational and occupational aspirations compared to natives with comparable backgrounds. It is an important finding that for immigrant groups, socioeconomic origin is not a strong determinant of educational aspirations, which challenges the theoretical premises of intergenerational status attainment models (Sewell et al., 1969; 1970) as well as the claims of rational choice approaches (Breen and Goldthorpe, 1997; Erikson and Jonsson, 1996; Stocké, 2013). Even though this view of a paradoxical gap between aspirations and achievement does not take account of selection into immigration, my finding that the size and durability of this paradox varies among specific immigrant groups in Germany suggests that future research ought to consider the role of selection and how it might vary among groups – some of which are labor migrants, some refugees, some return migrants – and who come from countries where

access higher education is more or less comparable to what immigrants experience in Germany.

Starting with a discussion of the mechanisms that influence the formation of aspirations, I argued here that the educational aspirations of immigrant students should vary among immigrant communities and across generations. The social and historical conditions of arrival provide different opportunities to these groups, including the extent of intermarriage with native Germans, and immigrant groups differ from each other in terms of interpreting the opportunities available to them in the destination country. This crucially depends on which country of origin the immigrant groups come from, and how much the act of immigration to Germany boosts their aspirations for the future.

Immigrant groups also differ from each other in terms of their positions in the German social status hierarchy not only in the educational attainment and occupational status of parents but also in the degree to which generations are integrated more or less fully into the German opportunity structure. One important outcome is that students who come from disadvantaged educational and occupational backgrounds hold higher idealistic aspirations than either those from countries more comparable to German or than German students themselves. More importantly, for these students there are larger gaps between their idealistic and realistic aspirations, since their experience of being tracked and achieving at a lower level does not reduce their ideals to the levels that would be realistic.

My findings point to differences among immigrant groups in terms of their educational aspirations. The groups who have the highest levels of educational aspirations compared to native Germans are those from Turkey and former Yugoslavian countries; this applies for both immigrant students and what students report about their

parents' educational and career aspirations for them. It is important to note that these two groups come from the most disadvantaged backgrounds in terms of access to higher education in their countries of origins. Moreover, in Germany they are not only the most disadvantaged immigrant groups in my sample; they are also more likely to have working-class origins, have the least well-educated mothers, and have the least number of books at home, which places them at a strong socio-economic disadvantage in trying to realize their aspirations in reality. In fact, Turkish students are also the most likely to attend the lowest high school track, but this does not reduce their aspirations or their perceptions of their parents' hope for them as much as such a position does for German families. Return migrants from the Soviet Union also have high educational aspirations, and they report that their parents hold expectations regarding their future higher than German parents are said to have. The most plausible explanation for the lack of unusually high aspirations among Mediterranean immigrant students is that they do not come from countries where access to higher education rates are lower than Germany, so they are not likely to interpret this as a reason for educational or career optimism (UNESCO, 2004).

The results mostly support my hypotheses. There are substantial differences between the realistic and idealistic aspirations immigrant students compared to German natives. Although some groups maintain high idealistic aspirations about what degree they would like to have, I did not find systematic differences between immigrant and German students in terms of their realistic expectations for what degrees they will actually obtain once I controlled for their –very different– track placements. Nonetheless, Turkish and Yugoslavian students report higher educational aspirations in idealistic

terms, ambitions that are not erased by their realistic assessment that they will not obtain what they wanted.

Early curricular tracking in German secondary education system is a strong mechanism in the formation of educational aspirations of immigrant students, even if it operates in somewhat different ways depending on country of origin (Buchmann and Park, 2009; Parker et al., 2016). This institutional characteristic of German education is also apparent in differences between aspirations attributed to immigrant parents and their children's reports of their own ideals. Immigrant parents who have no personal experiences of German schooling system are believed to hold higher aspiration by their children than similarly situated German students believe about their parents. However, immigrant parents who themselves grew up in Germany i.e. the parents of third-generation students – are not believed to hold any higher aspirations for the children than German children see their parents as having for them

Generation status appears to play a rather limited role in attenuating differences from the German norm for particular immigrant groups. Only among return migrant students from the former Soviet Union controlling for actual track and SES and achievement levels, is there a systematic and significant decrease in reported ideal aspirations for an academic high school qualification between the first and second generation. Mediterranean and Polish students do not significantly differ from their German peers in any measure of aspiration, regardless of generation.

Most importantly, the Turkish and Yugoslavian students, and according to their reports, their parents maintain high aspirations even with longer duration of time in Germany. Among the second and third generation Turkish students, their own idealistic

aspirations for an academic high school qualification remain substantially higher than it would be predicted by either German norms or their own SES and achievement and track placement. Their optimism appears unquenchable. Yugoslavian students of later generations have smaller coefficients, but remain significantly more ambitious.

This finding, however, should not be interpreted as optimism; given the fact that realistically these students do not report high aspirations for an academic high school qualification. Rather, I interpret this outcome as a recognition of their practically disadvantaged position in terms of access to higher education. The students with Turkish and Yugoslavian origins do not expect to obtain *Gymnasium* degrees unless they are (unusually) in the track where this is realistic. They clearly realize that the secondary school track they attend would not allow them to do so. However, they maintain their appraisal of the desirability of receiving an academic high school qualification, as their reporting of high idealistic testifies. All in all, using measures of educational aspirations that differentiate between realistic and idealistic ones (see Becker and Gresch, 2016: 89; Stocké, 2005a; 2005b), this study indicates how these two groups of immigrants differ from other immigrants, not only in what degree qualifications students actually obtain but in what degree they would have like to obtain even when their real chances have already ended by ninth grade.

Based on these results some important questions remain to be answered: Why do immigrant students maintain high idealistic aspirations regarding their high school qualification even if they anticipate their eventual degree qualification will not match this ideal given their track placement and achievement levels? Do idealistic aspirations represent a persistent desire for mobility, even though immigrant students realize they are

not on track towards a college degree? Or do immigrant students merely reveal a social desirability bias in answering the question in a way that implicitly denies the relevance of their achievement levels and track placement? To answer these questions, more detailed measures of how immigrant students conceptualize realistic and idealistic aspirations are needed.

Becker and Gresch's (2016) article reviews existing theoretical mechanisms for interpreting high immigrant aspirations in the German context: immigrant-optimism, information deficit, blocked opportunities, social capital within ethnic networks, and variation in reference points. The major limitation of my study is that I am unable to test these different approaches to explain how high educational aspirations develop among immigrants. I have only been able to analyze the variation in educational aspirations among immigrant groups based on their particular characteristics. The cross-sectional characteristic of my data is a major constraint on my ability to understand changes in aspirations over time, although future releases of NEPS will open space for more longitudinal analyses.

I provide a comparison between the realistic and idealistic aspirations of immigrant students, yet I cannot assess whether these have changed over time, particularly whether aspirations were different prior to track placement into secondary schools. Kao and Tienda's (1998) seminal study shows that educational aspirations do not hold the same significance for each immigrant group; they show the high aspirations of blacks and Hispanics in the United States are less likely to be maintained from eighth to twelfth grade, indicating that educational aspirations change within relatively short span of a high-school career.

Despite these limitations, my study suggests that there is important variation between immigrant groups in Germany in the extent to which the move inspires high educational aspirations. The achievement-aspiration paradox is still observable among disadvantaged immigrant groups. The most disadvantaged students (those with Turkish and Yugoslavian origins) have the highest levels of idealistic aspirations for an academic high school degree. More importantly, controlling for track and achievement, the combination of low socioeconomic origins and high educational aspirations remains for these groups across generations. This is an indication that in the long run, a significant proportion of these two groups is being incorporated into the lowest positions of the German social status hierarchy despite their own strong desire to move upward. In addition, the highly stratified secondary education system in Germany contributes to the reproduction of social immobility for labor migrant groups across generations by denying them opportunities for accessing higher education.

References:

- Alba, R. D., Handl, J., & Müller, W. (1994). Ethnische Ungleichheit im deutschen Bildungssystem. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 46(2), 209-237.
- Alba, R., & Nee, V. (2003). *Remaking the American mainstream: Assimilation and contemporary immigration*. Harvard University Press.
- Allmendinger, J. (1989). Educational systems and labor market outcomes. *European sociological review*, 5(3), 231-250.
- Allmendinger, J. (2013, April 18). Educational Expansion and Vocational Training in the EU: An Intractable Contradiction? *Paper presented at European Union Center of Excellence, University of Wisconsin-Madison*.
- Becker, B. (2010). *Bildungsaspirationen von Migranten. Determinanten und Umsetzung in Bildungsergebnisse*. Working Paper Nr. 137. Mannheimer Zentrum für Europäische Sozialforschung, Mannheim.
- Becker, B. (2011). Cognitive and Language Skills of Turkish Children in Germany: A Comparison of the Second and Third Generation and Mixed Generational Groups. *International Migration Review*, 45(2), 426-459.
- Becker, B., & Gresch, C. (2016). Bildungsaspirationen in Familien mit Migrationshintergrund. In *Ethnische Ungleichheiten im Bildungsverlauf* (pp. 73-115). Springer Fachmedien Wiesbaden.
- Blau, P. M., & Duncan, O. D. (1967). *The American occupational structure*. New York: Free Press.
- Blossfeld, H. P. (1990). Changes in educational careers in the Federal Republic of Germany. *Sociology of Education*, 165-177.
- Blossfeld, H. P., Roßbach, H.-G., & von Maurice, J. (Eds.). (2011). Education as a Lifelong Process: The German National Educational Panel Study (NEPS). [Special Issue] *Zeitschrift für Erziehungswissenschaft*, 14.
- Borjas, G. J. (1994). The economics of immigration. *Journal of economic literature*, 32(4), 1667-1717
- Breen, R., & Goldthorpe, J. H. (1997). Explaining educational differentials towards a formal rational action theory. *Rationality and society*, 9(3), 275-305.
- Buchmann, C., & Park, H. (2009). Stratification and the formation of expectations in highly differentiated educational systems. *Research in Social Stratification and Mobility*, 27(4), 245-267.
- Büchel, F., & Wagner, G. (1996). Soziale differenzen der bildungschancen in westdeutschland—Unter besonderer berucksichtigung von Zuwandererkindern. *Lebenslagen im Wandel. Sozialberichterstattung im Langsschnitt* (pp. 80-96).
- Diefenbach, H. (2008). Bildungschancen und Bildungs(miss)erfolg von ausländischen Schülern oder Schülern aus Migrantenfamilien im System schulischer Bildung. In Becker R. & Lauterbach, W., *Bildung als Privileg: Erklärungen und Befunde zu den Ursachen*

der Bildungsungleichheit (pp. 221-245). Wiesbaden: VS Verlag für Sozialwissenschaften.

Diehl, C., & Schnell, R. (2006). "Reactive ethnicity" or "assimilation"? Statements, arguments, and first empirical evidence for labor migrants in Germany. *International Migration Review*, 40(4), 786-816.

Dietz, B. (2006). Aussiedler in Germany: From Smooth Adaptation to Tough Integration. In *Paths of Integration: Migrants in Western Europe (1880–2004)*, Lucassen, L., Feldman, D. & Oltmer, J. (pp. 116–36). Amsterdam: Amsterdam University Press.

Ditton, H., Krüsken, J & Schauenberg, M (2005). Bildungsungleichheit - der Beitrag von Familie und Schule. *Zeitschrift für Erziehungswissenschaft*, 8, (2), 285-304

Erikson, R., & Jonsson, J. O. (1996). The Swedish context: Educational reform and long-term change in educational inequality. *Can education be equalized*, 65-93.

Euwals, R., Dagevos, J., Gijsberts, M., & Roodenburg, H. (2010). Citizenship and labor market position: Turkish immigrants in Germany and the Netherlands. *International Migration Review*, 44(3), 513-538.

Farley, R., & Alba, R. (2002). The new second generation in the United States. *International migration review*, 36(3), 669-701.

Glick, J. E., & White, M. J. (2004). Post-secondary school participation of immigrant and native youth: The role of familial resources and educational expectations. *Social Science Research*, 33(2), 272-299.

Gresch, C., Maaz, K., Becker, M., & McElvany, N. (2012). Zur hohen Bildungsaspiration von Migranten beim Übergang von der Grundschule in die Sekundarstufe: Fakt oder Artefakt. *Soziale Ungleichheit in der Einwanderungsgesellschaft. Kategorien, Konzepte, Einflussfaktoren. Tagungsdokumentation im Auftrag der Abteilung Wirtschafts- und Sozialpolitik der Friedrich-Ebert-Stiftung. WISO Diskurs Juli*, 56-67.

Grodsky, E., & Jackson, E. (2009). Social stratification in higher education. *The Teachers College Record*, 111(10), 2347-2384.

Haller, W., Portes, A., & Lynch, S. M. (2011). Dreams fulfilled, dreams shattered: Determinants of segmented assimilation in the second generation. *Social Forces*, 89(3), 733-762.

Haug, S. (2003). Interethnische Freundschaftsbeziehungen und soziale Integration. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 55(4), 716-736.

Hillmert, S., & Jacob, M. (2010). Selections and social selectivity on the academic track: A life-course analysis of educational attainment in Germany. *Research in Social Stratification and Mobility*, 28(1), 59-76.

Jackson, M., Erikson, R., Goldthorpe, J. H., & Yaish, M. (2007). Primary and secondary effects in class differentials in educational attainment the transition to A-level courses in England and Wales. *Acta Sociologica*, 50(3), 211-229.

- Kalter, F., & Granato, N. (2007). Educational hurdles on the way to structural assimilation in Germany. In *Proceedings-British Academy* (Vol. 137, p. 271). Oxford University Press Inc.
- Kalter, F., Granato N. & Kristen, C. (2007). Disentangling Recent Trends of Second Generation's Structural Assimilation in Germany." in *From Origin to Destination: Trends and Mechanisms in Social Stratification Research*, Scherer, S. et al. (eds.) Frankfurt, Germany: Campus.
- Kalter, F. (2008a). Ethnische Ungleichheit auf dem Arbeitsmarkt. In *Arbeitsmarktsoziologie*, (pp. 303-332). VS Verlag für Sozialwissenschaften.
- Kalter, F. (2008b). Stand, Herausforderungen und Perspektiven der empirischen Migrationsforschung. *Migration und Integration. Kölner Zeitschrift für Soziologie und Sozialpsychologie. Special Issue 48*, (2008b), 11-36.
- Kalter, F., & Kogan, I. (2014). Migrant networks and labor market integration of immigrants from the former Soviet Union in Germany. *Social Forces*, 92(4), 1435-1456.
- Kao, G., & Tienda, M. (1995). Optimism and achievement: The educational performance of immigrant youth. *Social Science Quarterly* 76(1), 1-19.
- Kao, G., & Tienda, M. (1998). Educational aspirations of minority youth. *American journal of education*, 349-384.
- Kogan, I. (2011). New immigrants—old disadvantage patterns? Labour market integration of recent immigrants into Germany. *International Migration*, 49(1), 91-117.
- Kristen, C., & Granato, N. (2007). The educational attainment of the second generation in Germany Social origins and ethnic inequality. *Ethnicities*, 7(3), 343-366.
- Kristen, C., Olczyk, M., & Will, G. (2016). Identifying immigrants and their descendants in the National Educational Panel Study. In *Methodological Issues of Longitudinal Surveys* (pp. 195-211). Springer Fachmedien Wiesbaden.
- Kristen, C., Reimer, D., & Kogan, I. (2008). Higher education entry of Turkish immigrant youth in Germany. *International Journal of Comparative Sociology*, 49(2-3), 127-151.
- Kroneberg, C. (2008). Ethnic communities and school performance among the new second generation in the United States: Testing the theory of segmented assimilation. *The Annals of the American Academy of Political and Social Science*, 620(1), 138-160.
- Landale, N. S., Oropesa, R. S., & Llanes, D. (1998). Schooling, work, and idleness among Mexican and non-Latino white adolescents. *Social Science Research*, 27(4), 457-480.
- Lareau, A. (2003). *Unequal childhoods: Race, class, and family life*. Berkeley: University of California Press.
- Levels, M., Dronkers, J., & Kraaykamp, G. (2008). Immigrant children's educational achievement in western countries: origin, destination, and community effects on mathematical performance. *American Sociological Review*, 73(5), 835-853.

- Maaz, K., Trautwein, U., Lüdtke, O., & Baumert, J. (2008). Educational transitions and differential learning environments: How explicit between-school tracking contributes to social inequality in educational outcomes. *Child Development Perspectives*, 2(2), 99-106.
- Mickelson, R. A. (1990). The attitude-achievement paradox among Black adolescents. *Sociology of education*, 44-61.
- Münz, R. (2002). Ethnos or demos? Migration and citizenship in Germany. *Challenging ethnic citizenship: German and Israeli perspectives on immigration*, 15-35.
- Nauck, B., Diefenbach, H., & Petri, K. (1998). Intergenerationale Transmission von kulturellem Kapital unter Migrationsbedingungen. Zum Bildungserfolg von Kindern und Jugendlichen aus Migrantenfamilien in Deutschland. *Zeitschrift für Pädagogik*, 44(5), 701-722.
- Neugebauer, M., Reimer, D., Schindler, S., & Stocké, V. (2013). Inequality in transitions to secondary school and tertiary education in Germany. *Determined to succeed*, 56-88. In Jackson M. (ed.), *Determined to succeed? Performance versus choice in educational attainment* (pp. 56–88). Stanford: Stanford University Press.
- Olczyk, M., Will, G., & Kristen, C. (2014). *Immigrants in the NEPS: Identifying generation status and group of origin* (No. 41a). NEPS Working Paper.
- Parker, P. D., Jerrim, J., Schoon, I., & Marsh, H. W. (2016). A Multination Study of Socioeconomic Inequality in Expectations for Progression to Higher Education The Role of Between-School Tracking and Ability Stratification. *American Educational Research Journal*, 0002831215621786.
- Paulus, W., & Blossfeld, H. P. (2007). Schichtspezifische Präferenzen oder sozioökonomisches Entscheidungskalkül? Zur Rolle elterlicher Bildungsaspirationen im Entscheidungsprozess beim Übergang von der Grundschule in die Sekundarstufe. *Zeitschrift für Pädagogik*, 53(4), 491-508.
- Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. University of California Press: Berkeley, CA.
- Portes, A., & Rumbaut, R. G. (2005). Introduction: The Second Generation and the Children of Immigrants Longitudinal Study. *Ethnic and Racial Studies*, 28(6), 983-999.
- Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *The annals of the American academy of political and social science*, 530(1), 74-96.
- Relikowski, I. (2012). *Primäre und sekundäre Effekte am Übertritt in die Sekundarstufe I: Zur Rolle von sozialer Herkunft und Migrationshintergrund*. Springer-Verlag.
- Relikowski, I., Yilmaz, E., & Blossfeld, H. P. (2012). Wie lassen sich die hohen Bildungsaspirationen von Migranten erklären? Eine Mixed-Methods-Studie zur Rolle von strukturellen Aufstiegschancen und individueller. In *Soziologische Bildungsforschung* (pp. 111-136). Springer Fachmedien: Wiesbaden.
- Roth, T., & Salikutluk, Z. (2012). Attitudes and expectations: do attitudes towards education mediate the relationship between social networks and parental expectations?. *British Journal of Sociology of Education*, 33(5), 701-722.

- Roth, T., Salikutluk, Z., & Kogan, I. (2010). Auf die „richtigen“ Kontakte kommt es an! Soziale Ressourcen und die Bildungsaspirationen der Mütter von Haupt-, Real- und Gesamtschülern in Deutschland. In *Vom Kindergarten bis zur Hochschule* (pp. 179-212). VS Verlag für Sozialwissenschaften.
- Rosenbaum, E., & Rochford, J. A. (2008). Generational patterns in academic performance: The variable effects of attitudes and social capital. *Social Science Research*, 37(1), 350-372.
- Schuchart, C., & Maaz, K. (2007). Bildungsverhalten in institutionellen Kontexten: Schulbesuch und elterliche Bildungsaspiration am Ende der Sekundarstufe I. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 59(4), 640-666.
- Schulz, B. (2013). Social embedding and educational achievement of immigrants. *Mannheimer Zentrum für europäische Sozialforschung, Mannheim*. Available at: <http://www.mzes.uni-mannheim.de/publications/wp/wp-152.pdf>
- Schulz, B., & Leszczensky, L. (2015). Native friends and host country identification among adolescent immigrants in Germany: The role of ethnic boundaries. *International Migration Review*. Online publication, 1–34. doi:10.1111/imre.12163
- Sewell, W. H., Haller, A. O., & Ohlendorf, G. W. (1970). The educational and early occupational status attainment process: Replication and revision. *American Sociological Review*, 35, 1014–1024.
- Sewell, W. H., Haller, A. O., & Portes, A. (1969). The educational and early occupational attainment process. *American Sociological Review*, 34, 83–92.
- Söhn, J., & Özcan, V. (2006). The educational attainment of Turkish migrants in Germany. *Turkish Studies*, 7(1), 101-124.
- Stanat, P., & Christensen, G. (2006). *Where immigrant students succeed: A comparative review of performance and engagement in PISA 2003*. OECD.
- Stanat, P., Segeritz, M., & Christensen, G. (2010). Schulbezogene Motivation und Aspiration von Schülerinnen und Schülern mit Migrationshintergrund. In Bos W., Klieme E. & Köller O. (eds.), *Schulische Lerngelegenheiten und Kompetenzentwicklung. Festschrift für Jürgen Baumert* (pp. 31-57), Münster: Waxmann.
- StataCorp. 2013. *Stata 13 Base Reference Manual*. College Station, TX: Stata Press.
- Statistisches Bundesamt (2011). *Statistisches Jahrbuch 2010 für die Bundesrepublik Deutschland*.
- Steinbach, A. (2013). *Soziale Distanz: Ethnische Grenzziehung und die Eingliederung von Zuwanderern in Deutschland*. Springer-Verlag.
- Stocké, Volker (2005a): Idealistische Bildungsaspirationen. In Glöckner-Rist, A. (ed.), *ZUMA-Informationssystem. Elektronisches Handbuch sozialwissenschaftlicher Erhebungsinstrumente. Version 9.00*. Mannheim: Zentrum für Umfragen, Methoden und Analysen.
- Stocké, Volker (2005b): Realistische Bildungsaspirationen. In Glöckner-Rist, A. (ed.), *ZUMA-Informationssystem. Elektronisches Handbuch sozialwissenschaftlicher*

Erhebungsinstrumente. Version 9.00. Mannheim: Zentrum für Umfragen, Methoden und Analysen.

Stocké, V. (2007). Strength, sources, and temporal development of primary effects of families' social status on secondary school choice. Working Paper No. 07-60: Sonderforschungsbereich 504, University of Mannheim.

Stocké, V. (2013). Bildungsaspirationen, soziale Netzwerke und Rationalität. In *Bildungskontexte* (pp. 269-298). Springer Fachmedien Wiesbaden.

Turner, R. H. (1960). Sponsored and contest mobility and the school system. *American sociological review*, 855-867.

UNESCO (2004). *Education for all. The quality imperative. EFA global monitoring report 2005*. Paris: United Nations Educational, Scientific and Cultural Organization.

von Below, S. (2007). What are the chances of young Turks and Italians for equal education and employment in Germany? The role of objective and subjective indicators. *Social Indicators Research*, 82(2), 209-231.

von Maurice, J., Sixt, M., & Blossfeld, H.-P. (2011). The German National Educational Panel Study: Surveying a cohort of 9th graders in Germany. NEPS Working Paper No. 3. National Educational Panel Study, University of Bamberg, Bamberg, Germany.

Wegmann, K. M. (2014). Shaping a new society: Immigration, integration, and schooling in Germany. *International Social Work*, 57(2), 131-142.

Wenzig, K. (2012). Starting Cohort 4: 9th Grade (SC4) SUF Version 1.0.0 Data Manual [Supplement]: Codebook (en). In *National Educational Panel Study (NEPS)*. Bamberg: University of Bamberg. https://www.neps-data.de/Portals/0/NEPS/Datenzentrum/Forschungsdaten/SC4/1-0-0/SC4_1-0-0_Codebook_en.pdf.

White, I. R., Royston, P., & Wood, A. M. (2011). Multiple imputation using chained equations: issues and guidance for practice. *Statistics in medicine*, 30(4), 377-399.

Worbs, S., Bund, E., Kohls, M., & Babka von Gostomski, C. (2013). *(Spät-) Aussiedler in Deutschland. Eine Analyse aktueller Daten und Forschungsergebnisse*. Universität Tübingen.

Endnotes:

ⁱ This paper uses data from the National Educational Panel Study (NEPS): Starting Cohort 4–9th Grade, doi:10.5157/NEPS:SC4:1.1.0. From 2008 to 2013, NEPS data were collected as part of the Framework Programme for the Promotion of Empirical Educational Research funded by the German Federal Ministry of Education and Research (BMBF). As of 2014, the NEPS survey is carried out by the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg, in cooperation with a nationwide network.

ⁱⁱ Using data from 13 countries, which who participated to in the 2003 PISA Study, Stanat and et al. (2010) findings indicate that the immigrant populations hold consistently higher levels of educational aspirations, measured as a desires to go to college and their efforts in math classes, for their expected jobs at the age of thirty. Their findings also show that optimism diminishes among second-generation students relative to the first-generation students (Stanat et al., 2010: 53).

ⁱⁱⁱ *Personen mit Migrationshintergrund* (persons with migration background) is the official term in the German Census to identify the immigrant population.

^{iv} This difference is also indicated by the fact that ninety percent of Polish students said that they grew up speaking German in the household, whereas fifty-seven percent of Soviet students reported doing so.

^v After controlling for family social background and current math performance, the only exception to this finding is the second-generation students from the former Soviet Union (Stanat et al., 2010: 53).

^{vi} *Bildungsprozesse, Kompetenzentwicklung und Selektionsentscheidunign im Vorschul- and Schulalter*, i.e. BiKS-8-14, is a longitudinal study that follows a sample of students from the third to the ninth grade in the federal states of Bavaria and Hesse. The study also includes interviews with students' parents and teaching staff.

^{vii} Neugebauer, Reimer, Schindler and Stocké (2013) report that a total of 14.4% of all students attending secondary school change tracks, about 11% to a less demanding track and 3% to a more demanding track. Given the fact that students from more privileged backgrounds tend to move upwards and those from less privileged classes tend to transfer downward, the social inequalities observed at the fourth grade track placement can be considered an underestimation of completed secondary school degrees (see Bellenberg, Hovestadt, and Klemm, 2004; Jacob and Tieben, 2010; Hillmert and Jacob, 2005, cited in Neugebauer et al., 2013, p. 60).

^{viii} Following Buchmann and Park (2009: 247; see also Footnote 2), I use the term highly differentiated, rather than highly stratified. They emphasize that whether high degrees of between-school tracking leads to greater levels of stratification is a question to be answered with empirical evidence.

^{ix} I exclude students attending special needs schools because of differences in curricula, as well as different types of NEPS assessments and questionnaires. In addition, I exclude students whose country of origin cannot be determined (n=140), or whose country of origin is different than the five regions under consideration (n=2240). These 2240 students with “other” countries of origin come from over 100 different countries, with very small case numbers. Following the five immigrant communities I examine in this article, Western European countries such as France, Austria, and the Netherlands have the highest case numbers.

^x University of Wisconsin-Madison’s Social Science Computing Cooperative’s training suggests not to use “imputed values of the dependent variable in the analysis model” that the imputed values add no information to the analysis because they are already used in the imputation model (Social Science Computing Cooperative, 2014).

^{xi} I group immigrants from four Mediterranean countries (Greece, Italy, Spain and Portugal) into a single category because the case numbers from these four countries in the sample are small.

^{xii} Among the four measures of educational aspirations, this is the only measure where immigrant groups have substantially positive and statistically significant point estimates compared to German natives in models without SES and achievement controls. In fact, the models without controlling for SES and achievement levels show that immigrant students report substantially lower levels of realistic and idealistic aspirations for an academic high school qualification than their German peers (see Table A3.4).

^{xiii} According to UNESCO’s *Education for All* report (2004), the gross enrolment ratio (GER) for tertiary education in all four countries grouped under the Mediterranean category is higher than Germany. According to 2001 data, the enrolment rate in tertiary education was 53.1% in Italy, 53.1% in Portugal, 58.9% in Spain and 68.3% in Greece, whereas in Germany it was 49.9%; the rate was 24.8% in Turkey. Even though they do not include these Mediterranean countries in their analyses, I would like to thank Relikowski, Yilmaz and Blossfeld (2012) for the idea of referring to the UNESCO report.

^{xiv} Third-generation Polish students have very high point estimates in terms of parental aspirations and expectations. However, considering that third-generation Polish students are very likely descendants of early return migrants (following the Second World War), I do not want to draw any conclusions based on these findings. In addition, because there are only twelve third-generation students in my sample, the estimates for these groups have very large confidence intervals.

Table 3.1. The Generation Status by Immigrant Group

Generation Status							
	Native German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union*	TOTAL
1 st Generation	N/A	53 (6%)	21 (4%)	28 (7%)	38 (11%)	141 (22%)	281 (10%)
2 nd Generation	N/A	759 (90%)	287 (61%)	276 (72%)	303 (86%)	507 (78%)	2,132 (79%)
3 rd Generation	N/A	35 (4%)	162 (35%)	81 (21%)	12 (3%)	1 (0%)	291 (11%)
Total	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)

*The immigrants from former Soviet Union are considered to be the return migrants–*Spaetaussiedler*, who migrated back to Germany with the end of the Cold War. The Polish and former Soviet Union students with only one or two grandparents born abroad are removed from the immigrant sample, because there is compelling reason to believe that these students are descendants of the early return migrants–*Aussiedler*–who were displaced at the end of the Second World War. The single third generation student from Soviet Union is not included in the estimations.

Table 3.2. Educational Aspirations of Students by Immigrant Group

	Native German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union	TOTAL
Realistic Educational Aspirations							
Without Any Degree	18 (0.2%)	6 (0.7%)	1 (0.2%)	4 (1.0%)	1 (0.5%)	3 (0.4%)	33 (0.3%)
<i>Hauptschule</i> Certificate	1,242 (13.1%)	222 (26.2%)	113 (24.0%)	79 (20.5%)	64 (18%)	135 (20.8%)	1,855 (15.3%)
<i>Realschule</i> Certificate	3,885 (41.1%)	346 (40.9%)	200 (42.6%)	173 (44.9%)	143 (40.5%)	324 (49.9%)	5,071 (41.7%)
<i>Abitur</i> Certificate	3,569 (37.8%)	209 (24.7%)	108 (23.0%)	104 (27.0%)	122 (34.6%)	127 (19.6%)	4,239 (34.9%)
Missing	737 (7.8%)	64 (7.6%)	48 (10.2%)	25 (6.5%)	23 (6.5%)	60 (9.2%)	957 (7.9%)
TOTAL	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)
Idealistic Educational Aspirations							
Without Any Degree	3 (0.03%)	1 (0.13%)	0 (0.0%)	2 (0.55%)	0 (0.0%)	1 (0.15%)	7 (0.06%)
<i>Hauptschule</i> Certificate	462 (4.9%)	47 (5.6%)	46 (9.8%)	26 (6.8%)	17 (4.8%)	38 (5.9%)	636 (5.2%)
<i>Realschule</i> Certificate	3,186 (33.7%)	330 (39%)	180 (38.3%)	154 (40%)	105 (29.8%)	271 (41.2%)	4,226 (34.8%)
<i>Abitur</i> Certificate	5,203 (55.1%)	406 (47.9%)	203 (43.2%)	184 (47.8%)	210 (59.5%)	292 (45%)	6,498 (53.5%)
Missing	597 (6.3%)	63 (7.4%)	41 (8.7%)	19 (4.9%)	21 (6%)	47 (7.2%)	788 (6.5%)
TOTAL	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)

Table 3.3. Perceived Educational & Career Aspirations of Parents by Immigrant Group

	Native German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union	TOTAL
Idealistic Educational Aspiration of Parents							
<i>Hauptschule</i> Certificate	408 (4.3%)	31 (3.7%)	29 (6.2%)	17 (4.4%)	10 (2.8%)	25 (3.9%)	520 (4.3%)
<i>Realschule</i> Certificate	3,309 (35.0%)	304 (35.9%)	172 (36.6%)	138 (35.8%)	113 (32%)	248 (38.2%)	4,284 (35.2%)
<i>Abitur</i> Certificate	4,710 (49.8%)	436 (51.5%)	208 (44.3%)	195 (50.7%)	205 (58.1%)	297 (45.8%)	6,051 (49.8%)
Has No Opinion	239 (2.5%)	11 (1.3%)	10 (2.1%)	9 (2.3%)	5 (1.4%)	14 (2.2%)	288 (2.4%)
Missing	785 (8.3%)	65 (7.7%)	51 (10.9%)	26 (6.8%)	20 (5.7%)	65 (10%)	1,012 (8.3%)
TOTAL	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)
How important is future career for parents?							
Very Unimportant	233 (2.5%)	38 (4.5%)	19 (4.0%)	15 (3.9%)	10 (2.8%)	36 (5.6%)	351 (2.9%)
Rather Unimportant	364 (3.9%)	8 (0.9%)	14 (3.0%)	4 (1.0%)	4 (1.1%)	3 (0.5%)	397 (3.3%)
Partly Important	1,217 (12.9%)	24 (2.8%)	39 (8.3%)	20 (5.2%)	23 (6.5%)	34 (5.2%)	1,357 (11.2%)
Rather Important	3,505 (37.1%)	119 (14.1%)	112 (23.8%)	92 (23.9%)	110 (31.2%)	134 (20.6%)	4,072 (33.5%)
Very Important	3,240 (34.3%)	595 (70.3%)	238 (50.1%)	228 (59.2%)	179 (50.7%)	381 (58.7%)	4,861 (40%)
No Opinion	173 (1.8%)	10 (1.2%)	3 (0.6%)	6 (1.6%)	8 (2.3%)	5 (0.8%)	205 (1.7%)
Missing	719 (7.6%)	53 (6.3%)	45 (9.6%)	20 (5.2%)	19 (5.4%)	56 (8.6%)	912 (7.5%)
TOTAL	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)

Table 3.4. Logistic Regression Analysis of Students' Realistic and Educational Aspirations: Immigrant Group by Generation Status Dummies

	Realistic Educational Aspirations of Students				Idealistic Educational Aspirations of Students			
	M1: Test Scores	M2: Test Scores; School Type	M3: SES	M4: Test Scores; School Type; SES	M1: Test Scores	M2: Test Scores; School Type	M3: SES	M4: Test Scores; School Type; SES
Turkish 1 st	.26 (.40)	.42 (.59)	.34 (.52)	.61 (.71)	.68* (.33)	1.26** (.37)	1.05** (.37)	1.76*** (.44)
Turkish 2 nd	.56* (.25)	.46 (.45)	.55 (.42)	.69 (.57)	.92*** (.24)	1.28*** (.29)	1.26*** (.30)	1.72*** (.38)
Turkish 3 rd	.48 (.56)	.59 (.70)	.38 (.59)	.74 (.78)	.76† (.45)	1.18* (.50)	.92† (.49)	1.52** (.54)
Medit. 1 st	.09 (.53)	.97 (.64)	-1.13 (1.12)	.82 (1.20)	.22 (.40)	.93* (.45)	-.09 (.62)	.79 (.64)
Medit. 2 nd	-.01 (.35)	.22 (.58)	-.94 (1.11)	.05 (1.37)	.15 (.30)	.62 (.39)	-.03 (.51)	.55 (.56)
Medit. 3 rd	-.03 (.34)	.08 (.63)	-1.24 (1.11)	-.27 (1.37)	.33 (.30)	.73† (.41)	-.14 (.53)	.41 (.58)
Yugoslav 1 st	.30 (.55)	.60 (.70)	-.16 (.70)	.85 (.82)	.62 (.40)	.88† (.50)	1.15* (.50)	1.63** (.59)
Yugoslav 2 nd	.84* (.35)	1.02 (.70)	.84 (.58)	1.30 (.86)	.89** (.32)	1.13** (.43)	1.49*** (.42)	1.72** (.53)
Yugoslav 3 rd	.97* (.40)	1.05 (.80)	.98 (.68)	1.16 (.93)	.86* (.36)	.90† (.52)	1.39* (.54)	1.18† (.66)
Polish 1 st	-.44 (.64)	.55 (.90)	-.13 (.84)	1.08 (1.19)	.67 (.57)	1.18† (.64)	.33 (.70)	1.21 (.83)
Polish 2 nd	.16 (.32)	.60 (.59)	.42 (.57)	1.19 (.83)	.67* (.33)	.75† (.44)	.40 (.50)	.79 (.65)
Polish 3 rd	-.20 (.70)	-.56 (.99)	.07 (.76)	-.16 (1.15)	1.29 (.90)	.25 (1.02)	1.18 (.97)	.29 (1.18)
Soviet Union 1 st	.65 (.43)	1.60** (.58)	.76 (.68)	1.85* (.79)	.81* (.33)	1.37*** (.39)	1.04* (.45)	1.45** (.48)
Soviet Union 2 nd	-.07 (.28)	.91* (.45)	-.29 (.64)	.80 (.78)	.29 (.24)	.81** (.29)	.36 (.40)	.71 (.44)
Female	.52*** (.06)	.20** (.07)	.19*** (.05)	.22** (.07)	.58*** (.06)	.33*** (.07)	.35*** (.05)	.39*** (.07)
Constant	-1.01*** (.07)	-3.26*** (.16)	-3.02*** (.31)	-3.82*** (.41)	.10 (.06)	-1.49*** (.10)	-1.97*** (.27)	-2.00*** (.31)

F-Score	51.33	52.86	29.45	31.01	47.60	41.08	29.27	26.33
---------	-------	-------	-------	-------	-------	-------	-------	-------

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The constant is the main effect estimates for the native German category. All models control for students' gender, age and whether or not they have a sibling. STATA's *mi estimate* command reports *t* and *F* statistics for inference although logit would usually report *Z* and χ^2 statistics; it uses Rubin's combination rules to obtain the estimates from multiply imputed data (StataCorp, 2014).

Table 3.5. Logistic Regression Analysis of Parents' Perceived Educational & Career Aspirations: Immigrant Group by Generation Status Dummies

	Idealistic Educational Aspirations of Parents				Importance of Career Success for Parents			
	M1: Test Scores	M2: Test Scores; School Type	M3: SES	M4: Test Scores; School Type; SES	M1: Test Scores	M2: Test Scores; School Type	M3: SES	M4: Test Scores; School Type; SES
Turkish 1 st	.79* (.33)	1.42*** (.38)	1.14** (.37)	1.78*** (.45)	1.04** (.32)	.85* (.35)	1.04** (.36)	.94* (.39)
Turkish 2 nd	1.32*** (.25)	1.80*** (.29)	1.62*** (.29)	2.13*** (.38)	1.17*** (.23)	.98*** (.27)	1.17*** (.28)	1.08** (.32)
Turkish 3 rd	.90* (.44)	1.23** (.45)	1.06* (.46)	1.50** (.48)	-.04 (.40)	-.25 (.42)	-.02 (.43)	-.14 (.45)
Medit. 1 st	.62 (.39)	1.34** (.44)	.81 (.52)	1.76** (.58)	.92* (.40)	.74† (.42)	1.07* (.47)	.68 (.49)
Medit. 2 nd	.12 (.29)	.48 (.38)	.53 (.47)	.96† (.56)	.07 (.26)	-.10 (.30)	.10 (.37)	-.20 (.41)
Medit. 3 rd	.03 (.29)	.24 (.39)	.19 (.49)	.52 (.58)	-.04 (.27)	-.22 (.32)	.02 (.39)	-.29 (.44)
Yugoslav 1 st	1.17** (.41)	1.56** (.49)	1.37** (.50)	1.91** (.55)	1.24** (.41)	1.26* (.49)	1.67** (.54)	1.68** (.60)
Yugoslav 2 nd	1.32*** (.30)	1.63*** (.43)	1.71*** (.41)	2.08*** (.50)	.95** (.29)	.98** (.37)	1.27** (.41)	1.39** (.47)
Yugoslav 3 rd	1.07** (.36)	1.03* (.50)	1.36** (.52)	1.25* (.61)	-.45 (.36)	-.43 (.45)	-.18 (.50)	-.01 (.55)
Polish 1 st	.92† (.54)	1.66** (.60)	1.15† (.66)	2.56*** (.72)	.81† (.47)	1.01† (.52)	1.25* (.58)	1.55* (.66)
Polish 2 nd	.51 (.31)	.75† (.42)	.91† (.49)	1.69** (.54)	.24 (.28)	.53 (.36)	.73† (.43)	1.03* (.51)
Polish 3 rd	2.14† (1.19)	1.46 (1.34)	2.64* (1.16)	2.44† (1.35)	1.81* (.87)	2.28* (.91)	2.30* (.92)	2.76** (1.02)
Soviet Union 1 st	.96** (.32)	1.32** (.40)	1.01* (.46)	1.34** (.51)	.90** (.31)	.59† (.34)	.92** (.40)	.86* (.44)
Soviet Union 2 nd	.71** (.24)	1.11*** (.31)	.66 (.41)	.98* (.48)	.73** (.22)	.44 (.27)	.77* (.36)	.73† (.39)
Female	.43*** (.06)	.12† (.07)	.21*** (.05)	.14* (.07)	-.54*** (.05)	-.50*** (.05)	-.46*** (.05)	-.51*** (.05)
Constant	-.08 (.06)	-1.80*** (.10)	-2.33*** (.26)	-2.64*** (.31)	-.11* (.05)	.09 (.07)	.13 (.24)	-.04 (.25)

F-Score	42.48	43.42	27.31	26.60	25.44	18.69	13.15	11.40
---------	-------	-------	-------	-------	-------	-------	-------	-------

Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The constant is the main effect estimates for the native German category. All models control for students' gender, age and whether or not they have a sibling. STATA's *mi estimate* command reports *t* and *F* statistics for inference although logit would usually report *Z* and χ^2 statistics; it uses Rubin's combination rules to obtain the estimates from multiply imputed data (StataCorp, 2014).

Table A3.1. The Detailed Measures of Generation Status by Immigrant Group

	German	Turkish	Mediterranean	Yugoslav	Polish*	Soviet Union*	TOTAL
1 st Generation	N/A	53	21	28	38	141	281
1.5 Generation	N/A	41	37	41	39	216	374
2. Generation	N/A	522	75	140	143	222	1,102
2.25 Generation	N/A	101	19	7	2	2	131
2.5 Generation	N/A	20	10	11	8	3	52
2.75 Generation	N/A	75	146	77	111	64	473
3 rd Generation	N/A	11	1	1	4	1	18
3.25 Generation	N/A	1	2	0	8	0	11
3.5 Generation	N/A	10	33	14	94	7	158
3.75 Generation	N/A	13	126	66	439	95	805
TOTAL	9,451	847	470	385	886	751	12,790

*The 3.5 & 3.75 Generation with Polish and Soviet Union origins; those with two or three grandparents born in Germany are considered early return–*Aussiedler*–migrants who arrived to Germany immediately after the World War II. Therefore, they are not included in the immigrant sample (see Olczyk et al., 2014 & Worbs et al., 2013 for a detailed discussion).

Note: 1st Generation: Student born abroad and migrated after the age of 6; 1.5 Generation: Student born abroad and migrated before the age of 6 and started education in Germany. See Figure A.1 for the genealogy of other generation groups.

Table A3.2. Secondary School Track Attendance by Immigrant Group

	German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union*	TOTAL
<i>Hauptschule</i> (Lowest High School Track)	1,953 (21%)	409 (48%)	192 (41%)	149 (39%)	83 (24%)	270 (42%)	3,056 (25%)
<i>Realschule</i> (Intermediate Track)	2,082 (22%)	152 (18%)	93 (20%)	81 (21%)	76 (22%)	151 (23%)	2,635 (22%)
<i>Gymnasium</i> (Academic Track)	3,573 (38%)	146 (17%)	116 (25%)	95 (25%)	101 (29%)	120 (19%)	4,151 (34%)
Other School Type*	1,843 (20%)	140 (17%)	69 (15%)	60 (16%)	93 (26%)	108 (17%)	2,313 (19%)
TOTAL	9,451 (100%)	847 (100%)	470 (100%)	385 (100%)	353 (100%)	751 (100%)	12,155 (100%)

* Other School Type includes two school types, which combine more than one curricular tracks in the same school: *Gesamtschule* (combines all three curricular tracks) and *Schulen mit mehrere Bildungsgaenge* (combines the lower two school tracks).

Table A3.3. Parental Socioeconomic Resources & Control Variables by Immigrant Group

	German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union	TOTAL
Mother's Educational Attainment							
No Qualification	154 (2%)	213 (25%)	30 (6%)	36 (10%)	13 (4%)	13 (2%)	459 (4%)
Elementary	1,756 (19%)	261 (31%)	118 (25%)	93 (25%)	50 (14%)	68 (11%)	2,346 (19%)
Intermediate High-School	4,529 (48%)	252 (30%)	196 (42%)	134 (35%)	124 (35%)	282 (44%)	5,517 (46%)
Academic High-School	1,812 (19%)	53 (6%)	72 (15%)	59 (16%)	94 (27%)	119 (19%)	2,209 (18%)
Tertiary Education	1,074 (11%)	30 (4%)	41 (9%)	42 (11%)	53 (15%)	121 (19%)	1,361 (11%)
Other Education	100 (1%)	35 (4%)	13 (3%)	16 (4%)	17 (5%)	42 (7%)	223 (2%)
TOTAL	9,425 (100%)	844 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)
Parental Occupational Status							
Upper Professionals	2,487 (26%)	99 (12%)	110 (23%)	69 (18%)	54 (15%)	86 (13%)	2,905 (24%)
Lower Professionals	2,786 (30%)	154 (18%)	126 (27%)	65 (17%)	89 (25%)	127 (20%)	3,347 (28%)
Routine Non-Manual	2,961 (31%)	285 (34%)	147 (31%)	114 (30%)	145 (41%)	218 (34%)	3,870 (32%)
Skilled Manual Workers	760 (8%)	184 (22%)	55 (12%)	70 (19%)	42 (12%)	123 (19%)	1,234 (10%)
Semi-Skilled & Unskilled W.	439 (5%)	119 (14%)	32 (7%)	61 (16%)	23 (7%)	93 (14%)	767 (6%)
TOTAL	9,425 (100%)	844 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)
Number of Books Available at Home							
	German	Turkish	Mediterranean	Yugoslav	Polish	Soviet Union	TOTAL
None/ Very few (0-10)	566 (6%)	144 (17%)	58 (12%)	72 (19%)	36 (10%)	75 (12%)	951 (8%)

Fill one shelf (11-25)	899 (10%)	213 (25%)	77 (16%)	81 (21%)	65 (18%)	121 (19%)	1,456 (12%)
Fill several shelves (26- 100)	2,041 (22%)	260 (31%)	111 (24%)	90 (23%)	95 (27%)	223 (34%)	2,820 (24%)
Fill small set of shelves (101-200)	2,078 (23%)	133 (16%)	84 (18%)	66 (17%)	77 (22%)	123 (19%)	2,561 (22%)
Fill large set of shelves (201-500)	2,118 (23%)	66 (8%)	85 (18%)	47 (12%)	56 (16%)	67 (10%)	2,439 (20%)
Fill shelf units (More than 500)	1,536 (17%)	30 (4%)	55 (12%)	28 (7%)	24 (7%)	40 (6%)	1,713 (14%)
TOTAL	9,425 (100%)	844 (100%)	470 (100%)	385 (100%)	353 (100%)	649 (100%)	12,155 (100%)
Gender							
Female	4,600 (49%)	413 (49%)	242 (52%)	191 (50%)	198 (57%)	343 (53%)	5,987 (49%)
Male	4,851 (51%)	434 (51%)	228 (48%)	194 (50%)	155 (43%)	306 (47%)	6,168 (51%)
Mean Age							
In Months	185.6	188.7	187.7	188.3	187.1	190.1	186.2
In Years	15.5	15.7	15.6	15.7	15.6	15.8	15.5

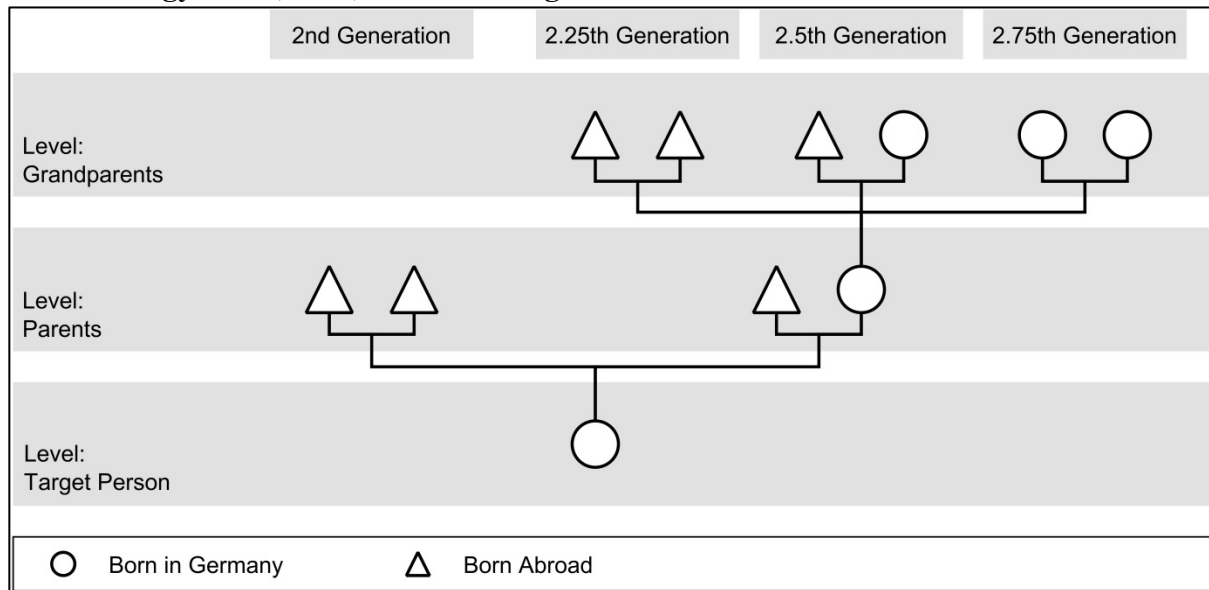
Table A3.4. Logistic Regression Analysis of the Realistic and Idealistic Educational Aspirations: Models without SES, School Type & Achievement Controls

	Students' Aspirations		Parents' Aspirations	
	Realistic Educational Aspirations	Idealistic Educational Aspirations	Idealistic Educational Aspirations of Parents	Importance of Career Success
Turkish 1 st	-1.14*** (.28)	-.67** (.21)	-.53* (.22)	1.60*** (.24)
Turkish 2 nd	-.60* (.09)	-.23** (.08)	-.14† (.08)	1.70*** (.09)
Turkish 3 rd	-.42 (.38)	-.23 (.36)	-.05 (.36)	.47 (.35)
Medit. 1 st	-1.05** (.35)	-.78** (.30)	-.22 (.29)	1.65*** (.33)
Medit. 2 nd	-.70*** (.15)	-.54*** (.13)	-.21 (.14)	.73*** (.14)
Medit. 3 rd	-.60** (.19)	-.23 (.17)	-.15 (.17)	.57** (.17)
Yugoslav 1 st	-1.89*** (.43)	-1.09*** (.27)	-.53* (.26)	1.78*** (.30)
Yugoslav 2 nd	-.55*** (.15)	-.35* (.14)	.02 (.14)	1.33*** (.15)
Yugoslav 3 rd	.18 (.23)	.28 (.24)	.38 (.24)	-.31 (.25)
Polish 1 st	-1.49** (.48)	-.47 (.34)	-.01 (.33)	1.10** (.35)
Polish 2 nd	-.04 (.12)	.25 (.13)	.29* (.12)	.58*** (.12)
Polish 3 rd	-.19 (.63)	1.15 (.78)	2.13* (1.05)	2.03** (.78)
Soviet Union 1 st	-1.04*** (.24)	-.52** (.18)	-.31† (.19)	1.54*** (.21)
Soviet Union 2 nd	-.90*** (.11)	-.38*** (.09)	-.10 (.10)	1.03*** (.10)
Constant	-.37*** (.02)	.35*** (.02)	.18*** (.02)	.53*** (.02)
F-Score	14.46	6.58	2.42	46.93

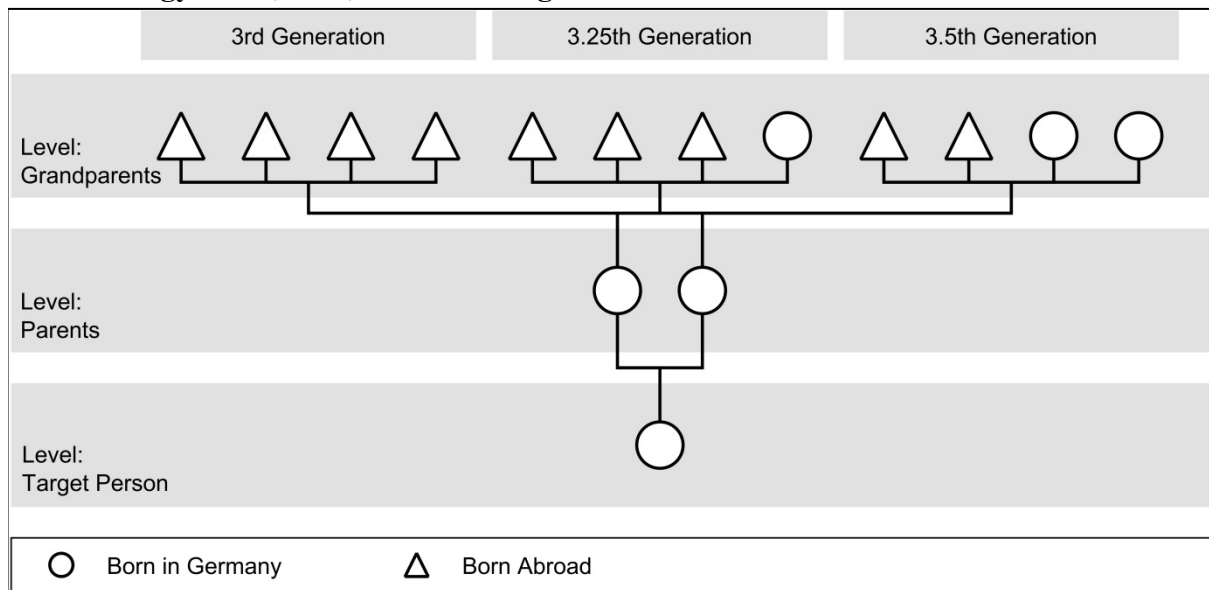
Note: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$; † $p < 0.10$. Robust standard errors are in parentheses. The constant is the main effect estimates for the native German category. All models control for students' socioeconomic status, school type they attend, reading and math scores, gender, age and whether or not they have a sibling. STATA's *mi estimate* command reports *t* and *F* statistics for inference although logit would usually report *Z* and χ^2 statistics; it uses Rubin's combination rules to obtain the estimates from multiply imputed data (StataCorp, 2014).

Figure A3.1. Genealogy of Generation Status

A: Genealogy of 2nd; 2.25; 2.5 and 2.75-generation status.

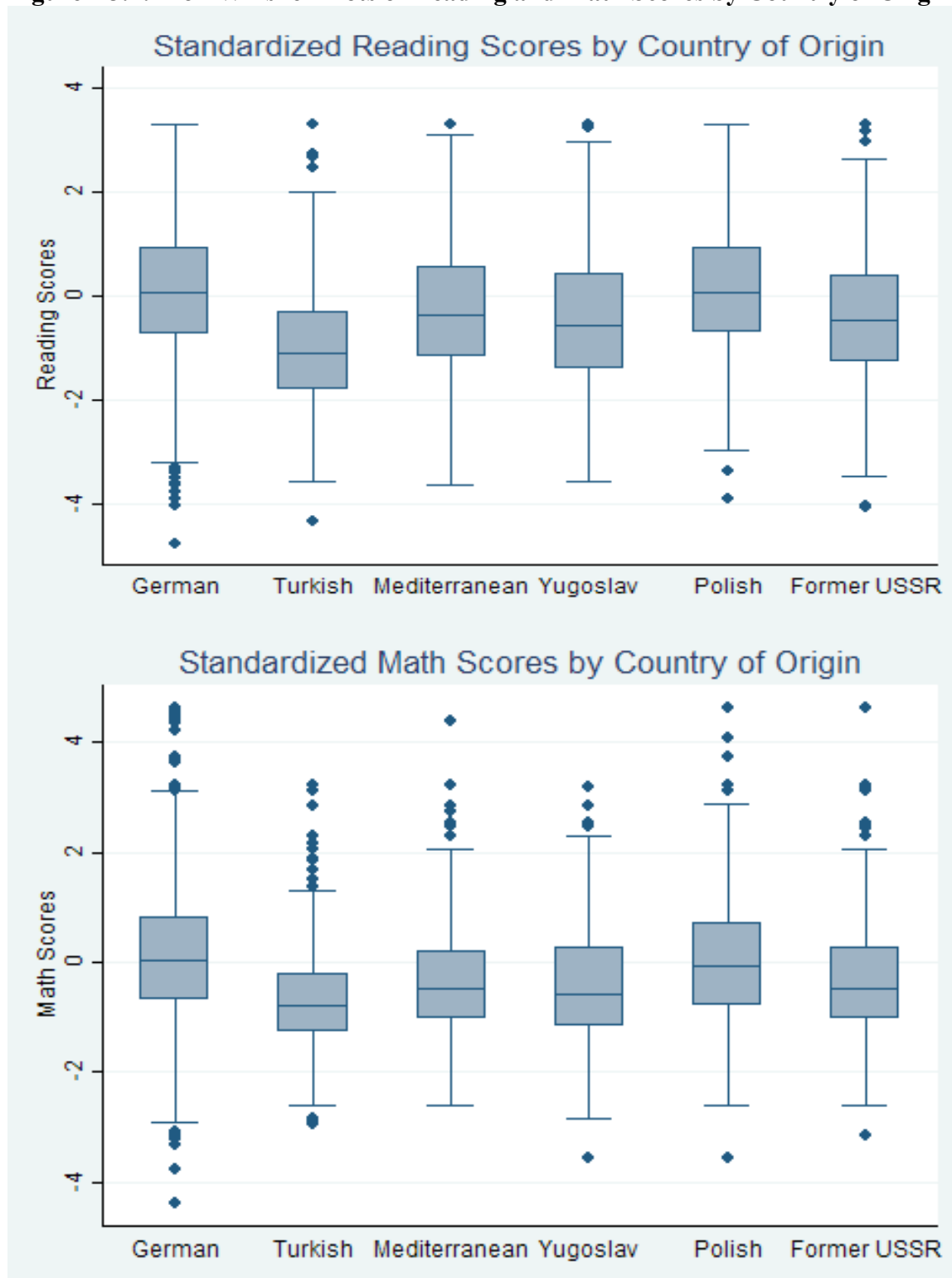


B: Genealogy of 3rd; 3.25; 3.5 and 3.75 generation status.



Source: Olczyk, Will & Kristen, 2014, Figure 2, P. 6; Figure 3, P. 7.

Figure A3.2: Box-Whisker Plots of Reading and Math Scores by Country of Origin



Source: National Educational Panel Study; Waves 1 & 2.

Conclusion to Dissertation

The three chapters of this dissertation unequivocally establish the fact that the contexts of arrival and the mobility experiences of different immigrant communities in Germany vary substantially. Building on the growing research on immigrant integration and educational in Germany, as well as Europe, findings offer a new perspective by discussing potential mechanisms to understand the complexities of immigrant experiences between five largest and politically most relevant groups with a comparative approach. Furthermore, engaging the scholarly debate among assimilation scholars (see Alba, Kasinitz and Waters, 2011; Haller, Portes and Lynch, 2011), the findings of this study suggest that the immigration experiences of these five communities are indeed segmented and multiple; however, my major argument is that conceptualizing immigrant integration as downward or straight line assimilation, or selective acculturation offers limited theoretical perspective to understand the complexities of immigration histories and interaction of factors influencing the integration outcomes of immigrant communities from different countries of origin.

The first empirical chapter of this dissertation provides strong evidence for the German context, the political economy of immigration, i.e., arriving in Germany as labor migrant is an important characteristic. For the descendants of labor migrants from Turkey, higher human and economic capital in their families and the longer duration of stay in German have weaker associations with their educational performance. A similar relationship of weak signaling between parental resources and high school performance (see Ruhose and Schwerdt, 2015), would probably be observed for future educational degree attainment and future occupational attainment of descendants of this group as well. My findings provide evidence of this relationship for students with Turkish and Kurdish origins; for the other two labor migrant

groups –Mediterranean and Yugoslav origins– either the associations are stronger, or my findings do not provide clear evidence to reach a similar conclusion. Thus descendants of immigrants from Turkey appear to be in a uniquely disadvantaged position in the German social status hierarchy.

The exceptionally disadvantaged position of immigrant students from Turkey is not a new finding in the German context (see Kalter, 2011; Kristen, Reimer and Kogan, 2008). However, my findings further indicate that higher levels of parental resources and longer time spent in Germany do not improve their educational success of Turkish students, implying very limited opportunities for intergenerational mobility. The available data do not allow me to provide definite answers for the signaling problem between educational performance and parental resources for Turkish students. Yet, both my own findings and previous research suggest that residential segregation of Turkish community and language retention among Turkish youth are the most likely reasons for this problem. In addition, these two factors should be articulated with marriage patterns of Turkish and Kurdish immigrants; whether homogamous marriage patterns generate further social isolation for them.

Finally, it remains unclear whether the Turkish and Kurdish students are victims of discrimination in schools or by teachers or whether they confront some other type of barrier that members of other immigrant groups do not. In the German context, there is no clear evidence for discrimination at the school and classroom level (Gomolla and Radtke, 2000; Kristen, 2006), yet this alternative needs to be further examined considering that Turkish students reveal integration experiences different than other labor migrant communities from Mediterranean countries and former Yugoslavian republics (Haug, 2003; Schulz and Leszczensky, 2015; Steinbach, 2013), as well as more recent immigrants from Poland and return migrants from the former Soviet Union.

Another striking finding of this study is that return migrants from the former Soviet Union are only outperforming the students with Turkish origins; they appear to have lower test scores in both domains than other labor migrants with Mediterranean and Yugoslav origins. Previous research emphasized the positive reception context for these return migrants with German ancestry –*Spaetaussiedler*, pointing to an unprecedented support for settlement and naturalization by the German state (Euwals et al., 2010, 521; Münz, 2002; Wegmann, 2014). However, my findings challenge the notion that a welcoming arrival context would lead to positive integration outcomes; in this study measured as test scores in high school. It appears that human and economic capital in the family is also a weaker signal of educational performance for this group. Due to data limitations, I cannot provide a convincing explanation why the return migrants from the former Soviet Union do not perform as high, despite their German ancestry, the state support they received and their presumably developed German language skills. It is clear that further research is necessary to understand the surprisingly low test scores among the descendants of return migrants, especially in comparison to another recent migrant group from Poland; a group who not only enjoy high levels of human and economic capital in their families, but they also constitute the highest performing immigrant group in this study; almost matching their native German peers in both math and reading.

The findings from the third empirical chapter show that the students with Turkish and Yugoslav backgrounds maintain high educational aspirations for an academic high school qualification and attending college. However, contrary to their idealistic aspirations, these students do not express high aspirations for an academic high school qualification when they are asked about realistic expectations for the actual high school degrees they will most likely obtain. This gap between their idealistic aspirations and realistic expectations suggests that high

immigrant aspirations might not be due to immigrant optimism (Becker, 2010; Kao and Tienda, 1995) or information deficit (Relikowski, Yilmaz and Blossfeld, 2012), but in fact is a result of conscious appraisal for a better high school qualification. The fact that they realistically are aware of their limited opportunities for attending higher education, but continuing aspirations for might be an indication of their awareness of the value of an academic high school degree in the German context, rather than them being optimistic or they lack information.

Lastly, the findings also provide strong evidence for the central importance of the highly-differentiated secondary school system in Germany. The school tracks the immigrant students attend play a strong mediating role in the mechanisms that I examine in this study. This finding raises a call for further research on school tracking and immigrant students: to what extent the tracking system sets the students on an irreversible trajectory at the beginning of their educational careers (Allmendinger, 1989; Buchmann and Park, 2009), and to what extent the schools themselves, in terms of their resources and immigrant populations shape the opportunities for the educational and occupational attainment of immigrant students. A longitudinal study design is warranted to understand the role of school tracks as well as the variation among schools within school tracks in determining the later outcomes in the life course of immigrant youth. Particularly interesting area of research would be the recent decision of many German federal states to merge the intermediate school track –*Realschule*– with the lowest school track –*Hauptschule* and whether this policy decision would contribute to closing the gap between academic school track graduates from others.

This question is particularly important for Germany today. The German population is going through a demographic transformation due to immigration. After half a century of the start of the labor migration from Southern Europe, Turkey and former Yugoslavia, the larger

proportion of immigrants are still among the younger sections of the German society. According to figures of the last census report, 32% of the German population younger than 15, 29% that are below the age of 25 have an immigration background, whereas only 8% of those who are 65 and older have a migration background (*Statistisches Bundesamt*, 2011). Considering the political instability in the Middle East and Afghanistan, and the possibility of more people from these regions of the globe will arrive in Germany and other Western European countries, the findings of this study provide an important perspective for the integration potential of people on the move.

In light of my findings, the official category of “persons with immigration background” (*Personen mit Migrationshintergrund*) also has to be problematized in terms of its heterogeneous character. This categorization does not identify the third generation immigrants –those who are born to immigrant parents, who themselves born in Germany but with parents born abroad. This official category is in line with the straight-line assimilationist perspective that by third generation immigrant population would resemble the native one. Yet, my findings suggest that experiences of third generation immigrants vary by the country of origin. In other words, having an immigration background have differential effects on the experiences of immigrant youth from different countries of origin. Future studies need to take this gap between official definition and the actual implications of immigrant status into consideration.

Finally, the bifurcated pattern of recent immigration to Germany should be also taken into consideration with European migration with high levels of human and economic capital on the one hand, and the immigrants, refugees and asylum seekers from Middle Eastern and African regions with relatively lower socioeconomic resources, on the other. It remains to be seen

whether immigrants with socioeconomic disadvantages continue to experience extra barriers toward integration.

References:

- Alba, R., Kasinitz, P., & Waters, M. C. (2011). The kids are (mostly) alright: Second-generation assimilation: Comments on Haller, Portes and Lynch. *Social Forces*, 89(3), 763-773.
- Allmendinger, J. (1989). Educational systems and labor market outcomes. *European sociological review*, 5(3), 231-250.
- Becker, B. (2010). *Bildungsaspirationen von Migranten. Determinanten und Umsetzung in Bildungsergebnisse*. Working Paper Nr. 137. Mannheimer Zentrum für Europäische Sozialforschung, Mannheim.
- Blossfeld, H. P., Roßbach, H.-G., & von Maurice, J. (Eds.). (2011). Education as a Lifelong Process: The German National Educational Panel Study (NEPS). [Special Issue] *Zeitschrift für Erziehungswissenschaft*, 14.
- Buchmann, C., & Park, H. (2009). Stratification and the formation of expectations in highly differentiated educational systems. *Research in Social Stratification and Mobility*, 27(4), 245-267.
- Euwals, R., Dagevos, J., Gijsberts, M., & Roodenburg, H. (2010). Citizenship and labor market position: Turkish immigrants in Germany and the Netherlands. *International Migration Review*, 44(3), 513-538.
- Gomolla, M. & Radtke, F. O. (2000). Mechanismen institutionalisierter Diskriminierung in der Schule. In Ingrid Gogolin et al. (eds.) *Migration, gesellschaftliche Differenzierung und Bildung. Resultate des Forschungsschwerpunktprogramms FABER* (pp. 321-341). Springer-Verlag.
- Haller, W., Portes, A., & Lynch, S. M. (2011). Dreams fulfilled, dreams shattered: Determinants of segmented assimilation in the second generation. *Social Forces*, 89(3), 733-762.
- Haug, S. (2003). Interethnische Freundschaftsbeziehungen und soziale Integration. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 55(4), 716-736.
- Kalter, F. (2011). The Second Generation in the Labor Market: Explaining the Turkish Exception. In R. Alba & M. C. Waters (eds.) *The Next Generation: Immigrant Youth in a Comparative Perspective* (pp. 166-184), New York, NY: NYU Press.
- Kao, G., & Tienda, M. (1995). Optimism and achievement: The educational performance of immigrant youth. *Social Science Quarterly* 76(1), 1-19.
- Kristen, C. (2006). Ethnische diskriminierung in der grundschule? *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 58(1), 79-97.
- Kristen, C., Reimer, D., & Kogan, I. (2008). Higher education entry of Turkish immigrant youth in Germany. *International Journal of Comparative Sociology*, 49(2-3), 127-151.
- Münz, R. (2002). Ethnos or demos? Migration and citizenship in Germany. *Challenging ethnic citizenship: German and Israeli perspectives on immigration*, 15-35.

- Relikowski, I., Yilmaz, E., & Blossfeld, H. P. (2012). Wie lassen sich die hohen Bildungsaspirationen von Migranten erklären? Eine Mixed-Methods-Studie zur Rolle von strukturellen Aufstiegschancen und individueller. In *Soziologische Bildungsforschung* (pp. 111-136). Springer Fachmedien: Wiesbaden.
- Schulz, B., & Leszczensky, L. (2015). Native friends and host country identification among adolescent immigrants in Germany: The role of ethnic boundaries. *International Migration Review*.
- Statistisches Bundesamt. (2011). *Statistisches Jahrbuch 2010 für die Bundesrepublik Deutschland*. Statistisches Bundesamt.
- Steinbach, A. (2013). Family structure and parent–child contact: A comparison of native and migrant families. *Journal of Marriage and Family*, 75(5), 1114-1129.
- Ruhose J and Schwerdt G (2015) *Does Early Educational Tracking Increase Migrant-Native Achievement Gaps? Differences-In-Differences Evidence Across Countries*. IZA Discussion Paper 8903.
- Wegmann, K. M. (2014). Shaping a new society: Immigration, integration, and schooling in Germany. *International Social Work*, 57(2), 131-142.