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The Experience of Immigrants and their Descendants in Sweden

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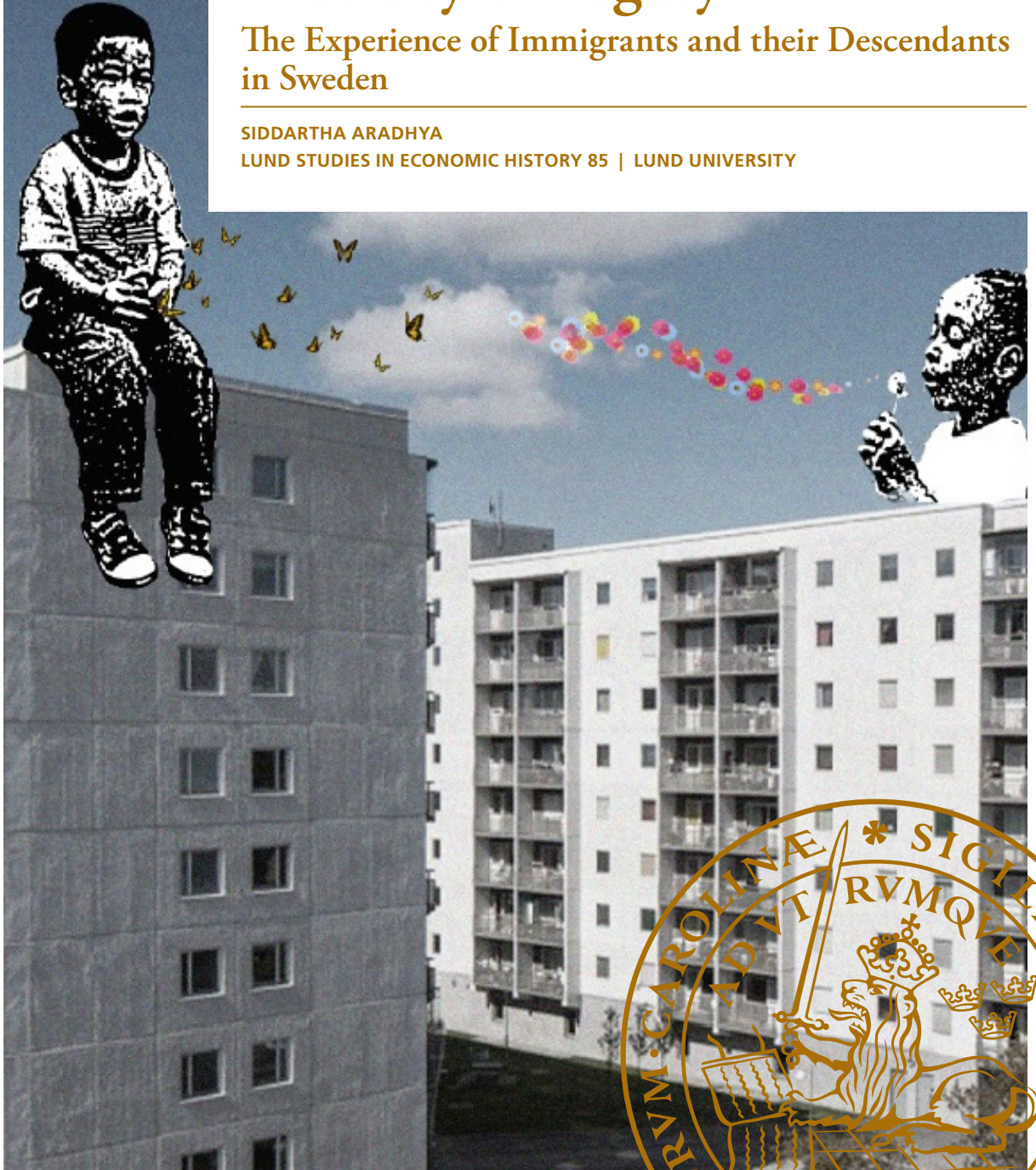
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Diversity of Legacy

The Experience of Immigrants and their Descendants
in Sweden

SIDDARTHA ARADHYA

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Diversity of Legacy

The Experience of Immigrants and their Descendants in
Sweden

Siddartha Aradhya



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DOCTORAL DISSERTATION

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Abstract		
<p>This dissertation examines the integration of immigrants from an intergenerational and multidimensional perspective. During the post-World War Two period, Sweden has been characterized by a large and increasing degree of heterogeneity in terms of immigrant background and reason for migration. This diversity has led to considerable challenges in terms of integration. While the economic challenges of immigrants are well documented, much less is known about other aspects of integration. In particular, little is known about the extent to which an individual's home country characteristics and experiences carry over into the long-term integration prospects of immigrants and their descendants. This thesis examines integration as an intergenerational process, and examines aspects such as residential choice, education, gender differences, and health. Specific focus is placed on understanding the varying extent to which country of origin differences persist.</p> <p>The thesis exploits longitudinal administrative data found in Swedish registers to link families across generations. Using this linkage, it is possible to move away from standard mono-generational studies of integration and identify mechanisms through which parental experiences and background manifest themselves in the outcomes of their descendants. This not only allows us to understand integration in the past, but it also allows us to make informed assumptions of how integration may evolve over time.</p> <p>General results of this thesis suggest that there is considerable heterogeneity in the extent to which immigrant background carries over into the integration process in the new country. In an examination of residential choice, it becomes clear that country of origin may not be an adequate unit of aggregation to understand residential clustering of migrants. For countries with high degrees of ethnic heterogeneity, nationality is not the salient characteristic. When examining educational outcomes, the migration histories of parents are important in determining the educational disadvantage of the children. Additionally, the gender norms in the home country also affect the degree to which daughters perform relative to their brothers - origin countries with high degrees of gender inequality seem to penalize girls' educational achievement. Finally, the thesis identifies a puzzling development where some migrant groups display increasing birthweight disparities relative to the native population, with differences growing even in the third generation.</p> <p>In sum, this thesis points to the broad diversity of legacy in terms of immigrant integration over generations. These results underline the fact that no single aspect of integration is adequate to assess the overall integration process. The identification of these processes highlights a potential development towards persistent socioeconomic stratification based on immigrant background.</p>		
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Diversity of Legacy

The Experience of Immigrants and their Descendants in
Sweden

Siddartha Aradhya



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To my Mom and Dad

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Lund, 2018

Siddartha Aradhya

List of papers

- I Aradhya, Siddartha; Hedefalk, Finn; Helgertz, Jonas; and Scott, Kirk. (2017) Region of Origin: Settlement Decisions of Turkish and Iranian Immigrants in Sweden, 1968–2001. *Population, Space and Place*, 23(4).
- II Aradhya, Siddartha; Scott, Kirk; Smith, Christopher D. (2018) Father's Repeat Migration and Children's Educational Performance. Forthcoming in *International Migration Review*.
- III Aradhya, Siddartha. (2018) Gendered Integration: Origin Country Gender Norms and Gender Gaps in Educational Performance amongst Second Generation Immigrants. *Unpublished manuscript*.
- IV Aradhya, Siddartha. (2018) Immigrant Ancestry and Birthweight Across Generations: The Case of Sweden. *Unpublished manuscript*.

Introduction

Motivation and Aim

Motivation

Immigration has been and continues to be one of the most important forces of demographic change throughout the world. The increase in foreign-born populations in many countries presents these societies with a double-edged sword. On the one hand, the failure to integrate immigrant populations can place large burdens on society and threaten social cohesion. On the other hand, successful integration provides an opportunity for reinforcing economic vitality and contributing to a diverse and dynamic culture (Dumont and Liebig 2014; Peri 2013; Waters and Gerstein 2015). In reality, however, integration is a multifaceted and long term process that has proven to be challenging across contexts (OECD 2017a).

Immigrant integration, sometimes referred to as assimilation or incorporation, is the process by which characteristics of immigrant and native populations come to resemble one another (Brown and Bean 2006; Waters and Gerstein 2015). The process has both economic and sociocultural dimensions, and begins with immigrants and progresses through subsequent generations. Successful integration implies that immigrants eventually reach parity in critical life chances with the native population. This is often measured by assessing immigrant-native disparities in indicators such as socioeconomic characteristics, labor market position, residential conditions, and health (Waters and Gerstein 2015).

These dimensions of integration, however, are determined by different sets of individual and structural level factors, which are interrelated in complex ways and may lead to unique trajectories across measures. For example, age at arrival, language proficiency, and human capital are all some of the previously identified factors that contribute to the degree and rate at which immigrants are able to be incorporated into society (Bleakley and Chin 2010; Chiswick and Miller 2008). Additionally, country of origin differences in the integration experience has been widely shown in the literature. In particular, dissimilarities in appearance, class, language, religion, culture, norms and values between immigrants and natives are

associated with slower integration as a result of larger obstacles to overcome to bridge the gap, as well as a less positive reception with the host society (Portes and Rumbaut 2001; Tegunimataka 2017). Certain immigrant groups face more restrictive structural barriers, such as varying degrees of social acceptance by the native population, that magnify the obstacles impeding their ability to achieve outcomes on par with natives (Alba, Reitz and Simon 2012). This highlights the need of examining integration along each specific dimension across generations to shed light on the nuanced dynamics of the process. This thesis contributes to this line of research through a multidimensional investigation of immigrant integration in Sweden, over time and across generations.

In the post-World War 2 period, Sweden is one of the countries in the EU whose population has been significantly altered as a result of mass migration. The size and diversity of the foreign-born population has grown dramatically since the 1940s, transforming Sweden from a country of almost entirely native-born individuals to one with 18 percent of the population born abroad. The immigrant composition prior to the 1970s was predominantly of European background, whereas after the 1970s it has become increasingly non-European. This compositional change of immigrant origins also coincided with a marked shift in immigrant experiences, with the latter arriving cohorts facing increased difficulty in gaining a foothold in Swedish society.

One of the main challenges facing Swedish policy makers in recent decades has been facilitating the labor market and social integration of immigrant groups. The issue is all the more pressing since the failures to address problems associated with immigrant integration have long term consequences, as the experiences of one generation influence those of subsequent generations. The failure of immigrants and their children to seamlessly integrate into Swedish society has placed large burdens on the welfare state (Ruist 2015) and has increased concerns about persistent stratification (Jonsson and Rudolphi 2011).

Over the last half century in Sweden, there has been a growing gap in the circumstances of immigrants and their descendants compared to the native population. Although these disparities exist along several dimensions, socioeconomic status, residential locations, and several measures of health display some of the most striking patterns (Akhavan et al. 2004; Aldén, Hammarstedt and Neuman 2015; Andersson and Scott 2005; Andersson 2013; Bengtsson, Lundh and Scott 2005; Bevelander and Pendakur 2014; Edin, Fredriksson and Åslund 2003; Hammarstedt and Palme 2012; Helgertz 2010; Juárez and Hjern 2017; Juárez and Revuelta-Eugercios 2016; Nordin and Rooth 2009; Persson 2015; Rooth and Ekberg 2003; Rosholm, Scott and Husted 2006; Smith, Helgertz and Scott 2016; Tinghög et al. 2010). This thesis tackles these questions in a compilation of four articles.

Aim and Research Questions

The main aim of this thesis is to study immigrant integration in post-1970 Sweden in a multidimensional and intergenerational perspective. Specifically, this thesis focuses on three important dimensions of integration: the residential choices of immigrants (paper 1), the educational outcomes of second generation immigrants (papers 2 and 3), and the health at birth of third generation immigrants (paper 4). To reach this aim, two research questions are addressed:

1. In what way does the legacy of country of origin impact the long-run trajectories of integration?

This thesis specifically focuses on long-run country of origin differences in immigrant outcomes, but focuses more closely on operationalizing country of origin as a driver of integration. Specifically, the empirical work in this thesis contributes to our understanding of these processes by analyzing the extent to which the characteristics of the country of origin manifest themselves in the outcomes of subsequent generations born in the host society. In addition, within country of origin heterogeneities are examined in order to test the generalizability of its use as measure of integration.

2. To what extent does ethnic stratification persist and develop over generations? What factors contribute to the developments of this stratification?

This research question differs from the previous in that it aims to understand the development of stratification. In particular, the empirical studies included in this thesis test the extent to which new forms of stratification are developing over time. Specifically, the challenges experienced by the descendants of immigrants may differ by generation status, thus changing the nature of stratification. This is an important question since it provides an indication for the future challenges that may impact the host society.

The four studies in this thesis shed light on these two broad research questions from a variety of angles, in order to account for the multidimensionality of immigrant integration. The *first study* focuses on the residential choices of first-generation immigrants in Sweden. Specifically, this study challenges the idea that country of origin is a meaningful level of aggregation when discussing the clustering behaviors of immigrants in the host society. Furthermore, we examine the extent to which pre-migration experiences of immigrants continue to manifest themselves post-migration and are important determinants of residential choice.

The *second study* looks at the educational outcomes of second generation immigrants, but focuses specifically on the influences of parental integration and selection processes. In particular, it focuses on the intergenerational consequences

of one of the complex migratory behaviors that immigrants often engage in, repeat migration (Aradhya, Scott and Smith 2017). This study has important implications for understanding the development of ethnic stratification, since the outcomes of native-born children of immigrants may be heterogeneous as a result of parental selection and disrupted integration (Bean, Brown and Bachmeier 2015; Brown and Bean 2006; Dustmann 2008).

The *third study* focuses on gendered integration, and examines the extent to which gender norms and values from the country of origin are transmitted between generations. Namely, this paper focuses on gender gaps in the educational performance of Swedish-born children, distinguishing between those with foreign and Swedish-born parents. This paper contributes to the debate on the intergenerational transmissions of culture and family values, as well as to the literature on intergenerational immigrant integration.

The *final study* further extends the understanding on intergenerational integration by examining the development of immigrant-native birthweight differences over two native-born immigrant generations. This paper tests the extent to which country of origin birthweight differences persist or converge over into the third generation. This is one of the first papers to examine the developments of birthweights of the entire second and third generation immigrant populations in a host society. In addition, this paper contributes to our understanding of the long-term influences of country of origin, and the potential disadvantages the descendants of immigrants are developing.

Taken together, these studies broadly address the two research questions highlighted above in a multidimensional perspective. In doing so this thesis draws attention to the complexity of the immigrant experience, and provides an account where future policy and academic attention may be placed.

List of contributions: co-authored papers

- I. Paper 1 is co-authored with three colleagues (Finn Hedefalk, Jonas Helgertz, and Kirk Scott). The author of this thesis was responsible for the concept, theoretical framework, study design and led the practical aspects of the paper except for spatial analysis, which was done by Finn Hedefalk. The interpretation of results was conducted together with the co-authors.
- II. Paper 2 is co-authored with two colleagues (Kirk Scott and Christopher D. Smith). The author of this thesis was responsible for concept, theoretical framework, and took the lead on study design. Interpretation of the results and the writing of the paper were equally shared amongst the co-authors.

Theory and Previous Research

From the moment that immigrants settle in a host country, they must begin to establish themselves in the society. This includes tangible dimensions such as finding housing, entering the labor market, and entering the educational system, but also less tangible dimensions like acquiring host country social and cultural competencies (Penninx 2003).

As discussed above, immigrant integration is a multifaceted process in which the characteristics of immigrants and natives become indistinguishable over time (Brown and Bean 2006). While this concept is often used interchangeably with assimilation, it has been argued that they represent two distinct phenomena. On the one hand, the integration process involves two parties: the immigrants and the host society. It is the interaction of these two entities that determines the outcome of the integration process. Using the USA as an example, Waters and Gerstein (2015) succinctly states, “Integration is a two-fold process: it happens both because immigrants experience change once they arrive and because native-born Americans change in response to immigration” (p. 19). In this framework, both immigrants and the native population evolve and adapt to the society as it is changed by immigration. The assimilation perspective, on the other hand, assumes a one-sided process in which immigrants gradually lose the cultural norms and values of their origins and adopt those of the host society. Although this is an ongoing debate, there are those that argue that these terms refer to a similar process (Alba and Nee 2003; Brown and Bean 2006; Waters and Gerstein 2015). This dissertation follows the latter in considering integration and assimilation as representing similar processes in which immigrants and the host society come to resemble one another over time.

General Assimilation Frameworks

One of the foundational theoretical models of integration is the assimilation hypothesis (Alba and Nee 1997; Alba and Nee 2003; Gordon 1961; Gordon 1964). In general, the assimilation hypothesis posits that immigrants and natives follow a “straight-line” convergence in norms, behaviors, values, and characteristics. Specifically, the framework suggests that immigrants that have lived the longest in the host society, or members of later generations are assumed to be the most similar to the native population. Gordon (1964) hypothesized that the process of assimilation progressed through several defined stages. The first stage, structural assimilation, is characterized by immigrants and natives building closer social relationships. This is followed by large-scale intermarriage between immigrant

and natives, ethnic identification with the host society, and finally the ending of prejudice and discrimination of minority populations.

In a move reconciling the debate dividing the integration and assimilation perspectives, Alba and Nee (1997) further expanded on their framework by arguing that institutions played a role in facilitating the assimilation of immigrants. They emphasized that change and acceptance from the mainstream population was vital to achieving full assimilation, an integral part of the integration perspective. While the assimilation hypothesis has been a foundational framework in the immigrant integration literature, it has been criticized for being oversimplified and not well defined (Brown and Bean 2006).

The immigrant assimilation hypothesis provides a general framework through which the general process of immigrant integration can be understood; however, drawing on more specific theoretical models can provide a clearer and more nuanced picture regarding the individual processes that determine the speed and degree to which integration occurs. In particular, since the process of immigrant integration is a multidimensional phenomenon, it is possible particular immigrant populations are converging with the host society in one of these dimensions, while diverging along others. In addition, these patterns may differ across ethnic groups, since the barriers that impede or promote integration do not systematically impact all immigrant groups.

One framework challenging the assimilation hypothesis, the segmented assimilation hypothesis, argues that not all immigrant groups follow a 'straight-line' convergence with the native population (Portes and Rumbaut 2001; Portes and Zhou 1993). This framework posits that the convergence trajectories of immigrant groups are diverse and follow multiple pathways, stratified along national origins, socioeconomic status, and the context and conditions at the time of arrival in the host society. While some immigrant groups may follow the 'straight-line' convergence trajectory, others may face structural and social barrier that impede, or deter, them from achieving the same levels of assimilation. The most disadvantaged groups may face particularly severe structural barriers, such as high degrees of segregation that limit their access to high quality schools and employment opportunities and increase their social isolation from the host society. These groups may also be disproportionately affected by discrimination that further impedes immigrants and their children from attaining upward mobility. Within these groups, immigrants and their children can experience stagnant or downward assimilation trajectories, while those less affected by such conditions experience unhindered convergence with the host society (Brown and Bean 2006; Waters and Gerstein 2015; Waters et al. 2010).

The framework specifically highlights three potential paths of assimilation: upward assimilation, downward assimilation, and upward mobility combined with

persistent biculturalism (Portes and Rumbaut 2001; Portes and Zhou 1993). These paths of assimilation correspond to three processes that determine the assimilation of immigrants over time and generations - consonant, dissonant, and selective acculturation (Waters et al. 2010). Consonant acculturation is the process in which immigrants and their children adopt host country culture and norms and abandon those of their source country at the same pace. In this case, the children of immigrants become a part of the host society with the support of their parents. Dissonant acculturation, on the other hand, occurs when the children of immigrant adapt and assimilate to the host society faster than their parents. In this case, the children of immigrants may experience downward assimilation due to the lack or inability of their parents to support them through obstacles they confront during the assimilation process. The final process, selective acculturation, occurs when both immigrants and their children gradually adopt host society culture and norms, but remain closely embedded in the ethnic community. This may manifest itself in the maintenance of traditional family structures and bilingualism amongst children; however, membership in the ethnic community allows for a supportive environment to deal with the strains of acculturation, and as a result leading to more successful acculturation (Portes and Rumbaut 2001; Waters and Gerstein 2015).

Together, the assimilation hypothesis and the segmented assimilation hypothesis provide general expectations concerning the paths the assimilation process follows; however, additional frameworks are necessary in order to understand the processes determining assimilation in specific dimensions. The rest of this section will briefly highlight the theoretical considerations that are pertinent to the topics presented in this thesis.

Immigrant Selectivity

Migration has long been considered a process driven by self-selection, since those that migrate are not a random sample of the source population (Borjas 1987; Massey et al. 1999). In addition, immigrant populations in a host society are altered through selective return or onward migration (Borjas and Bratsberg 1996; Bratsberg, Raaum and Sørli 2007; Rooth and Saarela 2007). Since much of the selectivity is in unobserved characteristics, it is difficult to universally predict the extent to which immigrants are negatively or positively selected. Furthermore, selection processes seem to be source-destination context specific (Borjas 1987; Dustmann and Görlach 2015; Massey et al. 1999). As a result, this presents several challenges in analyzing and interpreting the integration process of immigrants, since the selection processes are an important factor in determining the outcomes of these individuals.

Several researchers have aimed at identifying the extent to which selection is an important determinant of assimilation (Borjas 1985; Borjas 1987; Borjas and Bratsberg 1996; Borjas, Kauppinen and Poutvaara 2015; Cobb-Clark 1993; Constant and Massey 2003). One of the classic debates in the economics literature, in particular, has been to study the earnings trajectories of immigrants relative to natives as a measure of assimilation. The linear convergence between immigrants and natives argued by the assimilation hypothesis has garnered some support in literature looking at the labor market integration of immigrants. Specifically, it has been argued that labor market integration may follow a U-shaped pattern. Immigrants face a decrease in their socio-economic status relative to their pre-migration status immediately after migrating, but are able to recover as they reside in the host society for longer periods of time. The initially lower status of immigrants is explained by the lack of transferability of their human, social, and cultural capital required to immediately integrate to the labor market. As immigrants assimilate to the host society and acquire this knowledge over time, they are able to recover and sometimes even surpass the conditions of the native society (Carliner 1980; Chiswick 1978).

In his seminal paper, Chiswick (1978) used cross-sectional data from the 1970 census in the United States to estimate the earnings of white foreign-born men compared to natives. The results from this study show that, upon arrival, immigrants earned lower incomes relative to natives, but they caught up and even surpassed natives after 10-15 years of residence in the US. Chiswick argued that the steeper growth in earnings experienced by immigrants relative to natives was due to their stronger incentive to invest in formal and informal human capital. The author further argues that positive selection on unobservable characteristics explains the finding that immigrants overtake natives in earnings approximately 10-15 years after arrival.

This finding was challenged by Borjas (1985), by testing this hypothesis using the 1970 and 1980 United States censuses. Particularly, Borjas argued that the within-cohort earnings growth is much smaller than what is found using cross-sectional data. This result, the author argues, is consistent with the idea that there was a gradual worsening of immigrant quality by cohort. Each immigrant cohort may display a similar earnings trajectory over time, but if later arriving cohorts were more negatively selected than the previous ones, they have lower intercepts. As a result, the cross-sectional pattern showing that immigrants converge with and surpass the earnings of natives within 10-15 years is missing the critical dimension of cohort self-selection.

Borjas (1987) further formalized the model of immigrant self-selection by empirically analyzing the characteristics of the sending countries and the outcomes

of immigrants in the United States. The migration selection model is succinctly summarized by Rooth and Saarela (2007) as follows:

The migration selection model predicts that, given sufficiently high portability of skills between source and destination countries, and time-equivalent migration costs, labour migrants are negatively (positively) selected on unobservable characteristics, such as abilities and productivities, if the source country has more (less) dispersion in its earnings distribution, and negatively (positively) selected on observable skills, such as education, if the returns from educational attainment is relatively higher (lower) than in the destination country. This is because it would be relatively less (more) rewarding for people with higher skills to migrate than for those with lower skills (p. 91).

This theoretical framework provides an expectation regarding the selection into migration; however, the immigrant population is also impacted in selective return or onward migration. Although migration is often treated as a one-time and permanent phenomenon, ample evidence suggests that migrants are likely to engage multiple acts of migration (Aradhya, Scott and Smith 2017; Bratsberg, Raaum and Sørli 2007; Constant and Massey 2003; Constant and Zimmermann 2012; DaVanzo 1983). Furthermore, evidence suggests that immigrants that leave the host society are not a randomly selected portion of the population (Borjas and Bratsberg 1996; Rooth and Saarela 2007). As a result, the immigrant composition in a country is subsequently altered by the self-selection of return or onward migrants.

The theory of selection in return migration argues that there are two distinct reasons for return migration to occur. First, return migration may be the optimal residential location plan over the life cycle, which allows individuals to attain higher utility than if the migration was permanent. Second, return migration is a correction due to a miscalculation of the initial migration decision (Borjas and Bratsberg 1996; Constant and Massey 2003). In either circumstance, however, return migration impacts the existing migrant stock in the host society by accentuating the selection that characterized the initial migration flow. According to Rooth and Saarela (2007), “In the case where the migration flow is negatively selected on skills, return migrants are the ‘best of the worst’, and if it is positively selected on skills, return migrants are the ‘worst of the best’” (p. 91). Thus, in the event that the initial migration flow is negatively selected, the existing stock of immigrants will gradually become less and less skilled as a result of the selection of return migrants.

The issue of selection is an overarching theme that is important to consider in nearly all studies analyzing immigrant outcomes (Dustmann and Görlach 2015). This is particularly important when assessing immigrant assimilation across several dimensions and over generation. In particular, immigrants may be

positively selected along certain dimensions, while being negatively selected in others (Borjas 1991; Rooth and Saarela 2007). In addition, when taking an intergenerational perspective on assimilation, one must consider the selectivity of the families that remain in the country for multiple generations. Carefully accounting for these multiple selection processes may help to disentangle the extent to which immigrant populations are assimilating, or the extent to which selection is producing persistent stratification (Borjas 1994; Ruist 2017).

Residential Choice, Education, and Health as Dimensions of Integration

Referring to Waters and Gerstein (2015), “Examining integration involves assessing the extent to which different groups, across generations or over time within the same generation, come to approximate the status of the general native-born population” (p. 20). Since immigrants and natives differ from one another along several dimensions, it is necessary to view the process of integration holistically across indicators. This thesis deals specifically with three dimensions of integration: residential choice, educational outcomes, and health. Each of these can be viewed as independent indicators of integration; however, they are interrelated in complex ways.

Residential Choice:

Where immigrants live influences the integration experience in a variety of ways. Each city or neighborhood represents a unique context that affects how immigrants and their children incorporate into the native society (Edin, Fredriksson and Åslund 2003; Waters and Gerstein 2015). Residential location is a unique dimension of integration since it represents both an outcome and facilitator of integration (Britton 2014; Massey 1990; Wessel et al. 2017). For example, an immigrant’s ability to autonomously choose their place of residence is an outcome of economic independence, while at the same time the environment in which they live provides the resources to gain economic and social mobility; however, there are several social and structural factors that influence the residential decisions of immigrants.

One of the foundational frameworks in this literature, the spatial assimilation hypothesis, argues that residential differences between immigrants and natives are expected to decrease over time as immigrants experience upward social and economic mobility (Massey 1985). Similar to assimilation hypothesis, the model postulates that due to limited host-country specific resources, immigrants are initially driven into ethnically and culturally homogenous areas (commonly referred to as ethnic enclaves) that provide cultural and institutional support. Over

time and across generations, as immigrants gain the necessary skills required to enter the labor market (i.e. language and job skills) and become more integrated into the host society, they move “up and out” (i.e. Alba and Foner 2015; Lichter, Parisi and Taquino 2015).

The spatial assimilation framework has garnered much support in the empirical literature across geographical contexts. Studies have shown that the propensity for immigrants to reside in or relocate to less immigrant-dense and higher quality neighborhoods is positively associated with several economic integration indicators such as education, occupational status, income, and home ownership (Alba et al. 2014; Bolt and Van Kempen 2010; Bråmås and Andersson 2010; Park and Iceland 2011; Waren 2013). Similarly, there is evidence that social and cultural integration are important drivers reducing the residential differences between immigrants and natives. Intermarriage with natives, longer duration of residence in the host country, fluency in the host country language, and naturalization have all been identified as factors that promote the residential integration of immigrants and natives (Britton 2014; Finney and Simpson 2008; Lauster and Fransson 2006; Macpherson and Strömngren 2013; Qian and Lichter 2001; Tammaru and Kontuly 2011; Trevena, McGhee and Heath 2013).

Although there is ample evidence suggesting that economic, social, and cultural integration are all important drivers of residential assimilation, there is also empirical evidence supporting a less optimistic perspective that structural barriers keep immigrants spatially isolated even when upward mobility is achieved (Ahmed and Hammarstedt 2008; Alba and Logan 1991; Pais, South and Crowder 2012; Waters and Gerstein 2015). The place stratification model highlights the role of discrimination and avoidance strategies (i.e. white flight, gated communities, and gentrification processes), in maintaining high degrees of segregation for particular immigrant groups (Ahmed and Hammarstedt 2008; Alba and Logan 1991; Aldén, Hammarstedt and Neuman 2015; Andersson 2007; Charles 2003; Leetmaa, Tammaru and Hess 2015; Massey and Denton 1993). Similar to the segmented assimilation hypothesis, this framework suggests that particular groups are overly represented in these increasingly segregated, poor, and declining areas; furthermore, specific groups are less able to translate their economic and social resources into improved residential environments (Hall and Crowder 2014; Magnusson Turner and Hedman 2014; Tienda and Fuentes 2014). As a result, the residential choices of these groups are hindered by structural barriers, even when they have the means and desire to residentially locate within the mainstream society.

A final perspective on the residential choices of immigrants is related to the idea that residing in enclaves is maybe desirable to immigrants. There is reason to believe that even in the event that immigrants possess the means to leave an

enclave, and there is an absence of structural barriers that impede their ability to do so, they may wish to permanently reside in these locations due to the cultural and social support they provide (Borjas 1992; Borjas 2000; Logan, Zhang and Alba 2002). Furthermore, there is evidence that immigrants and minorities maintain a preference for co-ethnic neighbors (Clark 2009; Ibraimovic and Masiero 2014), which subsequently drive their residential decisions.

When considering immigrant integration, the preference-based model of immigrant residential choice stands in contrast to the previous two frameworks. The other two models implicitly assume that residential assimilation is the ultimate goal and an intended outcome of the integration process; however, the development of parallel societies may be the intended outcome on the part of immigrants, and should not necessarily be deemed problematic (Waters and Gerstein 2015). Understanding the residential preferences of immigrants, however, may help shed light on the extent to which immigrants intend to recreate the social environment of their source country in the destination. This helps improve our understanding on the role of the preferences of immigrants themselves in the integration process.

Education:

Immigrants' children and grandchildren make up a sizeable and growing share of the population in many developed countries, and their educational success has profound implications for the future economic and social development of those countries. Furthermore, the outcomes of second and later generations reflect the long-term process of immigrant integration and provide an indication regarding the persistence or development of ethnic and social stratification. When studying the educational integration of immigrants, it is important to take a long-term and intergenerational perspective for several reasons (Chiswick and DebBurman 2004; Sweetman and van Ours 2015). The first reason is that the educational attainment of first generation immigrants is often more heterogeneous than the native-born population. The educational attainment of the first generation is largely related to the reason for migration (Dustmann and Glitz 2011). For example, labor migrants are driven by optimizing labor market opportunities, and as a result are often highly selected on education attainment. Asylum seekers, however, are fleeing persecution and, often, political unrest in their home countries. The selection processes characterized in this population differs dramatically from those of labor migrants. Additionally, a large majority of immigrants receive little to none of their formal education in the host country (Chiswick and DebBurman 2004; Dustmann and Glitz 2011). Not only does this present data quality issues, but it is often difficult to compare the quality and rigor of education across contexts.

The second reason that a long-term and intergenerational perspective is required when studying educational integration is that the second and subsequent

generations are born in the host society, but unlike native-parentage peers, their immigrant heritage influences their human capital formation (Chiswick and DebBurman 2004). Over generations, immigrant-native educational differences may converge for particular immigrant groups in accordance with the assimilation hypothesis, while other groups may experience divergence or persistent disadvantage. For these disadvantaged groups, second generation school outcomes are hindered as a result of their parents' lack of institutional familiarity and host country language skills. In later generations, the same disadvantages are not present since their parents are also born and raised in the host society; however, discrimination and persistent social stratification may continue to impede the descendants of immigrants from converging with natives (Carlsson 2010; Carlsson and Rooth 2007).

There is a rather large literature on the educational integration of immigrants. In particular, the two main outcomes most often analyzed include educational attainment (i.e. number of years of schooling or certifications attained) and performance (i.e. grades or standardized test scores). Each of these measures is characterized by different mechanisms and provide a different picture regarding the pace and degree of educational integration (Li and Sweetman 2014; Sweetman and van Ours 2015).

One of the most consistent findings in the literature is related to the impact of age at arrival on educational performance and broader integration for immigrants and their children (See for example: Chiswick and DebBurman 2004; Gonzalez 2003; Heath and Kilpi-Jakonen 2012; Schaafsma and Sweetman 2001). There has been a particular attempt to identify at what age was arrival optimal for an immigrant's educational attainment. Schaafsma and Sweetman (2001) use Canadian data to explore this question, and find that immigrants that arrive near the end of high school display a deficit of nearly one year of completed schooling, lower high school graduation rates, and a lower likelihood of enrolling to University (conditional on high school completion) relative to those arriving earlier or later. The authors posit that those immigrants arriving near the transition between high school and post-secondary education do not have enough time to recover from the negative impacts of migrating. Those arriving before their teenage years, however, have time to get acquainted to the host society and make the transition with less difficulty, and those arriving later have largely finished their education in the source country. The immigrant population arriving before their teenage years has often been classified as the 1.5 generation, since it has been shown that their educational and labor market outcomes differ very slightly from second generation immigrants (Allensworth 1997; Boyd 2002; Van Ours and Veenman 2006). Moving to subsequent generations, Card (2005) looked at the assimilation of immigrant groups in the United States. He finds that second generation immigrants obtain higher levels of average education as compared to first generation

immigrants and 3+ generation immigrants (Chiswick and DebBurman 2004 also corroborate these findings). The results also suggest, that some immigrant groups are rapidly converging with natives while others are making little to no progress, namely the Hispanic and Black populations. This image of gradual improvement over generations, however, seems to be context specific. There is a large degree of variation in the intergenerational success in immigrant groups across the European continent (EUROSTAT 2011; Nielsen et al. 2003).

The literature also points to the important role that parents play in the educational success of the second generation. In particular, the level of integration of the parents plays an important role in the educational outcomes of the second generation. To measure the level of integration of the parents, different measures have been used. Both Nielsen and Rangvid (2012) and Smith, Helgertz and Scott (2016) have shown, using within family designs, that the number of years the parents have resided in the host country has a positive effect on the teacher assigned grades of their children. Similarly, Bleakley and Chin (2008) and Casey and Dustmann (2008) find that parents' host-country language fluency is an important predictor of the educational performance and labor market success of their children. Both of these measures, parents' years since migration and language fluency, are considered assets that promote the intergenerational integration process by easing the institutional and social barriers for children.

Another area of the literature that has been developing is related to gender gaps in educational performance amongst immigrants and their children as a measure of integration (Abada, Frank and Hou 2017; Dronkers and Kornder 2014; Dronkers and Kornder 2015; Fleischmann and Kristen 2014; Pullés and Brown 2017). The idea here is that many Western countries have experienced large scale migration from less gender equal parts of the world. In particular, many of the sending countries of today's migration flows are those in which boys maintain an advantage in educational enrollment and performance, whereas in Western Europe and the United States girls maintain an advantage (Fleischmann and Kristen 2014; Grant and Behrman 2010). In general, the evidence suggests that amongst second generation immigrants, girls maintain an advantage over boys in grades, test scores and transitions to higher education (Abada, Frank and Hou 2017; Dronkers and Kornder 2014; Fleischmann and Kristen 2014). There seems to be a convergence in the gender gaps in educational performance, but there is a large degree of variation in the size of the gap across immigrant sending countries. These findings indicate that immigrant populations are assimilating to the native norm in the gender differences in educational performance, but perhaps at different paces. Little is known, however, regarding the factors determining the rate of convergence of gender norms.

In sum, educational attainment and performance can be used as measures of integration when observed from an intergenerational perspective. In certain contexts, there seems to be an improvement in the educational attainment of the second generation relative to the first, while in other contexts the development of a growing disadvantage has been observed. In terms of assimilation as a holistic process, intergenerational educational integration has long-term consequences as the outcomes of one generation impact those of subsequent ones. Furthermore, educational assimilation is an indication of broader position of immigrants in a host society today and what to expect in the future.

Health:

Understanding the determinants and consequences of immigrant health has been a point of interest amongst researchers across academic disciplines. Health is an important measure of integration since poor health can affect other realms of life in which immigrant-native differences are observed, such as in labor market success and education. One of the key stylized facts that is generally supported in the literature is the existence of the “Healthy Immigrant Effect” (hereafter referred to as HIE) (Markides and Coreil 1986). In particular, immigrants arrive in the destination country with better health than the native population, but over time this health advantage declines and even occasionally settles at levels worse than the native population. This HIE has been confirmed across several health conditions and illnesses and across several countries (Antecol and Bedard 2006; Constant 2017; De Maio 2010; Farré 2016; Jatrana, Pasupuleti and Richardson 2014; Mehta et al. 2016). Antecol and Bedard (2015) and Juárez and Hjern (2017) both provide extensive overviews of the literature confirming the existence of the HIE.

Several explanations have been offered in order to explain the initial health advantage and gradual deterioration immigrants experience in host societies. In particular, the most prevalent explanations include immigrant selectivity, access to health care, income assimilation, and acculturation.

Migration is generally regarded as a stressful and risky endeavor, which is why it is not unexpected for migrants to be positively selected also on health. Immigrants may be positively selected on observed and unobserved characteristics and as a result have better health either by individual choice or as a result of the immigrant screening processes implemented by host countries (See for example Chiswick, Lee and Miller 2008; Jasso et al. 2004). In addition, there may be an unhealthy selection in return migration (Palloni and Arias 2004; Turra and Elo 2008), albeit this evidence remains less consistent compared to the empirical support for the positive health selection amongst immigrants (See for example Sander 2007).

A second explanation provided is related to the increased access to health care immigrants receive in the host country. Specifically, the better health reported by

immigrants initially upon arrival are due to their lack of health care access in their country of origin leaving health conditions undiagnosed; as immigrants live longer in the host society and have more access to health services, their reported differences disappear as they receive diagnoses for pre-existing conditions (Antecol and Bedard 2015; Breen, Rao and Meissner 2010; Jasso et al. 2004). McDonald and Kennedy (2004) directly test whether access to health care explains the differences in diagnoses and subsequent convergence between immigrants and natives. In particular, they test whether there are differences between natives and immigrants in the incidence of blood pressure testing. The authors find no difference between the two groups and argue that the use of basic health care services converges faster than the rate at which observed health differences converge.

Antecol and Bedard (2015) further argue that in order for health care access to play a role in the convergence of health between natives and immigrants, two unlikely assumptions must be made. First, since the HIE suggests the initial advantage is followed by a gradual decline in the health of immigrants, immigrants access to health care must increase with their duration of residence. Secondly, the health care access must either fall or lead to the detection of previously undiagnosed conditions. The authors argue that both of these seem rather unlikely in developed societies.

The third explanation that has been discussed to explain the deterioration of immigrant health is related to income assimilation (Antecol and Bedard 2015). Immigrants tend to start at lower earnings relative to natives and this difference gradually declines the longer immigrants live in the host society (see Chiswick 1978; Borjas 1985). Since SES is generally positively associated with health, immigrants' health status should improve over time. This seems to logically rule out the role of income assimilation.

The final hypothesis that has gained the most support is the idea of unhealthy assimilation (Antecol and Bedard 2006). Specifically, immigrants gradually adopt to the health behaviors of the native population that have important health implications (i.e. smoking, diet, and exercise) (see for example Giuntella 2016; Marmot and Syme 1976). Giuntella (2016) investigates the health at birth of third generation immigrants of Hispanic descent in the United States. In particular, the author investigates the relationship between parental exogamy (partnership between a native father and a second generation Hispanic mother), a commonly used measure of integration (Dribe and Nystedt 2015; Kalmijn 1998; Kalmijn and van Tubergen 2006; Tegunimataka 2017), and the birth outcomes of their offspring. The results indicate that the children of exogamously married second generation Hispanic women were 9 percent more likely to be low birth weight as compared to endogomously (married to another Hispanic) married Hispanic

women. The author argues that the results reflect the higher incidence of risky behavior, such as smoking during pregnancy, among intermarried Hispanic women. In addition, there is also empirical evidence supporting the notion that immigrants may experience elevated stress levels as a result of discrimination, poor living conditions, and persistence of intergenerational poverty (Collins et al. 2009; Collins Jr, Rankin and David 2011; Elo, Mehta and Huang 2008).

Besides changes in morbidity, there is also evidence of a general improvement in certain measurements of health endowments that takes place over generations in immigrant populations (Draper, Abrams and Clarke 1995; Leon and Moser 2012). Measures such as height and birthweight are determined by genetics, but also diet and environment. The latter two factors both change across generations for many immigrant populations. For example, in some cases, nutrition improves at least between the first and second generations amongst immigrants from less developed countries. This has been shown in the case of Indian and Pakistani women in the UK, second generation women were 3 cm taller on average than first generation women (Leon and Moser 2012). This indicates that convergence in health measures can occur along several dimensions, all of which have important implications for the long term outcomes of immigrant populations.

In terms of understanding the long term assimilation of immigrant populations, health disparities provide an important perspective. Although assimilation is often viewed as an upward process in which immigrants catch-up with natives, it is commonly observed that health assimilation occurs in the opposite direction according to the HIE. Along measures such as height, however, there may be intergenerational improvements. Understanding the extent and pace at which immigrants' health converges with that of the native has broad implications related to the long-term and possible intergenerational success of these populations.

Context

Immigration in Post-World War 2 Sweden

In the post-World War II period, immigration has become a major source of demographic change in Sweden. Between 1945 and today, Sweden has transformed from a country whose population was almost entirely native-born to a country with one of the world's largest immigrant populations (Bengtsson, Lundh and Scott 2005; Åslund, Hensvik and Nordström Skans 2014). According to Statistics Sweden, in 1950 the foreign-born population accounted for approximately 3 percent of the Swedish population and by 2016 that figure has

grown to 18 percent (Statistics Sweden). Today, the share of the foreign-born population is higher than the OECD average, and higher than major economies such as the United States, Germany, and the UK (OECD 2017). Additionally, when considering the population that is born in Sweden with at least one foreign-born parent this figure increases by approximately 13 percentage points (Statistics Sweden).

While Sweden has experienced an impressive increase of foreign-born individuals in the post-war period, it has not always been a net immigration country. In the 19th century and up until the early 1930s, Sweden was a net emigration country. Emigration figures during the period 1901-1930 totaled 504,000, while the immigration figures in the same period totaled 222,000 (Scott 1999). Following the 1930's, Sweden has been a net immigration country. The initial flows of immigration in the “immigration era” were predominantly return migrants from the United States. It was not until after World War 2 that immigration to Sweden became dominated by individuals from other countries. Sweden’s immigration history in the post-World War 2 period can be divided into two distinct immigration policy eras (Rooth 1999). The first policy era is classified by a less restrictive set of immigration policies that lasted during the period 1945-1967. The second era, 1967 onwards, stifled labor immigration from non-Nordic regions and increased refugee and family reunification immigration. Figure 1 shows the number of immigrants and emigrants by year from 1940-2016.

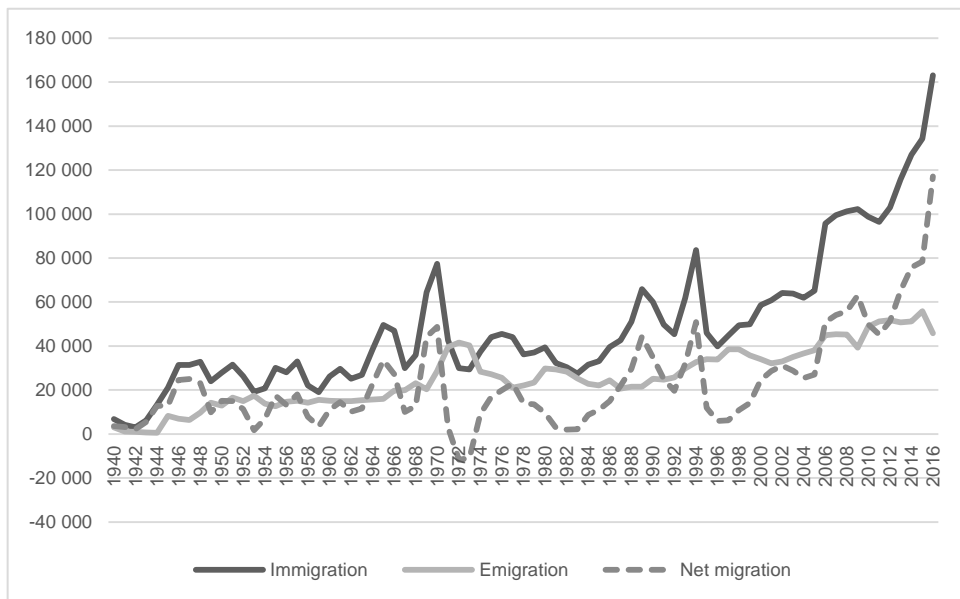


Figure 1. Number of Immigrants, Emigrants, and Net migration in Sweden 1940-2016
 Source: Statistics Sweden (extracted on 13 Oct 2017 from <https://www.scb.se/hitta-statistik/>)

The first wave of migration, beginning at the end of the war until the early 1970's, was dominated largely by labor immigrants and refugees from other European countries. The early refugee migration to Sweden during this period was mainly from neighboring countries such as Denmark, Norway, Finland, and the Baltic states. In the 1950s, political refugees immigrated from mainly Czechoslovakia, Hungary, Poland, and Yugoslavia. Since Sweden remained neutral during both World Wars, it experienced an economically advantageous position by 1945 as major parts of the European industry had been destroyed. The ensuing reconstruction across the European continent spurred an increase in demand for Swedish industrial goods that could not be met with the domestic labor supply. Thus, a number of measures were implemented to facilitate labor immigration and subsequently increase the labor supply. The Swedish authorities, under pressure from the trade unions, passed the Common Nordic Labor Market agreement in 1954. The Common Nordic Labor Market agreement was the first piece of immigration legislation implemented to fill the demand for labor by exempting citizens from other Nordic countries from obtaining a work visa in order to immigrate to Sweden. As a result immigration flows increased from Denmark, Norway, and Finland (Bengtsson, Lundh and Scott 2005).

Since the labor migration from other Nordic countries was insufficient, further immigration policies were implemented to increase labor recruitment from other European countries. In order to facilitate labor migration, legislation was passed allowing Europeans to immigrate to Sweden without pre-arranged employment and apply for work permits from within the country. These policies spurred large scale migration from Austria, Italy, Germany, Yugoslavia, Turkey, and Greece. By the mid-1960s, the number of migrants living in Sweden as a result of liberalized immigration policies totaled approximately 500,000 individuals (Bengtsson, Lundh and Scott 2005; Scott 1999).

Labor migration continued unfettered until the mid-1960s when the Swedish trade unions became concerned that immigration was threatening wage solidarity policy and employers were using foreign labor as a means to depress wages (Helgertz 2010; Lundh and Ohlsson 1994). In 1967, based on the recommendations of the Swedish Trade Union Confederation, new immigration regulations were enacted that essentially halted labor migration to Sweden. Particularly, the legislation stipulated that all non-Nordic individuals were required to obtain work permits, employment, and housing prior to arrival in Sweden (Bengtsson, Lundh and Scott 2005; Helgertz 2010). Furthermore, it gave power to the trade unions to deem on a case by case basis as to whether work permits were adequately motivated. As a result of this shift in immigration policy, labor migration from non-Nordic countries nearly halted altogether. This shift towards stricter immigration legislations marked the transition to the second immigration policy era in Sweden's post war period.

Starting from the late 1960s onward, labor immigration was almost entirely replaced by refugee and family reunification migration (Bengtsson, Lundh and Scott 2005). In the first immigration policy era, refugee immigration to Sweden had largely been from other European countries; however, the second era saw a diverse geographic pattern of immigration following regions of political unrest or war. In 1967, the political coup in Greece led large numbers of individuals to seek asylum in Sweden. In the following year, political unrest as a result of the Warsaw Pact invasion in Czechoslovakia, forced large numbers to flee their homes, some of whom sought asylum in Sweden. Also during this period, large numbers of Polish Jews were fleeing persecution in their home countries and came to Sweden as refugees. There was a brief period in the 1970s in which the recession and worsening economic conditions of migrants led to a two-year period in which Sweden experienced net emigration. Besides this brief window, Sweden remained a net immigration country from the 70s onwards and mainly in the form of refugee immigration (Scott 1999).

The 1970's, refugee immigration was dominated by Southern and Central American individuals fleeing a Civil War in El Salvador and a military coup in Chile. In the 1980s, refugee migration from the non-European migrants further increased as political instability and violence embroiled several regions of the world. Chileans continued to arrive throughout the duration of the Pinochet regime. The Swedish population became further diversified with refugee immigration of individuals predominantly of Vietnamese¹, Ethiopian², Iranian³, and Iraqi⁴ descent. In the early 1990's, the Civil War in Yugoslavia broke out causing many displaced individuals to seek refuge in Sweden (Bevelander, Hagström and Rönnqvist 2009). The number of Yugoslavian individuals that arrived in Sweden as a result of the war totaled 100,000 during the period 1992-1995.

The late 90s and early 2000s the migration flows were dominated by asylum seekers from Iraq and Afghanistan. In addition, during this period there was also an increase in the number of family reunification visas awarded (Bengtsson, Lundh and Scott 2005; Helgertz 2010; Persson 2015; Scott 1999; Westin 2003).

¹ Vietnamese refugees came mainly during the 1970s, following the Vietnam War and during the establishment of the communist regime.

² Ethiopian refugees arrived in large flows during the mid to late 1980s largely as a result of ethno-political turmoil.

³ Iranian refugees came to Sweden in large numbers in the 1980s during the Iran-Iraq war and continued in the 1990s due to repression by the Islamic government.

⁴ Iraqi refugees have been coming to Sweden for the past 30 years, as a result of several wars and repeated ethno-political and religious conflicts

The late 2000s is when annual immigration numbers began to dwarf the totals of any previous year in the post-war period.

At the beginning of 2015, civil conflicts in several Muslim-majority countries in the Middle East, Western Asia, and Africa led to a mass exodus of displaced individuals seeking refuge in Europe. What has been infamously titled the European refugee crisis, led to record-breaking inflows of refugees throughout Southern and Western Europe totaling over 1 million arriving in Europe in 2015. In that same year, Sweden became the largest recipient of refugees totaling approximately 163,000 individuals, the highest per capita ratio ever registered in the OECD at 1.6 percent of the total population (OECD 2017b). Table 1 shows the 2015 figures of the total number of asylum applications received by Sweden and its Nordic neighbors, as well as the main countries of origin.

Tabel 1

Asylum Applications Filed in Scandinavian Countries by Top Countries of Origin, 2015

Country of Asylum	Total Asylum Applications	Top Country of Origin	Second Country of Origin	Third Country of Origin
Sweden	162,877	Syria (51,388)	Afghanistan (41,564)	Iraq (20,857)
Finland	32,476	Iraq (20,485)	Afghanistan (5,214)	Somalia (1,981)
Norway	31,145	Syria (10,536)	Afghanistan (6,987)	Iraq (2,991)
Denmark	7,162	Syria (3,515)	Eritrea (1,276)	Stateless (702)

Source: Tanner (2016); SCB (extracted on 13 Oct 2017 from <https://www.scb.se/hitta-statistik/>)

In response to the mass migration, Sweden began to tighten up its previously generous asylum benefits in order to control the inflows of refugees. In particular, the government has proposed granting only three-year temporary residence permits, instead of the permanent residence that had been previously offered, to successful asylum seekers of all nationalities. The backlash towards liberal refugee immigration policies began to manifest itself in the public sentiment. Populist parties in Europe have experienced historic increases in public support, and Sweden is no exception. Support for *Sverigedemokraterna*, a populist party with an outspoken anti-immigration agenda, grew from 9.3 percent in November 2013 to 19.9 percent in November 2015 according to polls conducted by the country's statistical agency (SCB 2017; Tanner 2016).

Over the course of one century, Sweden went from a country with almost no foreign-born population, to one with a diverse population composition. The transition was first initiated by European immigrants, but over time the migrants started arriving from all across the globe. Figure 2 shows these developments.

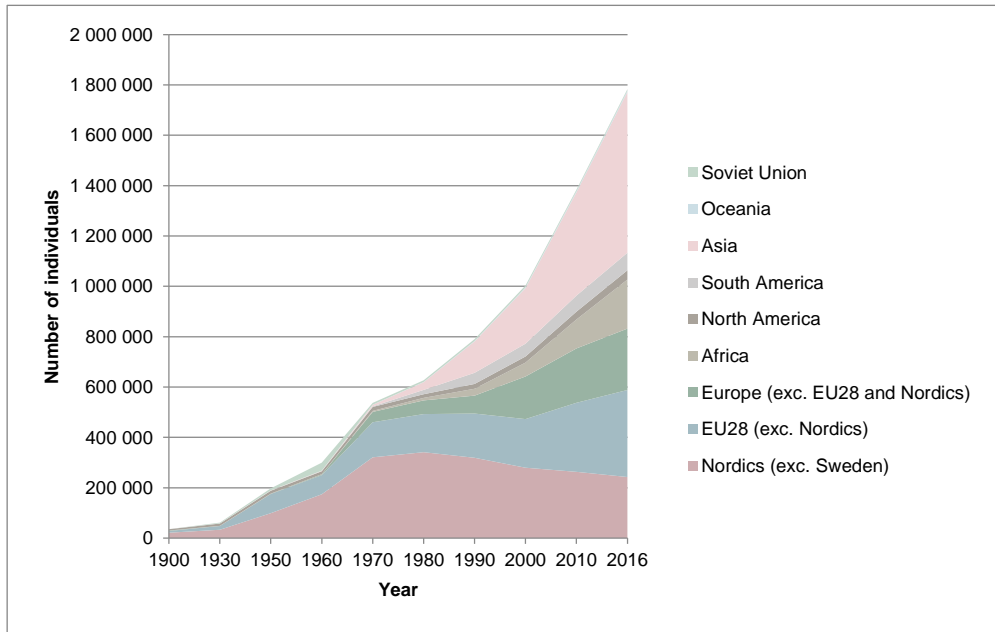


Figure 2. Number of individuals in Sweden by region of birth (excluding Swedish born)
 Source: Statistics Sweden (extracted on 13 Oct 2017 from <https://www.scb.se/hitta-statistik/>)

An additional result of the large inflows of immigrants is the increased diversity of the native-born population. As immigrants established their new lives in Sweden and started families, the share of the native-born population with at least one foreign-born parent children subsequently increased. In 2016, this group accounted for approximately 15.5 percent of the Swedish-born population⁵ (Statistics Sweden).

An Overview of Immigrants in the Swedish Labor Market

In the international literature, immigrant-native earnings differences are commonly used indicators to measure the labor market integration of immigrants (i.e. Borjas 1985; Chiswick 1978). In the Swedish context, however, measuring employment rate differences between immigrant and native populations is more useful indicator of immigrant labor market integration since high rates of unionization and the practice of collective bargaining allows for little variation in wages (Bengtsson, Lundh and Scott 2005).

⁵ Approximately 13 percent of the total population.

As previously mentioned, the Swedish economy expanded rapidly after World War 2 and the country was facing a labor shortage due to insufficient domestic labor. The government therefore facilitated the active recruitment of labor from abroad to meet the demand. As a result, the labor migrants that arrived in the 1950s and 1960s had no problems finding employment. The same can be said for the European refugees that arrived during this period. Figure 3 shows the development of employment rates of immigrant and native populations between 1960 and today. Between the 60s and 70s, immigrant men and women displayed higher employment rates than their native counterparts.

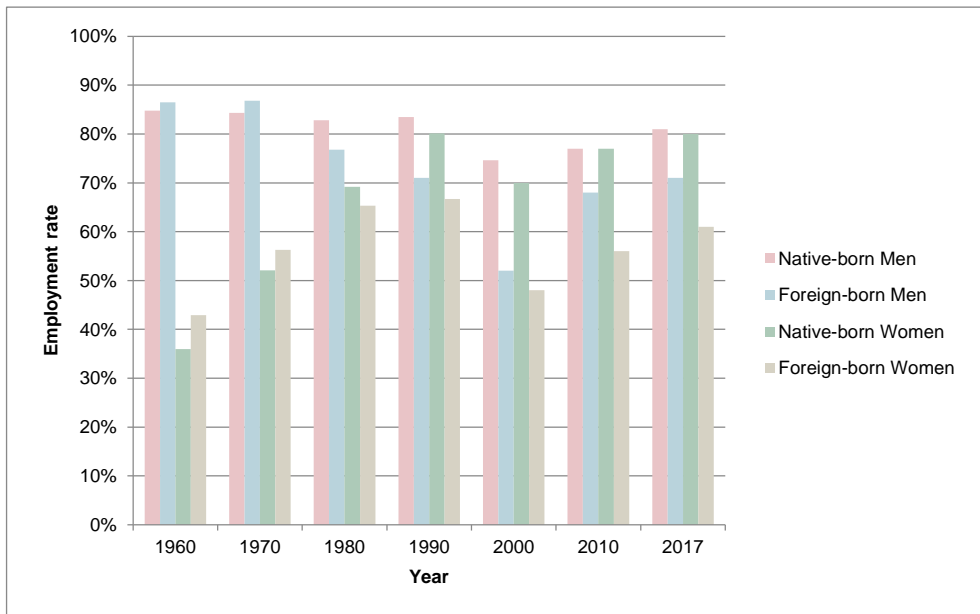


Figure 3. Age-standardized Employment rates (percent) of native and foreign-born men and women, age 16-64
 Source: Bevelander (2000) and Statistics Sweden (extracted on 13 Oct 2017 from <https://www.scb.se/hitta-statistik/>)

Since the 70s, however, there has been a gradual deterioration of immigrant men's and women's employment rates. Today, there is approximately a 10 percentage point gap between native and foreign-born men, and approximately a 20 percentage point gap between native and foreign-born women.

Part of this development is due to the changing in the composition of the immigrant population (Bevelander 2000; Helgertz 2010). Not only did the country of origin composition of the migrant flows change, but so did the reasons for migration. The earlier cohorts were predominantly labor migrants and refugees from Europe, while those arriving from the 70s onward were primarily refugees and family reunification migrants from more distant origins. Rooth (1999) argues

that since the post-1970s cohorts arrived from more ethnically and culturally “distant” origins than the previous ones, they faced more difficult challenges in developing the necessary “cultural” and country-specific capital required to excel in the Swedish labor market. Since the timing of this change in the immigrant composition coincided with the structural change in the Swedish economy, later arriving immigrant cohorts faced a labor market centered on a service sector that valued Swedish communication skills and institutional familiarity.

The structural change that took place in the 1970s and 1980s led to organizational changes disproportionately disadvantaging immigrants. The contraction of the industrial sector and the rise of the service sector⁶ resulted in a long-term change to more information- and communication-intense working processes (Schön 2007). In previous decades, immigrants were employed in the industrial sector that was conducive to integrating immigrant labor; however, the structural change introduced a flat organizational structure that valued general competence and teamwork (Lundh 2004). This transition emphasized country-specific human capital, such as language proficiency, that newly arrived immigrants lacked (Scott 1999).

Looking at a cross-section in 1999, Bengtsson, Lundh and Scott (2005) show that earlier arriving cohorts had higher employment rates. In particular, the employment rates of men and women that immigrated during the period 1970-1979 were 65 and 63 per cent, respectively, whereas, the employment rates of men and women that immigrated during the period 1988-1992 were 53 and 46 per cent, respectively. Furthermore, according to Taguma et al. (2010) in 1995 the foreign-born population with less than five years of residence in Sweden had employment rates 50 percentage points lower than the native-born population. Although this is partially due to the 1970 to 1979 cohorts having arrived earlier, the compositional differences between cohorts also plays an important role since they were predominantly born outside of Europe (Dahlstedt 2011; Joonas, Gupta and Wadensjö 2014).

There were also large differences based on the region of origin of the immigrant groups. Employment rates were highest among Nordic and Western European immigrants, followed by Southern Europeans, and lowest amongst those from developing countries. These differences remained robust even after controlling for time in Sweden and level of education (Bengtsson, Lundh and Scott 2005; Dahlstedt 2011; Joonas, Gupta and Wadensjö 2014).

During the 1980s, immigrant labor market outcomes changed dramatically. Not only did the employment rates of immigrants drop below native levels, but a divergence in relative earnings develops (Aguilar and Gustafsson 1994). This does

⁶ The IT-sector slowly grew to prominence beginning in the 1980s

not appear to be driven by the compositional shift of the immigrant population. The relative earnings of Nordic and European immigrants compared to native-born individuals in 1990 dropped from approximately 115 and 120 percent in 1980 to 75 and 80 percent, respectively. In addition, the relative earnings of the 1960 and 1970 immigrant cohorts deteriorated dramatically (Aguilar and Gustafsson 1994; Bevelander 2000; Scott 1999).

Another disadvantage that has developed amongst foreign-born individuals in Sweden is the underutilization of their skills once they are employed. Immigrants in Sweden have displayed a higher likelihood of being overeducated for the jobs they have, and the incidence is higher amongst individuals that are born outside of Europe (Dahlstedt 2011; Joonas, Gupta and Wadensjö 2014). Overeducation is generally defined as a state in which an individual has more education than is required for a given job, or having more education than the average individual who is working in that job. This is problematic for two particular reasons. First, one of the most consistent findings is that individuals that are overeducated experience lower returns to the education they receive than those who are properly matched. Specifically, overeducated workers typically earn more than correctly matched workers in the same type of job, but earn less than correctly matched workers with the same years of schooling (Chiswick and Miller 2008; Joonas, Gupta and Wadensjö 2014; Korpi and Tåhlin 2009). Furthermore, evidence suggests that the returns to overeducation are even lower for immigrants relative to natives, marking a double disadvantage (Nielsen 2011; Wald and Fang 2008). A second problem is related to the state dependence of overeducation. Joonas, Gupta and Wadensjö (2014) find that overeducation is more persistent for immigrants compared to natives, indicating that it has a scarring effect on the long-term labor market prospects of immigrants. As a result, even immigrants that do obtain employment are more likely to face challenges compared to natives.

To summarize, the labor market position of immigrant in Sweden has gradually deteriorated. Early in the post-war period, immigrants experienced higher employment rates and wages relative to the native-born population. By the 1990s, immigrants displayed lower employment rates, wages, and also a higher probability for being overqualified for the jobs they found. One of the most consistent findings, however, suggests that all immigrant populations experienced a deterioration in their labor market outcomes, but those born in non-Western countries were most negatively affected.

The Housing Market in Sweden

Since Sweden remained outside World War 2, the country was in no need of reconstruction of war-damaged areas like several of its European neighbors. Several other factors, however, put significant pressure on the country to invest in large scale construction, namely rapid urbanization and poor housing standards in the major cities. Between the mid-nineteenth century and the mid-twentieth century, the share of the population living in towns and cities grew from 10 percent to approximately 50 percent (Andersson, Bråmås and Holmqvist 2010; Hall and Vidén 2005). This rather rapid increase in the urban population was associated with increased demand for housing, and predominantly in the larger cities. In order to solve the problem, in 1965 the Swedish parliament adopted the target of constructing one million new public housing units in ten years. This agenda became known as ‘the Million Homes Program’ (Miljonprogrammet), hereafter referred to as MHP.

The goal of the MHP was to build 100,000 new homes per year over the course of ten years in order to alleviate the housing shortage, as well as to modernize the housing stock. The project targeted the peripheral regions of the larger cities in which the housing shortage was most severe and where there were opportunities for major construction. The development was predominantly comprised of large multi-family apartment complexes and a smaller share of single family homes. The multi-family housing complexes, in particular, faced criticisms due to their lack of social and commercial facilities, as well as their aesthetically unattractive design. By the time that the project was finished in the mid-1970s, the housing shortage had given way to a housing surplus in several regions in the country (Andersson et al. 2003; Hall and Vidén 2005; Hedin et al. 2012).

During their construction, the social composition of the MHP areas has changed dramatically. In the 1960s, all types of families moved into these areas, and were largely migrants from other parts of Sweden. In the 1970s, the public sentiment towards the MHP areas and the villa boom⁷ led to the disproportionate relocation of the native Swedes that had previously resided in these areas (Abramsson, Borgegård and Fransson 2002; Bengtsson 1991; Lauster and Fransson 2006). At the same time, the immigrants arriving in Sweden after the 1970s were locating in the major cities and occupying the vacant MHP apartments. These neighborhoods gradually became more concentrated with immigrants as they became ports of entry for the subsequent flows of immigrants (Andersson 1997; Andersson 2013; Andersson, Bråmås and Holmqvist 2010; Bråmås and Andersson 2010; Lindberg and Linden 1986; Magnusson and Özüekren 2002; Molina 1997). With the

⁷ Market demand driven by low interest rates and increased incomes reoriented the construction sector to increase the production of single family homes

growing socio-economic disadvantages amongst later arriving immigrant cohorts and the spatial isolation of the MHP projects, these regions transformed into regions synonymous with concentrated poverty and social problems (Andersson 1997; Biterman 1993; Grundström and Molina 2016).

It is important to note that this process was facilitated by the gradual liberalization of housing market. Grundström and Molina (2016) identify three distinct periods of Swedish housing policy: Regulating Folkhem housing (1930-1974), Deregulating Folkhem housing (1974-2006), and Back to business in housing (2006-present). The period 1930-1974 is characterized by a housing market that was highly regulated by the Swedish state. Comprehensive housing policy that included housing subsidies, regulation of loan interest rates, and highly regulated municipal housing companies allowed the country to eliminate housing shortages with the development of high quality and affordable housing. The resulting housing surplus after the completion of the MHP facilitated the transition towards a period of deregulation. The period 1974-2006 saw a dramatic decrease in the housing construction from approximately 100,000 new units constructed in 1974 to 30,000 per year in the mid-1980s. The gradual abolishment of state regulations and rent controls, along with the marketization of the housing market increased the cost of housing (Hedin et al. 2012). Housing construction during this period was driven largely by expensive housing projects in attractive and centrally located parts of the cities (Grundström and Molina 2016; Hedin et al. 2012). The revitalization of the inner cities during this period disproportionately increased the property values in the inner cities further exacerbating ethnic segregation in the cities. In 2006, there was a further marketization of the housing market. Although rent subsidies remained for low-income families and retirees, there was a deficit of affordable rental housing. The construction sector remained market oriented with several small developers and construction companies, and construction rates dropped to approximately 20,000 units per year. Rent levels increased during this period due to high construction costs for newly built housing, increased renovation costs for the MHP areas, and the abolition of laws supporting rent control (Grundström and Molina 2016).

Over the last several decades, vulnerable groups have experienced increasing difficulties in obtaining affordable housing. Not only have rental prices increased dramatically, but so have the prices of cooperative and ownership housing, as well as the minimum down payment required to obtain a mortgage (15 percent). The housing that has remained relatively affordable is located in the MHP areas; however, these housing areas are in need of renovation and have been deteriorating in quality. As a result of the liberalization of the housing market in Sweden, ethnic and socio-economic residential segregation has increased (Andersson 2013; Andersson and Magnusson Turner 2014; Hedin et al. 2012),

making Sweden one of the most ethnically segregated countries in Europe (Andersson, Magnusson Turner and Holmqvist 2010).

The Swedish Refugee Placement Policy (Whole of Sweden strategy):

Before 1985, a majority of refugee immigrants applied for asylum once they arrived in the Sweden and often remained permanently in the municipality from which they applied for asylum. The cities and municipalities with established immigrant populations became the destination of choice for new-entrees. As a result, refugee migration further intensified the concentration of immigrants in already immigrant dense areas (Åslund 2005). In an effort to alleviate the administrative and economic burden on established entry municipalities, as well as to promote immigrant integration, in 1985 the Immigration Board was given the responsibility to randomly assign refugees (except those who arrived for family reunification reasons) to an initial place of residence. In terms of integration, the idea was to place individuals in municipalities that had suitable characteristics for integration, such as educational and labor market opportunities (Edin, Fredriksson and Åslund 2003). Initially, the intention was to sign contracts with 60 municipalities, but due to large numbers of asylum seekers in the 1980s a larger number of municipalities were included. By 1989, 277 out of 284 municipalities were involved in the placement policy. The factors that initially drove the placement policy, labor market and educational opportunities, were eventually abandoned in favor of housing availability. Figure 4 shows the change in the residential patterns of immigrants before and after the policy was implemented. As one can see, prior to the 1985 immigrants were concentrated in particular locations, while after 1985 they became spread out across the country.

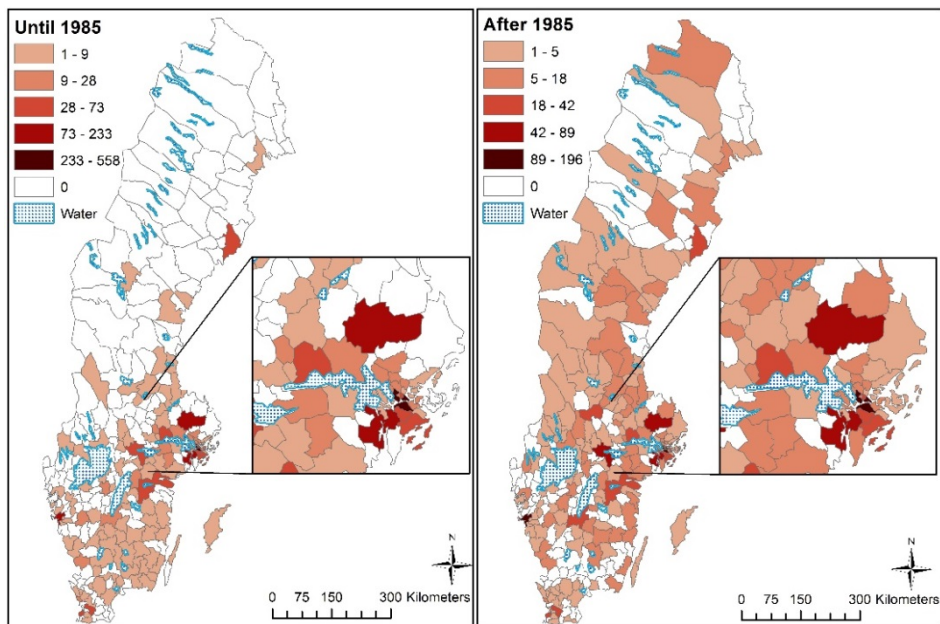


Figure 4. Pre- and post-placement policy initial municipalities of residence of a random sample of refugees. After 1985 represents the situation after the implementation of the placement policy.
 Source: Aradhya et al. (2017); Swedish Longitudinal Immigrant database

During the period in which the policy was most strictly enforced, 1987-1991, asylum seekers underwent several administrative procedures until they were finally assigned to their place of residence. Initially, refugees were placed in centers that were dispersed throughout Sweden while waiting for a decision from the Immigration Board. The port of entry had no bearing on which refugee center individuals were assigned, but individuals were sorted by native language. On average, asylum seekers waited three to twelve months in order to receive a decision on their residence permit from the Migration Board (Rooth 1999). After the individual received their decision, the process of municipality assignment was much shorter.

Once immigrants had been assigned to a residential location, they received support payments while participating in Swedish language courses. This financial support was not predicated on these individuals remaining in the assigned location, so individuals were free to relocate from the assigned municipality without losing their transfers (Aradhya et al. 2017). The initiative was most strictly implemented between 1987 and 1991, after which it was gradually dismantled until 1994

(Aradhya et al. 2017; Edin, Fredriksson and Åslund 2003; Åslund 2005). After 1994, settlement patterns reverted back to previous patterns. Traditional entry ports continued to receive large waves of immigrants further increasing segregation (Bråmås 2008).

The Primary and Secondary Educational System in Sweden

In the post-World War 2 period, several reforms were implemented in order to increase the level of education in the population, as well as maintain an equal standard throughout the country (Björklund et al. 2004; Lindblad et al. 2002; Stenholm 1984; Taguma et al. 2010; Wildt-Persson and Rosengren 2002). The policies implemented towards the end of the post-war period, however, transformed the Swedish educational system from one of the most centralized educational systems in the OECD to one of the most decentralized ones (Ahlin and Mörk 2008).

The transformation of the educational system can be characterized by two distinct periods: pre-1990s (Centralized regime) and post-1990s (Decentralized regime). Prior to the 1990s, the educational system was governed and regulated by the central government (Ahlin and Mörk 2008). After a set of reforms were gradually implemented in the late 1980s and through the 1990s, however, the regulatory body of the educational system shifted towards the municipal government. This shift transformed the public education system from one focused on pursuing egalitarian social and economic goals, to a market-oriented system that encouraged competition between private and public schools, decentralized authority to local governments, and increased the variability in the resources allocated to students of different social classes and geographical regions (Björklund et al. 2006).

Centralized Regime:

Compulsory education was already implemented by the mid-19th century; however, following World War 2, there was a reinvigorated social democratic agenda striving for equality through centralized state governance (Björklund et al. 2006; Lindblad et al. 2002). Early in the post-war period, the central government regulated the educational sector in all aspects. In particular, teachers were central government employees, and their wages were set through central negotiations and implemented nationwide. Similarly, school funding was allocated through targeted equalization grants, so that all municipalities had the necessary funding for the school sector. This system was designed to regulate the teacher to student ratios and the number of teaching hours, so that municipal governments were unable to reallocate resources in order to hire more teachers or teaching hours (Ahlin and Mörk 2008). Even the curriculum was centrally determined, so that all students

received the same type of basic education (Björklund et al. 2006). This systematic approach led to a high degree of uniformity in the resources allocated and services provided by the educational system throughout the country.

Throughout this period, there was also an effort to gradually expand the educational attainment of the population in an effort to equalize the opportunities of individuals regardless of social class (Björklund et al. 2006; Lindblad et al. 2002; Stenholm 1984). One of the first major reforms that took place in the post-World War 2 period included the expansion of tuition-free, compulsory schooling to a nine-year comprehensive system for all children aged 7 to 16. The reform was introduced in 1962 and was gradually implemented finally completed by the end of the 1970s (Hort 2014; Ljungberg and Nilsson 2009).

From the mid-1960s up to 1971, traditional secondary school and most forms of vocational education were merged into an integrated upper secondary school for students aged 16 to 20. Almost 90 percent of students aged 17 enrolled in upper secondary programs lasting two to three years. The result of this expansion was an increase in the average years of schooling from seven years in the 1950s to eleven years in the 1970s. The restructuring of the educational system finally reached the tertiary level in the late 1970s. This change upgraded disciplines such as nursing, primary school teachers programs, and higher education in the fine arts to tertiary level education programs (Ljungberg and Nilsson 2009).

The Swedish educational system achieved a high degree of uniformity and has remained largely unchanged until today. By the end of the 20th century, all children took part in compulsory schooling until the age of 16 and approximately 80 percent enrolled in non-compulsory, upper secondary education lasting approximately three additional years (Björklund et al. 2006; Söderström and Uusitalo 2010). As a result, the average age that children leave school increased from 14 to 18 years of age as a result of the educational expansion (Hort 2014; Ljungberg and Nilsson 2009; Taguma et al. 2010). Furthermore, Björklund et al. (2006) argued that up until the 1980s, the system seems to have been quite successful as Sweden ranked high in cross-country comparisons of economic equality. The extent to which this was driven by educational policy, however, is an unsettled debate.

Björklund et al. (2006) argue that the tides began turning in the 1980s, at which time several important developments led to the decentralization of the educational system. The authors state, “The concepts of decentralization and ‘goal steering’—or the practice of governing by defining a broad set of goals for local governments to achieve rather than by setting strict regulations—became very fashionable” (p. 8). Beginning in the late 1980s and through the 1990s, the educational system came under public scrutiny as it was widely argued that Swedish school performance was declining, even though the International Adult Literacy Survey

(released in 1994) and PISA evaluation of student achievement (released in 2000) suggested the contrary (Björklund et al. 2006; Henrekson and Jävervall 2017). These developments laid the foundations for the fundamental changes in the educational system.

Decentralized Regime:

Although the decentralized period of the educational system took full form in the 1990s, the first steps had already been taken in the late 1980s. In particular, the first major reform in 1989 made the municipalities the main employers of teachers, allowing for greater variability in teacher pay and working conditions. Additionally, the government also withdrew the regulatory powers of the central government over education. This occurred as Sweden was entering the turbulent economic period of the 1990s. The country was amidst an economic crisis that led unemployment levels to dramatically increase 10 percent after having been stable around a couple of percent in the decades prior (Reinhart and Rogoff 2013). These conditions coupled with growing support for decentralization led to the election of a center-right government.

In the 1990s, the new government implemented several reforms that decentralized and deregulated the public sector. In 1991, the administrative responsibility of compulsory and upper secondary school shifted to the municipality level in order to allow local governments to allocate resources according to the specific local economic and demographic conditions. As a result, the targeted grant system that had previously been used to fund the educational system was replaced by a lump sum grant that allowed the municipalities to independently allocate resources in the schooling system. This meant that the municipalities maintained autonomy to distribute funding to teaching hours, and even the hiring of teachers without adhering to the central regulations regarding teacher to student ratios (Ahlin and Mörk 2008).

Another reform was implemented in 1993 that further deregulated the funding to the school sector. The reform in 1991 eased the regulations regarding school spending, but maintained targeted grants for education. The reform in 1993, however, replaced these grants by an even more deregulated block grants that could be allocated across all social services provided by the municipality

(i.e. schooling, child and elderly care, social services, and infrastructure) (Ahlin and Mörk 2008; Björklund et al. 2006). Further decentralization took place in 1996 as teacher's wage setting was transferred from central negotiations implemented nationwide to the municipal government, further exacerbating disparities across the country.

While the process of decentralization was taking place, two other monumental reforms were introduced further altering the structure of the educational system.

The first was a school choice reform that increased the possibilities for parents to choose the compulsory schools their children attended. The second was a voucher system that allowed students to attend private schools (free-schools) without paying any additional fees (Böhlmark and Lindahl 2015; Edmark, Frölich and Wondratschek 2014).

The school choice reform marked a significant deviation from the way students sorted into schools in the previous period. Prior to the reform, students were assigned and obligated to attend the public school located in their local catchment (Böhlmark and Lindahl 2015; Edmark, Frölich and Wondratschek 2014). The only other option was for students to opt into attending one of the few private schools that were available, but this only accounted for about one percent of total school enrollment in the country (Böhlmark and Lindahl 2015). After the school choice reform, however, students were able to choose to attend any public school within their municipality of residence, subject to space limitations. This policy was again expanded in 1994, allowing students to choose to enroll in schools outside of their municipality of residence (Björklund et al. 2006; Edmark, Frölich and Wondratschek 2014).

The implementation of the voucher system had a similarly profound impact. Prior to the reform, private schools in Sweden were rare; however, the new legislation stipulated that private schools approved by the National Agency for Education (from 2008 by the Swedish Schools Inspectorate) would be entitled to municipal funding. As a result, the number of private schools increased across the country. Most of these schools receive funding through municipal grants and offer education corresponding to that of comparable public schools, thus following the format of charter schools (Söderström and Uusitalo 2010; Taguma et al. 2010). Furthermore, the voucher system allowed students to attend these schools free of charge, and the schools were required to admit students on a first-come-first-served basis (Björklund et al. 2006; Szulkin and Jonsson 2007; Söderström and Uusitalo 2010). As a result, private schools became direct competitors to the traditional public schools.

The combined result of the school choice reform and the voucher system was an increased share of students opting into privately run schools and public schools outside of their municipality of residence. It is estimated that 12 percent of students choose to attend private schools, and roughly as many choose to attend a school outside of their local catchment (Björklund et al. 2006; Edmark, Frölich and Wondratschek 2014).

With respect to school segregation, there seems to have been a short term effect of the school choice reform and the introduction of the voucher system (Böhlmark, Holmlund and Lindahl 2016; Lindbom 2010). Although a few studies have shown that there has been a general increase in school segregation corresponding to the

increased school choice (Fredriksson and Vlachos 2011; Skolverket 2012), the mechanisms driving this trend have been less examined. In particular, although school choice is one possible determinant, school segregation may also be driven by increases in residential segregation. Böhlmark, Holmlund and Lindahl (2016) examined these mechanisms by exploiting variation in school choice opportunities across municipalities in order to disentangle the effects of school choice and residential segregation on school segregation. The authors find that in municipalities where school choice was more prevalent, school segregation between immigrants and natives, and between children of high and low educated parents, increased more than in municipalities where school choice was limited. These results remain robust after controlling for measures of residential segregation. The results also indicate, however, that school segregation 15 years after the reform that can be attributed to school choice is relatively small. Furthermore, in an international context, Sweden ranks in the low to medium levels of school segregation.

Data

The data used in this thesis comes from two register-based datasets administered by the Centre for Economic Demography at Lund University: The Swedish Longitudinal Immigrant database (SLI) and the Swedish Interdisciplinary Panel (SIP). Both of these sources are longitudinal, micro-level datasets containing high quality socio-economic, health, demographic, and education information.

Swedish Longitudinal Immigrant Database (SLI)⁸

The SLI was created by drawing random samples of 2,600 immigrants from the 1970 census in the ages 0-65, stratified by sex and five-year immigration periods from each of the 16 qualitatively most important immigration countries to Sweden. This sample was extended with a random sample of almost 7,000 citizens from each immigration country according to the same stratification logic for the immigration period 1968-1993. For the immigrant sample, children residing in the same household as their immigrant parents were also added. With respect to the native population, the database also included stratified random samples of native Swedes selected from the 1970 and 1980 censuses. In 1997 the SLI consisted of 110,000 unique individuals.

⁸ The SLI is used in paper 1

In 2005, the SLI was updated and expanded. Following the same stratification procedures as the initial sample construction, the additions included a sample of native and born between 1971 and 1987, and the sample of immigrants from countries of origin initially included were updated to include immigration cohorts 1994 to 2001. The major expansion of the SLI, however, consisted of linking individuals to their children, children's children, parents and spouses, provided that they at some point in time between 1968 and 2001 had resided in Sweden. As a result of the expansion, the SLI consists of 550,000 unique individuals from 150 countries of origin (although some of the countries of origin consist of few individuals) (see Helgertz 2010 for more information on the construction of the SLI).

The strength of this database comes from its unique set of pre and post-migration data for a random subsample of the individuals. Although this leaves us with a smaller sample size, the population remains representative. The pre-migration information was manually collected from visa applications stored in the archives of the Swedish Migration Agency. The pre-migration information is self-reported and includes variables such as city of birth, occupation prior to emigration, education, and visa type (i.e. refugee, labor, or family reunification) (Helgertz 2013). Using unique identification numbers for each individual, the pre-migration information is subsequently linked to post-migration data on socioeconomic and demographic variables available in the Swedish administrative registers covering the period 1968-2001. The analytical sample consists of individuals entering Sweden between 1968 and 1991.

Swedish Interdisciplinary Panel (SIP)⁹

The SIP is a register-based longitudinal dataset containing an extensive set of socio-economic, health, demographic, and education information on the entire Swedish population born between 1973 and 1995, as well as their parents born outside the main sampling window, with annual coverage from 1968 until 2011. Information about each individual is merged between administrative registers using unique identification numbers assigned to each individual. Using the Multigeneration register, we are able to link individuals to their parents, thus allowing us to identify siblings. All information in the dataset is available for all parents and siblings of the individuals born within the index cohorts.

The SIP is advantageous since it contains the total population in the index cohorts, unlike the SLI, which is a subsample of the immigrant population. We are able to identify the immigrant population and generational status by identifying the place

⁹ The SIP is used in papers 2, 3, and 4

of birth of the individuals in the index population, as well as that of their parents. Across all studies included in the thesis, first generation immigrants are identified as those born outside of Sweden, and subsequently second generation immigrants are identified as those being born in Sweden with at least one parent born abroad. Besides the standard demographic and socioeconomic data available in the Swedish registers, the SIP also includes information present in the education register and the Medical Birth Register (MBR).

The education register includes 9th grade (students are on average 16 years of age) teacher-assigned course grades for all birth cohorts (corresponding to the graduating cohorts 1989-2011). Ninth grade marks the final year of compulsory schooling in the Swedish system, and these grades determine the high school track (i.e. Natural Sciences, Social Sciences, or vocational education) for which students are eligible. The main variable exploited in this thesis is the Grade Point Average (GPA), calculated as the average marks in all the mandatory subjects. In this thesis, GPA is standardized by graduation year (z-score transformation) in order to account for the well-documented differences in cognitive ability across cohorts (Flynn 1987; Pietschnig and Voracek 2015; Weber, Dekhtyar and Herlitz 2017), changes in student body composition (Jonsson and Rudolphi 2011; Szulkin and Jonsson 2007), and school assessment schemes. With respect to the latter, Sweden implemented an assessment reform in 1998 at which time the grading system changed dramatically. Prior to 1998, each class was graded on a “curve” (following a normal distribution). After 1998, the grading criteria became based on teacher’s evaluation as to whether each student had sufficient mastery to earn a passing grade or not. As a result, the standardized GPA reflects a student’s performance relative to the entire national graduating cohort in a given year.

The second data source that plays an important role in this thesis is the MBR. The MBR in the SLI contains information from the prenatal care, delivery care, and neonatal care¹⁰ for birth cohorts 1973-2011, with approximately 99 percent coverage of all births in Sweden (Cnattingius et al. 1990). The MBR records the personal identification number of the mother, but not the father. As a result, it is possible to construct a 3-generation linkage only through the mother’s lineage, with complete birth information for mother’s (generation 2) and their children (generation 3), for all mothers born in Sweden that are 38 years or younger. This information and linkage strategy is exploited in the 4th study included in this thesis.

¹⁰ More information on the specific variables in the MBR can be found at:
<http://www.socialstyrelsen.se/register/halsodataregister/medicinskafofelseregistret/inenglish>

Methods

The use of register data provides a unique opportunity to study immigrant integration due to its prospective, detailed, and longitudinal structure. As a result, it is especially well-suited for the use of panel models. Variations of fixed-effects and random-effects designs are used throughout the thesis in order to account for various levels of unobservable heterogeneity. In addition, the large sample sizes available allow for very detailed sub-analyses to be conducted, highlighting one of the strengths of this thesis. Additionally, register data is void of several pitfalls present in retrospective data sources, such as surveys, which are commonly used in the immigrant integration literature (i.e. non-random censorship, recall bias, and response rate issues).

In addition to the information present in the register data, it is common practice to link additional information that is not delivered by Statistics Sweden (Björk et al. 2017). This can be done at the individual level or at the context level. For example, the first study in this thesis makes use of digitized visa application information that was linked to individuals, and the third study links contextual information from the country of origin to analyze immigrant outcomes that are traditionally beyond the scope of register-based studies.

The empirical analyses employ a variety of statistical methods, chosen for each specific paper based on the methodological considerations and research questions asked, which are specified in more detail in the subsequent section. In general, the statistical methods used appropriately fit the strengths and weaknesses presented in register data.

Summary of the Papers

Paper 1: Region of Origin: Settlement Decisions of Turkish and Iranian immigrants in Sweden, 1968-2011

The residential decisions of immigrants are an important indicator and determinant of immigrant integration, as it reflects the social and institutional structures that determine residential sorting, as well as the environment in which they develop in the host society. One of the most consistent findings in the literature is that immigrants tend to locate in areas that have large concentrations of other immigrants, and often those from the same origin (Logan, Zhang and Alba 2002; Massey 1985; Massey et al. 1993). While there are competing theories regarding the processes that influence the residential decisions of immigrants, they all generally make one large assumption that country of origin is the level of

aggregation at which to examine ethnic enclave influences on immigrants' residential decisions (Park and Iceland 2011; Zavodny 1999; Åslund 2005). Country of origin may be an appropriate marker to understand ethnic residential clustering; however, for immigrants from ethnically diverse and potential conflicting ethnic populations, as is the case for many refugee groups, separate residential clustering dynamics may be at play. This paper addresses this issue by analyzing the residential choices of a random sample of first generation Turkish and Iranian immigrants in Sweden, both ethnically diverse populations from countries with a high degree of ethnic regional settlement patterns. Specifically, by using city of birth in the home country, we examine the extent to which networks defined by region of origin is a better predictor of residential decisions than is country of origin.

In order to test this, we assess the probability of relocating out of the initial municipality of residence as a function of individual and municipality-level characteristics, specifically the size of the regional and country networks. The variables of interest were the number of 'regional neighbors' living in the municipality (defined as the number of individuals in Sweden born within a 60 km radius¹¹ in the country of origin of the index individual) and the number of 'country neighbors' living in the municipality (defined as the number of individuals from the same country of origin as the index individual)¹². The main empirical challenge that we aimed to address was the endogenous nature of the municipality characteristics. In order to account for this issue, the empirical strategy employed relies on the exogenous assignment of asylum seekers to their initial municipality of residence during the "Whole of Sweden" strategy (the empirical strategy follows Åslund 2005). This policy provides an ideal setting, since the characteristics of the initial place of residence are randomly assigned, and thus exogenous to the initial settlement decision.

The probability of resettlement is estimated using Random Effects Probit regressions. This empirical strategy was selected over a Nested Logistic regression, the optimal method used modeling strategy to assess residential choice decisions (McFadden 1977), due to the computational power required for such models, as well as the inability to exploit the exogenous placement.

The results from this study indicate that, indeed, individuals are less likely to relocate from municipalities in which there is a large presence of other immigrants from the same region of origin. Instead, individuals living in municipalities with a large number of individuals from their country of origin are observed with an

¹¹ Several thresholds were used to test robustness, and yielded qualitatively similar results.

¹² These are mutually exclusive, so an individual that is counted as a regional neighbor is not also identified as a country neighbor

elevated probability of relocating from their initial municipality of residence. We argue that the results indicate that ethnic homophily and, potentially, the ethnic or religious differences that divided populations in the home country are replicated in the destination. Thus, assuming region of origin is capturing ethnicity, these results would reflect this process rather than through a process of solely network migration.

Paper 2: Father's Repeat Migration and Children's Educational Performance

In line with the intergenerational perspective of this thesis, paper 2 looks at the educational performance of second generation immigrants in Sweden. In particular, we analyze the intergenerational consequences of father's repeat migration, a common but relatively understudied pattern of migration (Aradhya, Scott and Smith 2017).

This study contributes to the debate on the long-term integration of immigrants by analyzing specifically the impact of heterogeneous familial migratory patterns often observed in migrant populations. Specifically, immigration is often viewed as a one-time and permanent phenomenon, but it has been shown that immigrants often engage in multiple acts of migration (Aradhya, Scott and Smith 2017; Bratsberg, Raaum and Sørli 2007). Using register data, we are able to analyze the long-term consequences of one form of the complex migratory patterns practiced by immigrants, a task that is not viable with other data sources. Repeat migration is a unique phenomenon in that it potentially reflects the integration intentions of immigrants (Dustmann 2008), disrupted or delayed integration (Bean, Brown and Bachmeier 2015), as well as the way selection processes lead to persistent stratification (Aradhya, Scott and Smith 2017).

In order to investigate this, we construct complete migration histories for each immigrant by tracking each reported act of migration an individual executes in the population registers. We then analyze the extent to which children with father's who engaged in an act of repeat migration differ from children whose father's did not engage in any acts of migration after entering Sweden (permanent migrants) in average school performance (GPA).

One of the empirical challenges in this study was in dealing with the endogenous nature of repeat migration. In order to account for this, we use school-level fixed effects. This method was chosen for three reasons. First, there was no way to use family-fixed effects, since there is no within-family variation in the presence of a father that engaged in a repeat migration. Second, school fixed effects allows us to account for non-random sorting into neighborhoods to a better extent than municipality of residence, the lowest level of residential information present in the SIP. Finally, there was no instrument that was valid to instrument for repeat migration. Albeit, this does not fully address the endogeneity problem, it is the

best that could be done with the data available. As a result, we interpret our results as associations and do not assume we are identifying causal relationships. In addition, quantile regressions were run to check for non-linearities in the associations.

The results indicate that the children of fathers who repeat migrate have significantly lower grade point averages, even after controlling for individual and family characteristics, than children of permanent migrants. In addition to the main analysis, we also assessed whether the timing of the repeat migration and the duration of time the father spent abroad modified the associations we estimated. In particular, we stratified the analysis between children whose fathers repeat migrated before they were born and those whose fathers did so after they were born. Here, we found that the penalties of children whose fathers repeat migrated before they were born remained robust, but the duration that the father spent abroad did not matter. On the other hand, for children whose fathers repeat migrated after their birth, there was an inverse relationship between time spent abroad and its impact on the GPA of the child. These results suggest that a combination of selection and delayed integration may exert negative pressures on the GPA of children of repeat migrants.

Although the exact mechanisms are difficult to disentangle in this study, the results highlight several important considerations for assessing immigrant integration. First, understanding the transitory behavior of immigrants is important to disentangling nuances in the integration process. There are heterogeneities in the immigrant population that lead to unique integration trajectories, and repeat migration is just one. Second, from a policy perspective, these results indicate that long-term penalties exist for this group. Regardless of the fact that the mechanisms are not transparent, we can identify a subsection of the second generation population that is underperforming in school that is related to the migration behaviors of their fathers. If these results are purely driven by selection, since they remain robust to all model specifications used, then at the very least it suggests that there is an intergenerational process at play that must be uncovered.

Paper 3: Gendered Integration: Origin Country Gender Norms and Gender Gaps in Educational Performance amongst Second Generation Immigrants

For decades, Sweden has consistently been ranked as one of the most gender equal societies in the world. Although males still display a gender advantage along several dimensions, for example labor force participation, there has been a reversal in gender inequalities in education in which females experience sizeable advantages. Alongside these gender developments in education, there has been a growing share of first and second generation immigrants from less developed and less gender equal origins. This study analyzes the 9th grade educational performance of the entire population of Swedish born cohorts 1973-1995, with a

focus on the extent to which gender gaps in educational performance exist amongst Swedish born individuals depending on the gender norms to which their parents were exposed.

Second generation immigrants provide an ideal test case to answer to understand the intergenerational transmission of gender norms. Like their peers with Swedish born parents, second generation immigrants are born in the host country; however, their household environment potentially differs as a result of the cultural roots of their parents. As a result, the extent to which gender norms are transmitted through the norms practiced within the family may lead to gender differences in the outcomes of children. To date, the gender gaps in educational performance amongst child immigrants (Abada, Frank and Hou 2017; Abada and Tenkorang 2009; Dronkers and Kornder 2014; Dronkers and Kornder 2015) and second generation immigrants (Fleischmann and Kristen 2014) has been discussed in the literature, but the extent to which these gaps are related to the transmission of gender norms has been not formally tested in an adequate manner.

This paper aims to fill this gap in the literature by systematically testing the extent to which gender norms are transmitted across generations. In particular, this studies the extent to which the gender gaps in educational performance of children are related to measures of gender equality (Gender Inequality Index, labor force participation ratio, and adolescent fertility rate) in the mother's country of birth¹³. It is argued that these measures of gender equality capture the gender norms or culture to which these mothers are exposed (Blau, Kahn and Papps 2011; Fleischmann and Kristen 2014), and in turn is reinforced in the household.

In order to test this, the child's GPA is regressed on the interaction between the child's gender and the measures of gender equality in the mother's country of birth¹⁴, as well as a set of controls, in several independent fixed-effects model specifications. First, family fixed effects models are used to account for family level confounders. In this model specification, the within-family variation comes from different sex siblings, and includes controls for birth order. Second, country of origin fixed effects are used in order to account for country level differences, such as level differences in average grade performance for each immigrant group. This model includes controls for birth order and mother's level of education.

The main assumption applied in this study follows that of Fernandez and Fogli (2009) on second generation immigrants in the United States. In this study the authors look at the influences of source country characteristics on the fertility and

¹³ A detailed discussion regarding the reason the mother's country of birth is chosen is present in the article.

¹⁴ The gender equality measures are operationalized as the quintile ranking of the country in the world. Further clarification is available in the paper.

labor market behaviors of second generation immigrants in the United States. The authors state, “The economic and (formal) institutional conditions of the country of ancestry should no longer be relevant for second-generation American women (as neither the country nor even the time period is the same), whereas the preferences and beliefs embodied in these variables may still matter if parents and/or neighborhood transmitted them to the next generation” (p. 148). As a result, although measures of gender equality are proxies for other conditions in the source country, it is culture or norms that are being transmitted over generations.

Our results indicate that indeed gender gaps in education are related to the gender equality in the mother’s country of origin. All groups actually display a female educational advantage, but the more gender unequal an origin society is, the smaller the advantage, indicating persistent intergenerational associations between gender inequality and performance of daughters of migrants in the new society. This result also indicates, however, that there is an assimilation process taking place in gendered outcomes, since many of these countries of origin exhibit a male advantage in education (Grant and Behrman 2010). Albeit, this process may be occurring more slowly in the case of immigrants from countries with the lowest levels of gender equality, potentially indicating a dissonant acculturation paradigm.

Paper 4: Immigrant Ancestry and Birthweight across Generations: The Case of Sweden

Existing literature finds that the mean birthweight of immigrant populations in Western countries is lower than that of the native population and does not systematically converge over generations in the host country (Harding et al. 2006; Harding, Rosato and Cruickshank 2004; Juárez and Hjern 2017; Juárez and Revuelta-Eugercios 2016; Leon and Moser 2012; Ramraj, Pulver and Siddiqi 2015). This suggests that changing environmental, social, and lifestyle conditions of immigrants and their descendants has limited impact on the birthweight of their offspring. There are few studies, however, that use multigenerational links to identify this process for the total population of immigrants and their descendants. This study contributes to the literature by examining immigrant-native birthweight differences over two generations of immigrant groups born in Sweden using total population registers with multigenerational linkages.

In order to do this, children born in Sweden during the period 1987-2011 (G3) are linked to their mothers (G2), born in Sweden during the period 1973-1995, and their maternal grandmothers (G1) who are native or foreign-born. First, immigrant-native birthweight differences are examined for both G2 and G3 by country of ancestry. Second, G3 immigrant-native birthweight differences are examined by country of ancestry while accounting for factors that theoretically explain the differential. All analyses are conducted using linear regression with

municipality of residence fixed-effects to account for potential environmental confounders.

The results show that particular immigrant populations, namely Lebanese, Turkish, Chilean, and Asian¹⁵ immigrants, experience increasing birthweight disparities relative to natives over generations, while others display a convergence or no change. These differences only partially attenuate in the fully adjusted models, but remain large and significant across model specifications. The populations that display an increasing disparity over time are those from less developed origins that have traditionally struggled to integrate into Swedish society. It is not possible to identify the specific mechanisms behind birthweight changes over generations in the current study; however, some potential explanations include epigenetic processes or stresses related to social isolation. Nonetheless, this is the first study to show systematically, using high-quality data with multigenerational links, that there exist distinct segmented processes in the development of birthweight in immigrant populations over generations.

Conclusion

Throughout the post-World War 2 period, immigration to Sweden has been one of the most important drivers of demographic and societal change. During this period, the country transformed from one with nearly no foreign-born population to one with approximately 30 percent of the population being foreign-born or born in Sweden with at least one foreign-born parent. This shift has been accompanied with increasing difficulties in integrating immigrants into society. In particular, the deterioration of the economic and social position of immigrants and their descendants has raised concerns regarding the long term outlook of societal development. As a result, immigration and immigrant integration have become forefront issues amongst policy makers and academics alike.

This thesis engages in this discussion by empirically examining the integration process through a multidimensional and intergenerational lens. The studies included address some of the most pertinent dimensions of immigrant integration necessary to understanding the long term impacts of immigration. In general, the four studies shed light on the two broad research questions stipulated above, but do so from a variety of angles. The results from these studies uncover evidence that adhere both to the expectations stipulated by classic assimilation theory (Alba and Nee 2003; Gordon 1964) and the segmented assimilation hypothesis (Portes and Zhou 1993). Thus, this thesis highlights the complexity of the immigrant

¹⁵ This is the classification provided by the Swedish Statistical Agency

experience, and provides evidence that new forms of stratification are developing that may lead to further challenges in immigrant integration.

One of the main conclusions that can be drawn from this thesis is that immigrants carry their norms, values, and experiences with them when they migrate, and these characteristics continue to impact their outcomes post-migration, as well as those of subsequent generations. To some extent this has been widely shown and discussed through the consistent finding that differences in integration lie along country of origin lines; however, the exact channels through which this occurs is still being understood. Furthermore, country of origin does not necessarily capture this process since it masks considerable within-country of origin heterogeneity.

This is shown in the study analyzing the residential choices of Turkish and Iranian immigrants in Sweden. Particularly, the results from this study show that refugees from these countries are pushed to relocate from their initial municipality of residence if there are a larger number of co-nationals also residing there. Rather, they display a lower probability of relocating if there is a larger presence of regional neighbors. Since refugees initially left their country of origin as a result of persecution, this would support the notion that their experiences of marginalization in the home country influence their preferences towards the ethnic composition of their residential location. We argue that these results do not support the notion that region of origin is a more precise proxy for networks, since there is no reason to expect opposite effects when including country neighbors and regional neighbors in the same model. Thus, this provides evidence that pre-migration experiences manifest themselves in post-migration behaviors.

We also find that the norms and values of the country of origin influence the outcomes of the Swedish-born children of immigrants. This is examined in the third study of the thesis analyzing gender gaps in education amongst second generation immigrants. Similar to the children with Swedish-born parents, all immigrant groups display a girl advantage in education; however, the advantages are smaller for students whose parents were born in more gender unequal societies. This paper argues that this reflects a lingering effect of gender norms that are transmitted across generations within the household. Thus, the results provide evidence for the assimilation hypothesis in that the gender gaps in education seem to be converging to the native norm.

Both of these studies highlight some of the ways in which pre-migration norms, values, and experiences influence the integration process. Furthermore, the extent to which country of origin is a proxy for these experiences needs careful consideration.

A second important conclusion that can be drawn from this thesis is that previously unobserved disadvantages are developing amongst the descendants of

immigrants. In particular, the second study shows that the children of repeat migrants are disadvantaged relative to the children of permanent migrants. The exact mechanisms are difficult to identify in this study since this disadvantage is unexplained by observable characteristics. Similarly, the fourth study in this thesis shows that the immigrant-native birthweight differences are growing in the case of certain immigrant groups. Again, exact mechanisms driving these results are difficult to identify. Nonetheless, they highlight the alarming development of disadvantaged populations.

Although both of these studies do not directly identify the mechanisms behind the observed patterns, they are important to consider for two reasons. First, they highlight the complexity of the immigrant experience, since the challenges faced by immigrant populations differ between generations. Thus, part of the challenge in addressing the dynamics of integration is in disentangling the cumulative and the independent aspects of integration amongst the descendants of immigrants. Second, there seems to be a development of stratification that cannot be explained by the traditional factors. Even if these results are driven by selection (selective outmigration, for instance), at the very least we can use these results to identify an at-risk population. This can be used as a guideline for future research to understand what can be done to improve outcomes of these groups.

From a policy perspective it is important to consider the heterogeneity in immigrant experiences. Targeted integration policies may prove to be more cost effective than implementing policies aimed at overly generalized groups. Careful consideration of the pre-migration experiences of immigrant populations may help inform these policies. Similarly, funding research focused at disentangling the nature of the ethnic stratification experienced by the descendants of immigrants is necessary to tackling future challenges.

What can be taken away from this thesis is that integration is truly a multidimensional and multigenerational process that requires a dynamic policy approach. The face of integration issues changes over time as each subsequent generation becomes further distant from their migrant roots, and as a result the discourse surrounding these issues must adapt accordingly. The lingering legacy of country of origin may wane over time, only to be replaced by visible dissimilarities amongst native-born Swedes. As a result, it is important to consider that the consequences of failed integration may compound over generations. One relevant avenue for future research must be to uncover the role of discrimination as an engine promoting and perpetuating stratification. The evidence presented in this thesis on the development of new forms of ethnic stratification may reflect the legacy of poor integration, but also the intensification of prejudice and discrimination.

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Diversity of Legacy

One of the defining demographic developments of the past century has been the massive increase in international migration to Europe. While earlier migration had largely been an intra-European affair, more recent migration has been characterized by an unprecedented increase in migrants from non-European countries. This increasing heterogeneity in the migrant population, coupled with shifts from predominantly labor migration to mostly refugee and family reunification migration, has brought with it increasing challenges to integration. This thesis tackles the question of integration by moving away from a standard one-generation approach and studying the integration process over generations. In doing this, it also provides a more nuanced and comprehensive view of immigrant integration than is prevalent in the literature.

The thesis is important because it not only examines integration as a multigenerational process, but also views it as a multifaceted process. Integration is studied from the perspective of residential mobility, educational performance, gender gaps in education, and health.

The title "Diversity of Legacy" summarizes the central theme of this book. It is clearly shown that the legacy of the past is not the same for all migrants, with some groups moving beyond their history, while others continue to be defined by it. The past is not always prologue.



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