

THE ECONOMIC PERFORMANCE OF IMMIGRANTS

The Role of Human and Social Capital

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THE ECONOMIC PERFORMANCE OF IMMIGRANTS

The Role of Human and Social Capital

DE ECONOMISCHE POSITIE VAN IMMIGRANTEN

De rol van menselijk en sociaal kapitaal

(met een samenvatting in het Nederlands)

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To my parents

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1 Introduction

1.1 Background

In the context of increasing migration to Western countries, immigrants' economic disadvantage has become an important issue in policymaking and scientific inquiry. Sociologists, economists and social demographers have studied the economic difficulties the foreign-born population experiences in great detail (e.g., Borjas 1994; Portes and Rumbaut 1996; Van Tubergen, Maas and Flap 2004). Empirical evidence overwhelmingly shows that immigrants are more likely to be unemployed than are natives; if they have jobs, they often have jobs with lower prestige and lower earnings (Alba and Nee 2003; Borjas 1994; Hall and Farkas 2008; Kogan 2006).

In this study, I focus on two important explanations for immigrants' economic disadvantage provided by human capital theory and social capital theory. According to human capital theory, immigrants' disadvantage can be explained by their skills and knowledge. It is argued that, on average, immigrants have fewer skills and are less productive in the labor market than the native-born population. In particular, immigrants are less educated than natives, making them less productive and less attractive to employers. Indeed, empirical studies show that immigrants are generally less educated, and that this difference partly explains their disadvantaged position in the labor market (e.g., Borjas 1994; Portes and Rumbaut 1996).

An intriguing question remains, however, in studies relying on the human capital approach: why do immigrants still perform worse in the labor market –compared to natives–, while taking education into account? The 'ethnic residual' remains even after including other determinants of economic attainment that are informed by the human capital theory (e.g., labor market experience, gender, age, health). Why are immigrants more often unemployed and occupy lower quality jobs than natives, even when they have the same or similar levels of education, work experience, gender, age, and health?

Researchers have extended the human capital theory to further explain the ethnic disadvantage (Bratsberg and Ragan 2002; Duleep and Regets 1999; Friedberg 2000; Li 2001; Zeng and Xie 2004). It is argued that immigrants face particular problems in the labor market, because they lack so-called *host-country specific skills* that natives possess and that are required in the host-country labor market (Duleep and Regets 1999; Van Tubergen and Van

de Werfhorst 2007). This is most evident for language. In many Western countries, a large part of the immigrant population has a mother tongue different from the host country's official language, and many immigrants do not speak the host-country language well (Espenshade and Fu 1997; Van Tubergen and Kalmijn 2005). Although immigrants are skilled in their mother tongue, such *origin-specific skills* are clearly less valued in the host-country labor market. By contrast, immigrants who acquire the host-country language significantly improve their economic opportunities (e.g., Chiswick and Miller 1995, 2002). For example, Chiswick and Miller (2002), using the 1990 Census data on immigrants in the United States, showed that keeping other characteristics constant, immigrants who speak English fluently have 14 percent higher earnings than those who are not fluent in English.

Besides language, researchers have argued that other forms of host-country specific skills are important as well (Chiswick 1978; Bratsberg and Ragan 2002; Friedberg 2000; Li 2001; Zeng and Xie 2004). More specifically, it is suggested that the educational qualifications and work experience immigrants have acquired in their country of origin are less valued in the host-country labor market than schooling and experience obtained in the host country. It is furthermore assumed that many immigrants do obtain some education and work experience after migration, thereby improving their host-country skills (Van Tubergen and Van de Werfhorst 2007). However, besides the empirical evidence supporting the importance of host-country language skills, there is little empirical research on the role of origin- and host-country schooling and work experience in immigrant economic performance.

A second explanation for the "ethnic residual" is provided by the social capital theory. A longstanding and influential line of research in sociology and economics has been developed that considers the impact of social capital on people's economic attainment (Coleman 1990). The theoretical importance of social capital has long been recognized in the literature on the native-born population (Burt 1992; Coleman 1990; Granovetter 1973; Ioannides and Loury 2004; Lin 1999; Mouw 2002). The major idea stipulates that having more (resourceful) contacts generally increases people's economic opportunities.

A number of studies have examined the importance of co-ethnic contacts in immigrant economic outcomes (e.g., Aguilera 2005; Aguilera and Massey 2003; Sanders, Nee and Sernau 2002). Immigrants could benefit from social contact with co-ethnics as it provides immigrants with host-country specific information and knowledge, for example, about where to look for a job, what the available jobs are, and how to behave on the job interview (Aguilera and Massey 2003; Fernandez-Kelly 1995). In addition, social contacts can assist immigrants in the job-search process by providing recommendations to prospective employers or entry into work positions (Aguilera and Massey 2003; Hagan 1998; Sanders, Nee and Sernau 2002). There have been also a number of studies that considered the role of ethnic

enclaves in immigrant economic outcomes (Hagan 1998; Portes and Jensen 1989; Sanders, Nee and Sernau 2002; Waldinger, Aldrich and Ward 2006). These studies have consistently shown that immigrants tend to settle in areas with large concentrations of immigrants (Bauer, Epstein, and Gang 2005; Chavez, Mouw and Hagan 2009), and that these ethnic concentrations can be an important predictor of immigrants' entry and advancement in the host-country labor market (Hagan 1998; Portes and Jensen 1989; Waldinger, Aldrich and Ward 2006). Specifically, some authors showed that ethnic concentration is associated with higher employment chances and better jobs for immigrants (e.g., Hagan 1998; Portes and Jensen 1989); others showed that economic opportunities provided by ethnic concentrations are merely limited to low-skilled and low-paid jobs (Catanzarite and Aguilera 2002; Lewin-Epstein and Semyonov 1992).

In the research of Putnam (2000) a distinction is made between *bonding* and *bridging social capital*. According to this research, connections within one's own ethnic group are considered a form of bonding social capital, whereas connections with natives are a form of bridging social capital. It is also argued that whereas bonding social capital is crucial for mobilizing in-group solidarity and reciprocal relations, bridging social capital is critical for linkages to external resources and information diffusion. Following Putnam (2000), I distinguish between bonding social capital (which I refer to as *origin-country specific social capital*) and bridging social capital (which I refer to as *host-country specific social capital*). Although co-ethnic contacts generally facilitate immigrants' economic performance, I expect that interacting with natives may be particularly important for immigrant economic outcomes. One reason for this expectation is that natives have had more exposure to the host-country labor market than have immigrants. Another reason is that natives are generally more educated, more often employed, they have higher status jobs and more earnings than immigrants. For these reasons, one may expect natives to possess more information about available jobs and to be better informed on how to apply for jobs. However, previous studies have almost exclusively focused on origin-country specific social capital, and little empirical evidence exists for the role of host-country social capital in immigrant economic outcomes.¹

¹ Although I mainly focused on human and social capital, other explanations can be offered to explain the economic performance of immigrants, one of them having to do with racial discrimination (National Research Council 2004; Quillian 2006). There is ample evidence that discrimination hampers the economic mobility of immigrants in the labor market, particularly those from culturally different backgrounds (Van Tubergen 2006). In this study, discrimination could explain why I consistently find that Turkish immigrants in the Netherlands and Germany, the populations most socially and culturally distinct from the native-born population, are more often unemployed, have lower occupational statuses and higher rates of self-employment than other immigrants, even after accounting for origin- and host-country specific human capital, social contacts with natives, and after controlling for multiple demographic variables.

1.2 Research questions and contributions

In this study, I assess the role of origin- and host-country human and social capital in the economic performance of immigrants in two Western countries: the Netherlands and Germany. I attempt to answer three general research questions. In answering these questions, I make several contributions to the literature. The first research question is the following:

1. *To what extent and why do origin-country specific human capital and host-country specific human capital affect the economic performance of immigrants?*

In answering this question, I contribute to the literature by studying the role of place of education and work experience in the economic incorporation of immigrants in the Netherlands and Germany. Despite much theorizing about the presumed impact of host-country specific skills, little is known empirically. There are few studies that have examined the importance of origin- and host-country schooling, and even less is known about the returns to origin- and host-country work experience. What is even more important is that these studies were exclusively conducted among immigrants in the United States (Akresh 2007; Bratsberg and Ragan 2002; Bratsberg and Terrell 2002; Zeng and Xie 2004), Canada (Li 2001), and Israel (Friedberg 2000), thus, little is known whether the same findings would hold equally in new receiving Western European countries.

Second, I assess how the economic returns to origin-country human capital differ between immigrant groups in the Netherlands. Specifically, I examine whether education and work experience obtained in Turkey and Morocco have a smaller effect on immigrant economic outcomes than do education and work experience received in Suriname and Dutch Antilles. Most previous research has not considered immigrant group differences in the returns to origin-country human capital, and therefore, provide little insights into why such differences could occur. However, a few studies have examined the returns to origin-country schooling among different immigrants in the United States (Bratsberg and Ragan 2002; Bratsberg and Terrell 2002; Zeng and Xie 2004) and Israel (Friedberg 2000).

Third, I advance previous research methodologically by using better measures of origin- and host-country human capital. Most of the previous studies examining the returns to origin- and host-country human capital relied on general population surveys (e.g., census data) that do not directly measure pre- and post-migration schooling (and work experience), but instead use information on age at the time of migration and total years of schooling (Bratsberg and Ragan 2002; Friedberg 2000; Zeng and Xie 2004). Such measures may lead to systematic measurement error of both pre-migration schooling and post-migration schooling (Chiswick

and Miller 1994).² In this study, I rely on immigrant specific surveys, which contain direct measures of pre- and post-migration schooling, language proficiency, and more direct measures of work experience.

The second research question addressed in this study is the following:

2. *To what extent and why do origin-country specific social capital and host-country specific social capital affect the economic performance of immigrants?*

In answering this question, I improve on previous research by focusing on not only social contacts with co-ethnics, but also social contacts with natives. Previous research almost exclusively focused on origin-specific social capital. Specifically, a number of studies have considered the importance of having co-ethnic family and friends for immigrant economic integration into the host-country (Aguilera 2005; Aguilera and Massey 2003; Sanders, Nee and Sernau 2002). These studies have shown, by providing immigrants with information and social and financial assistance, that co-ethnic contacts promote the economic performance of immigrants (e.g., Aguilera 2005; Aguilera and Massey 2003; Sanders, Nee and Sernau 2002).

Although contacts with co-ethnics generally foster economic mobility of immigrants, it can be argued that contacts with natives, in particular, improve immigrants' economic performance. It can be assumed that in the host-country labor market natives have access to more and better resources than immigrants (e.g., have more and better information about available jobs and application procedures). Moreover, several studies throughout the literature examining the native-born population have suggested that for acquiring novel information about labor market opportunities and influence, ties outside of one's own social network are crucial (Burt 1992; Granovetter 1973; Putnam 2000). Following the insights from these studies, it can be argued that for immigrants, contact with natives is especially important. In this study, I improve upon earlier research by relying on surveys, which also contain information on social contacts with natives.

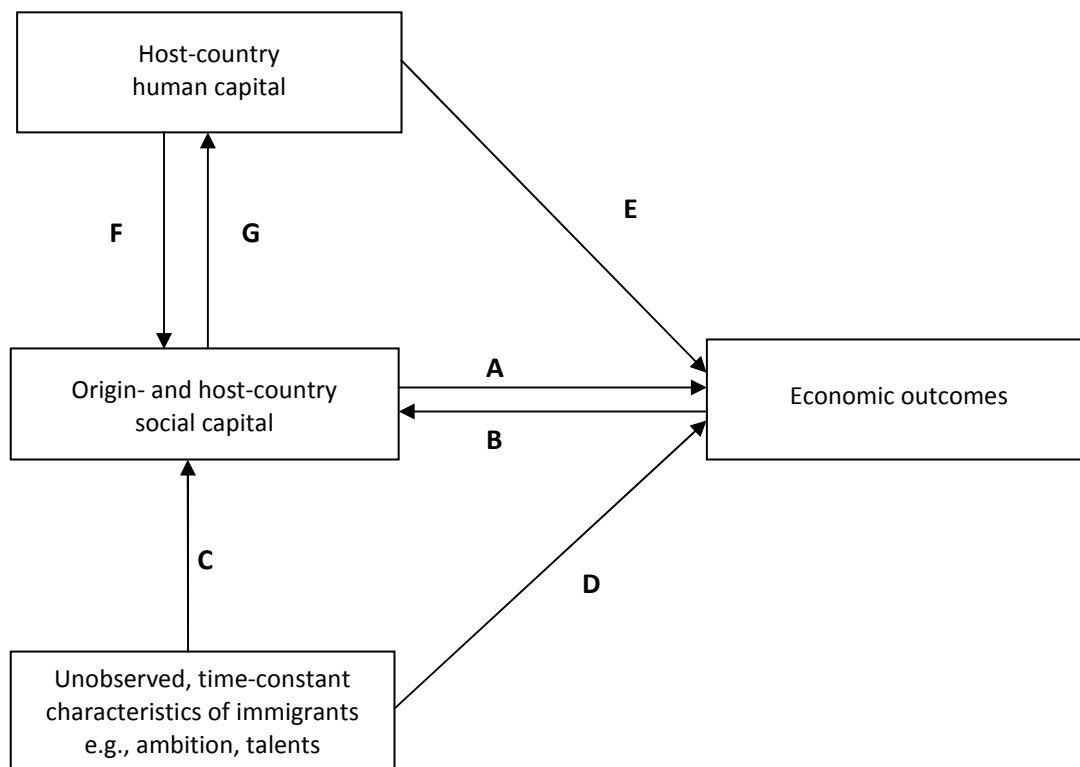
The second contribution regarding the social capital theory is the use of panel data. Previous empirical studies on immigrants have exclusively relied on cross-sectional data. The use of cross-sectional data is problematic for assessing the effect of social capital and testing the hypotheses rigorously. That is, cross-sectional data do not allow examining whether the presumed positive effect of social contacts on immigrant economic outcomes is causal, reflects reversed causality, or is spurious due to unobserved characteristics of immigrants.

² I discuss the importance of the possible measurement error in detail in chapter 2 on pp. 22-23.

Figure 1.1 outlines the possible causal, reverse causal, mediated and spurious relations between social contacts and immigrants' economic outcomes. Although researchers have argued that (resourceful) social contacts help immigrants get (better) jobs (as depicted by arrow **A** in Figure 1.1), it could be that immigrants who have a better job have more opportunities to make (resourceful) social connections (arrow **B**). Because having a job (or higher status job) provides opportunities to meet and socialize with resourceful people, a positive correlation between immigrant social contacts and economic outcomes could reflect the tendency that (better) employed immigrants acquire more resourceful social contacts. By using longitudinal data and measuring immigrant social contacts earlier than their economic outcomes, this study provides a better test of a causal relationship between social contacts and immigrants' economic performance.

Furthermore, this study examines whether a positive correlation between social contacts and immigrant economic outcomes could be spurious due to unmeasured time-constant immigrant characteristics. Because people tend to associate with people that are similar to

Figure 1.1 Causal, reverse causal, mediated and spurious effects of host-country human capital and origin- and host-country social capital on immigrant economic outcomes.



themselves (McPherson, Smith-Lovin, and Cook 2001), a positive correlation between social contacts and immigrant economic outcomes could simply reflect the tendency of ambitious and talented immigrants to befriends other ambitious and talented immigrants (or natives) (arrow **C**) and have better economic outcomes (arrow **D**) even in the absence of a causal effect of social contacts. By making use of longitudinal data and by following the same individuals over time, this study provides a more rigorous test for a causal effect of social capital.

The third research question follows:

3. *How do origin- and host-country specific human capital and origin- and host-country specific social capital interplay in the economic performance of immigrants?*

In answering this question, I make two theoretical contributions. First, I study whether the positive effect of host-country specific human capital on immigrant economic outcomes is mediated or spurious due to host-country specific social capital. Figure 1.1 describes possible scenarios in the relationship between host-country specific human capital, social contacts with natives and immigrant economic outcomes. According to the standard interpretation, host-country specific human capital is more valued by employers because skills acquired in the host-country are of higher quality and are more transferable than skills acquired in the country of origin (e.g., Friedberg 2000), (arrow **E**, in Figure 1.1). In this study, I also examine *an alternative interpretation* of the positive effect of host-country human capital. One could argue that immigrants with more host-country specific skills benefit from such skills because they are associated with increasing connections with the native-born population. People who learn the second language, and who attend school and work in the host country are more likely to develop relationships with natives (e.g., at school, at work) (arrow **F**) that promote their economic opportunities (arrow **A**). In this scenario, higher returns to host-country specific human capital are mediated: investments in such skills lead to better economic outcomes because of their association with increased connections with natives.

In a more extreme scenario, the higher returns to host-country human capital are spurious due to host-country specific social capital. Specifically, social contacts with natives can lead to both post-migration investments in human capital (arrow **G**) and better economic opportunities (arrow **A**), not that post-migration investments in human capital have an effect on immigrants' economic outcomes. For example, one could argue that immigrants who marry a native spouse and develop relationships with native friends are more likely to learn the official language, to attend school and to get a (better) job.

Similarly, one could argue that a presumed positive correlation between contacts with natives and immigrant economic outcomes is mediated or spurious due to post-migration investments in human capital. For example, in an extreme scenario, immigrants who learn the language of the host country and attend school in the host country are more likely to find a job (arrow **E**), but, at the same time, these post-migration investments in human capital could help immigrants to develop social connections with natives (arrow **F**). By studying the effects of host-country specific human capital and host-country specific social capital at the same time, this study deepens the understanding of the relationship between human and social capital in explaining the economic performance of immigrants.

Second, beyond studying mediation and spuriousness, I contribute to earlier research by theorizing how the returns to origin- and host-country specific human capital are moderated by origin-country specific social capital. Specifically, I argue that because co-ethnic concentration facilitates the transferability and reduces employers' uncertainty towards origin-country skills, immigrants living among many co-ethnics receive larger returns to their origin-country human capital than those living among few co-ethnics. By providing immigrants with jobs where host-country credentials and skills are not important or not necessary, co-ethnic concentration can also reduce the economic returns to host-country human capital.

Although several studies have examined the direct impact of ethnic concentration in the region of living on immigrant economic outcomes (e.g., Chiswick and Miller 2002, 2005; Kogan and Kalter 2006; Lewin-Epstein and Semyonov 1992; Tienda and Lii 1987; Tolnay 2001), little is known about the interaction between ethnic concentration and origin- and host-country specific human capital. The exception is a study by Chiswick and Miller (2002) that examined the effect of linguistic concentration on the investments in host-country language skills and the economic returns to such skills among immigrants in the United States. In this study, I provide further insights into the relationship between co-ethnic concentration in the region of living and immigrants' economic outcomes, by comparing the economic returns to origin- and host-country schooling and work experience in regions with different co-ethnic concentrations.

1.3 Economic performance

In this study I focus on four different aspects of immigrants' economic performance: employment, self-employment, occupational status and income. Previous research on the role of origin- and host-country specific human capital has focused exclusively on immigrant earnings, and little is known empirically about other economic outcomes, that is, employment and occupational status. It could be, for example, that post-migration investments in human

capital are less important for finding a job, than for having a higher status job or higher income.

Likewise, most studies on immigrant social contacts have focused on a single economic outcome. Several studies showed, for example, that living among many co-ethnics facilitates immigrant employment (e.g., Hagan 1998; Portes and Jensen 1989; Waldinger et al. 2006), but it is less beneficial, or even detrimental to having a higher-status or better-paid job (e.g., Catanzarite and Aguilera 2002; Tienda and Lii 1987). The results from these studies suggest that the effect of ethnic concentration may depend on the economic outcome under study. It could also be that contradictory findings for the role of ethnic concentration originate from differences in immigrant populations, discrepancies in the measurement of social capital, or unobserved contextual factors. By replicating the analysis for different types of outcomes, I not only assess whether and how human and social capital resources affect immigrants' employment and job type, but also examine the extent to which the effects of these resources are generalizable across outcomes.

In addition, by examining occupational status and income, this study sheds light on aspects of immigrants' economic integration that cannot be clearly observed when focusing only on employment status. Specifically, studies on occupational status (or income) provide an indication of the returns to each year of schooling or work experience, and thereby, of the incentives to invest in these forms of human capital. More generally, the expected occupational status and income provide incentives for immigrants to participate in the host-country labor market (OECD 2008).

Previous studies on the role of self-employment in the economic integration of immigrants have been mixed. On the one hand, researchers have argued, and indeed showed, that problems with transferability and employers' uncertainty towards credentials and skills acquired in the country of origin push immigrants into self-employment (Bates 1997). In that sense, self-employment was considered as the second-best option for those immigrants who are at risk of unemployment or poverty. On the other hand, however, researchers showed that host-country human capital increases the managerial knowledge and skills needed to deal with host-country institutions, and thus, pulls immigrants towards self-employment (Constant and Zimmerman 2006; Le 2000). According to this argument, self-employment provides a route to upward mobility, facilitating the opportunities for higher-status and better-paying jobs. By studying how human and social capital acquired in the country of origin and destination influence self-employment, this study provides further insights into the discussion about the role of self-employment in the economic integration of immigrants.

1.4 The Netherlands and Germany

I examine the economic performance of immigrants in two Western countries: the Netherlands and Germany. There are several similarities between the two countries with respect to migration history, organization of the labor market, and the economic standing of immigrants. The Netherlands and Germany are recent immigrant countries with a substantial foreign-born population, 10 and 8.8 percent, respectively (Federal Statistics Office 2007; Statistics Netherlands 2010). In the 1960s, the two countries admitted large numbers of low-skilled guest worker immigrants. The guest workers in Germany came from Italy, Spain, Greece, Turkey, Morocco, Portugal, Tunisia, and Yugoslavia (Kogan 2007), whereas in the Netherlands they mainly came from Spain, Yugoslavia, Morocco, and Turkey (Hagendoorn, Veenman and Vollebergh 2003). Although in both countries immigrant guest workers were expected to stay temporarily, in most cases, they decided to stay and brought their families.

In addition to immigrant guest workers, starting in the late 1980s, Germany accepted a number of refugees and asylum seekers, mainly from Yugoslavia, and ethnic Germans from Eastern Europe (Kogan 2007). Beginning in the 1950s many immigrants to the Netherlands also came from former colonies of the Netherlands, Suriname and the Dutch Antilles, thus migration is common from these countries (Hagendoorn, Veenman and Vollebergh 2003).

The two countries are also similar regarding the organization of the labor market, which is characterized by high segmentation (i.e., low permeability of the labor market between unemployment and employment as well as different types of employment), expensive low-skilled labor and a relatively long maximum duration of unemployment benefits (Empter 2002). In both countries guest worker immigrants, in particular those with Turkish backgrounds, tend to have a higher unemployment rate than natives, and they are overrepresented in low-status, and low-paid jobs (Hagendoorn, Veenman and Vollebergh 2003; Kalter and Granato 2002; Kogan 2007).

An important difference between the two countries is that they adapted different integration policies. Specifically, whereas German integration policies were rather minimal focusing on return migration and restricting access to German nationality, the Netherlands promoted immigrants access to the host-country institutions (e.g., housing, education, labor market), offered easy access to Dutch nationality, and at least until 2001, encouraged immigrants to preserve their own cultural identity (Euwals, Dagevos, Gijsberts, Roodenburg 2007).

By focusing on the two countries I show whether the results for human and social capital can be replicated across two national contexts, and thus, provide a stronger evidence for the importance of human and social capital for immigrant economic performance. As argued by

Firebaugh (2008), repeating the analysis for different contexts and new populations allows for testing of the robustness of findings, and should become a common strategy in future research.

I also focus on the two countries because there are large-scale, high-quality data available on the immigrant population; these data contain relevant information on the research questions studied here, i.e., direct measures of origin- and host-country specific schooling and immigrant contacts with natives. Both datasets also complement each other in an important way. Specifically, whereas the Dutch survey provides a great opportunity for testing the effect of origin- and host-country human capital on the economic performance, its cross-sectional design makes it difficult to assess the causal effect of social capital. On the other hand, the German survey includes longitudinal information on immigrant social contacts, including connections with natives, which provides a better possibility for testing the effect of social capital.

1.5 Data sources

1.5.1 Dutch data

In chapters 2 and 3, I examine the economic performance of Turkish, Moroccan, Surinamese and Dutch Antillean immigrants in the Netherlands. I make use of a large-scale, cross-sectional survey: the Social Position and Use of Welfare Facilities by Immigrants survey (SPVA 1991, 1994, 1998 and 2002). The SPVA survey was administrated by the Institute for Socio-Economic Research (ISEO) and from 1998 was conducted in collaboration with the Netherlands Institute for Social Research (SCP) (De Koning and Gijsberts 2002; Martens 1994; Martens and Tesser 1998; Martens and Veenman 1991; Veenman 1988). The survey was designed to monitor the socio-economic and socio-cultural position of the previously described four largest, non-Western immigrant groups in the Netherlands. The first survey was conducted in 1988 and repeated in 1991, 1994, 1998 and 2002. The survey includes a random sample of Dutch natives and immigrants with Turkish, Moroccan, Surinamese and Dutch Antillean backgrounds, who were the heads of their households at the time of the survey. The sample was drawn from 10 to 13 cities (depending on the survey year), which cover about 50 percent of the four immigrant groups within the Dutch population. The sample size varies between 5,445 persons in 1988 and 8,321 persons in 2002. The response rate is between 44 and 79 percent and varies across immigrant groups and years. What is particularly important for this study is that the SPVA survey includes detailed information about origin- and host-country specific schooling and contacts with co-ethnics and natives. Additionally, in both chapters the SPVA survey is merged with the neighborhood level data on the percentage

of immigrants with a non-Western background from the Statistics Netherlands (Statistics Netherlands 1998a, 1998b).

1.5.2 *German data*

In chapters 4 and 5 I examine the economic outcomes of immigrants in Germany. I use the German Socio-Economic Panel (GSOEP 1984-2004). The GSOEP is representative panel survey of the population in Germany administrated annually by the German Institute for Economic Research (DIW Berlin) (Haisken-DeNew and Frick 2005). The survey started in 1984 and provides information on the socio-economic position of all household members. The sample includes Germans living in the old and new German states, immigrant guest workers and more recent immigrants to Germany. In 1984, the survey included 12,000 respondents from the Federal Republic of Germany (West Germany), including 3,000 legal immigrants. The response rate varied from 25 to 70 percent between 1984 and 2004 year, with unsuccessful interviewing and tracking of individuals throughout the surveys as the main causes of sample attrition (Kroh and Spieß 2008).

The main immigrant groups participating in the survey are from Italy, Greece, Spain, Turkey and former Yugoslavia, the main sources of guest worker migration; ethnic Germans mainly from Eastern Europe; immigrants from Western Europe, the United States, Canada, Australia, Japan; and other immigrants from developing countries. The advantage of the GSOEP is that it provides longitudinal information over a 20 year period on immigrants' social contacts, including contacts with German natives and economic outcomes. In chapter 5, I merge the GSOEP survey with data on the percentage of co-ethnics per region (i.e., Bundesländer) obtained from the German Microcensus (Microcensus Scientific Use File 2009).

1.6 Outline of the study

Table 1.1 provides an outline of this study. Chapter 2 examines the employment and occupational status of immigrants in the Netherlands using the SPVA data (SPVA 1998, 2002). In this chapter, I focus mainly on answering the first research question. Specifically, chapter 2 addresses the impact of origin- and host-country schooling on the employment and occupational status of immigrants in the Netherlands. It also examines whether the economic returns to origin-country schooling vary between Mediterranean (i.e., Turkish, Moroccan) and Caribbean (i.e., Surinamese and Dutch Antillean) immigrants, and depends on ethnic concentration in the region of living. In chapter 2, I also answer the third research question about the interplay between origin- and host-country specific human and social capital, by

studying whether the positive effect of host-country schooling is mediated or spurious due to increased social contacts with natives.

Chapter 3 studies self-employment of immigrants in the Netherlands using the SPVA survey (SPVA 1991, 1994, 1998, 2002). In chapter 3 all three research questions are addressed. Specifically, this chapter examines the roles of origin- and host-country specific human and social capital in immigrant self-employment. This chapter also studies the mediation and spuriousness between host-country human capital and social contacts with natives.

Chapter 4 examines the employment status of immigrants in Germany using the GSOEP data (1984-2004). It mainly addresses the second and third research questions by examining the impact of social contacts on immigrant employment. Specifically, it studies whether a positive correlation between social contacts and immigrant employment is causal, reflects reverse causality, or is spurious due to time-variant host-country human capital or time-constant unobserved characteristics of immigrants.

Chapter 5 also relies on the GSOEP data (1984-2004), and it examines the occupational status and income of immigrants in Germany. It mainly answers the second and third research questions. Specifically, it studies the impact of social contacts on immigrant occupational status and income. It also examines whether the economic returns to origin- and host-country specific schooling and language skills depend on co-ethnic concentration in the region of living. The study ends with a summary of the most important findings and contributions presented in chapter 6. Additionally, in chapter 6 several points for discussion and implications for future research are raised.

Table 1.1 Outline of empirical chapters

Chapter	Economic performance	Human capital	Social capital	Data source	Population	Method of analysis
2	Employment Occupational status	<ul style="list-style-type: none"> • Education abroad and in the Netherlands • Work experience abroad and in the Netherlands • Dutch language skills • Health 	<ul style="list-style-type: none"> • Partner • Dutch contacts • Organization membership: Dutch/ethnic/none • Ethnic composition of contacts • Ethnic concentration 	SPVA 1998, 2002 in the Netherlands	Turks, Moroccans, Surinamese, Dutch Antilleans	Logistic regression with cluster correction Heckman's selection model with cluster correction
3	Self-employment	<ul style="list-style-type: none"> • Education abroad and in the Netherlands • Work experience abroad and in the Netherlands • Dutch language skills 	<ul style="list-style-type: none"> • Partner: Dutch/ethnic/none • Dutch contacts • Organization membership: Dutch/ethnic/none • Ethnic concentration 	SPVA 1991; 1994, 1998, 2002 in the Netherlands	Turks, Moroccans, Surinamese, Dutch Antilleans	Logistic regression with cluster correction
4	Employment	<ul style="list-style-type: none"> • Education abroad and in Germany • German language skills • Work experience 	<ul style="list-style-type: none"> • Partner • Frequency of contacts • Volunteering • German contacts 	GSOEP 1984-2004 in Germany	Turks, Greeks, Yugoslavians, Italians, Spaniards, Eastern Europeans, Immigrants from developing countries	Random effects logistic regression Fixed effects logistic regression
5	Occupational status Annual income	<ul style="list-style-type: none"> • Education abroad and in Germany • German language skills • Work experience 	<ul style="list-style-type: none"> • Partner: German/ethnic/none • Frequency of contacts • Volunteering • German contacts • Ethnic concentration 	GSOEP 1984-2004 in Germany	Turks, Greeks, Yugoslavians, Italians, Spaniards, Eastern Europeans, Immigrants from developing countries	Heckman's selection model with cluster correction

2 The Impact of Origin and Host Country Schooling on the Economic Performance of Immigrants*

2.1 Introduction

It is widely known in the literature that many immigrants in Western countries are at a disadvantage in the labor market (Borjas 1994; Chiswick 1978; Portes and Rumbaut 1996). Immigrants have more difficulties finding a job, they have longer periods of unemployment and, if they are employed, they often have less prestigious jobs and lower earnings compared to natives (e.g., Alba and Nee 1999; Borjas 1994).

A well-known explanation of ethnic inequalities is that immigrants are less skilled and less productive than natives. Because many immigrants come from developing countries, they are often lower educated than natives in Western countries. Furthermore, several authors have argued that the skills immigrants acquired in the country of origin (*origin-country human capital*) are less valued than skills obtained in the country of destination (Borjas 1994; Duleep and Regets 1999; Friedberg 2000), as these origin-specific skills are of lower quality, difficult to transfer, or employers are more uncertain about these skills. Hence, it is argued that immigrants' proficiency in the home language is of little use when the official language in the host country is different. Similarly, authors have maintained that educational qualifications and work experience obtained in the country of origin are not equally valued as qualifications and experience acquired in the host country (Friedberg 2000). It is generally assumed that immigrants are particularly disadvantaged in the labor market upon arrival in the host country, but as they acquire *host-country human capital* they improve their economic position (Borjas 1994). Although many researchers have theorized about the importance of host-country skills, there is only sound empirical evidence for the role of language. There is ample support in the literature that immigrants who acquire the host-country language significantly improve their economic opportunities (e.g., Chiswick and Miller 1995, 2002).

Much less is known about the impact of returns to origin-country vis-à-vis destination-country education. Only a few studies have addressed this question. These studies were

* A slightly different version of this chapter is published in *Social Forces* (Kanas and Van Tubergen 2009). An earlier version of this chapter was presented at the 8th Annual European Sociological Conference in Glasgow, United Kingdom, September 2007.

conducted among immigrants in Israel (Friedberg 2000), Canada (Li 2001), Sweden (Duvander 2001) and the United States (Bratsberg and Ragan 2002; Bratsberg and Terrell 2002; Zeng and Xie 2004). Although these studies generally support the presumed higher returns to host-country education, little is known whether these patterns equally hold in other countries – e.g., in the new immigrant countries in Western Europe. What is more problematic, however, is that these studies rely on general population surveys (e.g., census data) that do not *directly* measure (in years) pre-migration and post-migration schooling. Instead, researchers have used information on people's age of migration and total years of education to construct measures of (years of) education before and after migration. As argued by Chiswick and Miller (1994), such indirect measures may lead to substantial measurement error and erroneous conclusions.

To see how important this measurement error is, consider the following example (cf. Van Tubergen and Van de Werfhorst 2007). An immigrant who has attended five years of education in his country of origin (i.e., from age 6 to 10), who migrated at 25 years of age and then attended school for five more years in the country of destination (i.e., from age 25 to 30) is estimated to have attended 10 years of education in the country of origin and not to have obtained any education after migration. Nevertheless, the majority of studies on the returns to origin- and destination-schooling rely on this indirect measure (Bratsberg and Ragan 2002; Bratsberg and Terrell 2002; Friedberg 2000; Zeng and Xie 2004). Furthermore, some studies (Duvander 2001; Li 2001) only include the level of education and a dummy variable indicating whether the highest education was (probably) obtained in the country of destination. In this way, however, those who obtained their highest education in the receiving nation also include people who were educated in their origin nation.

We make three contributions to the literature. First, we examine the returns to origin- and host-country schooling using *direct* measures. Only two studies have used direct measures of pre- and post-migration schooling (Constant and Massey 2003; 2005). However, these studies relied on different measures for pre- and post-migration schooling (in years and levels of education, respectively), thereby hampering comparisons between the returns to pre- and post-migration schooling.

Second, we examine whether the returns to pre-migration schooling differ between two *contexts*: the immigrant group and the region of living. It is argued in the literature that, because of transferability, quality, and uncertainty, education acquired in some origin countries is valued more than education acquired in other origin countries. This chapter contributes to the growing evidence on this issue (Bratsberg and Ragan 2002; Bratsberg and Terrell 2002; Friedberg 2000; Zeng and Xie 2004). The returns to origin-country schooling may also depend on immigrants' region of living in the host country. It can be argued that

ethnic concentration increases the transferability and reduces the uncertainty of origin-country schooling, and immigrants living in ethnic concentrations may therefore receive higher returns to their origin-country schooling than those living in regions with few immigrants. Although studies have been done on the impact of ethnic concentration on economic outcomes (e.g. Chiswick and Miller 2002, 2005; Kogan and Kalter 2006; Lewin-Epstein and Semyonov 1992; Tienda and Lii 1987; Tolnay 2001), few studies have specifically examined the cross-level interactions between ethnic concentration and the returns to origin-country schooling among immigrants.

Third, we provide an alternative explanation for the presumed (positive) effect of host-country schooling on immigrant economic outcomes. Rather than focusing on the common interpretation that emphasizes the lower uncertainty of employers, or the higher quality and transferability of skills (Bratsberg and Ragan 2002; Bratsberg and Terrell 2002; Friedberg 2000; Zeng and Xie 2004), it can be argued that *social contacts* play a major role. A longstanding and influential line of research in sociology, as well as in economics, has been developed that considers the impact of social capital on people's economic attainment (Coleman 1990). The major insight is that having more (resourceful) contacts generally increases people's economic opportunities (Bourdieu 1986; Boxman, De Graaf and Flap 1991; Coleman 1990; Ioannides and Loury 2004; Lin 1999; Mouw 2002; Portes and Sensenbrenner 1993). Specific studies in the field of migration have equally shown that contacts with family and friends promote the economic performance of immigrants (Aguilera 2003; Aguilera and Massey 2003; Nee, Sanders and Sernau 1994; Sanders and Nee 1996; Sanders, Nee and Sernau 2002).

However, these earlier studies have focused predominantly on contacts within the *own* ethnic group. We label this *origin-country social capital*, as those contacts – maintained either in the country of origin or country of destination – remain within the own ethnic community. Although contacts with co-ethnics generally foster economic mobility, it could be argued that contacts with natives (*destination-country social capital*) in particular may improve immigrants' economic performance. Immigrants have predominantly contacts with members of their own ethnic group, who know the host country labor market less well and who have less information on job opportunities than natives.

Making this distinction between origin-country vis-à-vis destination-country social capital sheds new light on the presumed impact of origin-country vis-à-vis destination-country schooling on the economic performance of immigrants. From the perspective of social capital theory, one could argue that immigrants' who have more destination-country schooling benefit from such skills, since acquiring them is associated with increasing contacts with the native population. For example, people who enroll in education in the host country are more

likely to develop contacts with natives, which promote their economic opportunities. Thus, we test an *alternative mechanism* for the presumed positive effect of host-country schooling on immigrant economic outcomes.

We make use of an immigrant survey that has been collected in 1998 and 2002 among four large immigrant groups in the Netherlands: Turks, Moroccans, Surinamese and Dutch Antilleans. The survey has been specifically designed to study these four ethnic minority groups. Sample sizes are large, bilingual interviewers are used, and extensive information on migration history, human capital, social capital and labor market outcomes is included.

2.2 Dutch setting

Before formulating the hypotheses, we briefly discuss the four groups studied here. In 2000, immigrants from Turkey, Morocco, Suriname and Dutch Antilles represented about 66 percent of the non-Western, foreign-born population and about 41 percent of the total immigrant population in the Netherlands (Statistics Netherlands 2008). Turks and Moroccans mainly came to the Netherlands as part of the ‘guest workers’ program in the 1960s and 1970s. Suriname and the Dutch Antilles were former colonies of the Netherlands and migration is common from these countries.

The four groups have a higher unemployment rate than Dutch natives and they are overrepresented in lower-paid jobs. This is especially true for Turks and Moroccans, who have the highest rates of benefit dependence (The Netherlands Institute for Social Research (SCP) 2005). The groups also differ with respect to their socio-cultural integration. The longstanding connection between Surinam, Dutch Antilles and the Netherlands has resulted in several advantages for immigrants from these countries, including knowledge of the Dutch language, familiarity with the Dutch educational system and a long tradition of cultural exchange. Surinamese and Dutch Antilleans are rather well-integrated socially. For example, about 25 percent of the Surinamese and 48 percent of Antilleans are married with natives, compared to less than 5 percent among the Turks and Moroccans (Kalmijn and Van Tubergen 2006). Immigrants from Turkey and Morocco were not exposed to the Dutch language before immigration, and virtually all Turks and Moroccans are Muslims. By contrast, Dutch natives and immigrants from Surinam and Dutch Antilles are predominantly Christian or not affiliated with a religion.

2.3 Theory and hypotheses

Human capital theory has been used to explain immigrants’ labor force participation (e.g., Bevelander and Veenman 2004; Sanders and Nee 1996), income (e.g., Chiswick 1978; Zeng

and Xie 2004), occupational status (e.g., Rajzman and Semyonov 1995), and job tenure (e.g., Aguilera 2003). Basically, human capital refers to the capability to work productively. According to the human capital theory, the more talented, skilled and capable people have a better position in the labor market. In empirical research, human capital is often measured in terms of education, labor market experience and health (e.g., Chiswick 1978). There is ample evidence that people with higher levels of education, work experience and who have better health have a better position in the labor market.

In the field of immigration, however, an important distinction is made between origin and destination human capital. It is argued that human capital acquired in the country of origin is less valued by employers (Bratsberg and Ragan 2002; Chiswick 1978; Friedberg 2000; Zeng and Xie 2004). Although talents, motivation and health seem to be rather context independent (what one could label general human capital), knowledge and skills might be more or less specific to a certain context. This is certainly the case for language skills. Knowledge of the official language of the country of origin (origin-country human capital) is of little usage when the official language of the host country is different. With the exception of a few jobs provided by co-ethnics, most occupations require knowledge of the native language (host-country human capital). There is ample empirical evidence that destination-language proficiency has a strong positive effect on labor market outcomes. Immigrants who speak the official language of the host country better are more likely to be employed and have higher earnings than those with fewer command of the host language (Chiswick and Miller 1995, 2002).

Likewise, the returns to labor market experience obtained in the country of origin might be less strong than the returns to experience from the host country. Employers are less well-informed about the occupational career of immigrants before migration than about the experience immigrants obtained in the host country. Furthermore, the knowledge and skills immigrants acquire on the job in the country of origin are presumably less valuable for the labor market in the receiving country.

In this chapter, we focus on the returns to origin- and destination-schooling. It can be argued that education obtained in the country of origin is difficult to transfer to the host country and that it is generally of lower quality, since many immigrants come from less developed nations (Friedberg 2000; Zeng and Xie 2004). Furthermore, employers may be reluctant to grant full recognition to foreign credentials as they are simply uncertain about the knowledge and skills that these credentials provide. By contrast, education obtained in the host country provides immigrants with credentials that are fully recognized in the host-country labor market. Employers are familiar with those diplomas and the education received in the host country more strongly matches the needs of the labor market. Hence, we

hypothesize that *the returns to host-country schooling are higher than the returns to origin-country schooling* (H1).

An important issue is the possible interplay between national origin and the value of origin-country schooling (Bratsberg and Terrell 2002; Friedberg 2000). Several studies have shown that the returns to pre-migration schooling vary between countries of origin. Bratsberg and Terrell (2002) studied the effect of educational quality on the returns to pre-migration schooling. They showed that the effect of origin-country education increases with the quality of education in the country of origin, as measured by lower pupil-teacher ratios and greater expenditures per pupil. Friedberg (2000) studied the transferability mechanism and showed that in Israel, immigrants from Western countries receive higher returns to pre-migration schooling than immigrants from Asia and Africa. However, both studies relied on indirect measures of pre-migration schooling.

We extend this line of research by comparing groups in the Netherlands. We assume that educational qualifications obtained in Suriname and the Dutch Antilles are valued more than qualifications obtained in Turkey and Morocco (Cf. Van Tubergen and Van de Werfhorst 2007). After all, Suriname and the Dutch Antilles are more economically developed than Morocco and regions in Turkey the immigrants come from (i.e., difference in quality) and Suriname and the Dutch Antilles were former colonies of the Netherlands, making the educational system and the labor market more similar to that of the Netherlands (i.e., differences in transferability and uncertainty). It is therefore hypothesized that *the returns to origin-country schooling are higher among Surinamese and Antillean immigrants than among Turks and Moroccans* (H2).

The effect of origin-specific capital may also depend on ethnic concentration. Ethnic concentration is expected to increase the value and transferability of pre-migration knowledge and skills. Immigrants living in ethnically concentrated areas can rely on origin-specific knowledge about ethnic goods, consumer preferences and norms (Chiswick and Miller 2005). Living in ethnic concentration area increases also chances of working for co-ethnic employers who can better recognize and value origin-country schooling. Finally, ethnic concentration may also increase the knowledge and experience of native employers who may be better informed about the value and portability of origin-country schooling than native employers living in areas with few immigrants. Hence, we hypothesize that *ethnic concentration increases the returns to origin-country schooling among immigrants* (H3).

Previous studies have argued that the higher returns to host-country education might be explained by its better quality, transferability and employers' uncertainty towards origin-country credentials. In this chapter we provide an *alternative explanation* for the differential returns to origin- and host-country schooling. It can be argued that higher returns to host-

country schooling are due to its relationship with contacts with natives. The idea is that immigrants benefit from host-country schooling as it is associated with increasing contacts with the natives. Emerson, Kimbro and Yancey (2002) showed that the school context might be crucial for the formation of racially diverse relationships. Those who attended racially diverse schools were more likely to attend inter-ethnic as opposed to co-ethnic religious congregations, and to have higher rates of inter-ethnic marriage. Thus, it can be argued that immigrants who are enrolled in education in the host country are more likely to have native friends, acquaintances or a partner. These contacts with natives can provide valuable social capital promoting the chances of immigrants in the labor market.

The idea that social capital facilitates immigrant economic integration is not new in the migration literature (Aguilera 2005; Aguilera and Massey 2003; Nee et al. 1994; Sanders et al. 2002). It is argued in the literature that immigrants profit from the resources of others, most notably information and influence. Within their social network, people may provide immigrants directly with information on a job that is available, and they can also inform about where to look for jobs generally, how to present themselves for employers, and how to behave on the job (Aguilera and Massey 2003; Fernandez-Kelly 1995). Furthermore, the contact person can influence the job-matching process by providing entry into desirable occupations (Lin 1999; Mouw 2003). Several studies conducted among immigrants in the United States indeed show the importance of social contacts for immigrants' economic integration (Aguilera 2002, 2003, 2005; Aguilera and Massey 2003; Nee et al. 1994; Sanders et al. 2002). Based on the foregoing, we hypothesize that *social contacts have a positive effect on the economic performance of immigrants* (H4).

Moreover, several researchers have suggested that contacts with natives may be particularly important for information diffusion and influence (Drever and Hoffmeister 2008; Kahanec and Mendola 2007; Kazemipur 2006). It is argued that natives are better informed about specific job openings, they generally know better how to find jobs, and they know more how to present themselves to employers than immigrants. One reason for this difference in resources is that natives naturally have been exposed for a longer time to the host-country labor market than immigrants, and for that reason they have superior information. Another reason is that natives are less often unemployed, higher educated and have more prestigious jobs than immigrants. Hence, contacts with natives may be helpful in finding a job and improving job quality. Empirically, however, less is known about the presumed positive impact of contacts with natives. Kahanec and Mendola (2007), in their study on immigrants in Great Britain, found that participation in mixed or non-ethnic clubs and voluntary organizations is positively associated with salary employment. However, Drever and Hoffmeister (2008) found that having close German friends provided little advantage in the

job search process, and that having such cross-ethnic contacts was not associated with an improved employment position of immigrants. We examine the influence of contacts with natives for the labor market position of immigrants in the Netherlands. In addition, despite important insights gained from previous studies, little attention was paid to the possible interplay between host-country human capital and contacts with natives. It is hypothesized that *contacts with natives explain part of the positive effect of host-country schooling* (H5).

2.4 Data and methods

The data come from the Social Position and Use of Welfare Facilities by Immigrants survey (SPVA 1998, 2002). Two waves were combined in order to increase the number of cases. SPVA is a large-scale, cross-sectional, immigrant-specific survey (Van Ours and Veenman 2003). The data are unique in the sense that they contain information on pre- and post-migration human capital. They provide a wide range of information on the socio-economic and the socio-cultural position of four large ethnic minority groups in the Netherlands: Turks, Moroccans, Surinamese and Antilleans.

People in cities were overrepresented in the sample frame since most members of ethnic minorities live in cities. The sample frame consists of ten to thirteen cities (depending on the survey year), covering about 50 percent of the four minority groups of the Dutch population. This overrepresentation of immigrants in urban areas might bias descriptive figures on employment and occupational status (i.e., unemployment rates tend to be higher in the cities), but it is less likely to affect our multivariate results.

The data have some limitations too. One issue is the cross-sectional design. This makes it impossible to examine the causality between some –though not all– variables. For example, even if we hypothesize that social contacts with Dutch increase the odds of employment, it may also be the opposite, namely, that having a job increases connections to natives. The issue of reversed causality is less problematic for the presumed effects of schooling, which is the main focus of this chapter. With respect to health and social contacts, we will keep the cautionary note in mind and talk about empirical associations. Another issue is non-response. The non-response rate for the 1998 and 2002 waves was the lowest among the Turks (39 percent), and the highest among the Surinamese (56 percent) (Groeneveld and Weijers-Martens 2003). These numbers are rather high when compared to surveys in other countries, but they are typical when compared to other surveys within the Netherlands (Van Ours and Veenman 2003). There are several reasons to believe that the low response rate is not of major concern to our conclusions. The non-response rates have been investigated and there is no evidence for systematic non-response in our survey with regard to core indicators such as

gender and education (Groeneveld and Weijers-Martens 2003; Martens 1999). Moreover, special measures were taken to include respondents that are less well-integrated culturally and economically. This means that interviewers were from the same ethnic minority group as the respondent and were matched on gender and interviews could be carried out in the ethnic language (Groeneveld and Weijers-Martens 2003; Martens 1999).

The analysis is restricted to male immigrants between the ages of 25 and 60. The age category was chosen based on the presumption that individuals older than 24 years have finished schooling and that individuals older than 60 have left the labor market as a consequence of (early) retirement (Bevelander and Veenman 2004). Immigrants are defined as individuals born outside the Netherlands. Because information was only available for the heads of households our analysis is restricted to these members of the family.¹ The focus is on males, because mostly men and only a few women are heads of households among the Turks and Moroccans. All in all, our analysis includes 4,410 respondents.

2.4.1 *Dependent and independent variables*

We analyze the employment and the occupational status of immigrants. The dependent variables are measured as follows:

Employment: Respondents were asked about their employment status. Those who are employed, including self-employed, are contrasted with those who are without work (unemployed, currently available and seeking work and inactive). By combining the labor force participation rates and unemployment rates among the active labor force we avoid the complicated boundary between inactivity and unemployment.

Occupational status: Employed respondents were asked about the status of the current job. Occupational status is measured in terms of the International Socio-Economic Index. The ISEI scale measures the hierarchical position of the occupation and is based on a weighted sum of the average education and the average income of occupational groups. To obtain ISEI scores for the occupations we use tools that convert the ISCO-92 classification into ISEI (Ganzeboom, De Graaf and Treiman 1992).

¹ The overrepresentation of immigrants in urban areas and focus on household-heads only might bias our results. To see whether this is the case we performed an additional analysis using a nationally-representative survey of (all) respondents (i.e., Leefsituatie Allochtone Stedelingen 2004/2005). The LAS data include a random sample of immigrants from Turkey, Morocco, Suriname and Dutch Antilles. Because social capital variables present in LAS cannot be compared with those from the SPVA survey, we replicated the models for human capital and control variables only. Our results, not presented here, show that the returns to host-country schooling are higher than the returns to origin-country schooling on both employment and occupational status. Thus, our findings do not change qualitatively and our conclusions remain the same even when we use a nationally-representative sample.

We include measures of (origin and destination) human capital, (origin and destination) social capital, and (additional) controls. In order to obtain a parsimonious model, we tested each variable measured on an ordinal level whether they may be entered as a continuous variable. When likelihood ratio tests show that dummy specification does not significantly improve the model, we chose the linear specification.

Human capital is measured by four indicators. *Education*: Respondents were asked about the highest level of completed education in their country of origin and in the Netherlands. In order to facilitate comparisons between education obtained in the country of origin and destination, we constructed five categories: (1. no education, (2. primary, (3. lower secondary, (4. higher secondary, and (5. tertiary. We include both education abroad and education in the Netherlands as continuous variables. *Work experience*: The survey provides a direct measure of work experience in the Netherlands and a more indirect measure of experience abroad. A separate question asks respondents to report the number of years of work experience in the Netherlands. No such question is included for experience abroad. We therefore used information on age at immigration and the total years of schooling in the country of origin. Experience abroad is measured as: age at immigration – years of schooling abroad – 6. Thus, the survey contains information on actual work experience in the Netherlands and potential work experience in the country of origin. *Health*: Respondents were asked what their health condition was. The possible answers were: (1. very bad, (2. bad, (3. neutral, (4. good and (5. excellent. Because very few people indicated that their health was very bad (3.1 percent) or bad (14.6 percent), we grouped categories 1 and 2 together. We used 5 as the reference category and included three dummy variables. *Dutch language skills*: Respondents were asked whether they experience difficulties with speaking the Dutch language. We created a dummy variable contrasting those who speak Dutch fluently with those who experience problems with speaking Dutch.²

We included several measures of social capital. *Ethnic concentration* at the neighborhood level (four-digit zip codes) was calculated as the population percentage of first- or second-generation immigrants with a non-Western background. Non-Western minorities predominantly include immigrants from Turkey, Morocco, and Suriname and Dutch Antilles (Statistics Netherlands 1998a, 1998b). We use figures for the year 1998. Information on group-specific measures at the neighborhood level is unavailable. *Dutch contacts*: We combined two questions that measure immigrants' contacts with natives. Respondents were

² Objective assessment of language skills would be more desirable than self-reported measure of language skills used in this chapter. There could also be a difference between self-reported and interviewer-reported measures of language skills. Research shows, however, that different measures of language proficiency highly correlate (Van Tubergen and Kalmijn 2005).

asked whether they ever received Dutch friends or neighbors as visitors and whether they sometimes associated with the Dutch in their free time. For both questions, respondents could choose between (1. never, (2. sometimes, and (3. often. Answers to these questions are highly correlated (Spearman correlation .69; Cronbach's alpha .82), and we therefore combined them by adding up the scores on the two items and dividing them by two. *Ethnic composition*: Next to an absolute measure of contacts with natives, we included a variable that measures the number of contacts with the Dutch in relation to that of co-ethnics. Respondents were asked about the ethnic composition of their social contacts, and we constructed a variable with three categories: (1. most contacts with ethnics, (2. equal contacts with Dutch and ethnics, (3. most contacts with Dutch. We used 1 as the reference category and included two dummy variables. *Membership organization*: Respondents were asked whether they were a member of an organization and whether the organization was predominantly ethnic or Dutch. We constructed a variable with three categories: (1. no membership, (2. member of a predominantly ethnic organization and (3. member of a predominantly Dutch organization. We used 2 as the reference category and included two dummy variables.

Preferably, we would like to have additional measures of social capital, including information on network size, diversity, and resources. Unfortunately, the SPVA survey does not include this information. At the same time, however, it should be noted that none of the previous studies in the literature on the impact of post-migration schooling include measures such as inter-ethnic contacts and ethnic composition of organizations.

Married: We constructed a dummy variable indicating those who are cohabitating/married as compared to single people. *Caribbean*: We contrasted immigrants from Turkey and Morocco ("Mediterranean") with immigrants from Suriname and the Dutch Antilles ("Caribbean"). We combined immigrant groups to get a sufficiently large number of respondents (especially for the interactions), and because the groups are very homogeneous (e.g., language, religion, economic development). *Migration motive*: Respondents were asked about their reasons for immigrating. We constructed three categories of the main reasons: (1. work, (2. family, (3. other. *SPVA 2002*: To control for survey effects, we included a dummy variable indicating the 2002 wave.

Table 2.1 presents descriptive statistics for the independent and dependent variables. We checked for high multicollinearity among the independent variables, but correlations did not exceed critical levels. Note, however, that for precisely this reason we did not include additional controls such as age, age at immigration, or length of stay.

Table 2.1 Descriptive Statistics of Independent and Dependent Variables, SPVA 1998 and 2002.

	Range	Mean	S.D.
Dependent variables			
Employed	0/1	.67	
Occupational status (ISEI)	16-88	37.70	15.21
Independent variables			
<i>Human capital</i>			
Education abroad	1-5	2.26	1.15
Education in the Netherlands	1-5	1.95	1.36
Work experience abroad	0-47	9.99	8.24
Work experience in the Netherlands	0-44	12.65	8.58
Dutch language skills	0/1	.46	
<i>Health</i>			
Bad or very bad	0/1	.18	
Neutral	0/1	.18	
Good	0/1	.44	
Excellent	0/1	.20	
<i>Social capital</i>			
Ethnic concentration (%)	.84-79.94	32.29	20.92
Contacts with Dutch	0-2	.91	.67
<i>Ethnic composition network</i>			
More with ethnics	0/1	.60	
Equal	0/1	.26	
More with Dutch	0/1	.14	
<i>Membership organization</i>			
Ethnic	0/1	.14	
Dutch	0/1	.13	
No membership	0/1	.73	
Control variables			
Married	0/1	.82	
Caribbean	0/1	.33	
<i>Migration motive</i>			
Work	0/1	.34	
Family	0/1	.40	
Other	0/1	.26	
Survey 2002	0/1	.38	

2.4.2 Methods

We used logistic regression for the analysis of employment, and linear regression for the analysis of occupational status. To adjust for the fact that respondent's answers are correlated within neighborhoods, we used cluster correction within Stata 9. Because immigrants' occupational status was estimated for only those who were employed, we corrected for possible sample selection bias in our sample.³

³ To compare the individual determinants of occupational status versus labor market participation of immigrants, this study uses a Heckman model (Lee 1983). There are two identifying variables. The region of living as represented by six dummy variables for region of living. We control for region of living because it is likely to influence the likelihood of immigrants' labor force participation but has no effect on occupational status. The

2.5 Results

We will first discuss the results of the multivariate analyses of employment (Table 2.2) and occupational status (Table 2.3). Model 1 includes measures of human capital; Model 2 adds interactions between certain human capital variables and national origin and ethnic concentration; Model 3 includes only social capital variables; Model 4 includes human and social capital variables simultaneously.⁴ We will compare the coefficients of Model 2 to that of Model 4, in order to see whether the role of host-country schooling persists when social capital is taken into account. We will compare the coefficients of these different models by a method proposed by Clogg, Petkova and Haritou (1995).

2.5.1 Human capital

It was hypothesized that the returns to host-country schooling are higher than to origin-country schooling (H1). Both education abroad and education in the Netherlands are measured on a five- point scale, ranging from no education to tertiary education. Table 2.2, Model 1 shows that higher diplomas obtained in the country of destination ($b = .23$) more strongly increase the odds of employment than higher qualifications obtained abroad ($b = .16$), the difference being not statistically significant, however. With respect to occupational status, we find that the returns to education obtained in the Netherlands are significantly higher ($\chi^2 = 34.60$; $p = .00$). For each unit of increase in education, those who obtained their education in the Netherlands score ($5.29 - 2.71 =$) 2.58 status points higher than those who obtained a similar education abroad (Table 2.3, Model 1).

The results presented here refer to a linear specification of ordered categories of educational levels (ranging from no education to tertiary education). To examine whether our results are sensitive to this specification, we examined alternative measures of education. Using dummy variables for each *educational level* confirms our conclusions: the returns to education obtained in the host country are higher than education obtained in the country of

second identifying variable is the number of persons in the country of origin the respondent is taking care of. Again, we expect that having dependents in the country of origin influences the likelihood of immigrants' labor force participation but is not related to occupational status. Both variables are indeed significantly and quite strongly correlated with employment status, but there is no (region of living) or only a weak (number of dependents in country of origin) correlation with occupational status. The rho is significant suggesting possible selectivity in our sample; therefore we report findings from the selection model.

⁴ Although it is beyond the scope of our study, it is important to mention that even when we control for human and social capital characteristics (Model 4) Turkish and Moroccan immigrants are more often unemployed and have lower status jobs than the Caribbean groups, possibly suggesting stronger discrimination against these Mediterranean groups.

Table 2.2 Logistic Regression of Immigrants' Employment, SPVA 1998 and 2002.

	Model 1		Model 2		Model 3		Model 4	
	B	t-ratios	B	t-ratios	B	t-ratios	B	t-ratios
Independent variables								
<i>Human capital</i>								
Education abroad (centered)	.16	3.64**	.14	2.79*			.13	2.56*
Education in the Netherlands (centered)	.23	5.72**	.24	5.86**			.23	5.64**
Work experience abroad (centered)	-.01	-0.74	-.01	-1.63			-.01	-1.62
Work experience in the Netherlands (centered)	.07	11.20**	.07	11.25**			.07	11.23**
Dutch language skills (Ref. Bad)	.20	1.95*	.18	1.66*			.15	1.41
Health (ref. Excellent)								
Bad or very bad	-2.85	-21.53**	-2.87	-21.76**			-2.87	-21.60**
Neutral	-1.62	-11.78**	-1.63	-11.90**			-1.63	-11.83**
Good	-.26	-2.05*	-.26	-2.07*			-.26	-2.01*
<i>Social capital</i>								
Ethnic concentration (%)	-.00	-0.75	-.00	-1.14	-.00	-2.17*	-.00	-1.03
Contacts with Dutch					.17	2.30*	-.08	-1.01
Ethnic composition network (ref. More with ethnics)								
Equal					.27	2.66*	.34	3.21**
More with Dutch					.06	0.47	-.04	-0.27
Membership organization (ref. Ethnic)								
Dutch					.42	2.47*	.16	0.81
No membership					-.28	-2.36*	-.11	-0.85
Control variables								
Married (ref. Single)	.53	5.23**	.53	5.23**	.57	6.05**	.53	5.22**
Caribbean (ref. Mediterranean)	.37	3.14**	.36	3.10**	.79	7.51**	.36	3.01*
Migration motive (ref. Family)								
Work	-.82	-7.59**	-.80	-7.53**	-1.02	-12.30**	-.79	-7.45**
Other	-.38	-3.10**	-.37	-3.08*	-.48	-4.93**	-.38	-3.15**
Survey 2002 (ref. 1998)	.12	1.45	.11	1.30	.21	3.11**	.11	1.29
Interactions								
Caribbean*Educ abroad			.05	0.47			.04	0.44
Caribbean*Exp abroad			.02	1.53			.02	1.40
Ethnic concentration (%) *Educ abroad			.00	-0.19			.00	-0.19
Ethnic concentration (%) *Exp abroad			.00	1.55			.00	1.54
Constant	1.55	9.17**	1.58	9.19**	.37	2.36*	1.64	7.42**
Number of clusters	313		313		313		313	
Number of individuals	4410		4410		4410		4410	
Nagelkerke R ²	.28		.28		.10		.29	
Unstandardized coefficients; **p<.001		*p ≤ .05 (one-tailed test)						

Table 2.3 OLS Regression of Immigrants' Occupational Status, SPVA 1998 and 2002.

	Model 1		Model 2		Model 3		Model 4	
	B	t-ratios	B	t-ratios	B	t-ratios	B	t-ratios
Independent variables								
Education abroad (centered)	2.71	8.35**	2.16	6.48**			2.01	5.87**
Education in the Netherlands (centered)	5.29	19.97**	5.26	20.00**			5.07	18.70**
Work experience abroad (centered)	-.05	-1.10	-.07	-1.35			-.06	-1.15
Work experience in the Netherlands (centered)	.29	7.83**	.29	7.83**			.28	7.64**
Dutch language skills (ref. Bad)	2.50	3.71**	2.28	3.49**			2.00	3.06*
Health (ref. Excellent)								
Bad or very bad	-16.42	-15.16**	-16.53	-15.38**			-16.08	-14.76**
Neutral	-7.78	-8.20**	-7.84	-8.32**			-7.48	-7.91**
Good	-1.54	-2.19*	-1.60	-2.27*			-1.35	-1.91*
Ethnic concentration (%)	-.02	-1.36	-.02	-1.50	-.04	-2.53*	-.01	-0.62
Contacts with Dutch					3.54	5.04**	.59	0.96
Ethnic composition network (ref. More with ethnics)								
Equal					1.59	1.75*	1.09	1.48
More with Dutch					1.39	1.18	.13	0.13
Membership organization (ref. Ethnic)								
Dutch					4.54	3.45**	1.77	1.59
No membership					-3.88	-3.73**	-1.78	-2.25*
Control variables								
Married (ref. Single)	3.19	4.15**	3.23	4.23**	3.16	3.54**	3.19	4.17**
Caribbean (ref. Mediterranean)	3.60	4.41**	3.40	3.99**	9.26	10.44**	2.93	3.35**
Migration motive (ref. Family)								
Work	-3.32	-4.64**	-3.52	-4.89**	-9.92	-13.02**	-3.42	-4.73*
Other	-.75	-0.97	-1.05	-1.28	-1.48	-1.74*	-1.08	-1.32
Survey 2002 (ref. 1998)	1.73	3.14**	1.70	3.10**	4.00	6.42**	1.66	3.01*
Interactions								
Caribbean*Educ abroad			1.67	2.91*			1.78	3.06*
Caribbean*Exp abroad			.02	0.28			.02	0.24
Ethnic concentration (%) *Educ abroad			.01	0.81			.01	0.85
Ethnic concentration (%) *Exp abroad			.00	2.00*			.00	1.98*
Constant	26.99	24.74**	27.19	25.03**	20.75	16.23**	27.50	21.00**
Number of clusters	313		313		313		313	
Number of individuals	4410		4410		4410		4410	
Adjusted R ²	.37		.37		.18		.37	

Note: The results are based on the Heckman two-step procedure.

Unstandardized coefficients; **p<.001 *p ≤ .05 (one-tailed test)

origin, for each level of education, and for both employment and occupational status. We have done several additional sensitivity checks using measures of *years of education*, and they are all reported in Table 2.4.

First, we constructed measures of years of education on (recodes of) the ordinal measures of the maximum level of obtained education in the country of origin and in the Netherlands, using the International Classification of Education ISCED-97 schema (OECD 1999). The results show that, when measured in this way, origin- and destination-country education positively and significantly affect employment and occupational status. With respect to occupational status, the returns to destination-country schooling are significantly stronger than to origin-country education. This is not so for employment. Second, we examined the effect of the number of years people have actually followed education instead of the effect of their obtained diploma. It can be argued that the number of years people went to school in the host country can be important for developing contacts with natives, and for that reason, one might want to look at years of education followed instead of the years of education associated with the obtained educational qualifications. The results show that when education is measured as the total years of followed education, both origin- and host-country schooling significantly affect employment and occupational status. Again, the returns to host-country schooling are higher than to origin-country schooling for occupational status, but not for employment. These findings are based on direct measures of years of education in the origin and destination country.

Third, we examined the effect of the number of years people have followed education, but then using *indirect* measures. A common methodology in the literature is to construct measures of years of schooling followed in the origin and destination country with information on the age at migration and the total years of schooling of the respondent (e.g., Friedberg 2000). Separate measures of origin- and destination-country schooling are then constructed on the assumption that people follow schooling continuously from age 6. Our results show that when using these indirect measures of origin- and host-country schooling, one also finds a significant positive effect of origin- and host-country schooling on employment and occupational status. The magnitude of the effects is only slightly overestimated when compared to direct measures of years of followed schooling in the origin and destination country. Again, the results show that for occupational status host-country schooling leads to significantly more returns than origin-country schooling, but this is not so for employment.

We further hypothesized (H2) that the returns to origin-country human capital would be larger among the former colonial or “Caribbean” groups (i.e., Surinamese, Antilleans) than

Table 2.4 The effects of origin- and destination-country education with different measures of education.

	Employment				Occupational Status			
	Education abroad		Education in the Netherlands		Education abroad		Education in the Netherlands	
	B	t-ratios	B	t-ratios	B	t-ratios	B	t-ratios
<i>Original measure</i>								
Education measured in five ordered categories and treated as a continuous variable, based on the maximum level of obtained education in the country of origin and the Netherlands (Table 2.2 and 2.3)	.16	3.64**	.23	5.72**	2.71	8.35**	5.29	19.97**
<i>Alternative measures</i>								
Education measured in years, based on the maximum level of obtained education in the country of origin and the Netherlands	.04	4.11**	.05	5.76**	.46	7.39**	1.05	17.74**
Education measured in years, based on direct information on the total years of followed education in the country of origin and in the Netherlands	.06	5.91**	.06	5.36**	.81	9.46**	1.15	14.05**
Education measured in years, based on the total years of followed education and age at migration (Cf. Friedberg 2000)	.06	6.54**	.06	3.97**	.88	11.29**	1.29	14.04**

Note: The results are based on logistic (employment) and linear (occupational status) regression models. Controlled are: work experience abroad, work experience in the Netherlands, Dutch language skills, health, ethnic concentration, marital status, ethnic origin (Caribbean vs. Mediterranean), migration motive, and survey (cf. Model 1, Table 2.2 and 2.3); presented are unstandardized coefficients; **p<.001 *p≤.05 (one-tailed test).

among the “Mediterranean” groups (i.e., Turks, Moroccans). We test this hypothesis by looking at Tables 2.2 and 2.3, Model 4. There is no significant interaction between national origin and origin-country schooling for employment. In line with this hypothesis, however, we do find a strong interaction among national origin and education abroad for occupational status (Table 2.3, Model 4). For every higher level of education obtained in Suriname or the Dutch Antilles, immigrants obtain 1.78 status points more than for every higher level of education obtained in Turkey or Morocco.

We also hypothesized that the returns to origin-country schooling are larger in ethnic concentration areas (H3). There is no evidence for this hypothesis in this chapter. The results show no such interaction for employment and occupational status.

Although we have not hypothesized about other human capital indicators, they are important to mention briefly. Our results also show that immigrants who speak Dutch

language fluently have a higher occupational status, but proficiency in the Dutch language does not affect significantly the odds of employment. There is a positive association between health and the odds of employment and occupational status. Work experience acquired in the country of origin has no significant effect on employment and occupational status of immigrants. By contrast, we find that years of work experience in the Netherlands positively affects immigrants' employment and occupational status. It should be remembered that whereas we have a direct measure of total work experience in the Netherlands, work experience abroad is estimated indirectly and actually refers to potential work experience (i.e., experience = age at immigration – years of schooling abroad – 6). Despite this difference in measurement, it seems legitimate to conclude that work experience in the Netherlands is more important than work experience abroad. There is no interaction between origin-country work experience and immigrant group. Interestingly, we do find a positive interaction between origin-country work experience and ethnic concentration on occupational status. That is, the effect of origin-country work experience on occupational status is higher in ethnically concentrated areas than in areas with fewer non-Western immigrants.

2.5.2 *Host-country schooling and social contacts with natives*

We hypothesized that social contacts have a positive effect on the economic performance of immigrants (H4). Model 3 shows that the number of contacts with Dutch is significantly and positively associated with the odds of employment and the status of jobs. Immigrants who often have contacts with Dutch in their free time and who often receive visits by natives have about 1.40 (e^{17*2}) times higher odds of employment and score 7.08 (2 x 3.54) status points higher than those who have (almost) no contacts with natives. Similarly, our results show that having a mixed ethnic network is associated with increased odds of employment (Table 2.2) and occupational status (Table 2.3). Finally, we also find a positive association between organization membership and immigrant employment and occupational status. Being a member of a Dutch organization is associated with 1.5 times higher odds of employment and 4.54 higher status points. All in all, our results show a positive association between social capital and immigrant employment and occupational status.

Do we find any evidence that contacts with natives explain part of the positive effect of host-country schooling (H5)? To see whether this is true, we compare Model 2 with human capital, interaction and control variables only with Model 4 where we included social capital variables. We find that the impact of host-country schooling is only slightly weaker when including measures of social capital. Specifically, education obtained in the Netherlands has a little stronger effect on occupational status in the model including only human capital variables ($b = 5.26$, Model 2) than when we control for social capital ($b = 5.07$, Model 4). The

difference is even smaller with respect to employment. These findings suggest that destination-country schooling has a direct positive effect on employment and occupational status of immigrants (interpreted in terms of higher quality and transferability and reduced uncertainty), and that associated relations with social capital explain very little.

2.6 Conclusions and discussion

There has been much discussion about the presumed positive effects of post-migration investments in the literature on the economic assimilation of immigrants. Besides the well-documented role of host-country language skills, little empirical evidence exists for host-country schooling. Earlier studies were restricted to a few nations, and these studies relied on indirect measures of education. The first contribution of this chapter is that it uses direct measures of pre- and post-migration schooling. It also examines whether the returns to pre-migration schooling depend on contextual factors: i.e., the immigrant group and the region of living. In addition, it relies on social capital theory as an alternative explanation of the positive role of host-country schooling. Using large-scale survey data that are specifically designed to study immigrants, we studied the employment chances and occupational status of foreign-born males from four ethnic minority groups in the Netherlands: Turks, Moroccans, Surinamese and Antilleans.

As hypothesized, we found that the returns to origin-country schooling are lower than to host-country schooling. There is some evidence that immigrants who have obtained their education in the Netherlands have higher odds of being employed than immigrants who have obtained a similar education abroad. The evidence is more convincing for occupational status: host-country schooling has a much stronger positive effect on the status of the jobs immigrants occupy than origin-country schooling. Using alternative measures of education, including the indirect measures commonly used in the literature (e.g., Friedberg 2000), we arrive at the same conclusions. This chapter thereby seems to validate earlier studies that relied on these indirect measures of origin- and destination-schooling. Strong positive returns to host-country education has been found in studies that relied on indirect measures of pre- and post-migration schooling among immigrants in the United States (Akresh 2007; Bratsberg and Ragan 2002; Zeng and Xie 2004); Great Britain (Kahanec and Mendola 2007) and Israel (Friedberg 2000).

We also find that the lower returns to origin-country schooling are particularly pronounced for Turks and Moroccans. Diplomas acquired in former Dutch colonies (i.e., Suriname and the Dutch Antilles) are more valued since they are better transferable, and of higher quality than diplomas acquired in Turkey and Morocco. This result contributes to the

existing knowledge on ethnic differences in the returns to origin-country schooling. Friedberg (2000) showed that Western immigrants receive higher returns to origin-country schooling than immigrants who obtained their education in Asia or Africa. Bratsberg and Terrell (2002) found that the quality of schooling in the origin country, as measured by lower pupil-teacher ratios and greater expenditures per pupil, is directly related to the returns of origin-country education. Likewise, Bratsberg and Ragan (2002) found that the returns to origin-country schooling are higher for immigrants from more developed countries and from countries in which English language is an official language.

Our results also reveal that ethnic concentration, at least in the Netherlands, does not influence the returns to origin-country schooling. One possibility for not finding an effect is that the level of ethnic concentration is quite small in the Netherlands. There are no ethnic enclaves, such as the Cubans in Miami, and it could be that only above a certain threshold, one could see a positive effect of ethnic concentration on the returns to origin-country schooling.

The particularly strong positive outcomes of host-country schooling are for the most part direct and cannot be interpreted by increased contacts with natives. Thus, the returns to host-country schooling are higher because immigrants acquire skills that are of higher quality, there are no problems of transferability and employers are more certain about such skills, as compared to schooling acquired in the country of origin. In summary, the benefits of host-country schooling are to a very small degree related to an increasing number of ties to Dutch natives, and to an overwhelming degree to increasing productivity and transferability of skills.

3 Immigrant Self-Employment: Testing Hypotheses about the Role of Origin and Host Country Human Capital and Bonding and Bridging Social Capital*

3.1 Introduction

Self-employment is an important aspect of the labor force participation of immigrants. Self-employed people comprise about 14 percent of all economically active immigrants in Australia, 10 percent in Canada, Germany and the Netherlands, and 20 percent in Portugal and Spain (OECD 2001). In addition, recent figures in several Western societies suggest an increase in immigrant self-employment (OECD 2006). In the Netherlands, for instance, the number has almost trebled between 1994 and 2004 (Dagevos and Gesthuizen 2005). In migration literature, self-employment is often considered as a solution to immigrant unemployment and poverty (e.g., Raijman and Tienda 2000; Waldinger Aldrich and Ward 2006; Yoon 1991).

An important issue in the literature on immigrant self-employment is the role of country-specific human capital in regard to the countries of origin and destination (Bates 1997; Le 1999; Sanders and Nee 1996). Earlier studies have theorized that immigrants who acquired their education and work experience in the country of origin are more likely to be self-employed than salary employed. It has been argued that education and work experience in the country of origin are often of lower quality and difficult to transfer. In addition, employers may find origin-country knowledge and skills difficult to assess (Bates 1997; Nee and Sanders 2001; Sanders and Nee 1996). In contrast, education and work experience acquired in the host country tend to better fulfill the needs of the host-country labor market, and employers are better prepared to evaluate host-country diplomas and occupational careers. Thus, human capital acquired in the host country would appear to increase the set of opportunities for salaried employment and decrease the likelihood of self-employment (Bates

* A slightly different version of this chapter is published in *Work and Occupations* (Kanas, Van Tubergen, and Van der Lippe 2009). Earlier versions of this chapter were presented at the Dutch Demography Day, Utrecht, the Netherlands, October 2007; and the Annual Meeting of the American Sociological Association, San Francisco, USA, August 2009.

1997; Bean, Leach and Lowell 2004; Donato, Wakabayashi, Hakimzadeh and Armenta 2008; Sanders and Nee 1996).

Several authors, however, have questioned the assumption that knowledge and skills acquired in the host country are more important for salaried employment than for self-employment (Constant and Zimmermann 2006; Evans 1989; Le 2000). They argue that host-country human capital provides increased knowledge about markets and facilitates interactions with financial institutions and suppliers, thereby contributing to more self-employment.

Despite much theorizing about the presumed impact of origin- and host-country human capital, little is known empirically. To our knowledge, only a few studies have addressed this question: two studies on immigrants in Australia (Evans 1989; Le 2000), two studies in Germany (Constant, Shachmurove and Zimmermann 2003; Constant and Zimmermann 2006) and one in the U.S. (Sanders and Nee 1996). However, all but the German studies relied on general population surveys that did not contain direct measures of human capital acquired in either the country of origin or the host country. As argued by Chiswick and Miller (1994), using indirect measures can lead to substantial measurement error.¹

In this chapter, we use the competing arguments from previous research and examine the impact of origin- and host-country specific human capital on immigrant self-employment versus salaried employment, providing a sound empirical basis by using direct measures of pre- and post-migration schooling and quite direct measures of pre- and post-migration labor market experience.

We also test an alternative explanation for the effect of host-country human capital on immigrant self-employment. Rather than focusing on the importance of host-country language skills and pre- and post-migration investments in education and work experience, researchers have argued that social capital plays a major role in self-employment. There is ample research in sociology, as well as in economics, which considers the impact of social capital on immigrant self-employment (Bates 1997; Clark and Drinkwater 2000; Flap, Kumcu and Bulder 2000; Waldinger et al. 2006). However, previous studies in both fields have focused predominantly or even exclusively on contacts within the migrant's own ethnic group (Bates

¹ To understand how important this measurement error is, consider the following example. An immigrant who has attended five years of education in his country of origin (i.e., from age 6 to 10), who migrated at 25 years of age and then attended school for five more years in the country of destination (i.e., from age 25 to 30) is estimated to have attended 10 years of education in the country of origin and not to have obtained any education after migration. Furthermore, some studies (Evans 1989; Sanders and Nee 1996) only include the level of education and a dummy variable to indicate whether the highest level of education was (probably) obtained in the country of destination. In this way, however, those who are thought to have obtained their highest education in the receiving country also include people who were educated in their country of origin.

1997; Flap et al. 2000; Min and Bozorgmehr 2000; Sanders and Nee 1996). In the literature, co-ethnic contacts are often viewed as bonding social capital, characterized by high density networks within the same ethnic group and with people of similar socioeconomic status, while contacts with natives are referred to as bridging social capital (Putnam 2000; 2007).

Several studies have shown that self-employed immigrants make extensive use of bonding social capital, mostly through access to financial capital, cheap and trustworthy labor and business-related information (Min and Bozorgmehr 2000; Rodriguez 2004; Sanders and Nee 1996). Although bonding social capital generally fosters self-employment among immigrants, it could be argued that contacts with natives of the host country increase salaried employment opportunities. Immigrants tend to have contact predominantly with members of their own ethnic group, who might be less familiar with the host-country labor market and less aware of job opportunities than natives. However, only a few studies have explicitly theorized about the effect of bridging social capital and examined it empirically.

By making a distinction between bonding and bridging social capital, we gain greater insight into the relationship between origin- and destination-country specific human capital and immigrant self-employment. One important idea tested in this chapter is that the negative (or positive) effect of host-country human capital is partly indirect, or even spurious, when social contacts with natives are taken into account.

We make use of a repeated, cross-sectional immigrant survey that was conducted in 1991, 1994, 1998 and 2002 among four large immigrant groups in the Netherlands: Turks, Moroccans, Surinamese and Dutch Antilleans. Specifically designed to study these four ethnic minority groups, the surveys contain large samples of each group and have been translated into the minority languages. In addition, bilingual interviewers were used. Using these surveys, we have studied the influence of origin versus destination human capital and bonding and bridging social capital on the chances of immigrant self-employment as compared to salaried employment.

In 2003, about 4.1 percent of non-Western immigrants were self-employed in the Netherlands. Although this number is relatively small compared to the number of self-employed Dutch natives (9.2 percent) and Western immigrants (7.2 percent), non-Western immigrants experienced the highest increase in the rate of self-employment between 1999 and 2002 (of about 30 percent). Among non-Western immigrants, about 5.1 percent of Turks are self-employed, followed by 3.4 percent of immigrants from Suriname and 2.3 percent of Moroccans and Antilleans. In 2002, the majority of immigrants were self-employed in the hotel and industry sector (31 percent) followed by trade and repairing business sectors (21 percent) and producer services and business-to-business sectors (Rusinovic 2006).

3.2 Theories and hypotheses

3.2.1 *Human capital theory*

There are conflicting arguments in the literature about the role of origin- and destination-country specific human capital in immigrant self-employment. One dominant view in the literature is that origin-country human capital restricts salaried employment opportunities and as a result pushes immigrants into self-employment. Because many immigrants come from developing countries, origin-country education and work experience are often considered of lesser quality and difficult to transfer to the host-country labor market. Furthermore, native employers are often reluctant to grant full recognition to origin-country human capital simply because they are unsure of the level of knowledge and skills that these credentials provide (Bratsberg and Ragan 2002; Friedberg 2000; Zeng and Xie 2004). Although co-ethnic employers can recognize the value of the education and work experience acquired in the country of origin, it is argued that the positions offered by co-ethnics are often poorly paid, with little chance for upward mobility (Sanders and Nee 1996; Sanders, Nee and Sernau 2002).

It has also been suggested that human capital acquired in the country of origin can be crucial for self-employed immigrants (Min 1993; Sanders and Nee 1996). For example, ethnic language skills may present a real advantage in contacts with co-ethnic employees, customers and suppliers (e.g., Evans 1989; Waldinger et al. 2006). Using the ethnic language can also help immigrants to strengthen ties with the ethnic community and thus acquire access to ethnic resources (Min and Bozorgmehr 2000). Similarly, an awareness of ethnic norms and practices, or ethnic customers' preferences could be equally rewarding in self-employment (e.g., Waldinger et al. 2006). This line of reasoning would lead to the hypothesis that *immigrants with more origin-country specific human capital are more likely to be self-employed than salary employed* (H1a).

According to another view of immigrant self-employment, however, immigrants who acquired their knowledge and skills in the country of origin are less likely to be self-employed than salary employed (Evans 1989; Le 2000). According to Evans (1989) and Le (1999, 2000), the arguments about the lower quality of origin-country education and work experience, and problems with transferability, are more important for self-employed than for salaried immigrants. After all, many immigrants have jobs with few skill requirements (e.g., cleaning, gardening, construction work, etc.), where issues of skill evaluation or transferability play a minor role. Consequently, origin-country human capital does not necessarily restrict salaried employment chances. In contrast, a large amount of business-related information such as market size, consumer products, or reliable suppliers is country-

specific and rather difficult to transfer across countries. This would suggest that origin-country human capital is of little use in immigrant self-employment (Evans 1989; Le 2000). Moreover, several authors suggest that immigrants who have worked longer in the country of origin before migrating tend to have worse socioeconomic outcomes (e.g., Bell 1997; Duvander 2001), so it would seem probable that these immigrants would also have a lower likelihood of self-employment. Hence, according to these arguments *immigrants with more origin-country specific human capital are less likely to be self-employed than salary employed* (H1b).

Researchers also theoretically disagree on the role of destination-country specific human capital in immigrant self-employment. On the one hand, according to Bates (1997), Nee and Sanders (2001) and Sanders and Nee (1996), immigrants who have obtained their education and work experience in the host country face broader opportunities for salaried employment and therefore are less likely to be self-employed. As discussed above, host-country education and work experience provide immigrants with credentials that are fully recognized in the host-country labor market. Employers are familiar with those diplomas and occupations. Furthermore, the knowledge and skills acquired on the job in the host country are presumably more transferable and more compatible with the requirements of the host-country labor market (Bratsberg and Ragan 2002; Friedberg 2000; Zeng and Xie 2004). According to this line of reasoning *immigrants with more destination-country specific human capital are less likely to be self-employed than salary employed* (H2a).

On the other hand, however, Constant and Zimmermann (2006), Evans (1989) and Le (2000) suggest that human capital specific to the host country increases the likelihood of self-employment compared to salaried employment. For example, the importance of host-country language skills may be greater for self-employment than for salaried employment since self-employment is often customer intensive and people oriented (Constant et al. 2003; Evans 1989; Le 2000; Sanders and Nee 1996). Host country language skills are less crucial for low-skill jobs, especially among co-ethnics (Sanders et al. 2002). Similarly, researchers argue that education and work experience acquired in the host country may be more important for self-employment than for salaried employment (Constant and Zimmermann 2006; Kloosterman, van der Leun and Rath 1999; Le 2000). Host-country experience can be crucial in gaining information and knowledge about working permits and regulations for self-employment, in how to deal with host-country institutions such as banks and tax offices. Furthermore, according to Kloosterman et al. (1999) in many countries, including the Netherlands, entry into self-employment often depends on obtaining host-country credentials and qualifications. In contrast, additional investments in human capital may be redundant for immigrants who have jobs at the bottom of the occupational structure (e.g., cleaners or gardeners), or which

provide skills easy to transfer across countries (e.g., researchers or artists). Moreover, Evans (1989) suggests that the years spent in the host-country labor market are decisive in building up personal savings. Based on these arguments, *immigrants with more destination-country specific human capital are more likely to be self-employed than salary employed* (H2b).

3.2.2 Social capital theory

Social capital refers to the importance of resources available to a person through his or her social relations (Flap 1999). Although there is no single coherent theory of social capital, three assumptions are commonly made: the amount of social capital depends on (1) the number of contacts a person has, (2) the willingness of others to offer help and, (3) the resources available (De Graaf and Flap 1988). Taken together, it is assumed that the more contacts immigrants have, the more willing others are to help them, and the better the resources of others, the more social capital immigrants have, and the better their economic position. In this chapter, we apply the three assumptions about social capital to formulate our hypotheses on the role of bonding and bridging social capital in the likelihood of self-employment versus salaried employment of immigrants.

Bonding social capital refers to dense networks of homogenous groups of people, and bridging social capital to loose networks of heterogeneous groups (Putnam 2000). Researchers have argued that immigrants mostly have access to high density networks of the same ethnicity and similar socioeconomic status (i.e., bonding social capital) rather than to social contacts which bridge groups (Portes and Sensenbrenner 1993; Sanders and Nee 1987).

It is argued that bonding social capital is useful for self-employed immigrants because of solidarity and trust, which facilitate cooperation and help, and reduce free riding (Portes and Sensenbrenner 1993; Sanders and Nee 1987; Waldinger et al. 2006). There is ample empirical evidence that bonding social capital increases self-employment among immigrants (Bates 1997; Flap et al. 2000; Min and Bozorgmehr 2000; Sanders and Nee 1996). For example, several authors have shown that ethnic group membership provides access to ethnic business organizations such as rotating credit associations, which help generate financial capital for starting businesses (Bates 1997; Min 1993; Yoon 1991).

Bonding social capital may also facilitate immigrant self-employment by providing access to low-paid, trusted labor (Flap et al. 2000; Ram, Edwards and Jones 2007; Rodriguez 2004; Sanders and Nee 1996). According to Sanders and Nee (1987), the beneficial effect of co-ethnic networks reflects the limited opportunities for salaried employment of some immigrants, who often work longer hours for less pay (see also Catanzarite's (2002) research on occupational segregation of immigrants). Moreover, it has been suggested that by creating a demand for special goods and services, such as *halal* meat or traditional Chinese medicine,

co-ethnic customers may also increase the likelihood of self-employment among immigrants (Fairlie and Meyer 1996; Kloosterman et al. 1999). Finally, it is argued that self-employed immigrants profit from bonding social capital by having access to additional business-related information, e.g., available business sites, laws and required permits, reliable suppliers and labor (Flap et al. 2000; Waldinger et al. 2006). Based on these arguments *immigrants with more bonding social capital are more likely to be self-employed than salary employed* (H3).

In the migration literature, bridging social capital refers to contacts with natives, as these contacts bridge immigrants with people of different ethnicities, and sometimes socioeconomic positions (Putnam 2007). One argument is that bridging social capital may be significant for immigrants because it provides them with non-redundant information about labor market opportunities and influence (see Granovetter 1973 for his discussion of strength of weak ties; and Burt, 1992 for his discussion of structural holes). Natives have access to more and better information about salaried employment than immigrants do, having naturally been longer exposed to the host-country labor market. For instance, they are generally better informed about specific job openings, about how to find jobs and how to present themselves to employers. Natives are also less often unemployed, generally higher educated and hold more prestigious jobs than immigrants. Contacts with natives can improve immigrants' entry into the host-country job market. Conversely, contacts with natives lack the in-group solidarity and trust that facilitate the willingness to help and cooperate in making social capital resources available. This implies, for example, that the financial capital, or the cheap and trustworthy labor that is often derived from co-ethnic social capital, and which helps self-employed immigrants succeed, is unlikely to be mobilized through relations with natives. Based on these arguments *immigrants with more bridging social contacts are less likely to be self-employed than salary employed* (H4).

3.2.3 *Social contacts with natives and host-country human capital*

Most of the previous studies on the role of social capital in immigrant self-employment have focused exclusively on *bonding* social capital. In this chapter, we distinguish between the contacts of immigrants within their own ethnic community and contacts with natives. Introducing this distinction between bonding and bridging social capital sheds new light on the presumed impact of destination-country specific human capital on immigrant self-employment. From the perspective of social capital theory, one could argue that immigrants who have more destination-country human capital benefit from skills acquired by increased contacts with the native population. However, because of the difficulty in predicting the effect of host-country human capital on self-employment, there are different plausible scenarios for the relationship between social contacts with natives and host-country human capital. For

example, people who learn the language, attend school and work in the host country are more likely to develop contacts with natives (e.g., at school, at work) which promote salaried employment (Perreira, Harris and Lee 2007). In this scenario, the effect of host-country human capital on immigrant self-employment is indirect: investing in knowledge and learning skills within the host country lead to increased contacts with natives, which in turn promote salaried employment of immigrants. In a more extreme scenario, the effect of host-country human capital is even spurious. For example, one could argue that immigrants having contacts with natives are more likely to learn the language of the host country, obtain education and work. This implies that social contacts with natives lead to both post-migration investments in human capital and better salary employment opportunities, not that such post-migration investments have an effect on immigrants' economic chances.

In a similar manner, one could argue that the (expected) positive effects of bridging social capital on salary employment are indirect. It could be that immigrants who have more connections, particularly with natives, more strongly improve their language skills, perform better in school and at work in the Netherlands than immigrants with fewer ties. In this way, bridging social capital helps to produce host-country human capital (Coleman 1990), which in turns facilitate salary employment of immigrants.

However, it could be that host-country human capital and social contacts with natives affect immigrant self-employment in opposite ways. For example, it could be that host-country human capital increases the likelihood of immigrant self-employment and contacts with natives are negatively associated with self-employment. Combined, these two opposing effects of host-country human capital and social contacts with natives on self-employment will result in a suppression effect. By simultaneously studying human and social capital, we examine whether the effects of host-country specific skills and bridging social capital on self-employment are indirect, suppressed or spurious.

3.3 Data and methods

The hypotheses are tested using the data from the Social Position and Use of Welfare Facilities by Immigrants survey (SPVA 1991, 1994, 1998, 2002) (De Koning and Gijsberts 2002; Martens 1994; Martens and Tesser 1998; Martens and Veenman 1991). The first survey was conducted in 1988 and was followed in 1991, 1994, 1998 and 2002. The SPVA survey is a large-scale, cross-sectional, immigrant-specific survey, containing detailed information on the socio-economic and socio-cultural position of four large ethnic minority groups in the Netherlands: Turks, Moroccans, Surinamese and Dutch Antilleans. Based on the geographical concentration of the four groups, random samples were drawn in a number of cities, including

the largest cities in the Netherlands (Amsterdam, Rotterdam, The Hague, Utrecht and Eindhoven).

An advantage of this survey is that it contains direct questions on pre- and post-migration schooling, as well as quite direct measures of pre- and post-migration labor market experience. Another advantage is that special measures (i.e., bilingual interviewers) were used to ensure the inclusion of respondents who were less culturally and economically integrated (Martens 1999).

The data comprise some limitations. One issue is the cross-sectional design, which makes it impossible to study the transitions into and out of self-employment from and to salary employment and unemployment. With the cross-sectional data, we also cannot examine causality between certain variables. For example, although we hypothesize that social contacts with co-ethnics increase the odds of self-employment, the opposite may occur, namely, that being self-employed increases social contacts with co-ethnics. Concerning social contacts, we will retain a cautionary note and talk about empirical associations. The issue of reversed causality is less problematic for the presumed effects of human capital.

Another issue is the response rate in the surveys. Over the years, the response rate declined from 51-79 percent in 1988 to 44-52 percent in 2002 (Martens 1999). The response rate was especially low among the Surinamese group.² However, there are several reasons to believe that the low response rate is a minor concern to our conclusions. There is no evidence for systematic non-response in our survey with regard to core indicators such as gender and education (Groeneveld and Weijers-Martens 2003; Martens 1999). Furthermore, we use a survey specifically designed to study immigrants, in which the interviewers belong to the same ethnic minority group as the respondent (Van Ours and Veenman 2003). It is also important to emphasize that the non-response rates in our study are comparable to those from surveys among the Dutch native population. The relatively high non-response rates in the Netherlands have been examined in several studies, and there was no strong evidence for systematic bias. Finally, to see whether the low response rate of Surinamese respondents biases our results, we performed an additional analysis without this group. Our results do not change substantively, however (results available upon request).

Our analysis is restricted to the economically active population of male and female immigrants between the ages of 18 and 64.³ Immigrants (i.e., first-generation immigrants) are

² The non-response rate for Surinamese immigrants was between 49 and 56 percent depending on a survey year.

³ It can be argued that younger immigrants tend to change jobs more often, which may affect our results. We performed an additional analysis to see whether our results changed when we exclude immigrants younger than 40. Although the effects of secondary education and work experience in the Netherlands become statistically

defined as those who were born outside the Netherlands. Because we do not have any information on social contacts for the native-born Dutch population, we focus only on the four immigrant groups in the analysis. The analysis includes 6963 respondents of which 418 are self-employed.

3.3.1 *Dependent and independent variables*

The dependent variable of *self-employment* was measured as follows: respondents were asked about their type of employment. Those who were self-employed, including freelancers, were contrasted with salaried workers.⁴

We included measures of origin- and host-country human capital, bonding and bridging social capital, and controls. Human capital was measured by three indicators: *Education*: respondents were asked about the highest level of completed education in their country of origin and in the Netherlands. In order to facilitate comparisons between education obtained in the country of origin and destination country, we constructed five categories: (1. no education, (2. primary, (3. lower secondary, (4. higher secondary and (5. tertiary. We included education in both the country of origin and in the Netherlands as categorical variables.

Work experience: the surveys provide a direct measure of work experience in the Netherlands and a more indirect measure of experience in the country of origin. A separate question asks respondents to report years of work experience in the Netherlands. Only the 1991 survey included a question on work experience in the country of origin. For the subsequent surveys of 1994, 1998 and 2002, we used the age at the time of migration and the total years of schooling in the country of origin to give an indirect measure of work experience in the country of origin: age at migration minus years of schooling abroad minus six. This provides information on actual work experience in the Netherlands and potential work experience in the country of origin.

Dutch language skills: respondents were asked whether they experienced difficulties in speaking the Dutch language. We compared those who reported never experiencing problems with the Dutch language, with those who said they sometimes or always experienced problems with Dutch.

We included several measures of bonding and bridging social capital: *Contacts with Dutch*: respondents were asked whether they were ever visited by Dutch friends or neighbors. We constructed a variable with three categories: (1. often meet Dutch, (2. sometimes meet

non-significant, other results do not change. Thus, even when analyzing the older age groups of immigrants our main conclusions would remain the same.

⁴ The distinction between freelancers and self-employed individuals was not made in all surveys; therefore, the two groups were combined into one category.

Dutch and (3. never meet Dutch. Preferably, we would like to have comparable measures of co-ethnic contacts. We do include, however, the ethnicity of the partner, co-ethnic organization membership and the percentage of non-Western immigrants in the neighborhood in the analysis.

Partner: respondents were asked whether they are married or cohabitate, and about the country of birth of their partner. We constructed a variable with three categories: (1. single, (2. ethnic partner and (3. Dutch partner.

Membership organization: respondents were asked whether they were a member of an organization and whether the organization was predominantly co-ethnic or Dutch. We constructed a variable with three categories: (1. no membership, (2. member of a predominantly co-ethnic organization, and (3. member of a predominantly Dutch organization.

Ethnic concentration: along with the direct measures of social capital, we also included a variable that measures the opportunity for social relations with natives and ethnic minorities, namely, the percentage of first- or second-generation immigrants with a non-Western background in the neighborhood (4-digit zip codes). Non-Western minorities predominantly include immigrants from Turkey, Morocco, Suriname and Dutch Antilles (Statistics Netherlands 1998a, 1998b). We used figures for the year 1998. Information on group-specific measures at the neighborhood level is unavailable.⁵

We also included several control variables: *Caribbean:* we contrasted immigrants from Turkey with immigrants from Morocco, Suriname and the Dutch Antilles and combined the last two groups into one Caribbean category because they are homogeneous regarding language, religion and economic development.⁶ *Male:* we constructed a dummy variable, where we distinguished between female and male respondents. *Survey:* to control for survey effects, we included three dummy variables for survey.

3.3.2 *Job-skill level*

A control variable that needs special attention is the job-skill level. Several studies suggest including the occupational status (or job-skill level) in the self-employment model (Evans 1989; Le 1999, 2000; Sanders and Nee 1996). An important argument in favor of controlling for this variable is the fact that the requirements for origin- and destination-country specific

⁵ Information about the percentage of co-ethnics is provided only for 17 broader geographical units (municipality). We redid the analysis using this information. We did not find a significant relationship between the percentage of co-ethnics and self-employment, however.

⁶ A t-test was conducted to see whether there was a significant difference between immigrants from Suriname and the Dutch Antilles in regard to self-employment compared to salaried employment, but this was not the case.

human capital vary across occupational positions. By controlling for job-skill level, we take into account, for example, the fact that many immigrants hold jobs with a low occupational status where little human capital is required.⁷ Indeed, several studies have shown that the effects of education are contingent upon whether the variable for occupational status is included in the model. For example, Borjas (1986), Fairlie and Meyer (1996), Li (2001) and Raijman (2001) did not control for occupational status and found that years of education *increased* the likelihood of self-employment compared to salaried employment. Controlling for occupational status, Evans (1989) and Le (2000) reported that higher levels of education *decreased* the likelihood of self-employment. Sanders and Nee (1996) also controlled for immigrant professional status and found that immigrants with higher levels of education from the country of origin were more likely to be self-employed than salaried, but the opposite was true for those who acquired additional education in the host country. To get more insight into this, we present an additional model where we do not control for job-skill level.

Job-skill level: respondents were asked about their current job and the skill requirements for this type of job. Based on this information and the educational requirement for this kind of job, the respondent's job-skill level was determined using the standard profession classification (Standaard Beroepenclassificatie) in the Netherlands (Statistics Netherlands 2001). According to this classification, a basic job-skill level corresponds to assembly line jobs; a lower job-skill level to metal work, construction work or vehicle driver jobs; a middle job-skill level to nursing jobs, baker jobs or secretarial work; and a high job-skill level to teaching, scientists, or writers. The job-skill level is measured in four categories: (1. basic, (2. lower, (3. middle and (4. higher.

Table 3.1 presents descriptive statistics for the independent and dependent variables. We checked for multicollinearity among the independent variables, but correlations do not exceed critical levels (VIF below 2.5 and Pearson correlations below .54). Note, however, that precisely to avoid high multicollinearity we did not include additional controls such as age at migration or length of stay.

Before we present the multivariate results, we briefly discuss the descriptive statistics for self-employed immigrants, which constitute about 6 percent of the immigrant workforce in our sample. Regarding social capital variables, the proportion of self-employed immigrants is slightly larger among single people than among those married or cohabitating with a Dutch or co-ethnic partner. Interestingly, self-employed immigrants are also overrepresented among

⁷ Among the self-employed, jobs at the bottom of the occupational hierarchy account for 33 percent of the Turkish, 43 percent of the Moroccans and 17 percent of the immigrants from the Caribbean region. However, these percentages are much higher among those with salaried employment at the bottom of the occupational structure: 71 percent are Turkish, 68 percent are Moroccans and 43 percent are from the Caribbean region.

those who often meet Dutch people (8 percent) than among those who never meet Dutch (4.5 percent). There are also a slightly higher numbers of self-employed immigrants among Dutch and co-ethnic organization members, 6.8 percent and 6.5 percent respectively, compared to 5.7 percent among non-members.

Regarding human capital variables, self-employed immigrants are overrepresented among people with none or primary origin-country education, and less than 7 years of work experience. By contrast, the proportion of self-employed immigrants is much larger among those with Dutch tertiary education and work experience of more than 12 years. Almost the same proportion of self-employers has good Dutch language skills and experiences problems with Dutch languages, 6.1 percent and 5.9 percent respectively.

3.3.3 Method

We analyzed immigrant self-employment using logistic regression. To adjust for the fact that respondent's answers are correlated within 350 neighborhoods, we used cluster correction within Stata 10.

3.4 Results

Table 3.2 presents the results of the logistic regression analysis of self-employment versus salary employment. Model 1 is a baseline model; it includes the origin-and destination-country human capital and control variables without job-skill level. Model 2 repeats Model 1 and includes job- skill level. Model 3 includes only measures of social capital and control variables and Model 4 is a full model, and it includes all measures of human and social capital and control variables. We compared the coefficients of Model 4 (full model) to those of Models 2 (human capital and control variables) and 3 (social capital and control variables) in order to see whether the coefficients of destination-country human capital (bridging social capital) changed when bridging social capital (destination human capital) was not taken into account. We compared the coefficients of these different models by a method proposed by Clogg et al. (1995). In addition to the variables mentioned, we included controls for gender, ethnic group and survey in each model.⁸

⁸ We also conducted a t-test to see whether there was a significant difference between immigrants who arrived in the Netherlands for different reasons (i.e., work, family or other) but there was no difference. Several studies have argued that adult family members can be crucial as a potential source of capital and family labor for immigrant self-employed (e.g., Sanders and Nee 1996; Nee and Sanders 2001). We conducted a t-test to see whether adult family members increased the odds of self-employment, but this was not the case.

Table 3.1 Descriptive Statistics of Independent and Dependent Variables.

	Range	Mean	S.D.
Dependent variable			
Self-employed	0/1	0.060	
Independent variables			
<i>Social capital</i>			
Partner			
Ethnic	0/1	0.597	
Dutch	0/1	0.112	
Single	0/1	0.291	
Contacts with Dutch			
Often meet Dutch	0/1	0.254	
Sometimes meet Dutch	0/1	0.464	
Never meet Dutch	0/1	0.282	
Membership organization			
Ethnic	0/1	0.125	
Dutch	0/1	0.174	
No membership	0/1	0.701	
Ethnic concentration (%)	0-79.94	30.875	20.855
<i>Human capital</i>			
Education abroad			
No education	0/1	0.282	
Primary	0/1	0.329	
Lower secondary	0/1	0.202	
Higher secondary	0/1	0.141	
Tertiary	0/1	0.045	
Education in the Netherlands			
No education	0/1	0.519	
Primary	0/1	0.111	
Lower secondary	0/1	0.128	
Higher secondary	0/1	0.143	
Tertiary	0/1	0.099	
Work experience abroad	0-47	6.486	7.270
Work experience in the Netherlands	0-46	11.617	8.357
Dutch language skills	0/1	0.588	
Control variables			
Male	0/1	0.735	
Job-skill level			
Basic	0/1	0.228	
Lower	0/1	0.317	
Middle	0/1	0.287	
Higher	0/1	0.130	
Ethnic group			
Turkish	0/1	0.275	
Moroccan	0/1	0.220	
Caribbean	0/1	0.504	
Survey year			
1991	0/1	0.189	
1994	0/1	0.138	
1998	0/1	0.391	
2002	0/1	0.282	

Table 3.2 Logistic Regression of Immigrants' Self-Employment, SPVA (1991, 1994, 1998, 2002).

	Model 1		Model 2		Model 3		Model 4	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Independent variables								
<i>Social capital</i>								
Social capital								
Partner (ref. Single)								
Ethnic					-0.452**	0.146	-0.515**	0.149
Dutch					-0.567**	0.211	-0.583**	0.208
Contacts with Dutch (ref. Never meet Dutch)								
Often meet Dutch					0.677**	0.170	0.677**	0.169
Sometimes meet Dutch					0.231*	0.136	0.242*	0.133
Membership organization (ref. no membership)								
Ethnic					-0.036	0.149	0.005	0.152
Dutch					-0.004	0.135	0.049	0.135
Ethnic concentration (%)					0.003	0.003	0.003	0.003
<i>Human capital</i>								
Education abroad (ref. No education)								
Primary	-0.108	0.123	-0.094	0.124			-0.077	0.125
Lower secondary	-0.050	0.155	-0.107	0.152			-0.100	0.152
Higher secondary	-0.168	0.175	-0.319*	0.179			-0.304*	0.177
Tertiary	-0.355	0.286	-0.946**	0.310			-0.895**	0.310
Education in the Netherlands (ref. No education)								
Primary	-0.086	0.194	-0.184	0.191			-0.184	0.192
Lower secondary	-0.269	0.204	-0.410*	0.210			-0.424**	0.214
Higher secondary	-0.028	0.195	-0.456**	0.214			-0.523**	0.213
Tertiary	0.259	0.207	-0.658**	0.244			-0.763**	0.246
Work experience abroad	-0.023**	0.010	-0.022**	0.010			-0.019**	0.010
Work experience in the Netherlands	0.015**	0.008	0.013*	0.008			0.015*	0.008
Dutch language skills (ref. Bad)	0.308**	0.133	0.136	0.131			0.076	0.132
Control variables								
Male (ref. Female)	0.702**	0.166	0.675**	0.166	0.916**	0.171	0.866**	0.173
Job-skill level (ref. Basic)								
Lower			0.350*	0.187	0.357*	0.184	0.346*	0.189
Middle			1.214**	0.189	1.110**	0.173	1.185**	0.188
Higher			1.999**	0.222	1.588**	0.186	1.944**	0.225
Ethnic group (ref. Turkish)								
Moroccan	-0.628**	0.164	-0.606**	0.164	-0.606**	0.156	-0.652**	0.162
Caribbean	-0.738**	0.157	-0.898**	0.154	-1.081**	0.149	-1.080**	0.158
Survey year (ref. 2002)								
1991	-0.380**	0.163	-0.435**	0.166	-0.283*	0.158	-0.437**	0.166
1994	0.118	0.169	0.118	0.178	0.108	0.170	0.126	0.180
1998	-0.290**	0.138	-0.203	0.137	-0.242*	0.133	-0.190	0.141
Constant	-2.823**	0.244	-3.249**	0.252	-3.563**	0.286	-3.325**	0.318
Number of clusters	350		350		350		350	
Number of individuals	6963		6963		6963		6963	
Pseudo R square	0.035		0.075		0.075		0.086	

Unstandardized coefficients; * p<.10, **p ≤ .05 (two-tailed test).

3.4.1 *Human capital*

Our findings favor the hypothesis that origin-country education and work experience decrease the likelihood of being self-employed (H1b). Model 4 shows that immigrants with higher secondary and tertiary education from the country of origin had 26.2 percent and 59.1 percent, respectively lower odds of self-employment as compared to those without any origin-country education $[(e^{-.304} - 1) * 100]$ and $[(e^{-.895} - 1) * 100]$. We did not find significant differences, however, for the lower levels of origin-country education. Furthermore, we found that each additional year of work experience in the country of origin decreased the odds of self-employment by 1.9 percent. It should be remembered that whereas we had a direct measure of total work experience in the Netherlands, work experience in the country of origin was estimated indirectly and actually refers to potential work experience (i.e., experience = age at migration minus years of schooling abroad minus 6).

Turning to the effect of host-country human capital, the results in Model 4 provide some support for the hypothesis that immigrants with host-country human capital are less likely to be self-employed than salary employed (H2a). Specifically, we found that education received in the Netherlands decreases the odds of self-employment compared to salaried employment. Immigrants who acquired their lower secondary diploma in the Netherlands were 34.6 percent less likely to be self-employed compared to those without any Dutch education. Likewise, obtaining higher secondary diploma or tertiary education in the Netherlands decreases the odds of self-employment by 40.7 percent and 53.4 percent, respectively. In contrast, our findings suggest that each year of work experience in the Dutch labor market increases the odds of self-employment by 1.5 percent. Interestingly, we did not find any significant effect of language proficiency on the odds of self-employment. This suggests that host-country language skills are equally important for salary employment as for self-employment.

3.4.2 *Social capital*

Before looking at the effect of bonding and bridging social capital, we should bear in mind that with regard to social capital, we cannot rule out issues of reverse causality, implying that we expect to find at least associations. Looking at Model 4, we reject the hypothesis that bonding social capital is positively associated with the likelihood of self-employment (H3). Our results show that immigrants living with a co-ethnic partner are 40.2 percent less likely to be self-employed than salary employed compared to those without a partner. A possible explanation for this negative association is the economic instability related to self-employment that makes it less attractive particularly for married male immigrants, whose household entirely depends on their income. However, we did not find a significant

association between other indicators of bonding social capital—ethnic concentration and co-ethnic organization membership—and the odds of self-employment.⁹

We further hypothesized that immigrants with more bridging social contacts are less likely to be self-employed than salary employed (H4). We found only weak support for this hypothesis. Model 4 shows that immigrants living with a Dutch partner are about 44.2 percent less likely to be self-employed than those who are single. Contrary to our hypothesis, we found that socializing with Dutch people in the free time is positively associated with immigrant self-employment. We did not find a significant association between immigrant self-employment and membership in Dutch organizations.

Finally, our results show that the odds of self-employment are much higher among male immigrants compared to female immigrants, and among Turks compared to Moroccans and immigrants from Caribbean region.

3.4.3 *Model comparison*

Are our results for origin- and destination-country human capital independent of job-skill level? Our results show that job-skill level is positively associated with immigrant self-employment, suggesting that the qualification requirements in self-employment are higher than those in a comparable position in salary employment.¹⁰ Furthermore, a comparison between Model 1 and Model 2 shows that when the job-skill level is excluded from the model, the effect of higher levels of origin- and destination-country education is insignificant. These results seem to suggest that higher levels of origin- and destination-country education capture opposing but equally strong influences. On the one hand, education, regardless of where it was obtained, facilitates the entry into salaried employment and thus makes the choice of self-employment less likely. On the other hand, higher levels of education correlate positively with job-skill level. Because there is a positive association between job-skill level and self-employment when we exclude job-skill level from the model, the positive effect of origin- and destination-country education on job-skill level and its negative effect on self-employment cancel each other out. This leads to insignificant origin- and destination-country education coefficients.

Our results also suggest that the effect of host-country language skills on self-employment is sensitive to the inclusion of job-skill level in the analysis. More specifically, Dutch

⁹ We also tested whether ethnic concentration has a nonlinear effect on self-employment, but this is not the case.

¹⁰ A subset of surveys includes information on job-skill level of the first job in the Netherlands. We re-did the analysis using this information. The effect of the first job-skill level in the Netherlands was insignificant, however, and other results remain substantively the same, except the ethnic concentration coefficient that become marginally significant (at the p -value = .06).

language fluency has a positive effect on self-employment in Model 1 ($b = .308, p = .021$) but it becomes insignificant after controlling for job-skill level in Model 2 ($b = .136, p = .299$). Finally, the coefficients of work experience from origin and destination countries remain almost the same in both models, suggesting that most of their negative and positive, respectively effects on self-employment are direct and cannot be explained by job-skill level.

What do the results show for destination-country human capital (bridging social capital) when we do not control for bridging social capital (destination-country human capital)? We found that the negative coefficients of higher secondary and tertiary education in the Netherlands significantly increased when we included social capital in the model. A possible explanation could be that the higher levels of destination-country education and contacts with Dutch people are positively correlated but have opposite effects on self-employment. These opposing effects suppress each other when we do not control for Dutch contacts in the model. Other indicators of host-country human capital—Dutch language proficiency, lower levels of education and work experience in the Netherlands—did not change significantly, however.¹¹ All in all, despite a small suppression effect, the estimates of host-country education remain quite consistent across models, suggesting that for the most part, destination-country human capital has a direct effect on immigrant self-employment, and it even increased when including social contacts with natives.

With respect to the effects of bridging social capital, our conclusions do not differ when destination-country human capital variables are not taken into account. The comparison between Model 3 and Model 4 shows that all coefficients of Dutch partner, contacts with Dutch and Dutch organization membership remained the same when human capital variables were included in the model. Thus, most of the negative association between Dutch partner and self-employment and positive association between Dutch contacts and self-employment is direct and cannot be explained by increased host-country human capital variables.

3.5 Conclusions and discussion

In this chapter, we studied the role of human and social capital in the self-employment of immigrants. We have examined the competing arguments for the impact of origin- and destination-country specific human capital, and similarly, we have assessed the connections that immigrants have within their own ethnic group vis-à-vis the ties they maintain with natives. Moreover, by studying human and social capital simultaneously, we were able to see whether and to what extent the effects of human or social capital are over- or underestimated.

¹¹ Although the coefficients of good language skills decreases significantly $\chi^2(1) = 10.67, p = .001$, the effect remains insignificant in both models.

Using a survey that was specifically designed to study immigrants, we examined the likelihood of self-employment compared to salary employment among the first-generation immigrants from four ethnic minority groups in the Netherlands, i.e., Turks, Moroccans, Surinamese and Antilleans.

One of our main findings is that origin-country human capital decreases the odds of immigrant self-employment compared to salary employment. The results also show that immigrants with more host-country human capital (credentials) are less likely to be self-employed than salary employed. However, this negative relationship seems untrue for host-country work experience. Although our data prevents us from saying more about this, the positive effect of host-country work experience on self-employment in this chapter could mean that labor market experience in the Netherlands is important for accumulating financial capital.

Regarding the effects of bonding and bridging social capital on self-employment our results are mixed. With respect to bonding social capital, contrary to our expectation, immigrants with a co-ethnic partner are less likely to be self-employed than singles. We also found that neither the ethnic concentration nor co-ethnic organization membership is positively associated with immigrant self-employment. As for bridging social capital, we found that having a Dutch partner is associated with lower odds of self-employment. Finally, contrary to what we anticipated, contacts with Dutch natives are associated with higher odds of self-employment.

The simultaneous study of human and social capital also revealed some important insights. Although social contacts with natives suppress the effect of host-country education on self-employment, our results mostly suggest that the strong negative effect of education from the destination country and the positive effect of work experience in the Netherlands are direct and that bridging social capital explains very little. Similarly, we show that the negative association between having a Dutch partner and self-employment, as well as the positive association between Dutch contacts and self-employment are mostly direct and cannot be explained by human capital variables.

The negative effect of origin-country education observed in our study on immigrants in the Netherlands contradicts previous theoretical arguments, which suggest that problems of quality and transferability assessment of foreign credentials push immigrants into self-employment, where the returns to origin-country education are higher (e.g., Bates 1997; Sanders and Nee 1996). We also refute another influential idea in the migration literature, which implies that host-country credentials increase the managerial knowledge and skills needed to deal with host-country institutions and thus pull immigrants towards self-employment (Constant and Zimmerman 2006; Le 2000).

The conclusion that higher educated immigrants are less likely to be self-employed than salary employed suggests that in the Netherlands, self-employment provides an alternative strategy for economic assimilation among lower educated immigrants whose employment opportunities in the Dutch labor market are often restricted by insufficient or non-transferable qualifications and discrimination. In this way, self-employment provides the second-best solution for immigrants who are at risk of unemployment and poverty.

Our results also contradict previous empirical findings that immigrants with more bonding social capital are more likely to be self-employed than salaried (Sanders and Nee 1996). We found that none of the indicators of bonding social capital—having a co-ethnic partner, co-ethnic organization membership and ethnic concentration—are positively associated with self-employment. Interestingly, these results for the Netherlands, and more generally for Europe (i.e., Clark and Drinkwater 2000, 2002) are not consistent with U.S. studies, which show a positive association between bonding social capital and immigrant self-employment. Future research is encouraged to examine why these differences arise.

This chapter demonstrates that when distinguishing between bonding and bridging social capital, self-employed immigrants mostly benefit from having contacts with natives. This positive influence of contacts with natives is mostly direct and cannot be interpreted by increased host-country human capital. Therefore, self-employed immigrants benefit from social contacts with natives mainly because of the resources they provide and not because of improved host-country language skills, better school or work performance. This calls for further research studying the exact mechanisms involved in this positive effect of bridging social capital on self-employment.

4 The Role of Social Contacts in the Employment Status of Immigrants: A Panel Study of Immigrants in Germany*

4.1 Introduction

The unemployment rate of immigrants has been an important issue in scientific research and policy agenda in Western countries (Commission of the European Communities 2007). Immigrants have lower labor force participation rates and higher unemployment rates than natives (OECD 2006). For instance, figures on Germany for 2005 show that about 25 percent of immigrants were unemployed, which was more than twice the unemployment level of natives (Uhlendorff and Zimmermann 2006). From the perspective of the host countries, immigrant employment is a concern, because high unemployment rates strain the welfare state finances and undermine the role of migration as a solution to aging of the population and declining ratio of workers to pensioners. Immigrant employment is also an important point in the discussion on immigrant integration as it determines poverty, material well-being, social integration and the integration of immigrant future generations (Kesler 2006).

The relationship between social contacts and employment opportunities has been largely theorized and researched in the literature on general populations (Boxman, De Graaf and Flap 1991; Burt 1992; Granovetter 1973; Ioannides and Loury 2004; Lin 1999; Mouw 2002, 2003), but only a few applications are found in the migration literature. The exceptions are studies on immigrants (mainly Latinos) in the United States (Aguilera 2002, 2003, 2005; Aguilera and Massey 2003, Amuedo-Dorantes and Mundra 2008; Sanders and Nee 1996, Sanders, Nee and Sernau 2002). These studies found that upon arrival in the host country, immigrants benefit from contacts with co-ethnic family and friends who provide them with knowledge, information and other essential skills which facilitate the adjustment to the labor market.

However, earlier studies have focused predominantly on contacts with co-ethnic groups. Although contacts with co-ethnics could foster economic mobility, it can be argued that contacts with natives may be especially important for immigrants' economic opportunities.

* A slightly different version of this chapter is published in *International Sociology* (Kanas, Van Tubergen and Van der Lippe 2011). An earlier version of this chapter was presented at the Spring Meeting of the International Sociological Association Research Committee 28 in Florence, Italy, May 2008.

Immigrants have predominantly contacts with members of their own ethnic group, who do not know the host country labor market as well as natives and who have less information on job opportunities than natives. Thus, contacts with natives of the host country may be important for immigrants as they provide access to a larger society; facilitate cultural adaptation and wider job choices (Hagan 1998; Kazemipur 2006; Nannestad, Svendsen, Svendsen 2008; Putnam 2000).

According to Putnam (2000), immigrants' contacts with natives are a form of bridging social capital that is crucial for providing access to external assets and for information diffusion, while contacts with co-ethnics are a form of bonding social capital that is most useful for strengthening reciprocity and solidarity. Surprisingly, few studies have looked at the importance of bridging social capital for immigrant economic integration. These studies were conducted among immigrants in Canada (Kazemipur 2006), Greece (Iosifides et al. 2007), Great Britain (Kahanec and Mendola 2009) and in the Netherlands (Kanas and Van Tubergen 2009; Kanas, Van Tubergen and Van der Lippe 2009; Lancee 2010) and among immigrant children in Germany (Kalter 2006). Although these studies generally support the presumed positive effect of social contacts with natives, all studies except the study on immigrant children (Kalter 2006) relied on cross-sectional data. In this way, it is impossible to test the causal effect of having bridging social contacts on immigrant economic outcomes.

The main research question of this chapter is whether and to what extent social contacts, in particular bridging social ties affect immigrant employment. Answering this question is methodologically challenging in three ways. First, despite the theoretical importance of social contacts for immigrant economic integration, the causality might be in the reverse direction. Getting a job creates opportunities to meet and interact with others, and empirically this could result in a correlation between social contacts and employment, even in the absence of a causal effect of social contacts on employment.

Second, a correlation between bridging social contacts and immigrant employment could be spurious due to time-varying human capital accumulation. Immigrants who learn the language of the host country, and who attend school or work in the host country are more likely to find a job, but at the same time these post-migration investments in human capital could help immigrants to acquire social contacts with natives.

Third, it can be also argued that a correlation between social contacts and immigrant employment is spurious due to time-constant unmeasured characteristics of immigrants. Given a tendency of similar people to become friends (McPherson, Smith-Lovin and Cook 2001), a correlation between social contacts and employment could merely reflect a tendency of economically successful immigrants to become friends with other economically successful immigrants or natives.

In this chapter, we address these challenges to examine the causal effect of social contacts in three ways. First, we use longitudinal data and measure social contacts at an earlier point in time than employment outcomes, thereby reducing problems of reverse causality. Second, we explicitly model the impact of post-migration human capital accumulation, and see whether after taking this into account a (positive) effect of social contacts persists. Third, by estimating a fixed effects model, we test whether a correlation between social contacts and employment can be explained by time-constant unmeasured characteristics of immigrants.

We use the German Socio-Economic Panel (GSOEP) collected in the period between 1984 and 2004 among female and male immigrants in Germany. A major advantage of the GSOEP data is that they provide longitudinal information on immigrants' social contacts and employment position over a long time period. Furthermore, the data also offer detailed information on immigrants' migration history, and their origin- and host-country human capital.

4.2 Theory and hypotheses

4.2.1 *Social contacts*

Linkage between social contacts and immigrant economic integration is provided by the insights from the social capital theory (Lin 1999). Social capital refers to the importance of resources, which are available to a given individual through his or her social relations to others (Flap 2004). Although there is no single coherent theory of social capital, it is commonly assumed that the amount of social capital depends on the number of people in an individual's network, the willingness of these people to offer help, and the resources available to others (De Graaf and Flap 1988). Based on this assumption, it can be argued that the more contacts people have, the more others are willing to help them, and the better the resources of others, the better their economic position.

The idea that, upon arrival to the host country, immigrants rely on co-ethnic contacts is not new in the migration literature (Boyd 1989; Hagan 1998; Massey 1986; Portes and Jensen 1989; Portes and Sensenbrenner 1993). It is argued that, because of common origin ties which facilitate bounded solidarity and reciprocity, co-ethnic contacts are often ready to cooperate and provide help when called upon (Portes and Sensenbrenner 1993). Drawing on co-ethnic family and friends, immigrants gain access to knowledge, assistance, and other resources that facilitate their economic integration into the host country (Portes and Sensenbrenner 1993). The importance of family and friends for immigrant economic incorporation relies on the provision of host-country specific knowledge and information, for example, about where to look for work, what the available jobs are, how to present themselves to employers, and how

to behave on the job (Aguilera and Massey 2003; Fernandez-Kelly 1995). Furthermore, family and friends can directly influence a job-matching process by providing an entry into desirable occupations (Coverdill 1998; Lin 1999). Next to immediate relatives and friends immigrants may participate in the host country institutions, which include religious denominations, social organizations and sport clubs. It can be argued that contacts developed through various institutions will lead to extended social networks and improved flow of innovative information (Burt 1992), and thus increase immigrant employment opportunities.

Social contacts may be helpful not only in facilitating the entry into employment but also in reducing the job turnover and the risk of unemployment (Coverdill 1998; Kmec 2007; Neckerman and Fernandez 2003). For example, Coverdill (1998) argues that getting a job via family and friends improves the match between a job and worker and as a result, increases the duration of employment. Family and friends can be especially useful in facilitating transition to a new job by mentoring, providing social support, feedback, advice and sometimes even informal training (Bernasco, De Graaf and Ultee 1998).

There has been consistent evidence in the literature that co-ethnic social contacts are positively associated with the labor market outcomes of immigrants such as employment, occupational status, and wages (e.g. Aguilera 2003, 2005; Aguilera and Massey 2003; Sanders and Nee 1996; Sanders et al. 2002). For example, Aguilera and Massey (2003) showed that having co-ethnic family and friends with migratory experience improves the effectiveness and efficiency of job search to yield jobs with better quality and higher wages. Likewise, Sanders et al. (2002), in their research on Asian immigrants in the United States, showed that having co-ethnic relatives and friends in the host-country is crucial in providing immigrants with information about employment opportunities outside ethnic enclave. Hence, we hypothesize that *the more social contacts immigrants have, the higher their likelihood of employment* (H1).

4.2.2 *Social contacts with natives and host-country human capital*

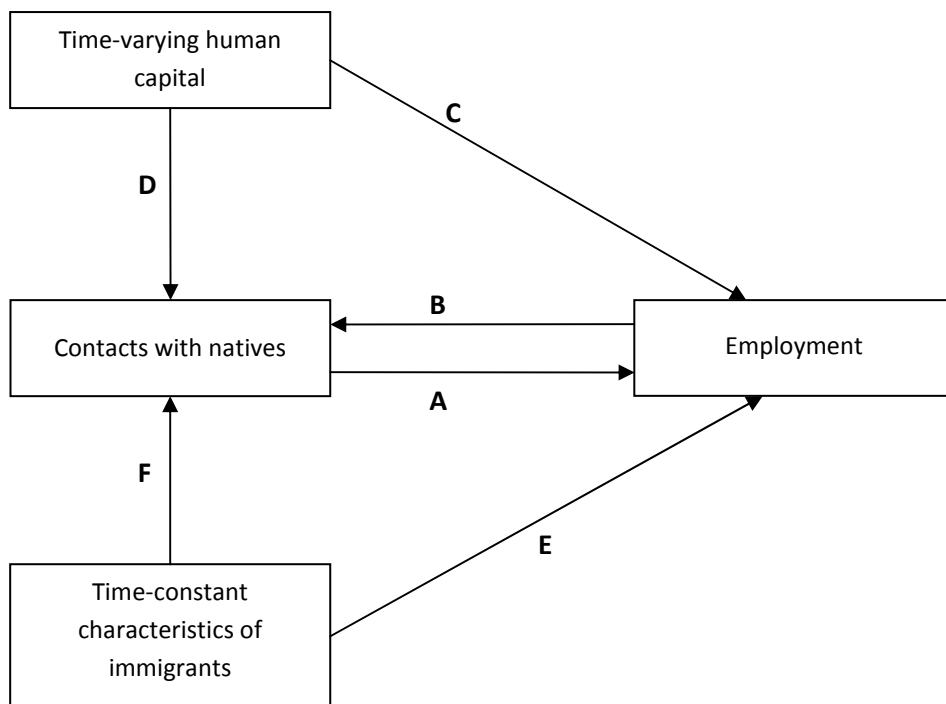
Previous research has implied that immigrants have contacts predominantly within their own ethnic group and so scholars focused almost exclusively on co-ethnic contacts. Although contacts with co-ethnics are helpful for the economic integration of immigrants, it can be argued that contacts with natives are particularly important for information diffusion and provision of recommendations (e.g. Hagan 1998; Nannestad, Svendsen, Svendsen 2008; Putnam 2000). One reason for this importance is that natives have access to more and better information about salaried employment than immigrants do, having naturally been longer exposed to the host-country labor market. They are, for example, better informed about specific job openings, they generally have a better idea on how to find jobs and on how to

present themselves to employers. Another reason is that they are also less often unemployed, higher educated and have more prestigious jobs than immigrants. Thus, contacts with natives bridge immigrants across ethnic groups, and so expose them to a more diverse set of resources than co-ethnic contacts.

However, even if we find a positive correlation between bridging social contacts and immigrant employment, the relationship might be in the opposite direction or spurious. Figure 4.1 presents the possible causal and spurious relations between immigrant social contacts and employment. Capital letters refer to the discussed relations in this figure. As depicted in Figure 4.1, arrow **A** is the central question of this chapter: whether social contacts, in particular bridging contacts with natives, affect immigrant employment. Arrow **B** illustrates reverse causality between social contacts and employment. Having a job provides opportunities to meet and socialize with people and so a positive correlation between bridging social contacts and immigrant employment could merely reflect the fact that employed immigrants have more contacts with natives. For example, using panel data Martinovic, Van Tubergen and Maas (2009) showed that having a job, and especially, having a higher status job promotes interethnic contacts of immigrants in the Netherlands.

Arrow **C** refers to an idea that immigrants who acquire higher levels of education and work experience, especially at the host country, and who speak the host-country language increase their productivity at the host-country labor market and so improve their economic opportunities in the host country. Empirical evidence overwhelmingly shows that speaking host-country language leads to increased occupational status and earnings of immigrants (Chiswick and Miller 1995; 2002; Kanas and Van Tubergen 2009). Likewise, it has been shown that immigrants who acquired their education in the host-country are more likely to be employed and have higher occupational status and earnings as compared to those who did not invest in host-country education (e.g. Friedberg 2000; Kanas and Van Tubergen 2009). Hence, it is hypothesized that *host-country human capital has a positive effect on immigrant employment* (H2).

Arrow **D** shows the possibility that a positive correlation between bridging social contacts and immigrant employment could be spurious due to time-variant human capital accumulation. It can be argued that immigrants with more host-country specific skills benefit from these skills, since they are associated with increasing contacts with natives. Immigrants who speak the host country language, received education and participate in the host-country labor market have more contacts with natives and better economic outcomes. Thus, post-migration investments in human capital lead to both social contacts with natives and better economic opportunities, thereby challenging the presumed positive effect of social contacts

Figure 4.1 The causal and spurious relations between immigrant social contacts and employment.

with natives on immigrants' economic chances. In line with this idea, Kanas and Van Tubergen (2009) found that although social contacts with Dutch natives and organization membership are positively associated with employment chances and occupational status of immigrants in the Netherlands, once host-country human capital is taken into account most of this positive association disappears.

Arrows E and F depict another possibility, namely that a positive correlation between social contacts and immigrant employment is spurious due to social homophily, the tendency of similar people to become friends with each other (McPherson, Smith-Lovin and Cook 2001; Mouw 2003). As argued by Mouw (2003: 869): "if successful people prefer to socialize with other successful people, then this preference would result in a correlation between friends' income and occupational status, even in the absence of causal effect of social capital on labor market outcomes." This could mean, for example, that successful immigrants have more and better (i.e., German contacts) contacts and higher employment chances but there is no causal relationship between social contacts and immigrant employment.

4.3 Data and methods

Our data come from the German Socio-Economic Panel (GSOEP), a nationally representative longitudinal survey administrated by the German Institute for Economic Research (DIW Berlin). The GSOEP started in 1984 in the Federal Republic of Germany (West Germany) with about 12,000 respondents, 3,000 of whom were legal immigrants. The original immigrant sample (sample B) included the West German immigrant population from Italy, Greece, Spain, Yugoslavia, and Turkey, the main sources of guest worker migration. In 1994, more recent immigrants, who arrived to West Germany after 1984, were included in the survey (sample D). The majority of immigrants in sample D were ethnic Germans (Aussiedlers), mainly from Eastern Europe and the former Soviet Union, and foreigners, largely asylum seekers and war refugees from former Yugoslavia (Haisken-DeNew and Frick 2005). The major strength of the GSOEP data is that they provide longitudinal information on immigrant pre- and post-migration human capital and social contacts for a long time period. Longitudinal data on immigrants are scarce, and the few existing longitudinal surveys of immigrants in Australia, Canada and the United States are very short, up to five years.

The response rate in the first wave exceeded 70 percent in both sample B and D.¹ In 2004, the response rate was about 25 percent (in sample B) and about 45 percent (in sample D) (Kroh and Spieß 2008). The main causes of attrition were unsuccessful interviews and unsuccessful tracking of individuals throughout the survey. Attrition was also related to mortality and migratory movements. Special measures were taken to reduce attrition in the subsequent waves. Temporary drop-outs or persons who could not be successfully interviewed in a given year were followed until there were two consecutive temporary dropouts of all household members or a final refusal (Haisken-DeNew and Frick 2005).

The analysis is based on 1984-2004 GSOEP immigration waves, sample B (guest worker sample) and sample D (recent immigrant sample). This chapter focuses on the population of economically active female and male immigrants, aged 20-60 years, who were successfully interviewed in a given year. Immigrants are defined as individuals born outside of Germany. The current analysis is restricted to 21,216 observations and 2,792 individuals with valid information on the covariates and dependent variables.²

¹ 30 percent of the total sample was not interviewed in the first wave of the survey because the respondents were below the age of 16.

² The questions about social contacts were asked on average in 60 percent of the analyzed waves (in 10, 7 and 9 waves for frequency of contacts, volunteering, and German contacts variables, respectively). Missing values on social contacts and other variables were replaced by information from previous years, and in a few cases (less than 10 percent of all observations) by later panel years. Only few percent of all observations were left with missing values. We removed these observations from the analysis.

4.3.1 *Dependent and independent variables*

Employment: those who are employed, including part-time workers and self-employed are contrasted with those who are unemployed. Respondents who are economically inactive (i.e., those pursuing their education, doing military service, homemakers and the retired) are excluded from the analyses.

We included measures of social contacts, human capital and controls. To test the hypothesis that a positive correlation between social contacts and immigrant employment can be due to time-varying human capital accumulation, we distinguished between human capital acquired in the country of origin and in the host country.

We included the following measures of social contacts. *Frequency of contacts*: respondents were asked how frequently they spent time with their friends, relatives and neighbors. The possible answers were: never, occasionally, regularly. We treated frequency of contacts as a continuous variable.

Volunteering activity: respondents were asked whether they volunteered for any clubs, associations or social services during the last year. The possible answers were: volunteered weekly, volunteered monthly, volunteered less frequently and never volunteered. Only few people volunteered at all during the last year, therefore we recoded this variable into a dummy variable with score 1 for those respondents who volunteered at least once during the last year.

Contacts with Germans: respondents were asked whether since they lived in Germany they had close German friends, whether in the last 12 months they visited Germans in their home and whether in the last 12 months they received German visitors in their home. The possible answers to all these questions were yes or no. Answers to these questions are highly correlated, and we therefore combined them by adding up the scores on the three items and dividing them by three (Cronbach's alpha 0.80).

Unfortunately, the GSOEP data do not include information about the intensity of contacts with Germans. Combining people who visit German natives every week with those who visit Germans once a year into one category may lead to over- or underestimation of the effect of contacts with Germans on employment. We, therefore, will keep a cautionary note in mind when discussing the effect of contacts with Germans.

We also included several measures of human capital variables. Host-country human capital is measured directly by two indicators: *Education in Germany*: respondents were asked about the highest degree taken in secondary school as well as for completed vocational and post-secondary training. Respondents were also asked whether they received their education in Germany. Based on the highest level of obtained education in Germany, we constructed a variable measuring years of education in Germany (cf. Pischke 1992, for details see Appendix).

German language skills: respondents were asked how well they speak the German language. The possible answers were: (1. do not speak German at all, (2. speak German poorly, (3. speak German fairly, (4. speak German well, (5. speak German very well. Because only few respondents (less than 1 percent) do not speak German language at all, we combined the first two categories.

Human capital from the country of origin is measured directly by one indicator: *Education abroad:* The information on schooling in the country of origin was rather limited. The possible answers in the questionnaire were: less than compulsory, more than compulsory, and higher schooling. Information about training in the country of origin is more detailed: none, some instruction on-the-job, formal apprenticeship, vocational school, university and other. Based on the highest level of acquired education in the country of origin, we constructed a variable measuring years of education abroad (cf. Pischke 1992, see also Appendix).

We also provided measures for general human capital. *Work experience:* the survey provided a direct measure of work experience years from abroad and Germany. To control for the nonlinear relationship between work experience years and employment, we also included the quadratic form of work experience.

Several control variables were included in our model: *Doctor visits:* respondents were asked how many times they went to the doctor in the last three months. Because several surveys (i.e., 1985, 1986, 1987 and 1993 waves) had asked the question for every specialist separately, we computed the total number of doctor visits during the last 3 months. We treated the doctor visit variable as a dummy variable with score 1 for those who visited a doctor at least once in three months. We controlled for doctor visits based on previous research, suggesting health status to be an important determinant of immigrant productivity and so of employment chances (i.e., Becker 2007).³

Gender: because there are significant differences in the determinants of employment of immigrant men and women, with the latter much heavily influenced by family-related factors, i.e., marriage, number and age of children and by origin-country characteristics, i.e., labor force participation rates (e.g., Antecol 2000; OECD 2006), we run separate analyses for men and women. The additional advantage of having separate analyses is that we provide further insights into gender-specific effects of social contacts. *Partner:* respondents were asked whether they were married or cohabitating, and about the partner's country of origin. We

³ In the literature, health is commonly measured by a subjective health status, satisfaction with health or number of doctors' visits. All of these measures rely on a subjective perception of own health, which may be problematic if there are individual or group differences in the perception of health status (e.g. higher educated individuals might be more accurate in describing their health status than lower educated individuals). We included "the number of doctor visits" as an indicator of individual health because it was asked in all surveys.

constructed a variable with three categories: (1. single, (2. ethnic partner, (3. German partner. *Children in the household*: we control for the number of children in the household, because having children is an important determinant of women's employment. We constructed a variable with three categories: (1. no children in the household, (2. one or two children in the household and (3. more than two children in the household. *Years since migration*: we subtracted the year of respondents' arrival in Germany from the current survey year to compute the length of stay in Germany. *Immigrant group*: We constructed a variable with seven categories: (1. Turkish, (2. Greek, (3. Yugoslavian, (4. Italian, (5. Spanish, (6. Eastern European, and (7. Third country immigrants. We distinguished between the following immigrant groups because there are significant differences in their economic integration. It is generally found that Turkish immigrants are the most disadvantaged group in the German labor market. By contrast, Eastern European immigrants, of whom the majority are ethnic Germans, show similar employment rates and occupational outcomes to those natives (e.g., Kalter and Granato 2002; Kogan 2004, 2007).

We also controlled for the survey year, eight regions (Bundesländer), as well as two German city-states, i.e., Berlin and Hamburg. These variables refer to contextual factors such as employment opportunities and population density in the region (Constant and Massey 2005).

Table 4.1 presents descriptive statistics for the independent and dependent variables. We checked for multicollinearity among the independent variables, but multicollinearity is not a problem.⁴

⁴ One of the variables that is important for immigrant economic integration but we do not include in our model is age at migration. We decided to not include it in the model because of high (above 0.5) correlations with German education and work experience.

Table 4.1 Descriptive Statistics of Independent and Dependent Variables, GSOEP 1986-2004.

	Male			Female		
	Range	Mean	S.D.	Range	Mean	S.D.
Dependent variable						
Employed	0/1	0.89			0.86	
Independent variables						
<i>Social capital</i>						
Frequency of contacts t-1	1-3	2.85	0.42		2.83	0.44
Volunteering activity t-1	0-1	0.15			0.09	
Contacts with Germans t-1	0-1	0.83	0.31		0.85	0.30
<i>Human capital</i>						
Education abroad (years)	0-17	7.03	3.55	0-16	6.68	3.69
Education in German (years) t-2	0-18	3.22	5.03	0-18	2.67	4.70
German language skills t-2						
Poor	0/1	0.12			0.16	
Fair	0/1	0.33			0.31	
Good	0/1	0.40			0.36	
Very good	0/1	0.16			0.17	
Work experience t-2	0-48	18.02	11.01	1-46	11.37	9.58
Control variables						
Doctor visits	0/1	0.56			0.70	
Partner						
Single	0/1	0.18			0.21	
Ethnic						
German	0/1	0.74			0.76	
German	0/1	0.08			0.03	
Children in the household						
No children	0/1	0.30			0.34	
1 or 2 children	0/1	0.58			0.59	
More than 2 children	0/1	0.12			0.07	
Years since migration	2-42	20.13	7.51		19.74	7.46
Immigrant group						
Turkish	0/1	0.37			0.27	
Greek	0/1	0.10			0.13	
Yugoslavian	0/1	0.12			0.14	
Italian	0/1	0.18			0.15	
Spanish	0/1	0.08			0.07	
Eastern European	0/1	0.05			0.08	
Third country	0/1	0.09			0.15	
Number of observations	13434			7782		
Number of individuals	1644			1148		

Note: Descriptive statistics of 18 dummies for survey year and 10 dummies for region not presented.

4.3.2 Methods

For a longitudinal latent binary outcome variable, a common model is

$$y_{it}^* = x_{it}'\beta + \alpha_i + \varepsilon_{it}, \quad (1)$$

where we observe $y_{it} = 1$ if $y_{it}^* > 0$ and $y_{it} = 0$ otherwise. In our model, y_{it} indicates whether respondent i is working in the period t or not, x_{it} is a vector of explanatory variables, β is a vector of regression coefficients, α_i is an individual specific component,

and ε_{it} is a remaining error component. We estimate the random effects logit model for the analysis of immigrant employment. This model is well suited for the analysis of longitudinal data as it takes into account that repeated observations of the same individual are nested within individuals and panel waves. This method allows the explanatory variables that are constant over time to be included in the analysis (e.g., immigrant groups, pre-migration education) and is normally more efficient than the fixed effects model (Johnson 1995; Verbeek 2000).

A major drawback of the random effects model is that it assumes that time constant individual effects α_i are random, and ε_{it} an error component is uncorrelated over time. That is, it is assumed that α_i and ε_{it} terms are mutually independent, and independent of all x_{it} (Verbeek 2000). This assumption may be problematic if social contacts are correlated with unmeasured productivity characteristics of immigrants (Halaby 2004). If economically successful immigrants prefer to socialize with other economically successful immigrants, then this preference would result in a correlation between immigrant social contacts and employment, even in the absence of causal effect of social contacts.

To test whether a positive correlation between social contacts and employment is causal or, instead represents a spurious effect attributable to time-constant unmeasured characteristics of immigrants, we estimated the fixed effects logit model. Because fixed effects model is based entirely on within individual variation over time, it eliminates time-constant individual effects α_i from the estimation, and so a possible bias caused by a correlation between unobserved individual characteristics α_i and explanatory variables x_{it} is reduced (Halaby 2004; Verbeek 2000). This means, however, that the variables that do not vary over time are excluded from the model. Another disadvantage of the fixed effects model is that it is problematic to estimate the effect of time-varying variables that change little over time (e.g., host-country education).

We further provide some insights into the causal relationship between human capital, social contacts and employment by including lagged host-country human capital and social contacts variables in the models. Firstly, as we already argued before, a positive correlation between social contacts with natives and immigrant employment could be spurious due to unobserved host-country human capital accumulation. By lagging host-country human capital variables by two years and social contact variables by one year, we test whether a correlation between social contacts and employment is causal, or instead, it is spurious due to host-country human capital accumulation. Secondly, a positive correlation between social contacts and employment could also be due to employment increasing social contacts. To avoid a

reverse causality between social contacts and employment, we lagged social contacts variables by one year prior to employment.⁵

4.4 Results

Table 4.2 and 4.3 present the results from the random effects logit model predicting the impact of social contacts on immigrant employment. Table 4.4 presents the results from the fixed effects logit model. Because there is little within individual variation in the employment status and explanatory variables in the women sample, it is not possible to run the fixed effect model for women only. Therefore, we run the fixed effect model for the pooled sample of male and female immigrants. In all three tables, Model 1 includes only measures of social contacts and controls. Model 2 includes only human capital and control variables, and Model 3 is a full model and it includes the measures of social contacts, origin- and host-country human capital and control variables. We compare the coefficients of Model 1 to that of Model 3, in order to see whether the effect of social contacts persists when host-country human capital variables are taken into account.

4.4.1 Social contacts

We hypothesized that the more social contacts immigrants have, the higher the likelihood of employment (H1). The results only partly support this hypothesis. Table 4.2, Model 1 shows a positive effect of contacts with Germans on men's employment. Specifically, having contacts with Germans in the previous year increases the odds of male employment 106 percent $100*[e^{.725} - 1]$.⁶ Because we only measure the presence of contacts with Germans and not the intensity of these contacts, one could expect the effect of German contacts to be larger for immigrants with more frequent than average contacts with Germans and smaller for those who have less than average frequent contacts. Regarding other indicators of social contacts,

⁵ The social capital theory provides no arguments about the time span between acquiring social contacts and their effects on employment. Thus, although we assume that the effects of social contacts should take place within one year, it could be that some observed changes in immigrant employment appear after two or more years. To see whether this is the case we run several random and fixed effects models with lagged social contacts variables from two to five years. The results (upon request) clearly show that although the effect of German contacts on male employment decreases a little by each lagged year, it remains positive and significant across all models and the other indicators of social contacts remain not significant.

⁶ Because we do not have information about the ethnic composition of frequency of contacts with family, friends and neighbors and volunteering activity, we also checked whether the positive effect of social contacts with Germans change after excluding these indicators of social contacts from the model. The coefficient of German contacts remains almost the same, however ($b = .713$ as compared to $b = .725$ in Table2, Model 1 and $b = .731$ as compared to $b = .717$ in Table 3, Model 1).

Table 4.2 Random Effects Logit Model of Male Employment, GSOEP 1986-2004.

	Model 1		Model 2		Model 3	
	B	S.E.			B	S.E.
Independent variables						
<i>Social capital</i>						
Frequency of contacts t-1	-0.120	0.102			-0.117	0.105
Volunteering activity t-1	-0.100	0.127			-0.155	0.131
Contacts with Germans t-1	0.725**	0.146			0.569**	0.151
<i>Human capital</i>						
Education abroad (years)			0.049	0.032	0.047	0.032
Education in Germany (years) t-2			0.066*	0.022	0.064*	0.022
German language skills t-2 (ref. Poor)						
Fair			0.187	0.146	0.138	0.147
Good			0.455*	0.169	0.389*	0.170
Very good			0.683*	0.222	0.603*	0.223
Work experience t-2			0.212**	0.025	0.214**	0.025
Work experience square t-2			-0.007**	0.001	-0.007**	0.001
Control variables						
Doctor visits (ref. No visits)	-0.276*	0.087	-0.192*	0.090	-0.199*	0.090
Partner (ref. Single)						
Ethnic						
German	0.839**	0.163	0.652**	0.179	0.655**	0.179
Other	1.221**	0.315	0.746*	0.330	0.735*	0.332
Children in the household (ref. No children)						
1 or 2 children	0.377*	0.127	0.191	0.132	0.188	0.133
More than 2 children	0.281	0.183	-0.064	0.190	-0.064	0.190
Years since migration	-0.055**	0.013	-0.017	0.017	-0.021	0.017
Immigrant group (ref. Turkish)						
Greek	1.066*	0.341	1.233*	0.373	1.243*	0.374
Yugoslavian	0.690*	0.299	0.707*	0.322	0.669*	0.323
Italian	0.632*	0.283	0.774*	0.306	0.751*	0.307
Spanish	1.728**	0.411	1.808**	0.443	1.781**	0.445
Eastern European	1.283*	0.438	1.596*	0.495	1.486*	0.497
Third country	0.706*	0.344	0.914*	0.371	0.849*	0.372
Constant	2.771**	.616	.919	.612	0.935	.687
Number of observations	13434		13434		13434	
Number of individuals	1644		1644		1644	
McFadden's Pseudo R square change compared to Model with controls	0.004		0.031		0.033	

Unstandardized coefficients; **p<.001; *p≤.05 (two-sided test).

The model includes also a set of dummy variables for survey year, region (Bundesländer) and two city-states (Berlin and Hamburg).

we do not find the expected positive effect of weekly time spent with family, friends and neighbors and volunteering activity on men's employment. The addition of all three indicators of social contacts to the model with control variables only improves the explained variance by 0.4 percent (McFadden's pseudo R-squared change: .071 - .067 = .004).

Do we find similar results of social contacts for immigrant women? Table 4.3, Model 1 shows that contacts with Germans are also beneficial for women: having contacts with

Table 4.3 Random Effects Logit Model of Female Employment, GSOEP 1986-2004.

	Model 1		Model 2		Model 3	
	B	S.E.	B	S.E.	B	S.E.
Independent variables						
<i>Social capital</i>						
Frequency of contacts t-1	0.166	0.109			0.157	0.110
Volunteering activity t-1	0.031	0.183			-0.084	0.186
Contacts with Germans t-1	0.717**	0.174			0.631**	0.178
<i>Human capital</i>						
Education abroad (years)			0.104*	0.033	0.104*	0.033
Education in Germany (years) t-2			0.070*	0.022	0.070*	0.022
German language skills t-2 (ref. Poor)						
Fair			-0.255	0.167	-0.302	0.167
Good			-0.107	0.193	-0.162	0.193
Very good			0.338	0.244	0.255	0.244
Work experience t-2			0.030	0.027	0.025	0.027
Work experience square t-2			-0.003*	0.001	-0.002*	0.001
Control variables						
Doctor visits (ref. No visits)	-0.378*	0.111	-0.363*	0.113	-0.356*	0.113
Partner (ref. Single)						
Ethnic						
German	-0.049	0.178	-0.050	0.188	-0.026	0.186
Other	-0.828	0.431	-0.860	0.450	-0.866	0.447
Children in the household (ref. No children)						
1 or 2 children	-0.009	0.145	-0.112	0.149	-0.125	0.148
More than 2 children	-0.360	0.229	-0.475*	0.234	-0.471*	0.234
Years since migration	-0.018	0.015	0.020	0.018	0.017	0.018
Immigrant group (ref. Turkish)						
Greek	1.173*	0.356	1.007*	0.398	1.008*	0.391
Yugoslavian	0.831*	0.324	0.800*	0.357	0.783*	0.352
Italian	1.053*	0.335	0.843*	0.359	0.858*	0.354
Spanish	1.349*	0.448	1.369*	0.484	1.333*	0.477
Eastern European	0.557	0.403	0.732	0.478	0.630	0.471
Third country	1.072*	0.337	1.365**	0.379	1.282*	0.373
Constant	1.286*	.657	1.227	.648	.385	.708
Number of observations	7782		7782		7782	
Number of individuals	1148		1148		1148	
McFadden's Pseudo R square change compared to Model with controls	0.004		0.014		0.016	

Unstandardized coefficients; **p<.001; *p ≤ .05 (two-sided test).

The model includes also a set of dummy variables for survey year, region (Bundesländer) and two city-states (Berlin and Hamburg).

Germans increases the odds of women's employment by 105 percent. Again, we do not find an expected positive effect of other indicators of social contacts on the employment of women. Adding social contacts variables to the model with control variables only improves the explained variance by 0.4 percent.

4.4.2 *Social contacts with natives and host-country human capital*

As a start we hypothesized that host-country human capital has a positive effect on immigrants' employment (H2). The results clearly support this hypothesis. Specifically, we find that immigrant men who speak German language very well are more likely to be employed as compared to those with poor command of German language. Likewise, immigrant men who acquired their education in Germany have higher chances of employment as compared to those without German education (Table 4.2, Model 3). Regarding immigrant women (Table 4.3, Model 3), we find that both education acquired in the country of origin and in Germany increases the odds of women employment. Surprisingly, there is no clear relationship between German language skills and employment chances of women.

Does the positive effect of contacts with Germans remain after taking into account host-country human capital accumulation? The comparison between Model 1 and Model 3 (Table 4.2 and 4.3) shows that only a small part of the effect of social contacts with Germans can be explained by host-country human capital accumulation.⁷ Specifically, the effect of contacts with Germans on male employment is a bit stronger in the model with social contacts variables only ($b = .725$, Table 4.2, Model 1) than when we control for human capital variables ($b = .569$, Table 4.2, Model 3). Likewise, the positive coefficient of German contacts on women's employment decreases by little between Models 1 and 3 ($b = .717$, Table 4.3, Model 1 and $b = .631$, Table 4.3, Model 3). These results suggest that most of the positive effect of contacts with Germans on employment is direct and only a small part of this effect can be explained by destination human capital variables. Thus, immigrant men and women benefit from social contacts with Germans because of the direct effect of such bridging ties on the employment (through information and influence), and not because of earlier investments in host-country human capital leading to such contacts.

Interestingly, the comparison between Model 2 and Model 3 (Table 4.2 and 4.3) shows that the effects of host-country human capital on employment remain almost the same when social contacts variables are included in the model. These findings imply that host-country human capital has a direct positive effect on the employment of immigrant men and women (interpreted in terms of higher quality and transferability, and reduced employer's uncertainty), and that associated relations with social contacts with natives explain very little of this effect.

⁷ Although our theoretical arguments are mostly concerned with social contacts with natives, we included all indicators of social contacts in the model. The reason for including all indicators of social contacts in the model is the lack of information about the ethnic composition of frequency of contacts and volunteering.

Table 4.4 Fixed Effects Logit Model of Employment (Males and Females), GSOEP 1986-2004.

	Model 1		Model 2		Model 3	
	B	S.E.	B	S.E.	B	S.E.
Independent variables						
<i>Social capital</i>						
Frequency of contacts t-1	-0.073	0.082			-0.062	0.082
Volunteering activity t-1	-0.168	0.117			-0.173	0.117
Contacts with Germans t-1	0.364*	0.130			0.371*	0.131
<i>Human capital</i>						
Education in Germany (years) t-2			0.120**	0.025	0.120**	0.025
German language skills t-2 (ref. Poor)						
Fair			-0.118	0.124	-0.138	0.125
Good			-0.059	0.148	-0.079	0.149
Very good			0.276	0.190	0.248	0.191
Number of observations	7932		7932		7932	
Number of individuals	823		823		823	
McFadden's Pseudo R square change compared to Model with controls	0.002		0.005		0.007	

Unstandardized coefficients; ** $p < .001$; * $p \leq .05$ (two-sided test).

Hausman test: H_0 : the difference between the random and fixed effects model coefficients (cf. Model 3) is not systematic: $\text{Chi}^2(38): 190.93, p = .000$.

The model controls for work experience, work experience squared, doctor visits, partner, children in the household, years since migration, survey year, region (Bundesländer) and two city-states (Berlin and Hamburg).

Does the positive effect of contacts with Germans on employment simply reflect a positive correlation between unobserved characteristics of immigrants and having German contacts? Table 4.4 presents the results from the fixed effects logit model. Because the coefficients are estimated using information on variation only within individuals, this model controls for all measured and unmeasured time-constant differences between immigrants, including selection and cohort effects. This means, however, that measures that do not vary within individuals, i.e., origin-country education, dummy variables for immigrant groups and gender, are excluded from the model.

The fixed effects model confirms the findings from the random effects model: the coefficient of German contacts remains positive and significant, and the conclusions for other indicators of social contacts stay the same.⁸ Likewise, in the random effects model, the comparison between Model 1 and Model 3 in the fixed effects model shows that most of the positive effect of German social contacts on the employment is direct and cannot be explained by speaking German language and having German education.

⁸ We also run the fixed effects model for men only. The results (available upon request) are similar to those presented in Table 4 for the pooled sample of men and women: the coefficient of German contacts is positive and highly significant ($b = .500$; $p \leq .05$; cf. Table 4, Model 3) and the other indicators of social contacts are not significant.

Although the effects of the control variables are not the main focus of this chapter, they are important to mention briefly. We find that having a partner, either co-ethnic or German, is associated with an increased odds of employment for men (Table 4.2, Model 3) but not for women (Table 4.3, Model 3). On the other hand, having more than two children in the household as compared to not having children is negatively associated with the employment of women but has no significant relationship with male employment. The fact that we do not find a significant relationship between the length of stay in Germany and employment suggests that the economic returns to length of stay are fully explained by acquiring host-country specific skills and contacts with Germans. Finally, even after taking into account human capital and social contacts variables, Turkish men and women have significantly lower odds of employment as compared to all but Eastern European women.

4.5 Conclusions and discussion

There has been much discussion about the presumed positive effects of social contacts on employment, and more recently this relationship has been addressed in the literature on the economic assimilation of immigrants. Besides the well-documented role of bonding social contacts, little empirical evidence exists for bridging social ties. Furthermore, earlier studies used cross sectional data, which made it impossible to make inferences about the causal effects of social contacts.

This chapter contributes to previous research by studying the impact of social contacts, in particular bridging contacts, and by addressing the problems in estimating the causal effects of such contacts. The strength of this research lies in the use of the longitudinal data on immigrants in Germany, which enabled us to test whether a positive correlation between social contacts and immigrant employment can be explained by reverse causality, spuriousness due to time-variant human capital accumulation or spuriousness caused by time-constant unmeasured characteristics of immigrants.

The random effects models show that frequency of contacts with family, friends and neighbors and volunteering in clubs, associations or social services do not have the expected positive effect on immigrant employment. However, our results do show that having contacts with Germans increases the odds of employment for both immigrant men and women. This finding remains, even when we take into account the possibilities of reverse causality and spuriousness. Thus, the positive effect of German contacts remains even after social contacts are lagged by one year. In addition, the positive effect cannot be explained by time-variant human capital accumulation or time-constant unobserved characteristics of immigrants. This means that the positive effect of social contacts with Germans on immigrant employment

cannot be attributed to German language proficiency or post-migration credentials and experiences or to a tendency of similar people to become friends. Instead, our results suggest that immigrants indeed benefit from contacts with natives mainly because of resources provided through these contacts.

The importance of social contacts with natives suggests that these contacts provide immigrants with crucial resources, namely information and influence (i.e., recommendations and references) that facilitate their employment chances. Thus, although co-ethnic family and friends may be generally more than natives willing to help and assist immigrants at the host-country labor market, contacts with natives may be more capable to improve the economic outcomes of immigrants (Hagan 1998; Sanders and Nee 1987). The importance of contacts with natives may be also related to their ability to substitute for host-country human capital. In this, contacts with Germans help those with poor command of German language, and without German credentials and skills to achieve employment rates similar to those of immigrants with host-country specific human capital. The idea that contacts with natives can act as a substitute for host-country human capital is particularly important in the context of German migration history. Most of the migration to Germany started in the 1960s as a result of the rising labor demand for low-skilled workers, followed in late 1980s and mid 1990s by flows of asylum seekers, refugees and ethnic Germans (Kogan 2007). Most of these immigrants who came to Germany lacked host-country specific human capital and because all, but ethnic Germans, were supposed to stay temporarily, no comprehensive policy was initiated to facilitate their social and cultural integration.

The relatively low education level, lack of German credentials and language skills and persistent economic disadvantage could also reduce potential benefits from co-ethnic contacts of immigrants. That could maybe explain why having family and friends in the host-country lead to increased immigrant employment and wages in the United States (Hagan 1998; Aguilera and Massey 2003), whereas there is no direct effect of frequency of contacts with relatives, friends and neighbors and volunteering activity on employment of immigrants in Germany.

One of our additional findings is that social contacts operate in the same way for immigrant men and women. Previous research showed that immigrant men benefit more from social contacts than immigrant women, mainly due to differences between male and female social contacts, where women access smaller, homogenous and resource-poor contacts (Gilbertson 1995; Hagan 1998). For example, Hagan (1998), in her research on the Maya immigrant community in Houston, suggested that one of the important limitations of women's social contacts was lack of ties with natives. According to the author, such bridging ties were crucial for the long-term incorporation of Maya men in the United States. In this chapter, we

show that when immigrant women get access to bridging contacts with natives, they benefit from these contacts equally to immigrant men.

The policy implication following from this chapter would be to facilitate social integration of immigrants. Following on the idea that there is “no mating without meeting” (Verbrugge 1977), policy makers should concentrate on creating opportunities for interethnic social contacts such as ethnically mixed neighborhoods, schools, voluntary organizations and sport organizations that will facilitate immigrant contacts with natives and so improve the labor market integration of immigrants.

5 Social Contacts and the Economic Performance of Immigrants: A Panel Study of Immigrants in Germany*

5.1 Introduction

In Western countries, immigrants tend to have lower occupational statuses and smaller incomes than native workers (OECD 2008). A well-known explanation for the economic disadvantage faced by immigrants concentrates on human capital. This theory stipulates that immigrants are less skilled and less productive than are natives. Because many immigrants come from less-developed countries, they are often less educated than the native-born population. Furthermore, immigrants cannot rely on their human capital as natives do, because the skills they gained in their countries of origin are of lower quality, and are often more difficult to transfer. In addition, employers are uncertain about these specific skills (e.g., Chiswick 1978; Duleep and Regets 1997, 1999; Friedberg 2000). As the length of stay in the host country increases, however immigrants tend to improve their economic outcomes. An explanation for this economic mobility is that immigrants acquire the host-country language and skills that allow them to compete more effectively in the host-country labor market. There is ample support in the literature for the notion that immigrants who acquire proficiency in the host-country language significantly improve their economic opportunities (Chiswick and Miller 1995, 2002; Dustmann and Van Soest 2002; Shields and Wheatley Price 2002). Similarly, research has shown that acquiring host-country credentials and labor market experience facilitates the economic integration of immigrants (e.g., Bratsberg and Ragan 2002; Friedberg 2000; Kanas and Van Tubergen 2009). However, even after taking into account the differences in the quality and transferability of human capital, the disparity in economic outcomes between immigrants and natives often remains evident (Duvander 2001; OECD 2008).

Another important explanation for immigrants' economic disadvantage focuses on social capital. Upon arrival in the host country, immigrants benefit from relationships with co-ethnic

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family and friends. These contacts provide them with knowledge, information and other essential skills, including how to search for a job and how to behave on the job interview. These skills, in turn, facilitate the immigrant's adjustment to the labor market. Several studies have shown that having co-ethnic family and friends in the host-country facilitates the economic integration of immigrants (Aguilera 2002, 2003, 2005; Aguilera and Massey 2003; Amuedo-Dorantes and Mundra 2008, Hagan 1998; Nee et al. 1994; Sanders et al. 2002).

An influential hypothesis in the scholarly literature on social capital states that contacts with natives are even more beneficial for immigrant economic outcomes than co-ethnic contacts (Hagan 1998; Putnam 2000). Relationships with natives can provide access to the host society by facilitating social and cultural adaptation and providing broader job choices (Drever and Hoffmeister 2008; Kazemipur 2006). In this way, contacts with natives are a form of bridging social capital that is crucial for providing access to external resources and for the diffusion of information, whereas contacts with co-ethnics are a form of bonding social capital that is most useful for strengthening solidarity and reciprocal relationships (Portes and Sensenbrenner 1993; Putnam 2000).

Although several studies have examined the relationship between bridging social contacts and immigrant economic outcomes (Drever and Hoffmeister 2008; Kalter 2006; Kanas and Van Tubergen 2009; Kanas et al. 2009; Kazemipur 2006; Lancee 2010), most prior research has relied on cross-sectional data, which makes it difficult to infer the causal effects of bridging social contacts. In these studies, a positive correlation between immigrants' social contacts and economic outcomes is interpreted as evidence of the effect of social contacts. However, because higher socio-economic status provides people with more resources to meet and interact with others, the positive correlation between social contacts and immigrants' economic outcomes may reflect reverse causality – the tendency of people with higher socio-economic status to have more friends (Lin 2000). In line with this argument, Martinovic et al. (2009) showed that immigrants with higher education levels acquired in the Netherlands had more social contacts with Dutch natives as compared to immigrants who did not acquire host-country education.

The positive correlation between social contacts and economic outcomes for immigrants may also be spurious, merely reflecting the fact that people with similar backgrounds tend to associate with one another (McPherson, Smith-Lovin, and Cook 2001; Mouw 2003, 2006). The problem of social homophily has been recently addressed in two studies on immigrants in Germany (Kalter 2006; Kanas et al. (forthcoming). Kanas et al. (forthcoming) estimated a fixed-effects model and found that even after taking into account a possible bias caused by social homophily, immigrants who have social contacts with Germans are more likely to be employed as compared to those without such contacts. Based also on the fixed effects model,

Kalter (2006) showed that having German friends increases the occupational status of second-generation Turkish immigrants.

This chapter attempts to build on this scholarship by studying the occupational status and annual income of immigrants to Germany. It contributes to the literature in three ways. First, we focus not only on the impact of social contacts with co-ethnics but also on social contacts with natives. There is a longstanding tradition of research on the impact of ethnic enclaves on immigrant economic incorporation (e.g., Chiswick and Miller 2002, 2005; Hagan 1998; Kogan and Kalter 2006; Portes and Jensen 1989; Sanders and Nee 1987). However, mostly due to the limitations of the available data, few studies have analyzed the impact of contacts with natives on the economic outcomes of immigrants.

Our second contribution is that we use longitudinal data that enables us to test the causal effect of social contacts more rigorously. The German Socio-Economic Panel (GSOEP) is a comprehensive dataset that offers information on immigrant social contacts with family, friends, and neighbors, contacts with Germans, volunteering, and immigrants' economic performance over a twenty-year period. We also have additional information about the percentage of co-ethnics in the immigrants' region of residence from the German Microcensus. We examine the influence of social contacts on immigrants' occupational status and annual income.

Occupational status and income may be viewed as two indicators of labor market outcomes. Although economists have often expressed concern over immigrants' earnings, and sociologists have mused over the occupational status of immigrants, the extant literature rarely addresses both outcomes conjointly. By studying both occupational status and income simultaneously, we provide more insight into the role of social contacts in immigrants' economic progress, which occurs not only among occupations but also within them.

Third, we contribute to the literature by studying interactions between social contacts and origin- and host-country human capital. More specifically, we ask whether ethnic concentration in a region of residence affects the economic returns to origin- and host-country human capital. Assuming that co-ethnic regional concentration increases the transferability of, and reduces the uncertainty of employers towards origin-country skills, the lack of host-country specific human capital are less important in regions with high concentrations of co-ethnics than they would be in regions with fewer co-ethnics (Chiswick and Miller 2002, 2005; Kanas and Van Tubergen 2009). This would also suggest that immigrants living among co-ethnics can benefit more from their origin-country human capital, but, at the same time, they receive comparatively lower returns on host-country human capital than do those living in regions with fewer co-ethnics (Chiswick and Miller 2002, 2005).

5.2 Theory and hypotheses

5.2.1 *Social contacts*

According to social capital theory, social contacts facilitate economic opportunities because they make accessible to people the resources of others, most notably knowledge, information and influence (i.e., recommendation letters) (Boxman, De Graaf, and Flap 1991; Granovetter 1973; Ioannides and Loury 2004; Lin 1999; Mouw 2002; Portes and Sensenbrenner 1993). Immigrants benefit from their social contacts by obtaining information specific to the host country and assistance in the labor market, including vital facts and advice about where to look for a job, what the available jobs are, how to present themselves to employers, and how to behave on the job (Aguilera and Massey 2003; Fernandez-Kelly 1995).

The most immediate sources of social contacts for immigrants are co-ethnic family and friends already living in the host-country. Immigrants also acquire their social contacts through leisure activities, such as volunteer work, and from neighborhood and job acquaintances (Aguilera and Massey 2003; Martinovic et al. 2009). Living among many co-ethnics is not only important for immigrants because it facilitates access to lower cost ethnic goods and services, including ethnic foods, clothing and co-ethnic contacts, but also facilitates their economic outcomes by allowing communication in the immigrant's native language and providing assistance in the host-country labor market (Bauer et al. 2005; Chiswick and Miller 2002, 2005). This leads us to hypothesize that *the more social contacts immigrants have, the higher the occupational status and annual income of immigrants* (H1).

The extant literature suggests that the quality of the resources of the contact person affects the quality of the job that is found via this person (e.g., De Graaf and Flap 1988; Lin 1999). It follows that people who obtained a job through a person with a higher occupational status find higher status jobs than those who were helped by a person with lower occupational status. It can be argued that at the host country labor market, knowledge and information provided by natives may be superior to those provided by co-ethnics. Natives are better informed about specific job openings, they know more about how to find jobs, and they know more about how to present themselves to employers than do non-natives. One reason for this difference in resources is that natives have more exposure to the domestic labor market through their own experiences and those of their parents than do immigrants. Another reason is that typically natives are less often unemployed, are more highly educated and have more prestigious jobs than immigrants (e.g., OECD 2008).

Furthermore, several studies in the literature on the native-born population suggested that social contacts whose social networks extend far beyond one's own network are more valuable in the labor market than social contacts whose social network overlaps with one's

own network (Burt 2000; Granovetter 1973; Lin, Ensel and Vaughn 1981; Putnam 2000). For example, Burt (2000) suggested that being connected to different social networks, which are otherwise disconnected by structural holes, provides advantages in access to different sources of information, which are more additive than overlapping. A similar conclusion was reached by Putnam (2000), who suggested that although bonding social capital, which connects socially homogenous people by similarities in gender, ethnicity, and socio-economic status, is crucial for getting by, bridging social capital that links socially heterogeneous people is critical in getting ahead. Although these studies were not concerned with immigrants, they imply that contacts with natives, which reach outside an immigrant's own ethnic group, are more helpful for finding better jobs than are co-ethnic contacts.

In this context, some authors have argued that connections to co-ethnics might even hamper access to high status salary jobs. Wiley (1967) suggested that although co-ethnic enclaves protect immigrants by offering more secure job opportunities, they also reduce the possibilities to meet and interact with natives, thereby isolating immigrants from mainstream society in the host country. Concurring with this argument, Martinovic et al. (2009) showed that in the Netherlands, immigrants who resided in heavily co-ethnic areas developed significantly fewer contacts with Dutch natives as compared to immigrants who lived in the regions with fewer immigrants. Because more lucrative jobs lie mainly outside the ethnic enclaves, relying solely on ethnic ties would lead immigrants to find jobs of lower prestige and earnings (Portes 1998; Sanders and Nee 1987). Based on the foregoing observations, we hypothesize that *immigrants who have more contacts with natives have a higher occupational status and a higher annual income than those who have fewer contacts with natives* (H2).

5.2.2 *Co-ethnic concentration and origin- and host-country human capital*

We also hypothesize about interactions between co-ethnic residential concentration and human capital. More specifically, we test whether living among many co-ethnics affects the economic returns to origin- and host-country human capital. It can be argued that immigrants who live in regions with many co-ethnics can benefit more from their origin-country skills than do immigrants who live in the regions with few co-ethnics (Bauer et al. 2005; Chiswick and Miller 2002, 2005). Specifically, co-ethnic concentration increases the transferability of origin-country skills by facilitating communication in the immigrant's native language and harnessing knowledge and experiences specific to a particular ethnic background (Chiswick and Miller 2005). Co-ethnic concentration can also reduce the uncertainty of employers by enabling employment with co-ethnic employers who are knowledgeable about origin-country specific credentials, or by influencing native employers to become more familiar with origin-country credentials (Kanas and Van Tubergen 2009). Based on these arguments, we

hypothesize that *the higher co-ethnic concentration in the region of residence, the higher the economic returns to origin-country human capital* (H3).

By facilitating employment in occupations in which origin-country skills are more transferable and more highly valued by employers, co-ethnic residential concentration can also reduce the economic returns to host-country human capital. Specifically, by enabling immigrants to communicate in their native language, co-ethnic residential concentration reduces the cost of not speaking the destination language (Bauer et al. 2005). Similarly, by increasing the transferability of, and reducing the employers' uncertainty towards credentials acquired in the immigrant's country of origin, residing among many co-ethnics reduces the costs of not having destination educational credentials or training. In line with these arguments, Chiswick and Miller (2002) showed that immigrants to the United States who live in areas where many others speak their language, known as areas of high linguistic concentration, are not only less proficient in English, but also receive lower returns to their English language skills as compared to those who live outside areas of high linguistic concentration. These arguments lead us to our fourth hypothesis, that *the higher the co-ethnic concentration in the region of residence, the lower the economic returns to host-country human capital* (H4).

5.3 Data and methods

The data analyzed in this chapter come from the 1984-2004 German Socio-Economic Panel (GSOEP), a nationally representative longitudinal survey administrated by the German Economic Institute, DIW Berlin (see Haisken-DeNew and Frick 2005 for detailed information about the GSOEP survey). The key advantage of the GSOEP is that it provides longitudinal information on immigrants' social contacts, including contacts with natives, language skills, and pre- and post-migration education. Another advantage of the GSOEP is that several foreign groups, namely those of Turkish, Greek, Italian, Spanish, Portuguese and Yugoslavian origin, are over-sampled in the survey.¹

For the purpose of this chapter, we used sample B (immigrant population from Turkey, Greece, Yugoslavia, Spain and Italy—the so-called “guest workers”) and sample D

¹ It should be mentioned that, as with all panel data, the GSOEP survey is subject to sample attrition. The response rate in the first wave in 1984 exceeded 70 percent in both samples B and D. In 2004, the response rate was about 25 percent in sample B and about 45 percent in sample D (Kroh and Spieß, 2008). The main causes of attrition were unsuccessful interviews and ineffective tracking of individuals throughout the survey. Attrition was also related to mortality and migratory movements. Special measures were taken to reduce attrition in the subsequent waves. Temporary drop-outs or persons who could not be successfully interviewed in a given year were followed until there were two consecutive temporary dropouts of all household members or a final refusal (Haisken-DeNew and Frick, 2005).

(immigrants who arrived in Germany after 1984 mainly from Eastern Europe—Aussiedlers—and from other developing countries). We selected employed male immigrants between 20-60 years of age.² Immigrants are defined as those born outside Germany.

5.3.1 *Dependent and independent variables*

Occupational status: employed respondents were asked their occupation for their current job. Occupational status is measured in terms of the International Socio-Economic Index (ISEI) (Ganzeboom, De Graaf, and Treiman 1992). The ISEI scale measures the hierarchical position of the occupation. It is based on a weighted sum of the average education and average income of occupational groups. The scale ranges from 16 (agricultural workers, hotel and restaurant cleaners) to 90 (judges). The mean occupational status in our sample of immigrants is 33 points, which is equivalent to sewers; wood treaters, cabinet-makers, etc. trades workers; and plumbers. An increase of one standard deviation in the average occupational status (ISEI score = 43) would be equivalent to working in one of the following occupations: social work associated professionals; production clerks; and salespersons. A decrease of one standard deviation (ISEI score = 24) would be equivalent to working in such occupations as: handpackers and other manufacturing laborers; semiskilled workers; bleaching, dyeing and cleaning-machine operators (Ganzeboom and Treiman 1996).

Annual income: respondents reported their annual individual income. This includes income from all employment including training, primary and secondary jobs, and self-employment, plus income from bonuses, overtime, and profit-sharing. In all waves, the income variable is reported in Euros. In the analysis, the natural logarithm of annual income is used to account for the positive skewness of the annual income variable, the heteroscedasticity of income and to facilitate the interpretation of the coefficients. This is a standard procedure in the analysis of income and earnings.

We include measures of general social contact as well as measures of bridging and bonding social contact. As a measure of general social contact, we use two variables. *Frequency of contacts:* respondents were asked how frequently they spent time with their friends, relatives and neighbors. The possible answers were: never, occasionally, and often/regularly. Because categorical specification did not improve the model fit significantly, we treated frequency of social contacts as a continuous variable.

Volunteering activity: respondents were asked whether they volunteered for any clubs, associations or social services during the last year. The possible answers were: weekly,

² People who were employed for a very short time were excluded from the analyses. These include people who reported an annual income lower than 6,000 Euros (2.4 percent of observations) and those who worked fewer than 16 hours per week (4.2 percent of observations).

monthly, less frequently, and never. Only a few people volunteered at all during the last year; therefore, we recoded this variable into a dichotomous variable with score 1 for those respondents who volunteered at least once during the last year.

As a measure of bridging social contacts, we include *contacts with Germans*. Respondents were asked whether they had made close German friends since they lived in Germany, whether in the last 12 months they had visited Germans in their homes, and whether in the last 12 months they received German visitors in their homes. The possible answers to all these questions were yes (equal to 1) and no (equal to 0). Answers to these questions are highly correlated, and we therefore combined them by adding up the scores on the three items and dividing them by three (Cronbach's alpha 0.80).

As a measure of bonding versus bridging social contacts, we use two variables. *Partner*: respondents were asked whether they were married or cohabitating, and about the partner's country of origin. We constructed a variable with three categories: (1. single, (2. ethnic partner, (3. German partner.

Ethnic concentration in the region of residence: measured by the percentage of co-ethnics in 1996 residing in nine federal states (Bundesländer, i.e., Schleswig-Holstein, Lower Saxony, Bremen, North Rhine-Westphalia, Hesse, Rhineland-Palatinate, Baden-Württemberg, Saarland and Bavaria) and two German cities (Berlin and Hamburg) in West Germany where the respondents live (Microcensus Scientific Use File 2009).³ We assume that co-ethnic regional concentration increases the opportunities to meet and interact with co-ethnics, and at the same, it reduces the chances to make contacts with natives. The opportunities for contacts with co-ethnics and Germans could be measured more accurately at the labor market level than at the level of a federal state. Unfortunately, there is no information about respondents' labor market or neighborhood in the public use file of the GSOEP survey.

Additional measures of bonding and bridging contacts, including their number, diversity and resources, would have been preferable. At the same time, however, there are few studies that have longitudinal information about immigrant social contacts, and in particular about social contacts with natives.

We include several measures of human capital. Host-country human capital is measured by two indicators. *Education in Germany*: respondents were asked about the highest degree taken in secondary school as well as for completed vocational and post-secondary training. Respondents were also asked whether they received their education in Germany. Based on the

³ The co-ethnic concentration measure was computed for each of the immigrant groups under study: Turkish, Greek, Yugoslavian, Italian, Spanish, Eastern European and Third country immigrants.

highest level of obtained education in Germany, we constructed a variable measuring years of education in Germany (cf. Pischke 1992, for details see Appendix).

German language skills: respondents were asked how well they speak the German language. The possible answers were: do not speak German at all; speak German poorly; speak German fairly, speak German well; speak German very well. We treat German language skills as a continuous variable.

Human capital from the country of origin is measured directly by one indicator. *Education abroad:* the information on schooling in the country of origin was rather limited. The possible answers in the questionnaire were: less than compulsory, more than compulsory, and higher schooling. Information about training in the country of origin is more detailed: none, some instruction on-the-job, formal apprenticeship, vocational school, university and other. Based on the highest level of acquired education in the country of origin, we constructed a variable measuring years of education abroad (cf. Pischke 1992, see also Appendix). To understand how education abroad and education in Germany are measured, consider an example. An immigrant who had completed 10 years of education in Turkey (i.e., obtained vocational diploma), and then attended for up to 3 years vocational school in Germany is assigned to have completed 10 years of education in Turkey and 12 years of education in Germany.

We also provided measures for general human capital. *Work experience:* the survey provided a direct measure of work experience years from abroad and Germany. To control for the nonlinear relationship between work experience years and employment, we also included the quadratic form of work experience.

Several control variables were included in our model. *Years since migration:* measured by the total number of years in Germany. *Weekly working hours:* measured by the average number of weekly working hours.

We controlled for the respondent's health based on previous research (i.e., Becker, 2007), suggesting the importance of health status for individual productivity and so for individual economic outcomes. *Doctor visits:* respondents were asked how many times they went to the doctor in the last three months. Because surveys in 1985, 1986, 1987 and 1993 had asked the question for every specialist separately, we computed the total number of doctor visits during the last 3 months. We treated the doctor visit variable as a dichotomous variable with score 1 for those who visited a doctor at least once in the last three months.

Immigrant group: we distinguished between seven origin groups: (1. Turkish; (2. Greek; (3. Yugoslavian; (4. Italian; (5. Spanish; (6. Eastern European; and (7. Third country immigrants. We also controlled for the *survey year*.

5.3.2 Method

We estimate the effect of social contacts on immigrants' occupational status and annual income. To take into account that the occupational status and income are only estimated for immigrants who work, we apply Heckman's (1979) sample selection model in Stata 11. Heckman's sample selection model produces regression weights and standard errors that are unbiased by the selection effects. Two identifying variables are used in the selection equation: the region of residence (nine Bundesländer and the cities of Berlin and Hamburg) and the presence of children in the household (i.e., no, one or two, more than two). Both region of living and the presence of children in the household are likely to influence immigrants' participation in the labor force, but they are less important for occupational status and income. Heckman's selection model produces the coefficient ρ , which indicates a correlation of the error terms of the selection equation (whether or not one works) and the outcome equation (occupational status and annual income). The ρ coefficient is highly significant in all models, suggesting that occupational status and annual income are indeed dependent on immigrants' choice to work. Therefore, we base our results on Heckman's sample selection model.

We also correct the standard errors of the parameters for the dependence of the repeated observations of the same individual and community. A community is defined as a combination of an immigrant group and a region of living, such as Turkish immigrants in Berlin. There are 60 communities in total in our sample. We use the cluster option in Stata 11 to estimate robust standard errors that adjust for intra-cluster (within individual and within community) correlations (Stata Library 2010).⁴

We further study the causal relationship between human capital, social contacts and the occupational status, and annual income of immigrants by including in the models lagged measures of host-country human capital and social contacts. The main insight from the literature is that immigrants with more social contacts have better economic outcomes. However, it can be argued that a positive correlation between social contacts and immigrants' economic outcomes could also reflect the influence of economic outcomes on the frequency and composition of immigrant social contacts. For instance, higher status jobs may increase the opportunities to meet and socialize with natives. To reduce the possibility of reverse causality between social contacts and occupational status (annual income), we lagged social

⁴ We do not estimate the fixed effects model because of a little within individual variation over time in the main independent variables in the data used here (Halaby 2004). For instance, only 200 respondents changed the status of their German schooling during the survey. The limited within individual variation over time is also problematic for excluding a possibility of a reverse causality between social contacts and immigrant economic outcomes.

contact variables to one year prior to the immigrant's current occupational status and annual income.⁵

A positive correlation between bridging social contacts and occupational status or income can be also spurious due to time-varying host-country human capital accumulation. Acquiring host-country human capital may facilitate immigrants' economic outcomes and social contacts with natives, not that contacts with Germans lead to higher economic outcomes. For example, immigrants who speak the German language and who boast German educational credentials are more likely to have higher occupational status and income and more German contacts than are immigrants without these qualifications. We lagged host-country human capital variables by two years and social contact variables by one year to determine whether a (positive) correlation between social contacts with Germans and immigrant economic outcomes is causal, or instead represents spurious effect attributable to prior accumulation of host-country human capital.⁶

Table 5.1 presents descriptive statistics for the independent and dependent variables.

5.4 Results

Table 5.2 and 5.3 present the results from Heckman's sample selection model predicting the effect of social contacts on immigrant occupational status (Table 5.2) and annual income (Table 5.3). Each table has three models. Model 1 includes only measures of social contacts and controls. Model 2 includes measures of social contacts, human capital and control variables, and Model 3 includes additional interaction effects between ethnic concentration in the area of residence and origin- and destination-country specific human capital. We mean-centered variables of German education, education abroad, German language skills and ethnic concentration to avoid multicollinearity, and to obtain a meaningful interpretation of the effects of ethnic concentration and human capital in this model.

5.4.1 *Social contacts*

We hypothesized that more social contacts would enable immigrants to obtain higher

⁵ We also run additional models with lagged social contacts variables for up to five years (cf. Model 1, Tables 2 and 3). The results (available upon request) show that it would not change our conclusions for occupational status and annual income if social contacts are lagged up to five years, except for the relationship between volunteering and annual income, which becomes positive and significant.

⁶ Although our theoretical arguments about the spurious effect of social capital are mainly concerned with social contacts with natives, we included all indicators of social contacts in the models. This is because of the lack of information about the composition of frequency of social contacts and volunteering variables, which may involve both co-ethnic and German contacts.

Table 5.1 Descriptive Statistics of Independent and Dependent Variables, GSOEP 1986-2004.

	Range	Mean	S.D.
Dependent variables			
Occupational status (ISEI)	16-88	32.92	9.60
Annual Income (ln)	8.70-12.53	10.06	0.35
Independent variables			
<i>Social capital</i>			
Frequency of contacts t-1	1-3	2.86	0.41
Volunteering activity t-1	0/1	0.15	
Contacts with Germans t-1	0-1	0.84	0.30
Ethnic concentration t-1	0.06-7.55	2.24	1.71
Partner	0/1	0.76	
Ethnic t-1			
German t-1	0/1	0.09	
Single t-1	0/1	0.15	
<i>Human capital</i>			
Education abroad (years)	0-17	8.11	3.61
Education in Germany (years) t-2	0-18	3.23	5.05
German language skills t-2	1-4	2.63	0.88
Years of work experience t-2	0-47	18.53	10.55
Control variables			
Years since migration	2-42	20.52	7.35
Weekly working hours	16-70	41.86	7.20
Doctor visits	0/1	0.55	
Immigrant group			
Turkish	0/1	0.35	
Greek	0/1	0.11	
Yugoslavian	0/1	0.12	
Italian	0/1	0.18	
Spanish	0/1	0.08	
Eastern European	0/1	0.06	
Third country	0/1	0.10	

Note: Descriptive statistics for survey year not presented.

Number of observations: 9,758.

Number of individuals: 1,393

occupational status and annual income (H1). We test this hypothesis by examining the effects of the frequency of social contacts, volunteering activity and having a co-ethnic or German partner, all measured prior to occupational status and income. The results partially confirm this hypothesis (Model 1, Table 5.2 and 5.3). Specifically, our results clearly show that volunteering in the previous year increases immigrants' occupational status by 1.39 status points (Table 5.2, Model 1). This is a small effect: an increase in 1.39 point does not lead to any substantial change in immigrant occupational status (the range of the ISEI scale in our sample is 16-88, with a standard deviation $SD = 9.6$). We also find that having a German partner as compared to being single leads to a substantial increase in the occupational status of immigrants (the coefficient for German partner as opposed to being single is: $b = 3.71$, $p = .00$). Contrary to our expectation, however, we do not find that immigrants who have a co-

Table 5.2 Heckman Selection Model of Immigrants' Occupational Status, GSOEP 1986-2004.

	Model 1		Model 2		Model 3*	
	B	S.E.	B	S.E.	B	S.E.
Independent variables						
<i>Social capital</i>						
Frequency of contacts t-1	0.389	0.398	0.030	0.337	-0.078	0.364
Volunteering activity t-1	1.392**	0.364	0.618	0.332	0.689*	0.324
Contacts with Germans t-1	2.932**	0.555	1.127*	0.470	1.197*	0.514
Partner (ref. Ethnic)						
German t-1	4.281*	1.424	2.636*	1.295	2.435*	1.162
Single t-1	0.573	0.550	-0.883	0.467	-1.013*	0.431
Ethnic concentration (%) t-1	0.108	0.188	0.104	0.143	0.082	0.181
<i>Human capital</i>						
Education abroad (years)			0.721**	0.090	0.684**	0.089
Education in Germany (years) t-2			0.477**	0.106	0.451**	0.070
German language skills t-2			1.460**	0.230	1.552**	0.205
Work experience t-2			-0.222*	0.068	-0.237**	0.066
Work experience squared t-2			0.003*	0.001	0.004*	0.001
Control variables						
Years since migration	0.102*	0.045	0.189**	0.047	0.176**	0.047
Weekly working hours	0.187**	0.036	0.159**	0.023	0.161**	0.029
Doctor visits (ref. No visits)	-0.694*	0.277	-0.531*	0.247	-0.558*	0.233
Immigrant group (ref. Turkish)						
Greek	3.941**	0.869	3.872**	0.775	3.506**	0.645
Yugoslavian	0.298	0.690	0.450	0.695	0.175	0.536
Italian	-0.346	0.728	0.499	0.642	0.272	0.597
Spanish	0.873	1.123	1.575	0.917	1.292	0.791
Eastern European	5.008*	1.568	3.892*	1.283	3.406*	1.351
Third country	0.839	0.893	0.616	0.667	0.318	0.640
Interactions						
Ethnic concentration (%) t-1*Educ abroad					-0.070	0.045
Ethnic concentration (%) t-1*Educ in Germany t-2					-0.172**	0.035
Ethnic concentration (%) t-1*German language skills t-2					0.304*	0.116
Constant	18.19**	2.407	12.47	.	24.62**	1.892
Number of observations	9758		9758		9758	
Number of clusters	60		60		60	
Number of individuals	1393		1393		1393	

Unstandardized coefficients; **p<.001; *p≤.05 (two-sided test).

The model includes also a set of dummy variables for survey year.

*The variables of Education abroad, Education in Germany, German language skills, and Ethnic concentration are mean-centered.

ethnic partner have higher occupational status than those who are single. Similarly, we do not find a significant positive effect on immigrant occupational status for frequent contacts with friends, relatives and neighbors.

Our results show that for each unit of increase in frequent contacts with friends, relatives and neighbors in the previous year immigrant annual income rises by 5 percent (Table 5.3, Model 1). Moreover, having either a co-ethnic or a German partner as opposed to being single

Table 5.3 Heckman Selection Model of Immigrants' Annual Income, GSOEP 1986-2004.

	Model 1		Model 2		Model 3*	
	B	S.E.	B	S.E.	B	S.E.
Independent variables						
<i>Social capital</i>						
Frequency of contacts t-1	0.050**	0.012	0.047**	0.011	0.045**	0.011
Volunteering activity t-1	0.019	0.012	0.010	0.012	0.011	0.012
Contacts with Germans t-1	0.032	0.018	0.002	0.017	0.003	0.016
Partner (ref. Ethnic)						
German t-1	0.055	0.028	0.043	0.024	0.041	0.025
Single t-1	-0.078**	0.020	-0.063**	0.017	-0.065**	0.017
Ethnic concentration (%) t-1	-0.001	0.011	0.000	0.010	-0.000	0.010
<i>Human capital</i>						
Education abroad (years)			0.013**	0.003	0.012**	0.003
Education in Germany (years) t-2			0.012**	0.002	0.011**	0.002
German language skills t-2			0.031**	0.009	0.032**	0.009
Work experience t-2			0.014**	0.003	0.014**	0.003
Work experience squared t-2			-0.000**	0.000	-0.000**	0.000
Control variables						
Years since migration	0.009**	0.001	0.006**	0.002	0.006**	0.002
Weekly working hours	0.005**	0.001	0.004**	0.001	0.004**	0.001
Doctor visits (ref. No visits)	0.008	0.009	0.008	0.009	0.007	0.008
Immigrant group (ref. Turkish)						
Greek	0.011	0.054	0.008	0.053	0.004	0.053
Yugoslavian	0.035	0.031	0.018	0.031	0.015	0.031
Italian	-0.040	0.044	-0.032	0.044	-0.035	0.043
Spanish	0.006	0.051	0.003	0.051	0.000	0.051
Eastern European	0.091	0.050	0.025	0.047	0.018	0.048
Third country	0.032	0.040	0.011	0.039	0.007	0.039
Interactions						
Ethnic concentration (%) t-1*Educ abroad					-0.001	0.001
Ethnic concentration (%) t-1*Educ in Germany t-2					-0.002*	0.001
Ethnic concentration (%) t-1*German language skills t-2					0.003	0.005
Constant	9.283**	0.081	9.039**	0.086	9.266**	0.070
Number of observations	9758		9758		9758	
Number of clusters	60		60		60	
Number of individuals	1393		1393		1393	

Unstandardized coefficients; ** $p < .001$; * $p \leq .05$ (two-sided test).

The model includes also a set of dummy variables for survey year.

* The variables of Education abroad, Education in Germany, German language skills, and Ethnic concentration are mean-centered.

in the previous year leads to increase in immigrants' annual income (the coefficient for German partner as opposed to being single is: $b = .13$, $p = .00$). We do not find that volunteering activity in the previous year leads to any increase in annual income, however.

We also hypothesized that immigrants who have more contacts with Germans achieve higher occupational status and income (H2). In general, our results support this hypothesis. We find that immigrants with a German partner have a considerably higher occupational status—4.28 status points higher and 5.5 percent greater annual income—than do immigrants

with a co-ethnic partner (Table 5.2 and 5.3, Model 1). Likewise, we find evidence that having contacts with Germans in the previous year increases occupational status by 2.93 status points and raises annual income by 3.2 percent (at $p < .09$) (Table 5.2 and 5.3, Model 1). Finally, our results show no significant relationship between a high co-ethnic residential concentration and immigrant occupational status and annual income.⁷

5.4.2 *Social contacts and origin- and host-country human capital*

So far, we have argued that a positive association between social contacts and immigrant occupational status and annual income could be spurious due to (previous) host-country human capital accumulation. To verify this assertion, we compare Model 1, which only includes social contacts variables and control variables, with Model 2, which includes previous measures of host-country human capital. The model comparison shows that although the positive effect of contacts with Germans decreases by more than half ($b = 2.93$, Table 5.2, Model 1; $b = 1.13$, Table 5.2, Model 2), it still has a direct effect on immigrant occupational status. Similarly, the strong positive relationship between having a German partner versus a co-ethnic partner remains valid after controlling for host-country human capital ($b = 4.28$, Table 5.2, Model 1; $b = 2.64$, Table 5.2, Model 2).

Our results suggest that the positive effect of bridging social capital on annual income is spurious, owing in large part to earlier investments in host-country human capital (Table 5.3, Model 2). Specifically, the positive relationship between having a German as opposed to co-ethnic partner becomes marginally significant ($p < .09$) after accounting for previous investments in host-country human capital (Table 5.3, Model 2). Similarly, the positive effect of having contacts with Germans becomes insignificant in the model with host-country human capital variables. Overall, we only find evidence for the direct positive effect of contacts with natives on immigrant occupational status. With respect to income, our results suggest that the effect of contacts with natives is spurious, stemming instead from host-country human capital accumulation.

We have further hypothesized that a higher co-ethnic concentration in the region of residence produces higher economic returns to origin-country human capital (H3). As a start, our results show that education abroad leads to increase in the occupational status and annual income (Tables 5.2 and 5.3, Model 2). We also find that immigrants who obtained their education in Germany have higher occupational status and annual income as compared to

⁷ We also tested whether the effect of co-ethnic concentration in the region of residence on the occupational status and annual income was nonlinear by including three dichotomous variables for co-ethnic concentration. Nevertheless, this is not the case.

those who did not acquire German education.⁸ Furthermore, German language proficiency has a positive effect on occupational status and annual income. Our results also show that work experience has a negative effect on occupational status but exerts a positive effect on annual income of immigrants. Although it is quite surprising that immigrants with more work experience have lower occupational status, the effect is relatively inconsequential. That is, the difference between having minimum (0) and maximum (47) years of work experience is approximately 3.5 status points. Because we also control for years since immigration in this model, the main effect of work experience on occupational status (or income) measures the effect of origin-country work experience. In their study on immigrants in the United States, Chiswick and Miller (2009) found that work experience acquired in the country of origin negatively impacted occupational status but positively affected immigrants' earnings.

Contrary to our hypothesis, we do not find any evidence for a positive interaction between co-ethnic regional concentration and origin-country schooling (Tables 5.2 and 5.3, Model 3). That is, the positive effect of education abroad on occupational status and annual income does not differ substantially between regions with high co-ethnic concentration and regions with low co-ethnic concentration.

We also hypothesized that a higher co-ethnic concentration in the region of residence would yield lower economic returns to German human capital (H4). With regards to this hypothesis, our results are mixed. In line with the hypothesis, our results show that the positive effect of German education on occupational status and annual income indeed decreases with an increasing percentage of co-ethnics. However, the significance of the effect is relatively small. For example, a one-unit standard-deviation increase in co-ethnic concentration decreases the positive effect of German education by only .29 status points (from .45 to .16). Regarding income, the difference in the impact of German education is even smaller: an increase of one standard deviation point in co-ethnic concentration decreases the positive effect of German education from 1.1 to 0.8 percent.

Contrary to our hypothesis, however, our results also show that the positive effect of German language skills is slightly greater in regions with many co-ethnics as compared to the regions with fewer co-ethnics (Table 5.2, Model 3). Because speaking German and having German education tended to be positively correlated, we performed the analysis in Model 3 again, this time separating the two interaction terms. The results, available upon request, show that although the negative relationship between co-ethnic concentration and German

⁸ Contrary to what one would expect, the economic returns to origin-country schooling are slightly larger (occupational status) or the same (annual income) than the returns to host-country schooling. A possible explanation for this finding is that a very small proportion of immigrants (15.8 percent) invested in higher (secondary or tertiary) education in Germany, which might have had a substantial economic payoff.

education does not change, the positive interaction between co-ethnic concentration and German language skills is no longer significant.⁹

Although we had not hypothesized about the effect of the control variables, their role in the results demands that we discuss them briefly. Our results show a positive relationship between weekly working hours and both occupational status and annual income. Doctor visits, an indicator of health status, are associated with lower occupational status, but they have no significant effect on annual income. Finally, our results show that even after accounting for the differences in immigrants' social contacts and origin- and destination-country human capital, Turkish immigrants have significantly lower occupational status than do Greek and Eastern European immigrants. Upon inquiring about the existence of significant cohort differences in occupational status and annual income of immigrants (by including three dichotomous variables for immigrant cohorts), we found none.

5.5 Conclusions and discussion

Using data from the German Socio-Economic Panel, we examined the impact of social contacts on occupational status and annual income of immigrants. Previous studies on the economic integration of immigrant workers have predominantly, or even exclusively, focused on contacts with co-ethnics. Little attention has been given to contacts with natives. Furthermore, previous studies relied on cross-sectional data, making it impossible to test for the causal direction of social contacts. The strength of our research design lies in the use of panel data on immigrant social contacts, in particular, contacts with natives, which enables us to examine the causal effect of social contacts. Specifically, we examine whether a positive correlation between social contacts and immigrants' economic outcomes could be explained by reverse causality and spuriousness due to the accumulation of host-country human capital. In addition, we provide further insights into a relationship between social contacts and the economic outcomes of immigrants by studying the interactions between co-ethnic regional concentration and human capital.

Our results show that the more social contacts immigrants have, the better their economic outcomes. There is evidence that immigrants who had a German partner and who volunteered during the previous year have higher occupational status than do those who were single and who did not participate in volunteering. Likewise, we find that having a partner and frequent contacts with family, friends and neighbors lead to an increase in subsequent income. The positive effects of social contacts on immigrant occupational status and annual income remain

⁹ We also tested whether the effect of co-ethnic concentration in the region of residence varied by immigrants' length of stay in Germany, but this is not the case.

significant even when we take into account the possibility of reverse causality and measure immigrant social contacts up to five years prior to the assessment of occupational status and income.

There is also evidence that bridging social contacts increase the occupational status of immigrants. Having a German partner as opposed to a co-ethnic partner and frequent contacts with Germans lead to an increase in occupational status, and this relationship remains valid even after we measure the variables up to five years before occupational status and take into account earlier investments in host-country human capital. This means that the economic benefits from bridging social capital, at least when concerning occupational status, cannot be attributed to reverse causality or post-migration human capital accumulation. Rather, immigrants may indeed benefit from contact with natives because of the information and influence they provide.

Our results also show that, at least in Germany, co-ethnic regional concentration has no significant effect on immigrant occupational status and annual income. It is possible that Germany simply lacks substantial ethnic concentrations, like the Cubans in Miami or the Chinese in San Francisco, that significantly influence immigrants' economic outcomes. For example, it could be that occupational status and income of immigrants are only affected by ethnic concentration if it exceeds certain thresholds values (Tolnay 2001). This could also explain why we do not find evidence for the positive interaction on labor market outcomes we expected to see between co-ethnic concentration in the region of living and origin-country schooling. Moreover, this might also explain the relatively small interaction effects we saw between co-ethnic concentration and host-country human capital.

Alternatively, insignificant effect of co-ethnic concentration could be explained by the opposing effects of selection of immigrants in the regions with high co-ethnic concentration (Bauer et al. 2005) and co-ethnic concentration on labor market outcomes (Catanzarite and Aguilera 2002). For example, in their study on Latino immigrants in the United States, Chavez et al. (2008) showed that ethnic concentration initially facilitates immigrants' wages by enabling them to communicate in their native language and providing assistance in the host-country labor market, in the long run, however, co-ethnic concentration seemed to reduce immigrants' opportunities for gainful employment.

Because there are only a few recent immigrants in our sample, we cannot substantiate any speculations concerning the extent to which the insignificant effects of co-ethnic concentration in the region of living and small interaction effects with origin-and host-country human capital are due to small ethnic concentrations in Germany, or to the opposing effects of immigrant selection and co-ethnic concentration (Catanzarite and Aguilera 2002; Huffman and Cohen 2004). These mechanisms could be examined more effectively through data on

more recent immigrants, who are still in the process of acquiring bridging social capital and host-country human capital.

Most of the previous research highlights the short-term benefits of co-ethnic family and friends in immigrant economic integration (Aguilera and Massey 2003; Portes and Sensenbrenner 1993). In this chapter, we also show that even immigrants who have already lived in the host-country for an extended period of time benefit from social contacts. Future research could analyze whether and how the effects of social contact change over time. Previous literature suggests that social contacts are most critical for immigrants upon arrival to the host-country, when they lack host-country language skills and credentials (Sanders et al. 2002). However, the importance of social contacts may also increase with the time spent in the host-country, when immigrants acquire better and more resourceful social contacts (Hagan 1998).

Migration studies could also benefit from more detailed measures of bonding and bridging social contacts. This would enable the examination of the exact mechanisms (i.e., number, diversity, resources) for the positive effect of social contacts. For example, although we assume that immigrants benefit from bridging contacts with Germans because of superior information and recommendations to prospective employers provided by such contacts, immigrants with greater contacts with Germans may also have more diverse networks. By incorporating a broader and more dynamic view of social contact into future research, we can better understand the impact of bonding and bridging social contacts on the economic integration of immigrants.

6 Conclusions and Discussion

6.1 Research questions and contributions

Numerous studies have examined the economic performance of immigrants (Borjas 1994; Chiswick and Miller 2002; Kogan 2006; Van Tubergen 2006). Empirical evidence overwhelmingly shows that immigrants who are longer in the host-country, have higher levels of education, more years of work experience, and learn the host-country language, significantly improve their economic opportunities (see, for example, Chiswick and Miller 1995, 2002). In addition, several studies have found that having co-ethnic social contacts in the host-country, be it family or friends, is an important determinant of the economic performance of immigrants (Aguilera and Massey 2003; Hagan 1998). However, most of the previous literature suffers from three serious limitations. First, most previous empirical studies have examined the effect of general human capital (i.e., education, work experience), and did not pay attention to whether this human capital was acquired in the country of origin or destination.

Second, most empirical literature has focused on immigrants' contacts within their own ethnic group (origin-country specific social capital), and thus, there is little empirical evidence for the role of contacts with natives (host-country specific social capital) in immigrant economic outcomes. In addition, previous studies that have examined the role of social capital in immigrants' economic performance have exclusively relied on cross-sectional data (e.g., Aguilera 2002, 2003, 2005; Aguilera and Massey 2003). Studies using such data are unable to examine processes of (reversed) causality or spuriousness as caused by unobserved characteristics of immigrants, and to test hypotheses rigorously. For instance, cross-sectional data do not allow us to assess whether having social contacts with natives results in better jobs, or if immigrants with better occupations establish contacts with natives.

Third, there has been little empirical research on the possible interplay between social and human capital in immigrant economic performance. For instance, living among many co-ethnics can facilitate skill transferability and reduce employers' uncertainty towards origin-country specific skills. Thus, immigrants living in regions with high co-ethnic concentration may receive larger economic benefits from human capital derived from their origin country than those who live in regions with few co-ethnics.

The aim of this study was to improve upon previous research in three ways. Firstly, I distinguished between human capital acquired in the country of origin and destination. Secondly, I examined the effect of contacts with natives on immigrant economic performance. Finally, I tested whether the positive effect of social contacts with natives on immigrant economic outcomes was spurious, and tested for the interaction between origin- and host-country human and co-ethnic social capital. The three research questions addressed were as follows:

1. *To what extent and why do origin-country specific human capital and host-country specific human capital affect the economic performance of immigrants?*
2. *To what extent and why do origin-country specific social capital and host-country specific social capital affect the economic performance of immigrants?*
3. *How do origin- and host-country specific human capital and origin- and host-country specific social capital interplay in the economic performance of immigrants?*

The hypotheses were derived from human capital and social capital theories. According to human capital theory, people with higher levels of education and work experience have more opportunities in the labor market. Because many immigrants come from less economically developed countries than the host country, it is expected that human capital acquired in the country of origin is often of lower quality, less transferable and employers are more uncertain about origin-country credentials and skills as compared to human capital acquired in the host country.

Regarding social capital theory, it is argued that immigrants with more social contacts and more resourceful social contacts, perform better in the host-country labor market. Given that natives are, on average, better educated, and are more likely to be employed (in better jobs) than immigrants, it is expected that immigrants benefit particularly from establishing social contacts with natives. I examined the effects of origin- and host-country specific human and social capital on four types of economic outcomes: employment status, self-employment, occupational status and income. The hypotheses were tested using large-scale, cross-sectional and panel data on immigrants in the Netherlands and Germany.

In this chapter, I provide answers to the three research questions studied. The main results are summarized, and whenever possible, compared across the two receiving contexts. Tables

6.1 and 6.2 present the overview of main findings. The chapter closes with the limitations of this study and directions for future research on immigrant economic performance.

6.2 Answers to the research questions

6.2.1 *Origin- and host-country human capital*

The main contributions to the literature in answering the first research question were threefold: (1) providing a sound empirical test of the importance of place of education and work experience in the economic performance of immigrants, (2) studying the differential returns to origin-country education and work experience among immigrant groups, and (3) using direct measures of origin- and host-country specific education.

Table 6.1 presents the results for the influence of origin- and host-country human capital on immigrants' economic performance. The main finding is that the place of education and work experience is important in explaining the economic performance of immigrants. Immigrants who received their education in the Netherlands are more likely to be employed and have higher occupational status as compared to immigrants who acquired the same level of education in their countries of origin. Regarding work experience, it appears that only work experience acquired in the Netherlands has a positive effect on immigrants' employment and occupational status. However, work experience acquired abroad does not significantly affect immigrant economic outcomes.

The economic benefits of origin-country schooling are also larger for immigrants from more similar cultural and economic backgrounds to Dutch natives (i.e., Surinamese and Dutch Antilleans) than culturally and economically dissimilar immigrants (i.e., Turkish and Moroccans). This may indicate that there are differences in quality of origin-country human capital, as well as problems with transferability and employer's uncertainty towards origin-country skills. The results also show that differential returns to origin- and host-country education are larger for occupational status than employment, implying that the imperfect portability of human capital is particularly problematic for getting a higher-status job than for getting a job at all.

However, the economic benefits from host-country schooling do not appear to be significantly larger than benefits from origin-country schooling in Germany. Specifically, a year of education obtained abroad has about the same effect on immigrants' employment, occupational status and income as compared to a year of education obtained in Germany. A possible explanation for this finding is that the measures of origin- and host-country education were more difficult to compare in Germany than in the Netherlands. Specifically, whereas in

Table 6.1 The main findings for the influence of origin- and host-country human capital on immigrants' economic performance

	The Netherlands				Germany		
	Hyp	Work	Occupational status	Self-employed	Work*	Occupational status	Income
Human capital							
Education abroad	+	+	+	-	0 (+)	+	+
Education in the host country	+	+	+	-	+(+)	+	+
Work experience	+				+(0)	-	+
Work experience abroad	+	0	0	-			
Work experience in the host country	+	+	+	+			
Host-country language skills	+	0	+	0	+(0)	+	+

Note: 'Hyp' = Hypothesis; '+' = a positive effect, '-' = a negative effect, '0' = the relationship is not significant at $p \leq .05$.; * between parentheses results for women. The results are based on the full model (human and social capital, interactions and control variables are included); the reference category for work is unemployment and inactive (in the Netherlands) and unemployment (in Germany), the reference category for self-employment is wage/salary employment.

the Netherlands origin- and host-country education were measured in the same way, in Germany the measures of education obtained in the host-country were more detailed than the measures of education abroad. Another explanation for this finding is that only a small proportion of immigrants received their education in Germany and among those with a German education, most acquired very little German schooling.

Finally, in both countries, immigrants who speak host-country language fluently are more likely to be employed and have higher occupational status and income as compared to those who are not fluent in the host-country language.

This study also provides some knowledge about the role of origin- and host-country human capital in immigrant self-employment in the Netherlands. When keeping the level of skills required to perform a job constant, immigrants with higher levels of education, derived from either the country of origin or destination, are less likely to be self-employed than employed for a wage or salary. Similarly, the likelihood of self-employment is smaller for immigrants with more years of work experience acquired in the country of origin, but it is larger for those with more years of host-country work experience.

The finding that higher educated immigrants are more likely to be wage/salary employed than self-employed suggests that, at least in the Netherlands, self-employment provides an alternative strategy for those who face limited employment opportunities at the host-country labor market because of insufficient, nontransferable qualifications or discrimination. The positive effect of host-country work experience on self-employment suggest that the chances of self-employment increase with the length of stay in the host-country and that financial capital accumulated during the time spent working in the host country may be important determinant of starting a business.

6.2.2 *Origin- and host-country social capital*

In answering the second research question I made two contributions: (1) I examined the role of contacts with natives in immigrant economic performance, and (2) I provided a more rigid test of a causal effect of social contacts on the economic outcomes.

The results for the influence of origin- and host-country social capital on immigrants' economic performance are presented in Table 6.2. The main finding is that having more social contacts of different types and sources has a positive influence on the economic performance of immigrants. In both countries, immigrants who have a partner, especially a native-born partner, are more likely to get a job, and have higher occupational status and income as compared to those who are single. Likewise, immigrants who are a member of an organization (the Netherlands) or volunteer (Germany) tend to have a higher occupational status than those who are not members or volunteers. Thus, there are additional benefits from joining an organization or volunteering, namely, immigrants extend their social networks of people that help them in getting better jobs (Ruiter and De Graaf 2009). However, organization membership or volunteering generally has no significant direct effect on other economic outcomes (i.e., employment status and income). Finally, there is some evidence that immigrants who have frequent interactions with family, friends and neighbors have better economic outcomes (annual income) than those without frequent contacts. These results suggest that different types of social connections provide immigrants with guidance and information about the host-country labor market that can efficiently link them with high-status and well-paid jobs.

Another important finding is that connections with natives facilitate the economic performance of immigrants. Immigrants who have contacts with German natives are more likely to be employed and have higher occupational status than those without German contacts. I also found a positive association between having contacts with Dutch natives and immigrants' employment and occupational status in the Netherlands, but after taking host-country specific human capital into account it disappeared. This finding suggests that the economic benefits of having Dutch contacts are either indirect or spurious. That is, immigrants benefit from having connections with Dutch natives indirectly because having such contacts facilitates learning the host-country language or acquiring a diploma in the host-country, which subsequently increases immigrants' chances for (better) employment. It could also be that the positive effect of having Dutch contacts on immigrant economic outcomes is spurious due to earlier accumulation of host-country human capital. For example, immigrants who speak the Dutch language and who acquired education in the Netherlands are likely to acquire both social contacts with Dutch natives and (better) jobs, and not that having social contacts with natives increases immigrants' economic outcomes.

Table 6.2 The main findings for the influence of origin- and host-country social capital on immigrants' economic performance

Human capital in the model	Hyp	The Netherlands						Germany					
		Work		Occupational status		Self-employed		Work*		Occupational status		Income	
		No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Social capital													
Partner	+	+	+	+	+	-	-	+(0)	+(0)	+	+	+	+
Contacts with natives	+	+	0	+	0	+	+	+(+)	+(+)	+	+	0	0
Ethnic composition network	+	+	+	+	0								
Frequency of contacts	+							0(0)	0(0)	0	0	+	+
Membership / Volunteering	+	+	0	+	+	0	0	0(0)	0(0)	+	+	0	0
Ethnic concentration	-	-	0	-	0	0	0			0	0	0	0

Note: 'Hyp' = Hypothesis; '+' = a positive effect, '-' = a negative effect, '0' = the relationship is not significant at $p \leq .05$. ; 'No' = human capital not included in the model; 'Yes' = human capital included in the model; * between parentheses results for women. The reference category for work is unemployment and inactive (in the Netherlands) and unemployment (in Germany), the reference category for self-employment is wage/salary employment.

The fact that, in this study, I also relied on longitudinal data makes the conclusions about the importance of social connections stronger than the conclusions drawn from cross-sectional research. In the longitudinal data, the observations on immigrant social capital and economic outcomes are repeated over time, making it possible to test the causal effect of social contacts. By measuring social contacts at least one year prior to economic outcomes, I attenuated the possibility of reverse causality, that is, economic outcomes affecting social contacts. I showed that an *earlier* increase in social contacts has a positive effect on immigrants' *current* employment, occupational status and income in Germany. Moreover, I examined whether changes in social capital lead to changes in employment status of the same individuals over time, thereby excluding biased estimates resulting from time-constant unobserved immigrant characteristics such as ambition or talent. I found evidence that the positive effect of social contacts on immigrant employment in Germany is causal and cannot be explained by a non-random acquisition of social contacts.

The results of this study also provide some insights into the role of origin- and host-country specific social capital in immigrant self-employment. Surprisingly, I did not find any evidence for a positive relationship between origin-country social capital and immigrant self-employment in comparison to wage/salary employment. Specifically, being a member of a co-ethnic organization or living in an ethnic neighborhood are both insignificantly related to immigrant self-employment. A possible explanation for this unexpected finding is that co-ethnic social capital does not affect immigrant self-employment. That is to say, it could be

that most of self-employed immigrants in the Netherlands run one-person companies that are active in a mainstream market, where reliance on co-ethnic help and assistance is not necessary (Rusinovic 2006). It could also be that origin-country social capital affect immigrant self-employment in a more specific way (i.e., relatives and friends who help in financing the start of self-employment or provide labor), which could not be considered in this study.

I also found that immigrants who have more frequent contact with natives are more likely to be self-employed than immigrants with less frequent contacts. Because this finding is based on cross-sectional data, I cannot conclude whether this positive association between frequent contacts with natives and immigrant self-employment is causal, reflects reverse causality, or is spurious due to unmeasured characteristics of self-employed immigrants. For example, because self-employment requires dealing with people (e.g., costumers, workers, suppliers), it could be that self-employed immigrants are more likely to frequently interact with Dutch natives, and not that frequent interactions with natives increase immigrant self-employment.

6.2.3 Interplay between origin- and host-country human and social capital

In answering the third research question, I improved on previous research in two ways: (1) by examining whether the effect of host-country specific human capital (social capital) on immigrant economic performance is mediated or spurious due to host-country specific social capital (human capital), and (2) by studying the interaction between origin-country specific social capital and origin- and host-country human capital.

To begin with human capital, the main finding is that host-country human capital has a direct positive effect on the economic performance of immigrants, which cannot be explained by host-country specific social capital. More specifically, speaking the host-country language and acquiring education and work experience in the host country facilitate the likelihood of immigrant employment, occupational status and income. The economic benefits associated with host-country skills are presumably due to their higher value and the transferability of such skills.

With respect to host-country social capital, I did find that some of the effect of having contacts with natives on immigrant economic performance was related to host-country human capital accumulation. For example, the positive effect of contacts with Germans on immigrant occupational status and income was largely reduced after controlling for earlier German language proficiency and German education in the model. This change was even larger regarding Dutch contacts. That is, the positive association between having Dutch contacts and immigrant employment and occupational status became statistically insignificant after host-country human capital was taken into account.

These results suggest that immigrants benefit from having a native partner or friends because such contacts can provide immigrants with guidance and information that facilitates the efficiency of the job search and links them with high-status and well-paid jobs. However, some of the positive effect of having contacts with natives can be attributed to earlier host-country human capital accumulation. That is, immigrants who speak the host-country language and acquired host-country diplomas and skills have more connections with natives and better economic outcomes. There is also another possibility, namely, that the positive effect of social contacts on immigrants' economic outcomes is mediated by host-country human capital. For instance, the reason why contacts with natives facilitate immigrants' employment or occupational status is that immigrants who establish connections with natives learn the host-country language faster or acquire host-country credentials and experiences that increase their opportunities in the host country labor market (Vervoort 2010).

While considering direct, mediated and spurious effects of origin- and host-country human and social capital, it is important to note that the measures of social capital are relatively weak when compared to the measures of human capital. Although several indicators of social contacts (i.e., frequency of contacts, ethnic composition, and organizational membership) are included in the models, these measures of social contacts remain very broad. This is an important limitation because it is difficult to discriminate between different mechanisms underlying the positive effect of social contacts on immigrants' economic outcomes, some of which could coincide with the host-country human capital effects (e.g., contacts with natives facilitating the host-country language acquisition).

I also argued that living in regions with high concentration of co-ethnics reduces immigrants' opportunities to meet and interact with natives, who can be critical in providing immigrants with information about available jobs, and thus, increase immigrant chances for having a high-status and well-paid job in the wage/salary sector. It appears that neighborhood ethnic concentration is negatively associated with immigrants' employment and occupational status in the Netherlands, but after controlling for host-country human capital this negative association disappears. This result suggests that the negative association between ethnic concentration and immigrants' economic performance in the Netherlands is mainly due to the selection of immigrants with poor Dutch and little education to neighborhoods with large ethnic concentration.

However, ethnic concentration has no significant effect on immigrants' self-employment in the Netherlands and immigrants' occupational status and income in Germany. One explanation for these findings could be that there are few regions with large concentrations of immigrants in both the Netherlands and Germany. Another explanation for this finding might be the imprecise measurement of ethnic concentration used in this study. Specifically, ethnic

concentration is either measured by the percentage of immigrants with non-Western backgrounds living in the neighborhood (the Netherlands), or by the percentage of co-ethnics living in a large geographical region (i.e., Bundesländer) (Germany). An improved measure, thus, would include information about the percentage of co-ethnics on the neighborhood level.

Another main finding is that living in regions with a high concentration of co-ethnics has no substantial effect on the economic returns to origin- and host-country human capital. Immigrants who live in regions with a large ethnic concentration do not benefit more from their education and work experience acquired in the country of origin than immigrants who live in regions with few co-ethnics. Likewise, ethnic concentration seems to have no substantial effect on the economic returns to speaking the host-country language and acquiring host-country diplomas.

6.3 Suggestions for future research

6.3.1 *The role of quality, transferability and employer's uncertainty*

By examining whether the returns to origin-country schooling and work experience vary between immigrant groups and regions of living, this study offered several first steps towards explaining the mechanisms for the lower returns to origin-country human capital as compared to host-country human capital. It would be interesting to extend this research to different immigrant groups from highly developed and less developed countries, as measured by GDP per capita, to different European countries. By focusing on many immigrant groups in different destination countries, one could examine the role of characteristics of the country of origin and destination, and thus, provide a better account of the mechanisms underlying the lower returns to origin-country human capital as compared to host-country human capital.

Several studies on immigrants in the United States have proposed measures that account for educational quality, i.e., origin-country school quality indexes or pupil-teacher ratios (Bratsberg and Terrell 2002; Hanushek and Kimko 2000). To assess the importance of transferability of foreign credentials and skills, one could study cross-national differences in recognizing and evaluating foreign certificates and experiences of immigrants coming from multiple origin countries to different destinations. The transferability mechanism could be also examined by looking at the differences in the transferability of skills of immigrants across occupations. Because certain occupations require host-country certification (e.g., doctors, nurses, teachers) and/or specific human capital (e.g., government employees, civil servants), transferability of origin-country skills would be lower in such occupations. The role of employer's uncertainty towards origin-country human capital could be examined by considering the ethnicity of the employer or number of co-ethnic workers in the workplace,

which would provide a more direct account of employer's familiarity with origin-country credentials and skills than the measure of regional ethnic concentration used in this and other studies (Chiswick and Miller 2002).

6.3.2 *The measures of social capital*

In this study I argued that when immigrants have more contacts, and when these contacts are willing to help, and have better resources (i.e., information, direct influence on recruitment process), immigrants have better economic outcomes. However, I could not discriminate between these different components, i.e., network size, willingness to help and resources, of social contacts. For instance, do contacts with Germans have a positive effect on immigrant economic outcomes because of superior information these contacts provide (as argued in this study), or because immigrants who established contacts with natives have access to larger social networks than immigrants without native contacts?

Likewise, I could not assess the role of willingness to help in the effect of social contacts on immigrants' economic performance. According to Granovetter (1983), people turn to close relatives and friends in need of help (i.e., in finding a job) because they are more easily accessible and willing to help, however limited the information they provide. In a more recent study, Smith (2005) showed that lack of willingness to share information or act as job referrals was one of the major obstacles keeping poor African Americans from reaping benefits from their social contacts. Future research should clarify the mechanisms for the (positive) effect of social contacts by relying on more detailed measures, including information on network size, willingness to help, and available resource. A better measure of a relationship between social contacts and immigrant economic outcomes would, for example, include asking respondents whether they acquired their job through formal methods (e.g., written application, employment agency) or through informal search strategies (e.g., having heard about a vacancy from a third person). For those respondents who acquired their job via informal methods further information about the type of contact (e.g., relatives, friends, acquaintances, etc.), ethnicity (i.e., co-ethnic versus native), intimacy (e.g., social closure to contact person), frequency of contact and finally the resources available to a contact (i.e., education, employment, occupational status) should be examined. These different questions will reveal the complexity of social capital in general, and features of social contacts that are relevant for immigrants' economic outcomes (Lin, Ensel and Vaughn 1981; Wegener 1991).

6.3.3 *Longitudinal data on recent immigrants*

A suggestion for future research is to focus on recent immigrants. Because most investments in host-country human capital and social contacts take place within a few years after

migration (e.g., Chiswick and Miller 1994; Martinovic et al. 2009), the implications from this research could be extended by focusing on more recent immigrants. One of the possible benefits from using such data would be to examine whether the economic benefits from social capital are stable or change over time. Several studies have argued that social contacts are a critical source of information and support for immigrants upon arrival to the host-country (e.g., Aguilera and Massey 2003). These social contacts may be already at work before immigrants decide to move to the host-country by informing potential migrants about employment opportunities and helping with the migration process (Hagan 1998; Kalter 2010). However, there is still little empirical evidence regarding whether and how the economic benefits of social contacts change over time. For instance, it could be that immigrants are more likely to benefit from their social contacts upon arrival to the host-country when host-country specific knowledge and skills are missing, but as the length of time in the host-country increases, social contacts become less important. Alternatively, one could argue that with greater time spent in the host-country immigrants acquire more resourceful social contacts (e.g., as they acquire better jobs), which could lead to an increase in the positive effect of social contacts. By extending the longitudinal data to more recent immigrants, future research could provide more insights into the dynamics of the relationship between social contacts and economic performance of immigrants.

6.3.4 Immigrant women

In this study, I mainly focused on the economic performance of immigrant men. This was mainly due to data limitations; the sample including the heads of the households only (the Netherlands) or predominantly guest worker immigrants (Germany), of whom majority are males. The exception is the study on the employment of immigrant women in Germany. There, I showed that immigrant women receive similar to men benefits from their social contacts. However, previous literature suggests that immigrant women are often excluded from resourceful networks, making the economic benefits of social capital smaller for immigrant women than men (e.g., Hagan 1998). Further research is needed to explore in more detail whether there are gender differences in the effects of social contacts, and if so why these differences arise.

6.4 The role of human and social capital

This study proves that both human and social capital matter in the economic performance of immigrants. With respect to human capital, especially host-country language skills, education and work experience acquired in the host-country are important determinants for immigrants'

economic outcomes. Immigrants benefit more from the host-country human capital because it is of higher quality and more transferable in the host-country labor market than human capital acquired in the origin country. Regarding social capital, immigrants profit from different kinds of social capital, in particular contacts with natives, as they provide immigrants with information and influence on the job search process. However, some of the benefits from social contacts with natives can be attributed to host-country human capital accumulation. This means that some of the positive effect of contacts with natives on immigrants' economic outcomes can be indirect, as they facilitate learning the host-country language or obtaining host-country skills. Alternatively, part of the positive effect of social contacts with natives can be explained by their positive correlation with host-country human capital.

Appendix

Years of education assigned to immigrants in Germany, GSOEP 1984-2004.

Education abroad (cf. Pischke 1992)

Type of Education	Years						
	Turkey	Yugoslavia	Greece	Italy	Spain	Eastern Europe	Third Country
No education	0	0	0	0	0	0	0
Less than compulsory	4	7	8	7	7	7	8
Compulsory school	5	8	9	8	8	8	9
More than compulsory	8	11	12	12	11	12	12
On-the-job instruction	8.5	8.5	9.5	8.5	8.5	8.5	9.5
Apprenticeship	9	9	10	9	9	9	10
Vocational school	10	10	11	10	10	10	11
University	15	15	16	17	15	17	16
Other training	10	10	11	10	10	10	11

Note: Years of education in Eastern Europe are based on the Polish education system (majority of Eastern Europeans), OECD 1999, years of education in Third country are based on Turkish education system.

Education in Germany (cf. Pischke 1992)

Type of Education	Years
No education	0
No degree (primary education)	7
Lower school degree	9
Intermediary school	10
Professional college degree	12
High school degree	13
Other degree	10
Apprenticeship	11
Vocational schools	12
Health care school	11.5
Technical school	12.5
Civil servants apprenticeship	11.5
Other training	12
Higher technical college	17
University degree	18

Samenvatting (summary in Dutch)

Onderzoeksvragen en bijdragen

De economische positie van immigranten is in talloze studies onderzocht (Borjas 1994; Chiswick en Miller 2002; Kogan 2006; Van Tubergen 2006). Uit het empirisch bewijsmateriaal blijkt overduidelijk dat immigranten die langer in een gastland verblijven, die een hoger opleidingsniveau en meer werkervaring hebben en die tevens de taal van het gastland leren, aanzienlijk betere economische perspectieven hebben (zie bijvoorbeeld Chiswick en Miller 1995, 2002). Daarnaast is in een aantal studies geconstateerd dat co-etnische contacten (familieleden of vrienden) een belangrijke bepalende factor zijn voor de economische positie van immigranten (Aguilera en Massey 2003; Hagan 1998). De onderzoeksliteratuur tot nu toe kent over het algemeen echter drie grote beperkingen. In de eerste plaats is in de meeste eerdere empirische onderzoeken het effect onderzocht van het algemeen menselijk kapitaal (d.w.z. opleiding en werkervaring) en is er geen aandacht besteed aan de vraag of dat menselijk kapitaal is opgebouwd in het land van herkomst of in het gastland.

In de tweede plaats ligt in de meeste empirische literatuur de nadruk op de contacten van immigranten met hun eigen etnische groep (waarnaar verwezen zal worden als het herkomstlandspecifieke sociaal kapitaal). Dat betekent dat er weinig empirische gegevens zijn over de rol die contacten met autochtonen (het gastlandspecifieke sociaal kapitaal) spelen bij de economische prestaties van immigranten. Daarnaast zijn de eerdere studies naar de rol van co-etnisch sociaal kapitaal van immigranten uitsluitend gebaseerd op cross-sectioneel onderzoek (bijvoorbeeld Aguilera 2002, 2003, 2005; Aguilera en Massey 2003). Bij studies die van dergelijke gegevens gebruik maken, is het niet mogelijk om processen te onderzoeken met betrekking tot een (omgekeerde) causaliteit of schijnverbanden, veroorzaakt door niet geobserveerde kenmerken van immigranten. Ook kunnen hypothesen aan de hand van dergelijke gegevens niet grondig worden getoetst. Op basis van cross-sectionele gegevens is het bijvoorbeeld niet mogelijk om vast te stellen of de sociale contacten met autochtonen tot

betere banen leiden dan wel, omgekeerd, of immigranten in hogere beroepen contacten leggen met autochtonen.

In de derde plaats is er weinig empirisch onderzoek gedaan naar de eventuele interactie tussen sociaal en menselijk kapitaal als medebepalende factor voor de economische positie van immigranten. Zo kan de dagelijkse omgang met veel mensen uit de eigen etnische groep de overdracht van vaardigheden bevorderen en tevens de twijfels bij werkgevers verminderen met betrekking tot de herkomstlandspecifieke vaardigheden. Dat betekent dat immigranten in regio's met een hoge concentratie inwoners uit de eigen etnische groep meer economisch voordeel kunnen halen uit het herkomstlandspecifieke menselijk kapitaal dan immigranten die in regio's wonen met slechts weinig mensen uit hun etnische groep.

Doel van dit onderzoek was om eerder onderzoek op dit gebied in drieërlei opzicht te verbeteren. In de eerste plaats wordt er onderscheid gemaakt tussen menselijk kapitaal dat in het land van herkomst en dat in het gastland is verworven. In de tweede plaats is het effect onderzocht van de contacten met autochtonen op de economische positie van immigranten. Tot slot is er getoetst of het positieve effect van sociale contacten met autochtonen op de economische positie een schijnverband is, waarbij tevens onderzocht is of er sprake is van een interactie tussen herkomstlandspecifiek en gastlandspecifiek menselijk en co-etnisch sociaal kapitaal. De studie is aan de hand van de navolgende drie onderzoeksvragen uitgevoerd:

1 In hoeverre hebben herkomstlandspecifiek menselijk kapitaal en gastlandspecifiek menselijk kapitaal gevolgen voor de economische positie van immigranten en wat zijn de redenen daarvan?

2 In hoeverre hebben herkomstlandspecifiek sociaal kapitaal en gastlandspecifiek sociaal kapitaal gevolgen voor de economische positie van immigranten en wat zijn de redenen daarvan?

3 Op welke wijze beïnvloeden herkomstland- en gastlandspecifiek menselijk kapitaal en herkomstland- en gastlandspecifiek sociaal kapitaal elkaar met betrekking tot de economische positie van immigranten?

Theoretische achtergrond

De hypothesen in het onderzoek zijn gebaseerd op theorieën over menselijk en sociaal kapitaal. Volgens de theorie over het menselijk kapitaal hebben mensen met hogere opleidingsniveaus en meer werkervaring betere kansen op de arbeidsmarkt. Aangezien veel immigranten afkomstig zijn uit minder economisch ontwikkelde landen dan het gastland, zal het menselijk kapitaal dat in het land van herkomst is verworven, vaak van lagere kwaliteit en minder snel overdraagbaar zijn. Dat betekent dat werkgevers meer twijfels zullen hebben over diploma's, kwalificaties en vaardigheden uit het land van herkomst ten opzichte van menselijk kapitaal dat in het gastland is verworven.

In de theorie over het sociaal kapitaal wordt ervan uitgegaan dat immigranten met meer sociale (netwerk) contacten beter presteren op de arbeidsmarkt in het gastland. Gezien het feit dat autochtonen gemiddeld hoger opgeleid zijn en de kans groter is dat zij een (betere) baan hebben dan immigranten, is de verwachting dat immigranten daadwerkelijk baat zullen hebben bij het aangaan en onderhouden van sociale contacten met autochtonen. In de onderhavige studie zijn de effecten van herkomstlandspecifiek en gastlandspecifiek menselijk en sociaal kapitaal onderzocht voor vier soorten economische indicatoren: de arbeidsmarktpositie, het zelfstandig ondernemerschap, het beroepsprestige en het inkomen. De hypothesen zijn getest aan de hand van grootschalige, cross-sectionele en paneldata over immigranten in Nederland en Duitsland.

Bevindingen

In hoofdstuk 2 wordt de rol beschreven van het herkomstlandspecifieke en gastlandspecifieke menselijk en sociaal kapitaal voor de arbeidsmarktpositie en het beroepsprestige van immigranten. Daarvoor is gebruik gemaakt van grootschalige onderzoeksgegevens over Turkse, Marokkaanse, Surinaamse en Antilliaanse immigranten in Nederland (SPVA 1998, 2002). De voornaamste bevinding is dat de plaats van de opleiding en de werkervaring belangrijke factoren zijn voor de verklaring van de economische positie van immigranten. Immigranten die hun opleiding in Nederland hebben gevolgd, hebben een grotere kans op werk en op een hoger beroepsprestige dan immigranten die dezelfde opleiding hebben

gevolgd in hun land van herkomst. Wat de werkervaring betreft, blijkt dat alleen de werkervaring die in Nederland is opgedaan een positief effect heeft op de arbeidsmarktpositie en het beroepsprestige van immigranten, terwijl buitenlandse werkervaring geen significant effect op de economische prestaties van immigranten heeft.

De economische voordelen van scholing en werkervaring in het land van herkomst zijn eveneens groter voor immigranten met een soortgelijke culturele en economische achtergrond als Nederlandse autoctonen (d.w.z. Surinaamse en Antilliaanse Nederlanders) dan voor immigranten die in economisch opzicht meer van de autoctonen verschillen (d.w.z. Turken en Marokkanen). Dit zou erop kunnen duiden dat er verschillen bestaan in de kwaliteit van het herkomstlandspecifieke menselijk kapitaal, dat er problemen zijn bij de overdraagbaarheid van dat kapitaal en dat werkgevers twijfels hebben over de vaardigheden die in het land van herkomst zijn verworven. Uit de resultaten blijkt daarnaast dat het differentiële effect van herkomstlandspecifieke en gastlandspecifieke opleidingen groter is voor het beroepsprestige dan voor de arbeidsmarktpositie, hetgeen erop duidt dat een niet volledige overdraagbaarheid van menselijk kapitaal met name problemen oplevert om een baan te vinden met een hogere prestige en niet zozeer om überhaupt werk te vinden.

Tot slot wordt geconstateerd dat het positieve effect van de opleidingen en werkervaring in het gastland meestal direct van aard is en niet verklaard kan worden door gastlandspecifiek sociaal kapitaal. Het grootste gedeelte van het positieve effect van sociale contacten met autoctonen blijkt te verdwijnen indien variabelen op het gebied van het gastlandspecifieke menselijk kapitaal in aanmerking worden genomen. Dit duidt erop dat het positieve effect van Nederlandse contacten terug te voeren is op het eerder opgebouwde gastlandspecifieke menselijk kapitaal. Dat wil zeggen dat immigranten die de taal van het gastland spreken en in het gastland diploma's hebben gehaald en vaardigheden hebben verworven, meer contacten hebben met autoctonen en economisch beter presteren. Er is echter ook nog een andere mogelijkheid, namelijk dat het positieve effect van de Nederlandse contacten op de economische prestaties van immigranten beïnvloed wordt door het gastlandspecifieke menselijk kapitaal. De reden dat contacten met Nederlanders bevorderlijk zijn voor de arbeidsmarktpositie of het beroepsprestige van immigranten kan bijvoorbeeld ook zijn dat immigranten die contacten onderhouden met autoctonen, de taal van het gastland sneller

leren of diploma's e.d. halen en werkervaring opdoen in het gastland die hun mogelijkheden op de arbeidsmarkt aldaar vergroten.

In hoofdstuk 3 staat de rol van het herkomstlandspecifieke en gastlandspecifieke menselijk en sociaal kapitaal centraal bij immigranten die een zelfstandig beroep uitoefenen. Hiervoor is gebruik gemaakt van de gegevens van de grootschalige enquête onder immigranten in Nederland (SPVA 1991, 1994, 1998, 2002). Uit de resultaten blijkt dat, wanneer gekeken wordt naar het niveau van de beroepsgerelateerde vaardigheden, immigranten met een hoger herkomstlandspecifiek of gastlandspecifiek opleidingsniveau eerder in dienstverband werken dan dat zij als zelfstandig ondernemer actief zijn. Ook neemt de waarschijnlijkheid van een zelfstandig ondernemerschap af wanneer de herkomstlandspecifieke werkervaring in aanmerking wordt genomen; dat geldt echter niet wanneer naar de gastlandspecifieke werkervaring wordt gekeken. Opvallend is dat er geen aanwijzingen gevonden zijn voor het veronderstelde positieve verband tussen co-etnisch sociaal kapitaal en het aantal zelfstandig werkende immigranten ten opzichte van immigranten met een dienstverband. Meer in het bijzonder is geconstateerd dat noch het lidmaatschap van een co-etnische organisatie noch het wonen in een etnische omgeving significant gerelateerd zijn aan het zelfstandig ondernemerschap onder immigranten. In tegenstelling tot de verwachtingen blijkt uit de resultaten echter dat de kans groter is dat immigranten met meer sociale contacten met Nederlandse autochtonen als zelfstandig ondernemer werkzaam zijn. Aangezien deze bevinding op cross-sectionele gegevens is gebaseerd, kan niet geconcludeerd worden dat dit positieve verband tussen frequente contacten met Nederlanders en het zelfstandig ondernemerschap onder immigranten oorzakelijk is of een weerspiegeling vormt van een omgekeerde causaliteit dan wel dat het slechts om een schijnverband gaat als gevolg van niet- gemeten eigenschappen van zelfstandige immigranten.

In hoofdstuk 4 ligt de belangrijkste nadruk op een nauwgezette toetsing van het causale verband tussen sociale contacten en de arbeidsmarktpositie van immigranten. In dit hoofdstuk is gebruik gemaakt van een uitgebreide longitudinale enquête die onder andere is gehouden onder gastarbeiders in Duitsland (GSOEP 1984-2004). In tegenstelling tot de verwachtingen met betrekking tot de veronderstelde positieve impact van sociale contacten, is geconstateerd dat contacten met familie, vrienden en burens en het als vrijwilliger actief zijn in het voorgaande jaar, voor mannelijke noch vrouwelijke immigranten enig significant effect op de

werkgelegenheid hebben. Daarnaast is echter geconstateerd dat contacten met Duitse autochtonen de kans op werk voor zowel mannen als vrouwen doet toenemen. Dat positieve effect van die Duitse contacten blijft ook behouden wanneer de sociale contacten verslappen, wanneer het gastlandspecifieke menselijk kapitaal in aanmerking wordt genomen en wanneer er rekening wordt gehouden met niet-gemeten, in de tijd constante kenmerken van immigranten. In tegenstelling tot eerdere studies die duiden op seksespecifieke effecten van sociale contacten, blijkt uit de resultaten van dit onderzoek dat indien vrouwelijke immigranten toegang hebben tot contactmogelijkheden met autochtonen, zij evenveel profijt van die contacten hebben als mannelijke immigranten.

In hoofdstuk 5 wordt op basis van de longitudinale GSOEP-data (GSOEP 1984-2004) voornamelijk onderzocht wat de gevolgen van de sociale contacten zijn voor het beroepsprestige en inkomen van immigranten. De belangrijkste bevinding is dat verschillende soorten sociale contacten en de aanwezigheid van meerdere contactbronnen een positief effect hebben op het beroepsprestige en inkomen van immigranten. Immigranten die in het voorgaande jaar vrijwilligerswerk hebben gedaan, hebben doorgaans een baan met een hoger beroepsprestige dan immigranten die geen vrijwilligerswerk hebben gedaan. Ook blijkt dat immigranten die in het voorgaande jaar vaak contact hebben gehad met familie, vrienden en burens, een hoger jaarinkomen hebben dan immigranten zonder dergelijke contacten. Een andere belangrijke bevinding is dat contacten met Duitsers weliswaar tot een hogere beroepsstatus leiden, maar niet tot een hoger jaarinkomen. De economische voordelen van sociale contacten blijven ook zichtbaar wanneer die sociale contacten verslappen of wanneer er rekening wordt gehouden met eerdere investeringen in Duits menselijk kapitaal. Tot slot blijkt dat wonen in een regio met een hoge concentratie inwoners uit de eigen etnische groep geen substantieel effect heeft op de economische voordelen uit herkomstlandspecifiek en gastlandspecifiek menselijk kapitaal. Immigranten die in regio's wonen met een hoge etnische concentratie, hebben geen groter profijt van de opleidingen die zij in het land van herkomst hebben gevolgd dan immigranten die in regio's wonen met een lage etnische concentratie. Die etnische concentratie blijkt ook geen substantieel effect te hebben op het economisch rendement als gevolg van de beheersing van de taal van het gastland of het behalen van diploma's in dat land.

Conclusie

Uit dit onderzoek blijkt dat zowel menselijk als sociaal kapitaal een rol spelen bij de economische positie van immigranten. Wat het menselijk kapitaal betreft, zijn vooral de beheersing van de taal van het gastland en de opleidingen en werkervaring in dat land belangrijke determinanten voor de economische prestaties van immigranten. Immigranten hebben meer profijt van gastlandspecifiek menselijk kapitaal vanwege de hogere kwaliteit ervan en doordat het beter aansluit op de arbeidsmarkt in het gastland dan van het menselijk kapitaal dat in het land van herkomst is opgebouwd. Met betrekking tot het sociaal kapitaal profiteren immigranten van verschillende soorten sociaal kapitaal, met name van contacten met autochtonen aangezien immigranten hierdoor de beschikking krijgen over informatie over en invloed op het proces dat een rol speelt bij het vinden van een baan. Een aantal voordelen van die sociale contacten kan echter ook toegeschreven worden aan het opgebouwde, gastlandspecifieke menselijk kapitaal. Dat betekent dat sommige positieve effecten van de contacten met autochtonen op de economische positie van immigranten van indirecte aard kunnen zijn, aangezien zij het leren van de taal van het gastland of het verwerven van gastlandspecifieke vaardigheden bevorderen. Aan de andere kant zou een deel van het positieve effect van de sociale contacten met autochtonen ook verklaard kunnen worden door de positieve correlatie met gastlandspecifiek menselijk kapitaal.

References

- Aguilera, M. B. 2002. 'The impact of social capital on labor force participation: evidence from the 2000 social capital benchmark survey.' *Social Science Quarterly* 83(3): 853-74.
- Aguilera, M. B. 2003. 'The impact of the worker: how social capital and human capital influence the job tenure of formerly undocumented Mexican immigrants.' *Sociological Inquiry* 73(1): 52-83.
- Aguilera, M. B. 2005. 'The impact of social capital on the earnings of Puerto Rican migrants.' *The Sociological Quarterly* 46(4): 569-92.
- Aguilera, M. B. and D. S. Massey. 2003. 'Social capital and the wages of Mexican migrants: new hypotheses and tests.' *Social Forces* 82(2): 671-701.
- Akresh I. R. 2007. 'U.S. Immigrants' Labor Market Adjustment: Additional Human Capital Investment and Earnings Growth.' *Demography* 44(4): 865-881.
- Alba, R. and V. Nee. 1999. 'Rethinking Assimilation Theory for a New Era of Immigration'. Pp. 137-60 in *The Handbook of International Migration*, edited by Ch. Hirshman, P. Kasinitz, and J. DeWind. New York: Sage.
- Alba, R. and V. Nee. 2003. *Remaking the American mainstream: Assimilation and Contemporary Immigration*. Cambridge (MA): Harvard University Press.
- Amuedo-Dorantes C. and K. Mundra. 2008. 'Social Networks and their Impact on the Earnings of Mexican Migrants.' *Demography* 44(4): 849-63.
- Antecol, H. 2000. 'An examination of cross-country differences in the gender gap in labor force participation rates.' *Labor Economics* 7(4): 409-26.
- Bates, T. 1997. *Race, self-employment, and upward mobility: An illusive American dream*. Baltimore: Johns Hopkins University Press.
- Bauer, T., G. Epstein, and I. Gang. 2005. 'Enclaves, language, and the location choice of migrants.' *Journal of Population Economics* 18(4): 649-662.
- Bean, F. M., M. Leach, and L. B. Lowell. 2004. 'Immigrant Job Quality and Mobility in the United States.' *Work and Occupations* 31(4): 499-518.
- Becker, G. S. 2007. 'Health as human capital: synthesis and extensions.' *Oxford Economic Papers* 59(3): 379-410.
- Behtoui, A. 2008. 'Informal Recruitment Methods and Disadvantages of Immigrants in the Swedish Labour Market.' *Journal of Ethnic and Migration Studies* 34(3): 411-30.

References

- Bell, B. D. 1997. 'The performance of immigrants in the United Kingdom: Evidence from the GHS.' *Economic Journal* 107(441): 333-44.
- Bernasco, W., P. de Graaf, and W. Ultee. 1998. 'Coupled careers, effects of spouse's resources on occupational attainment in the Netherlands.' *European Sociological Review* 14(1): 15-31.
- Bevelander, P. and J. Veenman. 2004. 'Variation in Perspective: The Employment Success of Ethnic Minority Males in the Netherlands 1988-2002.' *International Migration* 42(4): 36-64.
- Bonacich, E. 1973. 'A Theory of Middleman Minorities.' *American Sociological Review* 38: 583-94.
- Borjas, G. J. 1986. 'The self-employment experience of immigrants.' *Journal of Human Resources* 21(4): 485-506.
- Borjas, G. J. 1994. 'The Economics of Immigration.' *Journal of Economic Literature* 32(4): 1667-1717.
- Bourdieu, P. 1986. 'The Forms of Capital.' Pp. 241-58 in *Handbook of Theory and Research in the Sociology of Education*, edited by J. G. Richardson. New York: Greenwood Press.
- Boxman, A. W., P. M. de Graaf, and H. D. Flap. 1991. 'The impact of social and human capital on the income attainment of Dutch managers.' *Social Networks* 13(1): 51-73.
- Boyd, M. 1989. 'Family and Personal Networks in International Migration: Recent Developments and New Agendas.' *International Migration Review* 23(3): 638-70.
- Bratsberg, B. and J. F. Ragan. 2002. 'The impact of host country schooling on earnings. A study of male immigrants in the United States.' *The Journal of Human Resources* 37(2): 64-105.
- Bratsberg, B. and D. Terrell. 2002. 'School Quality and Returns to Education of U.S. Immigrants.' *Economic Inquiry* 40(2): 177-98.
- Burt, R. 1992. *Structural Holes: The Social Structure of Competition*. Cambridge (MA): Harvard University Press.
- Burt, R. S. 2000. 'Structural holes versus network closure as social capital.' Preprint of a chapter in *Social Capital: Theory and Research*, edited by N. Lin, K. Cook, and R. S. Burt. New York: Aldine de Gruyter (available via the homepage of R. S. Burt).
- Catanzarite, L. 2002. 'Dynamics of Segregation and Earnings in Brown-collar Occupations.' *Work and Occupations* 29(3): 300-45.
- Catanzarite, L. and M. B. Aguilera. 2002. 'Working with Co-Ethnics: Earnings Penalties for Latino Immigrants at Latino Jobsites.' *Social Problems* 49(1): 101-27.

- Chavez, S., T. Mouw, and J. Hagan. 2009. 'Occupational Enclaves and the Wage Growth of Hispanic Immigrants.' Paper presented at the annual meeting of the American Sociological Association, Boston, August 2008.
- Chiswick, B. R. 1978. 'The Effect of Americanization on the Earnings of Foreign-born Men.' *Journal of Political Economy* 86(5): 897-921.
- Chiswick, B. R. and P. W. Miller. 1994. 'The determinants of post-immigration investments in education.' *Economics of Education Review* 13(2): 163-77.
- Chiswick, B. R. and P. W. Miller. 1995. 'The Endogeneity between language and earnings: international analyses.' *Journal of Labor Economics* 13(2): 246-88.
- Chiswick, B. R. and P. W. Miller. 2002. 'Immigrant earnings: language skills, linguistic concentrations and the business cycle.' *Journal of Population Economics* 15(1): 31-57.
- Chiswick, B. R. and P. W. Miller. 2005. 'Do Enclaves Matter in Immigrant Adjustment.' *City & Community* 4(1): 5-35.
- Chiswick, B. R. and P. W. Miller. 2009. 'Earnings and Occupational Attainment Among Immigrants.' *Industrial Relations: A Journal of Economy and Society* 48(3): 454-65.
- Clark, K. and S. Drinkwater. 2000. 'Pushed out or pulled in? Self-employment among ethnic minorities in England and Wales.' *Labour Economics* 7(5): 603-28.
- Clark, K. and S. Drinkwater. 2002. 'Enclaves, neighbourhood effects and employment outcomes: Ethnic minorities in England and Wales.' *Journal of Population Economics* 15(1): 5-29.
- Clogg, C. C., E. Petkova, and A. Haritou. 1995. 'Statistical methods for comparing regression coefficients between models.' *American Journal of Sociology* 100(5): 1261-93.
- Coleman, J. 1988. 'Social Capital in the Creation of Human Capital.' *American Journal of Sociology* 94: S95-120.
- Coleman, J. 1990. *The Foundations of Social Theory*. Cambridge (MA): Harvard University Press.
- Commission of the European Communities. 2007. *Third Annual Report on Migration and Integration*. Brussels, Belgium.
- Constant, A. 1999. 'A Fixed Effects Model on Female Earnings Assimilation: Evidence from the First Ten Years of the GSOEP.' Presented at the annual meeting of the European Association of Labor Economists in Regensburg, Germany.
- Constant, A. and D. S. Massey. 2003. 'Self-selection, earnings, and out-migration: A longitudinal study of immigrants to Germany.' *Journal of Population Economics* 16(4): 631-53.
- Constant A. and D. S. Massey. 2005. 'Labor market segmentation and the earnings of German guestworkers.' *Population Research and Policy Review* 24(5): 489-512.

References

- Constant, A., Y. Shachmurove, and K. F. Zimmermann. 2003. *What makes an entrepreneur and does it pay? Native men, Turks, and other migrants in Germany*. IZA Discussion Paper no. 940.
- Constant, A. and K. F. Zimmermann. 2006. 'The making of entrepreneurs in Germany: Are native men and immigrants alike?' *Small Business Economics* 26(30): 279-300.
- Coverdill, J. E. 1998 'Personal contacts and post-hire job outcomes: theoretical and empirical notes on the significance of matching methods.' *Research in Social Stratification and Mobility* 16: 247-69.
- Dagevos, J. and M. Gesthuizen. 2005. *Niet-westerse allochtonen met een stabiele arbeidsmarktpositie: Aantallen en ontwikkelingen*. The Hague: Sociaal en Cultureel Planbureau.
- De Graaf, N. D. and H. D. Flap. 1988. 'With a little help from my friends: social resources as an explanation of occupational status and income in West Germany, the Netherlands, and the United States.' *Social Forces* 67(2): 452-72.
- De Koning, J. and M. Gijsberts. 2002. *Sociale Positie en Voorzieningengebruik Allochtonen 2002—SPVA'02* [computer file (P1684)]. Amsterdam: Steinmetz-archief.
- Donato, K. M., Ch. Wakabayashi, S. Hakimzadeh, and A. Arment. 2008. 'Shifts in the Employment Conditions of Mexican Migrant Men and Women.' *Work and Occupations* 35(4): 462-95.
- Drever, A. I. and O. Hoffmeister. 2008. 'Immigrants and social networks in a job-scarce environment: the case of Germany.' *International Migration Review* 42(2): 425-48.
- Duleep, H. O. and M. C. Regets. 1997. 'The Decline in Immigrant Entry Earnings: Less Transferable Skills or Lower Ability?' *Quarterly Review of Economics and Finance* 37(1): 189-208.
- Duleep, H. O. and M. C. Regets. 1999. 'Immigrants and Human-Capital Investment.' *American Economic Review* 89(2): 186-90.
- Dustmann C. and A. V. Soest. 2002. 'Language and the earnings of immigrants.' *Industrial and Labor Relations Review* 55(3): 473-92.
- Duvander, A. Z. E. 2001. 'Do country-specific skills lead to improved labor market positions?' *Work and Occupations* 28(2): 210-33.
- Emerson, M. O., R. T. Kimbro, and G. Yancey. 2002. 'Contact Theory Extended: The Effects of Prior Racial Contact on Current Social Ties.' *Social Science Quarterly* 83(3): 745-61.
- Empter, S. 2002. *Benchmarking Germany and the Netherlands*. Presentation at the Conference 'Benchmarking the Netherlands 2002 – Benchmarking for Growth.' The Hague.

- Espenshade, T. J. and H. Fu. 1997. 'An Analysis of English-Language Proficiency among U.S. Immigrants.' *American Sociological Review* 62: 288-305.
- Euwals, R., J. Dagevos, M. Gijsberts, and H. Roodenburg. 2007. *Immigration, Integration and the Labour Market: Turkish Immigrants in Germany and the Netherlands*. Bonn: IZA Discussion Paper no 2677.
- Evans, M. D. R. 1989. 'Immigrant entrepreneurship: Effects of ethnic market size and isolated labor pool.' *American Sociological Review* 54(6): 950-62.
- Fairlie, R. W. and B. D. Meyer. 1996. 'Ethnic and racial self-employment differences and possible explanations.' *Journal of Human Resources* 31(4): 757-93.
- Federal Statistics Office. 2007. *Population by sex and citizenship*. Accessed at: <http://www.destatis.de>
- Fernandez-Kelly, M. P. 1995. 'Social and cultural capital in the urban ghetto: implications for the economic sociology of immigration.' Pp. 213-47 in *The Economic Sociology of Immigration: Essays on Networks, Ethnicity and Entrepreneurship*, edited by A. Portes. New York: Russell Sage Foundation.
- Flap, H. D. 1999 'Creation and returns of social capital.' *La Revue Tocqueville* 20(1): 1-22.
- Flap, H. D. 2004. 'Creation and returns of social capital: A new research program.' Pp. 3-24 in *Creation and Returns of Social Capital*, edited by H. D. Flap and B. Völker. London: Routledge Advances in Sociology.
- Flap, H. D., A. Kumcu and B. Bulder. 2000. 'The social capital of ethnic entrepreneurs and their business success.' Pp. 142-161 in *Immigrant business: The economic, political and social environment*, edited by J. Rath. New York: St. Martins Press.
- Friedberg, R. M. 2000. 'You Can't Take It with You? Immigrant Assimilation and the Portability of Human Capital.' *Journal of Labor Economics* 18(2): 221-51.
- Ganzeboom, H. B. G. and D. J. Treiman. 1996. 'Internationally Comparable Measures of Occupational Status for the 1988 International Standard Classification of Occupations.' *Social Science Research* 25(3): 201-39.
- Ganzeboom, Harry B. G., P. M. de Graaf, and D. J. Treiman. 1992. 'A Standard International Socio-Economic Index of Occupational Status.' *Social Science Research* 21(1): 1-56.
- Gilbertson, G. A. 1995. 'Women's labor and enclave employment: The case of Dominican and Colombian Women in New York City.' *International Migration Review* 29(3): 657-70.
- Granovetter, M. 1973. 'The strength of weak ties.' *American Journal of Sociology* 78(6): 1360-80.
- Granovetter, M. 1983. 'The Strength of Weak Ties: A Network Theory Revisited.' *Sociological Theory* 1: 201-33.

- Groeneveld, S. and Y. Weijers-Martens. 2003. *Minderheden in Beeld: SPVA-2002*. Rotterdam: Instituut voor Sociologisch-Economisch Onderzoek.
- Hagan, J. M. 1998 'Social Networks, Gender and Immigrant Settlement: Resource and Constraint.' *American Sociological Review* 63(1): 55-67
- Hagendoorn, L., J. Veenman, and W. Vollebergh. 2003. *Integrating immigrants in the Netherlands: cultural versus socio-economic integration*. England: Ashgate Publishing Limited.
- Haisken-DeNew J. P. and J. R. Frick. 2005. *Desktop Companion to the German Socio-Economic Panel (DTC)*. Berlin: German Institute for Economic Research (DIW).
- Halaby, Ch. N. 2004 'Panel Models in Sociological Research: Theory into Practice.' *Annual Review of Sociology* 30: 507-44.
- Hall, M. and G. Farkas. 2008. 'Does Human Capital Raise Earnings for Immigrants in the Low-Skill Labor Market?' *Demography* 45(3): 619-39.
- Hanushek, E. A. and D. D. Kimko. 2000. 'Schooling, Labor-Force Quality, and the Growth of Nations.' *American Economic Review* 90(5): 1184-208.
- Heckman, J. 1979. 'Sample Selection Bias as a Specification Error.' *Econometrica* 47(1): 153-62.
- Huffman, M. L. and P. N. Cohen. 2004. 'Racial Wage Inequality: Job Segregation and Devaluation Across U.S. Labor Markets.' *American Journal of Sociology* 109(4): 902-36.
- Ioannides, Y. M. and L. D. Loury. 2004. 'Job information networks, neighborhood effects, and inequality.' *Journal of Economic Literature* 42(4): 1056-93.
- Iosifides, T., M. Lavrentiadou, E. Petracou, and A. Kontis. 2007. 'Forms of Social Capital and the Incorporation of Albanian Immigrants in Greece.' *Journal of Ethnic and Migration Studies* 33(8): 1343-61.
- Johnson, D. R. 1995. 'Alternative Methods for the Quantitative Analysis of Panel Data in Family Research: Pooled Time-Series Models.' *Journal of Marriage and the Family* 57(4): 1065-77.
- Kahanec, M. and M. Mendola. 2007. *Social Determinants of Labor Market Status of Ethnic Minorities in Britain*. Bonn: IZA Discussion Paper no 3146.
- Kahanec, M. and M. Mendola. 2009. 'Social Determinants of Labor Market Status of Ethnic Minorities in Britain.' *Research in Labor Economics* 29: 167-95.
- Kalmijn, M. and F. van Tubergen. 2006. 'Ethnic intermarriage in the Netherlands: confirmations and refutations of accepted insights.' *European Journal of Population* 22(4): 371-97.
- Kalter, F. 2006. 'Auf Suche nach einer Erklärung für die spezifischen Arbeitsmarktnachteile von Jugendlichen türkischer Herkunft.' *Zeitschrift für Soziologie* 35: 144-60.

- Kalter, F. 2010. 'Social capital and the Dynamics of Temporary Labour Migration from Poland to Germany.' *European Sociological Review*. Advance Access: <http://esr.oxfordjournals.org/cgi/reprint/jcq025?ijkey=uPiD3wUHa0K1yAz&keytype=ref>.
- Kalter, F. and N. Granato. 2002. 'Demographic change, educational expansion, and structural assimilation of immigrants: the case of Germany.' *European Sociological Review* 18(2): 199–216.
- Kanas, A. and F. van Tubergen. 2009. 'The Impact of Origin and Host Country Schooling on the Economic Performance of Immigrants.' *Social Forces* 88(2): 893–916.
- Kanas, A., F. van Tubergen, and T. van der Lippe. 2009. 'Immigrant Self-Employment: Testing Hypotheses About the Role of Origin- and Host-Country Human Capital and Bonding and Bridging Social Capital.' *Work and Occupations* 36(3): 181-208.
- Kanas, A., F. van Tubergen, and T. van der Lippe. 2011. 'The Role of Social Contacts in the Employment Status of Immigrants: A Panel Study of Immigrants in Germany.' *International Sociology* 26(1): 95–122.
- Kazemipur, A. 2006. 'The market value of friendship: social networks of immigrants.' *Canadian Ethnic Studies Journal* 38(2): 47-71.
- Kesler Ch. 2006. 'Social policy and immigrant joblessness in Britain, Germany and Sweden.' *Social Forces* 85(2): 743-70.
- Kloosterman, R., J. van der Leun, and J. Rath. 1999. 'Mixed embeddedness: (In)formal economic activities and immigrant businesses in the Netherlands.' *International Journal of Urban and Regional Research* 23(2): 252–66.
- Kmec J. A. 2007. 'Ties that bind? Race and networks in job turnover.' *Social Problems* 54(4): 483-503.
- Kogan I. 2004. 'Last Hired, First Fired? The Unemployment Dynamics of Male Immigrants in Germany.' *European Sociological Review* 20(5): 445-61.
- Kogan, I. 2006. 'Labor Markets and Economic Incorporation among Recent Immigrants in Europe.' *Social Forces* 85(2): 697-721.
- Kogan I. 2007. 'A study of immigrant's employment careers in West Germany using the sequence analysis technique.' *Social Science Research* 36(2): 491-511.
- Kogan, I. and F. Kalter. 2006. 'The Effects of Relative Group Size on Occupational Outcomes: Turks and Ex-Yugoslavs in Austria.' *European Sociological Review* 22(1): 35-48.
- Kroh, M. and M. Spieß. 2008. *Documentation of Sample Sizes and Panel Attrition in the German Socio Economic Panel (SOEP) (1984 until 2007)*. Berlin: German Institute for Economic Research (DIW).

References

- Laborsta Internet. 2010. *Wages by economic activity*. The International Labour Organization, from <http://laborsta.ilo.org/> (accessed 17 May 2010).
- Lancee, B. 2010. 'The economic returns of immigrants' bonding and bridging social capital. The case of the Netherlands.' *International Migration Review* 44(1): 202-26.
- Le, A. T. 2000. 'Empirical Studies of Self-Employment.' *Journal of Economic Surveys* 13(4): 381-416.
- Le, A. T. 2000. 'The determinants of immigrants self-employment in Australia.' *International Migration Review* 34(4): 183-214.
- Lee, L. F. 1983. 'Generalized Econometric Models with Selectivity.' *Econometrica* 51(2): 507-51.
- Lewin-Epstein, N. and M. Semyonov. 1992. 'Local Labor Markets, Ethnic Segregation, and Income Inequality.' *Social Forces* 70(4): 1101-19.
- Li, P. S. 2001. 'Immigrants' Propensity to Self-Employment: Evidence from Canada.' *International Migration Review* 35(4): 1106-28.
- Li, P. S. 2001. 'The Market Worth of Immigrants Educational Credentials.' *Canadian Public Policy* 27(1): 23-38.
- Liebig, T. 2007. *The Labour Market Integration of Immigrants in Germany*. OECD Social, Employment and Migration Working Papers no 47.
- Lin, N., W. M. Ensel, and J. C. Vaughn. 1981. 'Social Resources and Strength of Ties : Structural Factors in Occupational Status Attainment.' *American Sociological Review* 46(4): 393-405.
- Lin, N. 1999. 'Social networks and status attainment.' *Annual Review of Sociology* 25: 467-87.
- Lin, N. 2000. 'Inequality in Social capital.' *Contemporary Sociology* 29(6): 785-95.
- Martens, E. P. 1994. *Sociale Positie en Voorzieningengebruik van Allochtonen 1994—SPVA'94* [computer file (P1430)]. Amsterdam: Steinmetz-archief.
- Martens, E. P. 1999. *Minderheden in Beeld: SPVA-98*. Rotterdam: Instituut voor Sociologisch-Economisch Onderzoek.
- Martens, E. P., and P. Tesser. 1998. *Sociale Positie en Voorzieningengebruik van Allochtonen 1998—SPVA'98* [computer file (P1570)]. Amsterdam: Steinmetz-archief.
- Martens, E. P. and J. Veenman. 1991. *Sociale Positie en Voorzieningengebruik van Allochtonen 1991—SPVA'91* [computer file (P1429)]. Amsterdam: Steinmetz-archief.
- Martinovic, B., F. van Tubergen, and I. Maas. 2009. 'Dynamics of Interethnic Contact: A Panel Study of Immigrants in the Netherlands.' *European Sociological Review* 25(3): 303-18.

- Massey, D. S. 1986. 'The Settlement Process Among Mexican Migrants to the United States.' *American Sociological Review* 51(5): 670-85.
- McPherson, M., L. Smith-Lovin, and J. M. Cook. 2001. 'Birds of feather: Homophily in Social Networks.' *Annual Review of Sociology* 27: 415-44.
- Mesch, G. S. 2002. 'Between Spatial and Social Segregation among Immigrants: The Case of Immigrants from the FSU in Israel.' *International Migration Review* 36(3): 912-34.
- Microcensus Scientific Use File. 2009. Special analysis of the German Microdata Lab. Mannheim: GESIS.
- Min, P. G. 1993. 'Korean immigrants in Los Angeles.' Pp. 185-204 in *Immigration and entrepreneurship: Culture, capital and ethnic networks*, edited by I. Light and P. Bhachu. New Brunswick (NJ): Transaction Publishers.
- Min, P. G. and M. Bozorgmehr. 2000. 'Immigrant entrepreneurship and business patterns: A comparison of Koreans and Iranians in Los Angeles.' *International Migration Review* 34(3): 707-38.
- Mouw, T. 2002. 'Racial differences in the effects of job contacts: conflicting evidence from cross-sectional and longitudinal data.' *Social Science Research* 31(4): 511-38.
- Mouw, T. 2003. 'Social capital and finding a job: do contacts matter?' *American Sociological Review* 68(6): 868-98.
- Mouw, T. 2006. 'Estimating the Causal Effect of Social Capital: A Review of Recent Research.' *Annual Review of Sociology* 32: 79-102.
- Nannestad, P., G. L. H. Svendsen, and G. T. Svendsen. 2008. 'Bridge Over Troubled Water? Migration and Social Capital.' *Journal of Ethnic and Migration Studies* 34(4): 607-31.
- National Research Council. 2004. *Measuring Racial Discrimination*. Washington (DC): National Academic Press.
- Neckerman, K. and R. M. Fernandez. 2003. 'Keeping a job: network hiring and turnover in a retail bank.' *Research in the Sociology of Organizations* 20: 299-318.
- Nee, V., and J. M. Sanders. 2001. 'Understanding the diversity of immigrant incorporation: A forms-of-capital model.' *Ethnic and Racial Studies* 24(3): 386-411.
- Nee, V., J. M. Sanders, and S. Sernau. 1994. 'Job Transition in an Immigrant Metropolis: Ethnic Boundaries and the Mixed Economy.' *American Sociological Review* 59(6): 849-72.
- OECD. 1999. *Classifying Educational Programmes: Manual for ISCED-97 Implementation in OECD Countries*. Paris: Organisation for Economic Cooperation and Development.
- OECD. 2001. *The Employment of Foreigners: Outlook and Issues in OECD countries*. Paris: Organisation for Economic Co-operation and Development.

References

- OECD. 2006. *International Migration Outlook*. Paris: Organisation for Economic Co-operation and Development.
- OECD. 2008. *International Migration Outlook*. Paris: Organisation for Economic Co-operation and Development.
- Perreira, K. M., K. M. Harris, and D. Lee. 2007. 'Immigrant Youth in the Labor Market.' *Work and Occupations* 34(5): 5-34.
- Pischke J. S. 1992. *Assimilation and the earnings of guestworkers in Germany*. Mannheim: ZEW Discussion Paper no 92-17.
- Portes, A. 1998. 'Social Capital: Its Origins and Applications in Modern Sociology.' *Annual Review of Sociology* 24: 1-24.
- Portes, A. and L. Jensen. 1989. 'The enclave and the entrants: Patterns of ethnic enterprise in Miami before and after Mariel.' *American Sociological Review* 54(6): 929-49.
- Portes, A. and R. G. Rumbaut. 1996. *Immigrant America: A Portrait*. Berkeley (CA): University of California Press.
- Portes, A. and J. Sensenbrenner. 1993. 'Embeddedness and immigration: notes on the social determinants of economic action.' *American Journal of Sociology* 98(6): 1320-50.
- Puhani, P. A. 2000. 'The Heckman Correction for Sample Selection and Its Critique? A Short Survey.' *Journal of Economic Surveys* 14(1): 53-68.
- Putnam, R. D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Putnam, R. D. 2007. 'E Pluribus Unum: Diversity and Community in the Twenty-first Century. The 2006 Johan Skytte Prize Lecture.' *Scandinavian Political Studies* 30(2): 137-74.
- Quillian, L. 2006. 'New Approaches to Understanding Racial Prejudice and Discrimination.' *Annual Review of Sociology* 32: 299-328.
- Raijman, R. 2001. 'Determinants of entrepreneurial intentions: Mexican immigrants in Chicago.' *Journal of Socioeconomics* 30(5): 393-411.
- Raijman, R. and M. Semyonov. 1995. 'Modes of Labor Market Incorporation and Occupational Cost among New Immigrants to Israel.' *International Migration Review* 29(2): 375-94.
- Raijman, R., and M. Tienda. 2000. 'Immigrants' pathways to business ownership: A comparative ethnic perspective.' *International Migration Review* 34(3): 6820-706.
- Ram, M., P. Edwards, and T. Jones. 2007. 'Staying Underground: Informal Work, Small Firms, and Employment Regulation in the United Kingdom.' *Work and Occupations* 34(3): 318-44.

- Rodriguez, N. 2004. 'Workers Wanted': Employer Recruitment of Immigrant Labor.' *Work and Occupations* 31(4): 453-73.
- Ruiter, S. and N. D. de Graaf. 2009. 'Socio-economic Payoffs of Voluntary Association Involvement: A Dutch Life Course Study.' *European Sociological Review* 25(4): 425–442.
- Rusinovic, K. 2006. *Dynamic entrepreneurship. First and second-generation immigrant entrepreneurs in Dutch cities*. PhD dissertation, Amsterdam: Amsterdam University Press.
- Sanders, J. M. and V. Nee. 1987. 'Limits of Ethnic Solidarity in the Enclave Economy.' *American Sociological Review* 52: 745-73.
- Sanders, J. M. and V. Nee. 1996. 'Immigrant self-employment: the family as social capital and the value of human capital.' *American Sociological Review* 61(2): 231-49.
- Sanders, J. M., V. Nee, and S. Sernau. 2002. 'Asian immigrants' reliance on social ties in a multiethnic labor market.' *Social Forces* 81(1): 281-314.
- Shields, M. A. and S. Wheatley Price. 2002. 'The English language fluency and occupational success of ethnic minority immigrant men living in English metropolitan areas.' *Journal of Population Economics* 15(1): 137-60.
- Smith, S. S. 2005. 'Don't put my name on it': Social Capital Activation and Job-Finding Assistance among the Black Urban Poor.' *American Journal of Sociology* 111(1): 1-57.
- Stata Library. 2010. *Analyzing Correlated (Clustered) Data*. UCLA: Academic Technology Services, Statistical Consulting Group (accessed May 17, 2010).
- Statistics Netherlands. 1998a. *Population by Origin and Generation*. Available at: <http://www.cbs.nl>.
- Statistics Netherlands. 1998b. *Population by Origin, Generation and Municipality*. Available at: <http://www.cbs.nl>.
- Statistics Netherlands. 2001. *Standaard Beroepenclassificatie 1992*. Available at: <http://www.cbs.nl>.
- Statistics Netherlands. 2008. *Population by Origin*. Available at: <http://www.cbs.nl>.
- Statistics Netherlands. 2010. *Population by Origin*. Available at: <http://www.cbs.nl>.
- The Netherlands Institute for Social Research (SCP). 2005. *Summary of the Annual Report on Integration*. Research and Documentation Centre of the Dutch Ministry of Justice/Statistics Netherlands.
- Tienda, M. and D. T. Lii. 1987. 'Minority concentration and earnings inequality: Blacks, Hispanics, and Asians compared.' *American Journal of Sociology* 93(1): 141-65.
- Tolnay, S. E. 2001. 'African Americans and Immigrants in Northern Cities: The Effects of Relative Group Size on Occupational Standing in 1920.' *Social Forces* 80(2): 573-604.

- Uhlendorff A. and K. F. Zimmermann. 2006. *Unemployment Dynamics among Immigrants and Natives*. Bonn: IZA Discussion Paper no 2299.
- Van Ours, J. C. and J. Veenman. 2003. 'The educational attainment of second-generation immigrants in the Netherlands.' *Journal of Population Economics* 16(4): 739-53.
- Van Tubergen, F. 2006. *Immigrant integration: A cross-national study*. New York: LFB Scholarly Publishing.
- Van Tubergen, F. and M. Kalmijn. 2005. 'Destination-Language Proficiency in Cross-National Perspective: A Study of Immigrant Groups in Nine Western Countries.' *American Journal of Sociology* 110(5): 1412-57.
- Van Tubergen, F. and I. Maas. 2007. 'Ethnic intermarriage among immigrants in the Netherlands: an analysis of population data.' *Social Science Research* 36(3): 1065-86.
- Van Tubergen, F., I. Maas, and H. Flap. 2004. 'The Economic Incorporation of Immigrants in 18 Western Societies: Origin, Destination, and Community Effects.' *American Sociological Review* 69: 701-24.
- Van Tubergen, F. and H. van de Werfhorst. 2007. 'Post-Migration Investments in Education.' *Demography* 44(4): 883-98.
- Veenman, J. 1988. *Sociale Positie en Voorzieningengebruik van Allochtonen 1998—SPVA'98* [computer file (P1234)]. Amsterdam: Steinmetz-archief.
- Verbeek M. 2000. *A Guide to Modern Econometrics*. Chichester: Wiley.
- Verbrugge, L. M. 1977. 'The structure of adult friendship choices.' *Social Forces* 56(2): 576-97.
- Vervoort, M.H.M. 2010. 'Ethnic concentration in the neighbourhood and majority and minority language: A study of first and second generation immigrant.' Paper presented at European Network of Housing Researchers conference. Istanbul, Turkey, July, 4-7.
- Waldinger, R., H. Aldrich, and R. Ward. 2006. *Ethnic entrepreneurs: Immigrant business in industrial societies*. Newbury Park (CA): Sage Publications.
- Wegener, B. 1991. 'Job mobility and social ties: Social resources, prior job, and status attainment.' *American Sociological Review* 56(1): 60-71.
- Wiley, N. F. 1967. 'The Ethnic Mobility Trap and Stratification Theory.' *Social Problems* 15: 147-59.
- Yoon, I. J. 1991. 'The changing significance of ethnic and class resources in immigrant businesses: The case of Korean immigrant businesses in Chicago.' *International Migration Review* 25(2): 303-32.
- Zeng, Z. and Y. Xie. 2004. 'Asian-Americans. Earnings Disadvantage Reexamined: The Role of Place of Education.' *American Journal of Sociology* 109(5): 1075-108.

- Zhou, M. 1997. 'Segmented assimilation: Issues, controversies, and recent research on the new second generation.' *International Migration Review* 31(4): 975-1008.

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Agnieszka Kanas

Utrecht, February 2011

Curriculum Vitae

Agnieszka Kanas was born on February 3, 1980 in Trzcianka, Poland. In 2004 she obtained a Master's degree in Sociology at Adam Mickiewicz University in Poznan, Poland. During her studies in Poland, she was a visiting student at Erasmus University Rotterdam, the Netherlands and at Aarhus University, Denmark. In 2004 she enrolled in a Research Master program 'Sociology and Social Research' at Utrecht University, from which she graduated in 2006. In that same year she became a Ph.D. candidate at the Interuniversity Centre for Social Science Theory and Methodology (ICS), Department of Sociology, Utrecht University. In 2009 she was a visiting scholar at the Department of Economics, University of Illinois at Chicago, the United States. As of August 2011, Agnieszka will join Radboud University Nijmegen, where she will be a postdoctoral researcher at the Faculty of Social Sciences.

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