GRAN SASSO SCIENCE INSTITUTE
Urban Studies and Regional Science Doctoral Programme
Cycle XXXII – Academic Year 2016/2020

Multi-Scalar Analyses on Migrant Settlement-Site Selection

PHD CANDIDATE
Maire Carroline Magante

PhD Thesis submitted January 26, 2020

ABSTRACT

Rather than a singular event, migration is a complex series of temporal and spatial phenomenon occurring on a number of scales. As such, our frameworks and theories for understanding migration, and in particular explaining push and pull factors, are drawn from various disciplines. This thesis uses a variety of economic and sociological theories to explore the factors which influence migration settlement decisions. The three chapters approach the question of migration mobility at different scales. The first chapter explores the relationship between migrant location and poverty concentration in receiving society, exploring the co-location of migrants and poverty at the neighborhood level. The second chapter investigates the responsiveness of migrants to regional conditions focusing on a singular ethnic group. Finally, the third chapter examines the effect of individual characteristics and interregional migration. The intent is to contribute to the field of migration studies through an evaluation of how individual, place-based, and community-level factors influence migratory flows and settlement patterns.

The first chapter uses novel neighborhood data in the five cities of Netherlands to explore the link between migrant presence and the contribution of migrants in space. The findings suggest that neighborhoods with higher migrant concentrations have significantly higher levels of poverty relative to those populated by the Dutch. The chapter also explores differences between groups and some of the common explanations for these differences. This chapter furthermore studies how specific elements may establish the pattern of ethnic neighborhood and poverty.

The prevailing argument in migration literature is that migration is relatively inelastic in Europe. The second chapter explores whether that is true, focusing on the response of Filipino labor migrants to economic and demographic indicators within the twenty regions of Italy. The findings offer support for prior scholarship which has shown that the presence of Filipino migrant stock is the most significant variable driving locational decision making. This is noteworthy given the emphasis in the literature on Italian regional labor market differentiation and the spatial distribution of labor.

Finally, the third chapter explores interregional migration in Great Britain and the effect of migration on wage at the regional level. The findings show that individual characteristics are largely insignificant in determining regional migration but are highly important in influencing wages. Controlling for selectivity bias, this thesis identifies the influence of education, skills, and housing tenure on migration decision and wages.

ACKNOWLEDGEMENTS

I owe my sincerest gratitude to the Gran Sasso Science Institute (GSSI) for giving me the chance to purse a doctorate degree in Urban Studies and Regional Science. This great opportunity provided me with possibilities to participate in international workshops and conferences, dynamic learning environment, and financial support. The duration of my stay with GSSI has been a rewarding experience.

Next, I would be like to express recognition to my supervisor, Prof. Alessandra Faggian. It has been a great privilege to be able to receive mentorship from Prof. Faggian given her vast knowledge and expertise in the migration field. Her feedbacks and support are invaluable in improving my dissertation.

My PhD journey will not be complete without thanking Dr. Heather Dickey, who graciously accepted to be my external supervisor. Her expertise on the subject allowed me to further expand the scope of my research. I am thankful for all the helpful feedback and discussions, encouragement, compassion, understanding and the chance to work closely with her in the United Kingdom as I improve my quantitative skills and my knowledge in regional economics, migration and inequality.

I would not be able to reach this point without the guidance of Davide Luca and Audrey Lumley-Sapanski. Their consistent feedback enabled me to improve my work and with their continuous encouragement, I was able to go through difficult phases of my research. I would like to thank them for all the time they invested in me. Their kindness, support and expertise are invaluable.

The GSSI faculty members also provided crucial discussions and constructive comments to develop my dissertation. I would like to thank Francesco Chiodelli, Marco Modica, Masood Gheasi and Daniele Mantegazzi for their time and comments that enabled me to improve my research.

My colleagues at the European Commission Knowledge Center on Migration and Demography (EC-KCMD) helped in shaping my work to be better. In particular I would like to thank Alessandra Zampieri, Fabrizio Natale, Sara Grubanov-Boskovic, Silvia Migali, Sona Kalantaryan, Guido Tintori, Anna Chalkidi, Davide Bongiardo, Luca Carrozza, Marlene Alvarez Alvarez, Thomas Barbas, Marco Scipioni and Alfredo Alessandrini.

My professors in the Ateneo De Manila University encouraged me to pursue higher education and research, without them, none of this would be possible. I would like to thank Alvin Ang, Noel De Guzman, Fernando Aldaba, Edsel Beja, Cielito Habito, Victor Venida for supporting me in my dreams of pursuing a doctorate in Europe.

To my PhD friends, in particular Upasna, Martina, Daria, Sasha, Samaneh, Jamileh, Giulio, Federico, Martina, Senyo, Thoa, Phan, Zhao Min, Odysse, Alena, Wolfgang, Trung, thank you for making all those years in L'Aquila memorable. I would like to thank all of you for being my family in Italy, for all the encouragement, kindness and support.

To my friends who I shared this PhD journey with – Abigail, Jason and JL, thank you for always taking the time to teach and guide me as I navigate through the complicated yet enriching life of doing a PhD. Your knowledge particularly in Stata allowed me to surpass one of the most difficult parts of writing my thesis. Thank you for your indispensable guidance.

My best friends – MJ, Tyrus, Micaela, Cindy, Abigail, Agnetha, Chummy, Katrina and JoAnn thank you a thousand times, for supporting my dreams, no matter how crazy they were. Your friendship has always been a source of comfort for me.

I would like to thank my family who has my sincerest love and affection. I couldn't have made it without their unconditional love and support.

Finally, to our Creator, for whom everything is possible.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1
Testing The Link Between The Spatial Concentration Of Migrants And Poverty: New Micro-Geographical Evidence From The Netherlands

CHAPTER 2
The Determinants Of Migration: Italian Regional Factors And The Relationship To Filipino Migrant Labor Supply

CHAPTER 3
Migration, Selection and Wages: Regional Analysis of Great Britain

INTRODUCTION

While there is the urgent need to further understand migration and its complexities, migration phenomenon continues to evolve in faster and more complex ways. Although migration appears to be generally globalizing, expanding across international and national waters, it is also, at the same time, restricting – bordered in terms of human capital and government policies. New forms of movement that was observed in Europe after the fall of the Berlin Wall led to the demands for adjustment to the economic and social realities (Lazaridis and Williams, 2002). There is the new geography of migration, but more than the physical move of people, the changes in the geographic flows of people is continuously being transformed together with the various channels and structures that it comes with it (ibid). Urry (2000) labels these as "scapes" through which the migration or mobility of people, capital, information, ideas, among other things flow. These "scapes" are ordered according to complicated networks that traverses inside and outside various societies (ibid).

This complex patterns of mobility and decision processes in selecting settlement location spurred a separate niche in migration studies. Scholars such as Fischer et al. (2004), Parisi, Lichter, and Taquino (2011), Reardon et al. (2008) and Lee et al. (2008) had investigated the settlement patterns of various migrant ethnic groups which resulted to parallel findings – scale of analysis is significant in decomposing the movements of people. These studies served as traction in considering the scale of analysis as an important consideration in explaining settlement, particularly segregation and concentration.

The increased importance of scale analysis and the new forms of mobility patterns had convinced this researcher to consider that treating migration solely on the basis of both economic grounds and national scope is restricted, thus the need for deeper analysis. This thesis was focused on a single relevant subject since the scope of migration is vast. The investigation of migrants' settlement decision on different scales of analysis, with particular focus on the economic and non-economic determinants so that we could further understand how migration reshape societies and transform regional geographies.

The remainder of the Introduction is organized as follows: Section A deals with the existing literature, Section B discusses the research gaps followed by Section C which presents the background, structure and overview of the thesis. Section D elaborates the choice of the empirical studies and Section E impart the collaborations within the thesis.

A. EXISTING LITERATURE

Migration scholars have long been interested in understanding the phenomenon, in particular the push and pull factors that drive migration behavior. Scholars focus on different aspects of the practice, and explanatory factors. These include, but are not limited to: existing migrant population and potential wage (Bauer, Epstein and Gang, 2005), wage differentials (Harris and Todaro, 1970), cost and location of housing (Andersen et. al, 2013; Sim, 2000; Potepan, 1994; Andersson and Nilsson, 2009; Van der Vlist et al. 2011), economic growth or recovery (Jennissen, 2004; Beets and Willekens, 2009) and probability of employment (Reich, Gordon and Edwards, 1973; Massey et. al, 1993; Jennissen, 2004 and Harris and Todaro, 1970).

In order to simplify the complexity inherent in modeling the phenomenon with multiple variables in both sending and receiving contexts, scholars have created a number of models meant to conceptualize the decision to migrate. The following paragraphs give a brief overview on the popularly used models that explains migration, specifically the push and pull factors that helps in migrant decision making.

Network Externalities Model

A distinguishing characteristic of international migration is the congregation in immigrant clusters, especially of migrants' own ethnic background. These settlement concentrations or ethnic enclaves are typically found in large cities. The presence of enclaves and social networks more broadly have a number of effects, both positive and negative has been studied in many literatures such as Bauer, Epstein and Gang (2005), Sanders and Nee (1987a, 1987b) and Chiswick and Miller (2005).

Ethnic enclaves and location clustering significantly affect (though debated) migrant adaptation. Their existence is known to influence the location choice of migrants (Bauer, Epstein and Gang (2005). New migrants move into enclaves to benefit from externalities during the initial adaptation phase, although the location of co-ethnic peers has long been acknowledged to be a determinant of migrant settlement locations. While the direction of the effect, either positive or negative is debated, the Network Externalities model attempts to explain migrant settlement in relation to the relevance of factors such as potential wage and existing migrant stock on clustering behavior.

In moving to a new location, let the utility of migrant x be expressed as Ux,. Since the utility in moving is influenced by factors such as potential wage wx and migrant stock, N, let the utility function be expressed as:

$$Ux, = f(wx, N). \quad (1)$$

In this equation, migrant x's utility in moving to a certain region increases if the potential wage increases or the network externalities in that region increases. That relationship is expressed as:

$$\frac{\partial U_x(w_x, N)}{\partial w_x} > 0 \quad and \quad \frac{\partial U_x(w_x, N)}{\partial N} > 0 \tag{2}$$

Buffer Theory

Buffer theory became popular in the 1950s to explain the influx of migrant laborers to European countries. This migration theory explains that in periods of economic recovery, migrant laborers are expected to arrive to host countries to fill in the increase number of vacant jobs (Beets and Willekens, 2009). This theory predicts that migrant laborers flee the host country during times of economic crisis and are expected to return to their home countries, and in turn free up jobs for the non-migrant population (Kuhn, 1978 and Dobson, Latham and Salt, 2009). Economic growth affects the inflow of migrant laborers positively while economic recession decreases migrant labor flows (Jennissen, 2004).

Neo-Classical Theory

Neo-classical theory holds that the probability of employment and wage differentials are the two most significant predictors of labor migration (Harris and Todaro, 1970). The theory asserts that the chance of getting employed triggers the inflow of migrant labor. Aspiring labor migrates when the potential of getting a job and the variances in their potential earnings in the host country are both high as compared to staying in their home countries. Under this theory, employment and labor migration inflow are positively correlated: as the probability to be employed in a host country increases, the labor migration flow also increases, and, as unemployment rises the labor migration inflow to the host country also decreases.

Dual Labor Market Theory

The Dual Labor Market theory also uses employment as a significant determinant in attracting possible employment, even migrant employment. The theory asserts that the labor market is divided into primary and secondary markets. Primary markets are areas where job compensation is high and skills can be learned throughout working. It is also where job ascendancy or promotions are possible. Jobs within the secondary labor markets are characterized by short-term or irregular employment, low-skilled jobs and therefore low-paying. Typically, these jobs offer few avenues for upward mobility. Consequently, within the industrialized sectors, jobs within the secondary labor market are filled extensively but not exclusively by migrants (Reich, Gordon and Edwards, 1973). The continuous demand for low-skilled labor in the secondary labor market drives migration to industrialized nations (Massey et. al, 1993, Jennissen, 2004).

New Economics of Labor Migration

The pioneer of the New Economics of Labor Migration (NELM) theory, Stark and Bloom (1985) argued that the decision to migrate is not a singular decision, but a decision of many reasons. Under NELM, migration decision is a communal choice, not made solely by the migrant, but with the consultation and agreement of the family and its members. NELM also goes beyond the rationale of wage differentials and income maximization, but includes the diversification of the family's income sources and financial risk reduction.

These briefly summarized theories are some of the many rationalizations proposed by scholars to explain the migration phenomenon. Although there theories constitute the necessary platform from which this thesis was founded, this thesis is not limited to those theories discussed. Needless to say, experts in the field always remind scholars and policy makers to treat migration with caution. This involves our heavy reliance on the historical models of migration to explain recent patterns. The dynamic and multifaceted nature of migration would render historical models debatable, and as such, observed patterns and behaviors could not be consistently rationalized by these models. For example, the role of individual agencies, as shown throughout the thesis, is significant; and reductions would not capture these if we continue to limit ourselves in these economic driven theories. Certainly, different approaches are as or more valuable considering the current migration occurrence.

Consequently, new theories of migration patterns, behaviors and determinants are more than necessary to revitalize and strengthen migration studies, most particularly in these current and complicated times. Scholars such as Castles (2010), and Portes (2010) encouraged approaching migration under the context of social transformation or social change. Both of their works encouraged treating migration not as an individual, solitary occurrence, rather a complex interaction of national and international change in social dynamics. Another approach includes looking at migration as a transnational process (Portes, 1999 and Vertovec, 1999) which involves a plethora of spheres not limited to economic activities but as well as political, religious and cultural behaviors.

Still, regardless of the new approaches to migration, experts warned of investigating the migration experience and delimiting its interpretation in a limited or general explanation. Therefore, such ever-changing and complex phenomenon requires interdisciplinary approach.

B. RESEARCH GAPS

Although literature is abundant, there are still gaps to be filled in the migration settlement niche. Mainstream literature, though extensive, uses similar approaches in studying migration.

First, migration has predominantly been analyzed at the international scale. This has resulted in a lack of understanding of the microscale experience. This scale of analysis overlooks the microscale phenomenon that might help us understand individual choices and impact. Researchers such as Borjas (1994), Massey et al (1994, 1999), Piore (1979), Sjaastad (1962), Lee (1966), King (2002) and Favell (2008) are among the pioneers who laid the foundation for understanding international migration. Investigating migration on a massive scale, specifically movement from a developing nation to a developed one, paves way for the possibility of overlooking individual peculiarities and fundamental ideas that can only be seen if meticulously investigated on a smaller measure.

Primarily caused by the deficiency of data availability or availability of comprehensive data, sub-national migration analyses demands further analysis. Empirical evidence particularly those which are examined on a sub-national levels are still relatively few or outdated (Pissarides and McMaster, 1990; Pissarides and Wadsworth, 1989; Etzo, 2011 and Biagi et al, 2011). Consequently, these scarce studies are also accomplished on different migration duration and period. Migration to/in Europe has expanded in terms of size and speed in the recent decades. Driven by a combination of various factors such as globalization, family reunification, political turmoil, abolition of borders and ease of movements, Europe has experienced another surge of migration in the 20th century. These changes that provoked migration, such as drivers, scale, and policies among many other things, need to be reassessed in the context of the current migration situation.

Third, sub-ethnic-centric movements, outside the literature dealing with the United States, whether on an international or internal scale, is scarce specifically on the country of origin analysis. The recurring and collective treatments of migrants from similar backgrounds, (i.e. The Turks, Moroccans and Surinamese in the Netherlands, The Asian community in Rome, etc.) examining these groups as one considerable migrant community due to their similarities (or called pan-ethnic approach) rather than their unique ethnicities remains to be a significant problem that creates debatable findings and policy recommendations. The overall approach to these types of migrations trivializes the certainly intricate phenomenon. Therefore, the examination of sub-ethnic groups, focusing on their individuality needs to be done properly to avoid oversight.

Migration is an ever complex phenomenon, with more people migrating and increasingly aggressive or extreme bordering practices. The explanation of the migration process continues to evolve as does the phenomenon itself. The dynamics of the players in the migration experience makes it more difficult to comprehend, particularly if we consider the different forms and contexts, together with the fast-

changing pace of the world. As such, our analyses of the processes must also change. Furthermore, our past and current knowledge of migration is still subjected to numerous fragmentation. This highly fragmented nature affects the various approaches to migration research, particularly in the micro, macro or meso levels (Piché and Dutreuilh, 2013).

Therefore, the thesis aims to address the gaps in the literature through a multi-scalar analysis of migrant settlement decisions. Accordingly, the thesis, evaluates the role of individual preferences, migrant motivation, and role of community on migrant settlement location and outcomes. Specifically, this thesis explores why poverty is prevalent where migrants live (to understand neighborhood effects of their decisions), why a sub-ethnic group move (to understand their mobility and settlement decision process), and finally, what drives individuals preferences (to understand group variations). Examining migration on various scales, which include the individual groups, communities and regions allows us to probe past macro analyses. This approach allows less chances of overlooking the intricacies of different scales while having greater chances to produce more accurate understanding on the determinants of migration.

Because of the gaps mentioned above, the thesis aimed to investigate migration in macro, micro and meso levels, with sufficient consideration to the individuality of each migrant ethnicity, the reasons for migration and proper deliberation on each geographic scope. Specifically, below are the gaps that each paper aims to answer.

C. BACKGROUND, STRUCTURE AND OVERVIEW OF THE THESIS

This thesis is composed of three chapters, written in the style of academic papers. This thesis aims to contribute to the advancement of knowledge in migration literature by devoting one chapter in understanding how migration decisions and settlement selection are evolving in different regions. The investigation of these changes in the context of various geographies allows this thesis to present robust and reliable results in an extensive multi-scalar approach.

First, the development of more complex patterns of migration which includes global migration, emergence of global culture and social connectivity warrants investigation (International Migration Institute, 2006). To that end, this thesis analyzes migration settlement behavior and socio-cultural linkages in 5 cities in the Netherlands and how these complex patterns affects migrant integration in the host communities. Specifically, this chapter aims to analyze migrant integration in various cities in the host country. This chapter focuses on a small scale exploring the link between migrant concentration and poverty for the largest ethnic groups living in the 5 cities of Netherlands. In doing so, the paper fills a gap in the migration literature: studies on the spatial segregation among ethnic communities in Europe are still relatively scarce (Zorlu and Mulder, 2008). However, there is an established link between the positive relationship between migrants and deprived labor market consequences (OECD, 2008; Dustmann and Frattini, 2011) and the link between migrants being exposed to higher risk of poverty (Hooijer and Picot, 2015; Eurostat, 2018). Further research is needed in order to establish the geographic dimension of the link between migrants and/or migrant concentrations and their exposure to poverty and deprivation. Particularly, insufficient research explored the connection between these links and evident ethnic concentration among European cities. Below is the title and abstract for the Chapter 1.

Chapter 1: Testing the link between the spatial concentration of migrants and poverty: New micro-geographical evidence from the Netherlands

While there is growing evidence of how migrants across the EU are generally more likely to be at risk of poverty, fewer studies have been conducted to assess the current geographical dimension of such link. In this paper we aim to contribute to filling this gap. We explore the extent to which migrants' spatial concentration is linked to neighborhood poverty in the Netherlands and identify potential contributing factors. We exploit novel census data at high spatial resolution across five Dutch main cities to confirm that neighborhoods with a higher concentration of migrants show significantly higher levels of poverty compared to areas mostly inhabited by natives. However, the relationship is heterogenous across ethnic groups, and strongly dependent on both household and neighborhood characteristics.

Second, this thesis contributes on our understanding particularly on the roles of regions on migration systems. This focuses on how the host regions' demographic and economic characteristics influence the patterns of migration settlement. The thesis investigates the economic and demographic variables of Italy's twenty regions and

explores the migration patterns of the Filipino labor migrants. The second chapter is at the regional level focusing on one ethnic subset - Filipino labor migrants in the twenty regions of Italy. There lacks empirical evidence on the diverse reasons that contributes to the inelastic nature of migration in Europe (Eichengren, 1993). Still, numerous debates cite different variables that explains the phenomenon - regional wages and variances in unemployment (Obstfeld and Peri, 1999), lack of labor mobility and restrictive wages (B ertola, 2000) and labor market adjustments considering migrant destination (Niebuhr, 2003). By attaching a spatial dimension to labor market conditions, this thesis offers insight into the analyses of the regional conditions that potential labor migrants deliberate on prior to migrating. Below is the title and abstract for the Chapter 2.

Chapter 2: The Determinants Of Migration: Italian Regional Factors And The Relationship To Filipino Migrant Labor Supply

Throughout the years, the segmentation of the Italian labor market across regions, classes, genders, skill-levels and sectors has benefited from the supply of migrant labor. Among these migrant laborers, Filipinos met the demand for labor across various sectors where native supply is insufficient for local demand. Nevertheless, despite demand, the migration inflow fluctuates in response to variations in economic and geographic conditions. This study investigates the region-specific drivers of the annual inflow of Filipino migrants to the various regions in Italy. Using the annual arrivals of labor migrants from the Philippines to Italy for the period of 2007-2017, this paper uses static and dynamic estimation techniques by utilizing regional economic and demographic indices. The results show adherence to and diversion from migration theories and expected movements. Regardless of the substantial regional differences, the Filipino migrant stock is the most stable and significant variable in influencing regional migration inflow.

Third, this thesis contributes to our understanding on migration behavior particularly at the microlevel. The nature and characteristics of various socioeconomic migrant groups influence migrant decision. Consequently, this affects patterns of distribution which continues to contest conventional migration theories. Chapter three explores decisions individuals make based on migrant human capital and patterns in the 6 regions of the Great Britain. The third chapter aimed to contribute to the literature on the determinants of migration, personal characteristics and wages at a regional scale while considering migrant self-selection through examining internal migration across these regions. This research tested the labor pool's personal profiles and analyzed the drivers of migration by quantifying the effects of regional migration on wage equation while at the same time controlling for the various selectivity biases associated with interregional migration. Apart from providing a more recent research, extensive variables were utilized to present a suitable overview on migrant's human capital endowments and labor pool profiles. This research also contributed in quantifying the consequences of moving to wages using the household level panel data. Below is the title and abstract for the Chapter 3.

Chapter 3: Migration, Selection and Wages: Regional Analysis of Great Britain

While the migration literature on wages and inequality is abundant, there is limited research that associate drivers of migration to wage differences, particularly in a sub-national scale while at the same time considering the possibility selectivity biases. This paper aims to assess the level of this relationship and identify how individual characteristics of the labor migrants are correlated to the current degree of wage differences in each of the regions of Great Britain. With the use of British Household Panel Survey (BHPS) data from 1991 to 2007 for broad regions of Great Britain, the research identified different determinants that affect the interregional migration flows and how migration impacts regional wages. The findings indicate that oversight on the regional variations are often frequent as migration is mostly studied on a national scale. This and other lapses in studying the economics of migration leads to arguable findings.

D. CHOICE OF EMPIRICAL STUDIES

This subsection justifies the choice of the three countries selected for analysis. The purpose of this thesis is to examine migration settlement in multiple-scale with attention to migrant ethnicities and migration drivers beyond economic reasoning with attention to the European context.

After various historical events in Europe changed the patterns of people's mobility (Lazaridis and Williams, 2002), it is necessary that destination countries to be investigated should come from historical hotspots that are located in the regions of Southern, Eastern or Western Europe. Thus, this thesis focuses on analysis of these patterns and populations.

Italy was chosen to be the most accurate representative of the shifting from an emigration to an immigration country in the 1980s. Further, Italy has been an established site for studying migration dynamics because of the immense number of emigration from Italy, or known as the Italian Diaspora; Italy being the backdrop for mass migration in various forms and Italy being the instigator for new migration patterns that has been detected across its Southern neighbors (King, 1993). Italy as a country of choice in studying migration has been a tradition of migrant exploration from scholars like Sciortino and Colombo (2004), Amborisini (2011) and King and Andall (1999) who had examined the immigration profiles and consequences of the influx of immigrants throughout the years.

Comparably, Western Europe has historically been recorded to host extensive numbers of migrants of all sorts, being a destination region for migrants. Immigration to this region has been increasing since 1960s (Kahanec and Zimmerman, 2009) and the influx of migrants from the former Soviet Union to this region has been recorded since 1989 (Lazaridis and Williams, 2002). Among the countries in Western Europe, Netherlands and United Kingdom were chosen primarily for the purpose of collaboration. The Netherlands due to the opportunity of being able to collaborate with the European Commission's Knowledge Center on Migration and Demography (EC-KCMD). There result of the collaboration is an internally published policy paper entitled "Income Inequality and Concentration of Migrants in the Netherlands". Also, the selection of the Netherlands builds on the established tradition of exploring migrant poverty and settlement concentration this time with novel data. United Kingdom was also chosen due to another research collaboration with Queen's Management School of the Queen's University Belfast in the United Kingdom. Furthermore, the Netherlands and United Kingdom also offer the needed data available to uphold the goal of producing multi-scalar analysis within the European migration phenomenon.

To make the thesis more comprehensive, I aimed to cover different non-geographic scales of analysis. First is the broad comparison of ethnic groups in Chapter 1. Second is a deep diver into a specific sub-ethnic group in Chapter 2. Finally, the individual inter-regional mobility decisions and consequences in Chapter 3.

E. COLLABORATIONS

I declare that the Chapter 1 of this dissertation was co-authored with Davide Luca (University of Cambridge and London School of Economics and Political Science) and Audrey Lumley-Sapanski (Gran Sasso Science Institute). I am the sole author of Chapter 2. Chapter 3 was co-authored with Heather Dickey (Queen's University Belfast) which involved a visiting period at the Queen's Management School, Queen's University Belfast in the United Kingdom. For the two collaboration papers, I declare that I am the primary author who contributed to the majority of the paper writing and research.

Extracts of the Chapter 1 has been published in the OECD book *Divided Cities: Understanding intra-urban disparities* (2017), while the full paper has been submitted for publication in Geoforum. Chapter 2 has been accepted for publication at the World Journal of Applied Economics. Chapter 3 will be soon submitted to a peer-reviewed journal.

CHAPTER 1

Testing The Link Between The Spatial Concentration Of Migrants And Poverty: New Micro-Geographical Evidence From The Netherlands

ABSTRACT

While there is growing evidence of how migrants across the EU are generally more likely to be at risk of poverty, fewer studies have been conducted to assess the current geographical dimension of such link. In this paper we aim to contribute to filling this gap. We explore the extent to which migrants' spatial concentration is linked to neighborhood poverty in the Netherlands and flesh out potential determinants of such link. We exploit novel census data at high spatial resolution across five Dutch main cities to confirm that neighborhoods with a higher concentration of migrants show significantly higher levels of poverty compared to areas mostly inhabited by natives. Such link is heterogenous across ethnic groups, and strongly dependent on both household and neighborhood characteristics.

1.1. Introduction

In recent years, the integration of migrants into receiving communities has been among the top priorities for both national and local governments within many OECD countries. The European Union considers migrant integration at the local level one of the three pillars of the EU Agenda for integration (COM 2005, 389 FINAL). The importance of the local level as a locus where integration should occur is also embodied in the EU Action Plan on the integration of third country nationals (COM 2016, 377 FINAL). The European Economic and Social Committee further asserts that "the local level has a decisive role to play in integration, as it is the place where people live together and where a lack of integration first becomes visible" (EESC, 2016, 5.9).

Yet, compared with the vast amount of research conducted in the United States, studies on the current extent of local spatial integration/segregation of ethnic communities across European countries are limited (Zorlu and Mulder, 2008; Musterd and Ostendorf, 2009 and Marcinczak et.al, 2015) and have paid less attention to the link between the residential concentration of immigrants and material poverty and deprivation. Indeed, while there is growing evidence of a general positive link between migrants and poorer labor market outcomes (OECD, 2008; Dustmann and Frattini, 2011) as well as higher risk of poverty (Hooijer and Picot, 2015; Eurostat, 2018), fewer studies have explored the geographical dimension of these links. The relationship between visible ethnic concentration and high-poverty neighborhoods across European cities remains underexplored. As a consequence, we understand poorly the level of residential segregation of migrant groups and the comparative risk of individual migrant group exposure to residential poverty. Without an adequate understanding of the degree of segregation by group, or its link to disadvantage, it is difficult to posit explanations or shape policy.

This research addresses this question through an exploration of the relationship between migrants' spatial concentration and the concentration of economic disadvantage in the Netherlands. The objective of this research is to provide robust exploratory analysis for five main Dutch cities, namely Amsterdam, Rotterdam, The Hague, Utrecht, and Eindhoven. The analysis combines novel fine-grained data on the residential distribution of immigrants developed by the European Commission's Knowledge Centre on Migration and Demography (KCMD) with income distribution data from the Organization for Economic Co-operation and Development (OECD). We have detailed information for nearly 1.100 neighborhoods (postal codes) across the Netherlands' five largest cities.

The spatial concentration of households with different characteristics is a phenomenon explained by both ethnic preferences and constraints (Bolt, van Kempen, 2003). As people choose where to live, they often tend to move closer to people like them (OECD, 2018). Structural factors, like housing cost, transport constraints, and policy reinforce the tendency for groups with shared characteristics to co-locate. Yet, while from a socioeconomic perspective spatial concentration and segregation may be neutral per se, they can however become problematic when they involve the

concentration of disadvantaged groups, potentially bringing about long-term effects and undermining intergenerational social mobility (Ananat, 2011; Massey and Denton, 1993, 2005, Wilson, 1987). As a matter of fact, the high concentration of ethnic minorities in space is frequently believed to hamper their integration opportunities, especially in the long term (Friedrichs, Galster, and Musterd, 2003; Musterd, 2005; Chetty and Hendren, 2015). Indeed, prior scholarship has shown that concentrated disadvantage is associated with numerous long-term negative social and economic outcomes, including slower educational attainments (Crane, 1991), higher teenage pregnancy (Anderson, 1991), and higher juvenile delinquency (Peeples and Loeber, 1994). Besides, spatial concentration and segregation may reduce the overall social cohesion of societies (Novara, Loury, Khare, 2017).

The results confirm that, controlling for key demographic characteristics, migrant 'hotspots' – areas of intense residential concentration – exhibit significantly higher levels of poverty. However, the intensity and the sign of this relationship is heavily dependent on the ethnic composition of immigrant communities. In particular, areas with a higher share of migrants from EU13 Countries – i.e. those which joined the EU during the fifth enlargement between 2004 and 2007, mostly from Central and Eastern Europe – are those residing in areas with the highest levels of material deprivation. Mediation analysis suggests that the direction and strength of the relationship is strongly dependent on the neighborhood level of participation in the labor markets and household characteristics, in particular household structure. By contrast, factors such as social housing provision and neighborhood characteristics seem to have limited explanatory power. We emphasize that our research is exploratory as constraints in data availability, particularly data limitations in migrants' personal characteristics, impede any attempt to identify causality. Nevertheless, our results underline the differences in the comparative reception and integration of migrant communities. We suggest suitable policy solutions that are attentive to the findings presented here (Musterd, 2005; Florida, 2015).

We aim to contribute to the literature in two main ways. First, our analysis, which is based on high-resolution data from the most recent 2011 census, provides further insights to the spatial segregation patterns observed across Dutch neighborhoods by Zorlu and Mulder (2008) – who exploited administrative data from 1999 to 2003 – and by Bolt and van Kempen (2010) – whose analysis is based on survey samples of around 2.000 individuals for the years 2002 and 2006.[1] Building on this work, our contribution is the analysis of local level segregation at the subethnic level, as the dataset allows us to distinguish between a full host of migrant groups and to compare their segregation at the lowest geographical unit possible. Accordingly, our analysis provides novel insights into migrant community groups, neighborhood conditions, and experiences of segregation within the EU. Second, we are able to combine data on the residential concentration of ethnic minorities with detailed neighborhood-level

[1] It must be of course stressed that while both Zorlu and Mulder's (2008) and Bolt and van Kempen's (2010) analyses are longitudinal, we are unable to track how patterns of spatial concentration change over time.

socioeconomic data. The use of this data and our approach provide insights into the differences in migrant communities' exposure to neighborhood level poverty with important policy implications.

The remainder of this paper is structured as follows. Section 2 reviews the literature. Section 3 provides background information on the migration history and location patterns in the Netherlands. The following section then briefly describes the dataset and the research design. Section 5 presents the results, while section 6 finally draws the discussion to a conclusion.

1.2. Explaining the ethnic neighbourhood patterning of low income

Ethnic concentration and segregation can be conceived as a multidimensional phenomenon encompassing domains including residence, workplace, leisure, social media, etc. (van Ham and Tammaru, 2016). In line with most studies investigating the phenomenon of segregation, the current paper focuses on the residential dimension, that is, how diverse ethnic groups residentially sort in specific neighborhoods.[2] This research follows in a long line of scholarship whose interest is in the ramifications of spatial concentration and segregation and its implications for social inequality (Musterd and Ostendorf, 2009; Reardon and Bischoff, 2011). Specifically, this paper focuses on understanding the link between migrant concentration and the presence of poverty in five large cities within the Netherlands. This is an important area of focus: in order to have a good understanding of access to opportunity, institutional quality, and social network formation, it is important to understand where migrant groups live and build their social environments. Therefore, this research seeks to understand at a fine scale whether there is a relationship between migrants' spatial concentration and the concentration of economic disadvantage in the Netherlands.

1.2.1. The geographies of integration and exclusion

In the case of immigrants, clustering by ethnicity is typically referred to as enclave behavior. Traditional 'urban ecological' models tend to see enclave behaviors as temporary phenomena, with ethnic groups integrating geographically as they 'melt'

---

[2] Massey and Denton (1988) defined residential segregation as "the degree to which two or more groups live separately from one another, in different parts of the urban environment".

[2] Multiculturalist and pluralist approaches by contrast tend to emphasize how maintained patterns of spatial concentration and distinct sociocultural traits should not be viewed as necessarily negative – as they help promote group identity and cultural goals (Roseman et al., 1996) – particularly in contemporary 'super-diverse' societies (Vertovec, 2007). It is hence important to differentiate between voluntary/strategic (enclaves) and induced (ghettos) forms of spatial concentration, where ethnic groups are involuntarily clustered in specific areas due to implicit or explicit socio-economic discrimination or lack of integration on behalf of the host society (Massey and Denton, 1993; Walks and Bourne, 2006). Marcuse (1997) further distinguishes 'citadels' that is, isolated exclusive neighborhoods inhabited exclusively by elite groups of the host society.

culturally into the host society (Park et al., 1925).[5] Ethnic groups yet vary in their desire for proximity to co-ethnic peers and their ability to actualize preferences (Clark, 2009; Krysan and Bader, 2007). Some groups exhibit preference for proximity to co-ethnics over time while others prefer to transition out of enclaves quickly. Still others never inhabit enclaves, bypassing them upon entry (Portes and Bach, 1985; Portes and Rumbaut, 2006). These differences are explainable both by ethnic and individual-level factors, and by factors in the local environment which influence residential location and the ability of migrant groups to actualize their preferences.

Scholars debate the effects of residence within an ethnic enclave, showing both negative and positive effects for migrant groups. Enclaves can play an important and positive role in the initial period of adaptation. Through enclaves, migrants often receive information about employment and housing which can be vital in providing a safety net during adaptation (Zhou, 1992, 1997). In addition, employers in 'niche' industries may hire individuals from particular ethnic backgrounds, increasing the chances of finding a job through participation in the network (Bailey and Waldinger, 1991).

However, other scholars have argued that enclave participation decreases adaptation and acculturation speed affecting socioeconomic well-being. When in an enclave, immigrants are more likely to receive information from other migrants, decreasing the 'rate of host country information' acquisition like language skills (Cutler et al 2008; Per-Anders Edin et al., 2003). This can slow the process of acculturation and adaptation in the long term, negatively effecting wage and employment outcomes (Boeri et al. 2012). Consequently, prior scholarship has found that, migrants living in an ethnic neighborhood have lower incomes (Musterd et.al., 2008), and are less integrated in the local labor market with higher rates of unemployment (Hedberg and Tammaru 2010; Malmberg et al 2018). Migrants may be socialized to conditions of depravity, influencing their behavior; in situations of concentrated disadvantage migrants may be discouraged from working by high rates of unemployment in their social contacts (Alivon and **Guillain** 2017). While migrants may benefit from enclave participation, relying on the enclave as a social safety net, there may be limitations on the utility of the enclave over time in terms of promoting upward mobility. In other words, while geographical concentration in a specific neighborhood may have temporary benefits for a group, continued or increasing concentration is frequently assumed to imply a breakdown of the integration process and/or social exclusion by the host society (Walks and Bourne, 2006).

While spatial residential segregation per se may be neutral from a perspective, it can become particularly problematic when it involves the involuntary concentration of disadvantaged groups. A significant amount of research has identified negative long-term repercussions potentially linked to residing in a poor area (Wilson, 1987; Massey and Denton, 1993). Prior scholarship has identified that areas with high concentration of poverty and material disadvantage tend to be associated with worse

school and work opportunities, and increased risk of crime victimization. Galster (1999), Crane (1991) and Anderson (1991) respectively show that living in a poor neighborhood is correlated with poorer socioeconomic outcomes, lower educational attainments, and higher teenage pregnancy rates (mainly in the US). Hence, living in a highly segregated neighborhood is linked to not only higher odds of being already poor, but also lower ability to escape poverty in the long term.

Socio-spatial cleavages in the Netherlands and, more broadly, across Europe are relatively small compared to most US cases. Indeed, compared to North American and Asian cities, European cities are characterized by 'socially mixed neighborhoods' (Musterd, 2005). However, across many EU countries socioeconomic segregation is increasingly observed (Fujita and Maloutas, 2016; Musterd et al 2016) and there are growing concerns about the potential risks connected to the lack of integration of immigrant groups from economically less-developed countries (Musterd and Ostendorf, 2009). Recent empirical analyses conducted across EU cities suggest that disadvantaged migrants tend to spatially cluster, and that their spatial segregation often prevents them from social mobility (Natale et al., 2018). As an example, in 2016 across the EU-28 countries the risk of poverty and social exclusion for natives was less than half compared to that of non-EU migrants (Eurostat, 2018).

1.2.2. Explaining the link between migrants' concentration and poverty

Drawing on the existing literature, we identify five main categories of factors which may mediate any potential link between ethnic clustering and the concentration of poverty: (1) explanations based on group heterogeneity and different purposes of migration; (2) individual differences in education and other demographic factors influencing labor market access; (3) welfare state and housing provision; (4) social networks; (5) spatial integration and access to economic opportunities, both linked to the spatial structure of cities.

First, immigrants arrive with different levels of assets (Gold, 1992) and preferences (Adelman 2005; Alba et al 2013; Alba and Logan 1991) which affect their residential location. Premigration experiences may condition preferences for housing type and clustering behavior contributing in differences in desire for residential proximity to co-ethnic peers (Poppe, 2010, 2013; Lumley-Sapanski, forthcoming). However, individual level variance in knowledge of the local language, immigration status and other acculturation factors mediates the ability of groups to actualize preferences. Other factors contributing to differences in distribution and use of enclaves by ethnic group are demographic characteristics and migration history. Chain migrants, typically family reunification migrants, are known to choose their housing location based on the presence of family members and to settle with them (Massey, 1985). These migrants may stay in enclave neighborhoods even as their socioeconomic conditions improve (Brama, 2006). Conversely, temporary migrants without the visa status necessary for long-term stay may differ in their settlement pattern than individuals who settle permanently (Engbersen, Snel, & de Boom 2010). Temporary migrants who intend to return 'home' are perceived to invest or expend less in their residential choice than permanent migrants (Okólski 2001). Temporary labor migrants

may use different criteria for location, like the presence of labor opportunities, than permanent migrants, who often select their residence based on knowledge of housing supplied by co-ethnics. Combined, preferences and constraints contribute to differences in rates of segregation and housing location and, in turn, differences in associated socioeconomic attributes (White et.al, 1993; Crowder, 1999; Gurak and Kritz, 2000; Skop and Li, 2005; Timberlake, Howell, and Staight, 2010).

Second, prior scholarship has shown that while residential concentration varies between ethnic groups, in general it tends to decrease with improved socioeconomic status and education (Clark and Blue, 2004; Logan et al 2002). Groups with higher socioeconomic status have on average a lower probability of ethnic clustering (Borjas, 1998). By contrast, poorer migrants are more likely to settle in areas of high concentration. Bolt and Van Kempen (2009) find that poor migrants tend to leave concentrated neighborhood less often and that ethnic minorities regularly move from areas of non-concentration to more concentrated neighborhoods. Similarly, the research of Nord et al. (1995) shows that migration streams of poor and non-poor vary. The non-poor tend to move to less poor neighborhoods, while poorer migrants tend to move towards high-poverty areas. Nord et al. (1995) concludes that that these patterns preserve the already existing pattern of poverty concentration and even enhance it.

Third, however, at a larger scale the spatial concentration of migrant groups can also be explained by social processes unrelated to enclave propensity and personal socioeconomic characteristics. These may include macro-economic restructuring, urban development and the provision of welfare benefits (Musterd and Deurloo, 2002). Economic restructuring has led to the disappearance of middle-income jobs and the proliferation of low-skilled low wage work in many urban centers (Crescenzi et al., 2016; Sassen, 1991). These jobs offer few pathways for upward mobility, or routes to middle class stability that would provide better housing opportunity access for newly arriving migrants. In part as a result, more recent migrants have not experienced the same upward and spatial mobility as prior groups (Musterd and Deurloo, 2002).

Housing access, and access to social housing in particular, may compound the problems caused by such factors. The availability of social housing affects the affordability and location of housing for low income groups. Whether for instance public housing is geographically scattered or clustered in specific areas affects the concentration of low income residents (Andersson et al 2018; Andersson and Musterd, 2008). In states which use housing vouchers, low-income individuals are less likely to be concentrated in low income neighborhoods (Andersson et al 2018; Junto and Reijo 2010). Further, whether migrants are eligible at all for housing benefits is a further factor in whether they become concentrated in areas of low-income social housing (Poggio and Boreiko, 2017).

With regard to the Dutch context, Arbaci's research (2007) has demonstrated that the Netherlands's social housing system and, in particular, its structure contributes to ethnic segregation. The Netherland's relies on a unitary housing system in which both

private and social renting are incorporated into a solitary market. Additionally, although social housing providers in the Netherlands are obligated to cater primarily to those who need social housing the most, they are not limited to supplying only those who are in the lowest income (a practice which was criticized by the European Commission). Among the possible effects is higher competition between possible tenants, limiting the available housing options and steering social welfare recipients to particular areas. Consequently, most of the social housing is concentrated in particular areas which affects the housing location of low-income families.

More generally, while the provision of social housing is an important factor in explaining the concentration of groups, the health and nature of the local housing market (e.g., prominence of owner-occupied housing versus rental properties) also influences the location and availability of non-public affordable housing (Musterd and Deurloo, 2002). In general, areas with large numbers of rental units versus owner-occupied units are likely to house greater numbers of migrants (South et al 2011; Musterd and Van Kempen 2009). These combined factors explain the contextual factors which structure and constrain the observed residential choices.

Fourth, the spatial concentration of migrants and the associated socioeconomic attributes varies according to the social network contained within ethnic communities. The cumulative effect of living in an enclave on socioeconomic outcomes is likely linked to the type of information contained within the social network and type of work available in the enclave. Low-skilled, low-status migrants may have different job knowledge than their more affluent or skilled peers, constraining the type of job opportunity they can provide. As discussed above, prior scholarship has shown that migrants in these communities are likely to be employed within the enclave economy (Portes and Jensen, 1989), which can provide critical first employment opportunities but can also be exploitative and limit upward mobility. The social network may be further shaped by historical settlement patterns, size of foreign-born population, level of metropolitan segregation, and cost of living, affecting both who moves in and who can move out (South, Crowder, and Chavez, 2005; Gotham, 2002; Light, 2006; Pais, Crowder, and South, 2012; White, Biddlecomb, and Guo, 1993).

Finally, additional factors reinforce the economic impact of a segregated residential environment. Poorly resourced neighborhoods often suffer from poorer institutional quality and poorer transport access to neighborhoods with better employment opportunities (Bose 2014; Gotham 2002). As a consequence, migrants living in deprived neighborhoods are constrained and more likely to accept locally available employment opportunities which imply low skill levels with lower renumeration (Nord et al 1995).

To conclude, variations in residential patterns are explained both by individual preferences and characteristics as well as by meso-level factors.

1.3. Migration histories and residential patterns in the Netherlands

1.3.1. Migration histories

In the Netherlands, the six largest immigrant groups come from Morocco, Turkey, Suriname, Aruba, Poland and India. These migrant populations represent relatively new migrant flows, spurred by the end of WWII and the associated period of decolonization, in addition to guest worker programs in place since the 1960s (Van Amersfoort and Penninx, 1994; Sleutjes et al 2018).

The Moroccan and Turkish groups represent the largest migrant populations. The two groups began arriving in the 1960s on guest worker visas (Van Amersfoort and Penninx, 1994; Sleutjes et al, 2018) with temporary status. Only few of these guest workers have been repatriated (van Kempen and Ozuekren, 1997) and the population has grown with time largely through family-reunification visa sponsorship (Van Amersfoort and Penninx, 1994). Turks and Moroccans have historically tended to show higher-than-average levels of residential concentration across Dutch cities and experienced difficulties in integrating into the hosting society (Bolt and Van Kempen, 2009). Recruited for low-wage, low-skill jobs – and frequently lacking Dutch language skills, many members of the two communities arrived with few transferrable skills. As a result, the two groups have traditionally faced challenges in moving up from entry-level jobs and have had difficulty, more generally, achieving upward mobility.

While arriving to the Netherlands during a similar period, the Surinamese and Dutch Antilles migrants experienced a relatively different integration path. A 1954 charter granted Dutch citizenship to residents from the two former colonies. This allowed relatively unrestricted migration between the two places and the Netherlands. Migration further increased after Suriname achieved independence in 1975. Since then, there have been active attempts to discourage migration from the country and the two groups experienced discrimination (Houtzager and Rodrigues, 2002). In addition, the Surinamese have exhibited preferences for same-group clustering (Musterd and Deurloo, 2002), selecting housing in areas with co-ethnics. These two factors – discrimination and enclave preferences – may have contributed to the observed pattern of clustering within low income areas. Nevertheless, compared to Moroccans and Turks, immigrants from Dutch former colonies have experienced easier and faster integration into the hosting society. The Surinamese in general spoke Dutch and due to the legacy of colonialism and institutional familiarity, there was less cultural distance to travel associated with migration. The Surinamese were able to more quickly find work and culturally adapt to the host society (Sharpe, 2005). They are often considered a good example of integration (Van Amersfoort and Penninx, 1994).

Arubans are presently in a similar position to Suriname prior to independence. Aruba is one of the four countries forming the Kingdom of the Netherlands. Thus, its population are citizens of the Netherlands, they speak Dutch, and they may travel freely between Aruba and the Netherlands. Reflecting their rights in Dutch society

and demonstrable integration status, the socio-economic position of Aruban long-term migrants is comparatively high. Their educational levels– especially among second-generation citizens – are high and their unemployment levels low. Most of these migrants are also engaged in intermediate and high-ranking occupations (Vrooman and Hoff, 2004).

In contrast with the Arubans and other established migrant groups, many Polish migrants come temporarily on temporary work visas. Bailey et al. (2002) dubbed the Polish situation in the Netherlands as a 'permanent state of temporariness'. According to the Netherland's Central Bureau of Statistics, almost half of the Polish immigrants in the country leave again within ten years of arrival. Most are labor migrants, frequently living on minimum wages and experiencing temporary employment. Polish migrants have also been considered as 'target earners' (Constant and Massey 2002), that is, trading off short-term consumption – and hence living in poorer accommodations – for higher saving patterns. This state of temporariness is identified as a contributing factor in their concentration in relatively poorer and more deprived neighborhoods (Janicka and Kaczmarczyk, 2016).

Finally, migrants from India constitute a much smaller community compared to the other five ethnicities, since it is only during the past decade that Netherlands became a destination choice of Indian migrants (Kou and Bailey, 2014). The Indian migrants in the Netherlands are predominantly highly-skilled workers occupied in information technology, engineering and management positions. The inflow of Indians has followed the introduction of the '*kennismigrantenregeling*' (or highly skilled migrant) regulation in 2004 (Engbersen et al, 2011).

1.3.2. Migration settlement in the Netherlands

Concerns over migrants' integration prospects have drawn attention to the residential distribution of migrant groups. Prior scholarship has found that migrants are commonly located in urban areas where political and economic activity are centered (Musterd and Van Kempen, 2009). These cities are located in the western, Randstad region of the country. Further, within these cities migrant clusters are often found overlapping with high levels of socioeconomic inequality (Hartog and Zorlu, 2009). These areas are typified by the large number of low-income families and high welfare dependency (ibid).

The five cities in our study – Amsterdam, Rotterdam, The Hague, Utrecht, and Eindhoven host about 14 percent of the country's total population and more than 30 percent of all the immigrant population in the country. In the first two cities alone, if we consider both first and second-generation migrants, approximately half of the population comes from an immigrant background. The same can be said about two thirds of the school-aged children and youth in these two cities (Immigrants in the Netherlands, 2020)

Within each of the major Randstad cities, migrant groups exhibit unique patterns of residential sorting and concentration, by ethnicity and socioeconomic status (Musterd and Van Kempen 2009; Van Ham and Manley, 2009; Zorlu and Mulder, 2008). This is to say that clusters of single origin groups are distributed between different neighborhoods. Of the four largest groups, Turks and Moroccans tend to follow the most similar distribution patterns and to live in the same neighborhoods, while the Surinamese and Antilleans follow a different pattern. Perhaps reflecting the different degrees of socioeconomic integration into the Dutch society, Turks and Moroccans show the highest levels of spatial residential concentration among the different groups. Moreover, research has also shown that the concentration of Turks and Moroccans in specific neighborhoods has expanded rather than diminishing over time (Musterd and Ostendorf 2009). These differences seem to persist over generations: the residential concentration of native-born children with at least one Turkish or Moroccan parent persists over time (Bolt et al. 2002). This lack of residential mobility is mirrored by labor market outcomes of immigrants. In contrast, for example to countries such as Denmark – labor market outcomes do not improve with duration of residence (OECD, 2008). While naturalization and access to citizenship seem to give a premium in terms of job market and integration, the benefits are not equally distributed among immigrant groups, with Turks and Moroccans faring markedly worse than other groups (ibid.).

To conclude, while the Netherlands has invested significant resources into promoting the integration of immigrants – the country has a relatively developed 'infrastructure' for integration (e.g. through the education system and language trainings) – the extent to which immigrant communities have been able to climb up the socioeconomic ladder is mixed. Importantly, assessments date from the 2000s (Bolt and van Kempen, 2009, 2010; Zorlu and Mulder, 2008), and contemporary assessments mapping the link between migrants' spatial concentration and socioeconomic disadvantage remain scarce.

1.4. Data

The exploratory exercise features a novel high-resolution dataset combining data from the Knowledge Centre of Migration and Demography (KCMD) of the European Commission's Joint Research Centre, and from the Organization for Economic Co-operation and Development (OECD).

Exploiting micro-level data from the 2011 Dutch census, the KCMD mapped the distribution of residents at neighborhood level across the country's five biggest cities, namely Amsterdam, Eindhoven, The Hague, Rotterdam and Utrecht. The data is disaggregated by micro-neighborhoods and by country of birth. We have data for around 1100 micro-units and, for each of them, details about a total of 105 countries of origin. Micro units are approximately postal code areas with an average size of 2.500m^2.

The income distribution data comes from the OECD. The elaborations of administrative income data, which has the same geographical specifications of the residential distribution data, produced the income distribution of the 5 Dutch cities in quintiles. This was available for overall population within each spatial unit.

Supplementary data was retrieved from the Dutch Central Bureau of Statistics (Central Bureau van Statistiek or CBS). Using the neighborhood identifiers, we were able to match key sociodemographic controls obtained from the CBS to the combined KCMD and OECD datasets.

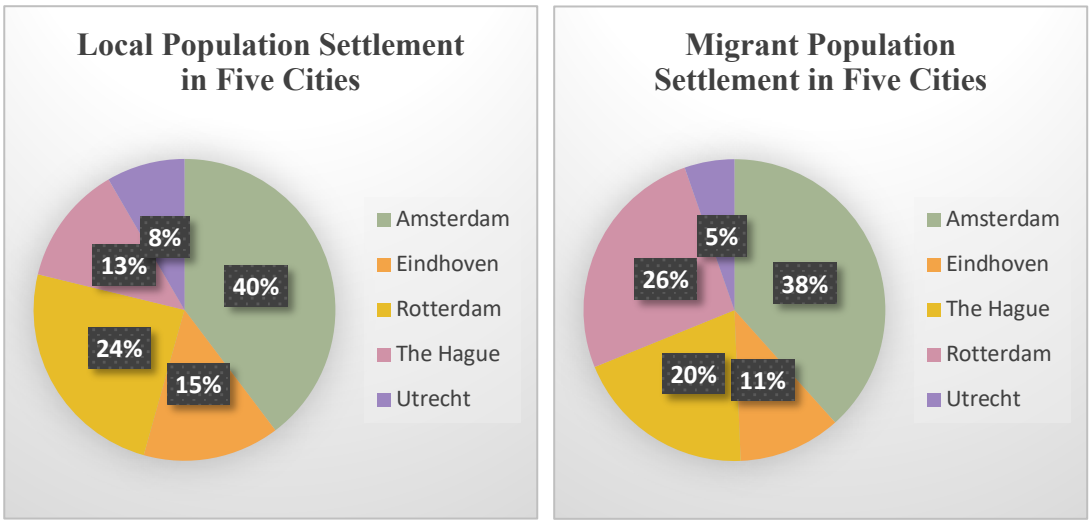
Among the five cities, Amsterdam has the lowest share of poverty (% of people in the lowest income decile), while The Hague has the highest. The Hague also score highest in the share of foreign-born persons (both EU and non-EU foreigners).

As for the demographics, younger population (between 0-15 of age) are recorded to be the highest in Utrecht. Meanwhile, older population (65 and above) are highest in Eindhoven. The Hague has the highest concentration of single person household while Utrecht has the highest number of households with children. Most home-owners are in Amsterdam, while most renters could be found in Rotterdam. Eindhoven has the highest number of inactive people. Both inequality and entropy are highest in The Hague.

The detailed descriptive statistics for the five cities (Tables 6 to 10) and statistics for the socioeconomic conditions (Table 11) can be found at the Appendix section of this chapter and substantiates generalizability. These tables capture the general characteristics of the population per city, showing the migrant group specific indexes, labor market participation, demographics, housing situation and income inequality and diversity indexes.

This paper investigated around 1100 micro-units in the five cities of the Netherlands. Among those units investigated less than a quarter was reported to hold local population. Figure 1 shows the distribution of both local and migrant population across the five cities. The breakdown of the distribution reflects that about half of the local population in the Netherlands are concentrated in the capital city of Amsterdam, followed by Rotterdam, Eindhoven, The Hague and Utrecht. A similar pattern of distribution was seen from the migrant population. The only difference in the distribution is that migrants appear to be concentrated more in Eindhoven compared to The Hague.

Figure 1: Distribution of local and migrant population in across the five cities.



Among the numerous indexes available to measure diversity (cf. Massey and Denton, 1988), we employ the entropy index, which is calculated from the entropy scores. The entropy index takes the weighted average of deviation of each unit's entropy score from the metropolitan-wide entropy score expressed as a fraction of the metropolitan area total (Iceland, 2004). The result is a 0-1 neighborhood-level measurement, where the result is 0 when all groups within the geographical unit are represented by the same shares as the whole metropolitan areas, and 1 when all areas contain only one group. In this research, the highest entropy index was recorded in The Hague at 0.31. This is followed by Rotterdam at 0.25. Amsterdam, Utrecht and Eindhoven have similar entropy indexes at 0.12, 0.11 and 0.11 respectively.

Inactive population is highest in the city of Eindhoven at 22.59%, followed by Rotterdam at 22.15% and The Hague at 21.79%. The two remaining cities – Amsterdam and Utrecht score 20.23% and 20.46% respectively. Inequality, as measured by the Gini coefficients, is highest in The Hague at 0.248. However, the cities of Rotterdam and Eindhoven are also almost equally the same in Gini figures at 0.247 and 0.245 respectively. Lower Gini indexes, relative to the three cities are found in Utrecht and Amsterdam. The complete summary statistics for each city can be found in the Appendix.

Table 1 reports the main descriptive statistics for all five cities pooled together. Population in the lowest decile refers to the percentage share of the population in the five cities who are considered poor. Natives refer to the percentage share of Dutch citizens, while Foreign-born persons refer to the percentage share of foreign-born persons per district. Of these, we distinguish between persons from EU15 (we still include the UK in this group), EU13, and non-EU countries. We also distinguish the percentage shares of the top six migrant ethnicities per country of birth in the five cities, namely Suriname, Turkey, Morocco, Aruba, Poland and India. Population density (per km2) is simply the population density per km^2. Population 0 to 15 (%)

and Population over 65(%) both refers to share of the residents from ages 0 to 15 and ages 65 and above respectively. The variables Single-person household (%) and Household with children (%) refers to the share of lone person household and share of household with children respectively. Household size refers to the average house size. Home ownership (%) refers to the share of residential homes that are owner-occupied. Rented houses via housing corp. refers to the rented housing owned through housing association. Inactive (%) refers to the share of inactive population. The indexes for Inequality and Entropy are simply Gini coefficients to explain intra-neighborhood inequality in income and measure of diversity respectively. Train and road accessibility, both measured in kilometers refer to the accessibility of the neighborhood. The former refers to the average distance to a train station and the latter refers to a road accessibility index.

Table 1. Summary statistics

Variable	Mean	Std. Dev.	Min	Max
Population in lowest decile(%)	17.66339	9.498422	1.351351	65.625
Natives (%)	96.24573	6.794765	47.6253	100
Foreign-born persons (%)	3.754269	6.794765	0	52.3747
EU15 foreign-born persons	0.1621955	0.6310028	0	14.68602
EU13 foreign-born persons	0.2290089	0.6633136	0	6.904038
Non-EU foreign-born persons	3.363065	6.342099	0	47.22773
Surinamese (%)	0.8693094	2.140155	0	20.97318
Turks (%)	0.819653	2.598473	0	22.7604
Moroccans (%)	0.5751347	1.576302	0	15.97445
Arubans (%)	0.2707805	0.8117888	0	11.1505
Poles (%)	0.1623607	0.4614593	0	5.421529
Indians (%)	0.1131012	0.3208783	0	4.24016
Population density (per km2)	5740.844	3795.315	10	25685
Population 0 to 15 (%)	16.89217	4.614132	0	42
Population over 65 (%)	16.508	8.74728	2	73
Single-person Household (%)	35.93429	12.94191	8	83
Household with children (%)	34.81887	10.82819	3	70
Household size	20.27464	6.701065	2	32
Home ownership	53.72283	19.57508	0	95
Rented houses via housing corp.	32.87953	20.85859	0	100
Inactive (%)	21.30755	6.814028	8	50
Inequality (Gini index)	0.2427731	0.0397581	0.1298554	0.3614376
Entropy index	0.1774668	0.2571042	0	1.856595
Train accessibility (km)	5.034457	5.482589	0.3	38.6

1.5. Empirical Analysis

It is crucial to bear in mind that the research makes no claim to provide any causal interpretation of the potential effects of residential segregation on material deprivation and poverty (or vice versa). Any such attempt would be misleading since the data available does not allow us to apply any rigorous causal identification methodology. Conversely, our research aims to present exploratory findings on the relationship between neighborhood ethnic composition and poverty, and to preliminarily explore five potential set of mediating factors.

1.5.1 The Empirical Model

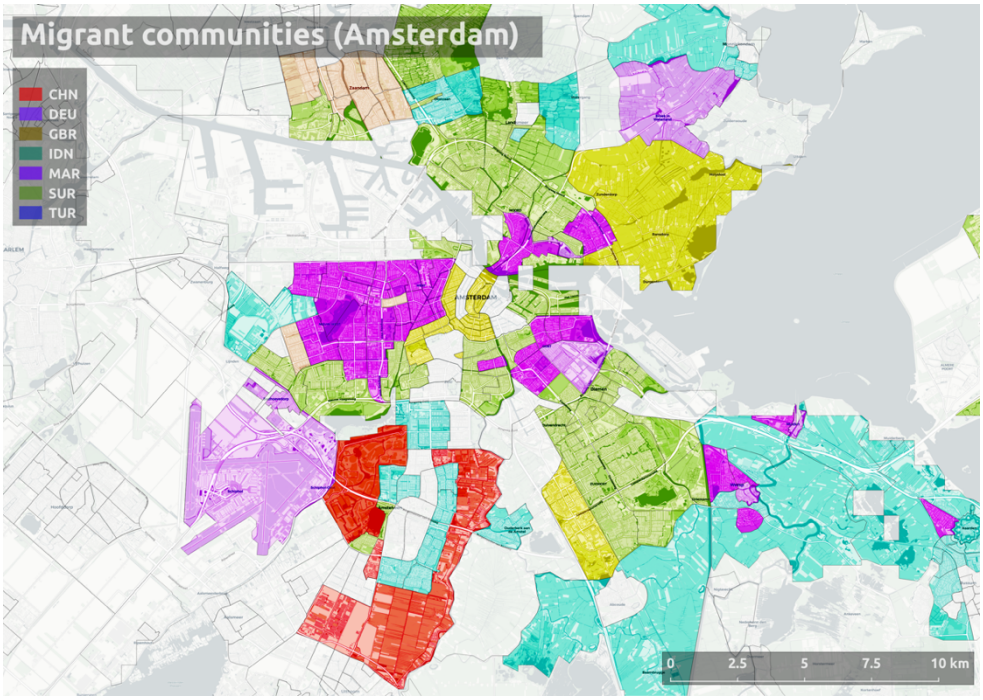
The research adopts the following empirical specification:

$$Y_{ij}=\alpha_{j+}\beta_1 G_{ij}+\beta_2 SM_{ij}+\beta_3 X_{ij}+\beta_4 N_{ij}+\varepsilon_{ij} \quad (1)$$

where Y is the share of poverty in neighborhood i in the city j; α are city fixed-effects, which are included to control for any city-specific idiosyncrasies (e.g. differences in social housing regulations, migration history, urban structure, etc.), while G consists in a vector of basic neighborhood geographical controls namely population and population density, included to account for differences in size; SM is the share of migrants in the neighborhood, classified according to the country of birth; X represents a vector of personal controls; N represents a vector of neighborhood-level characteristics; ε is the error term.

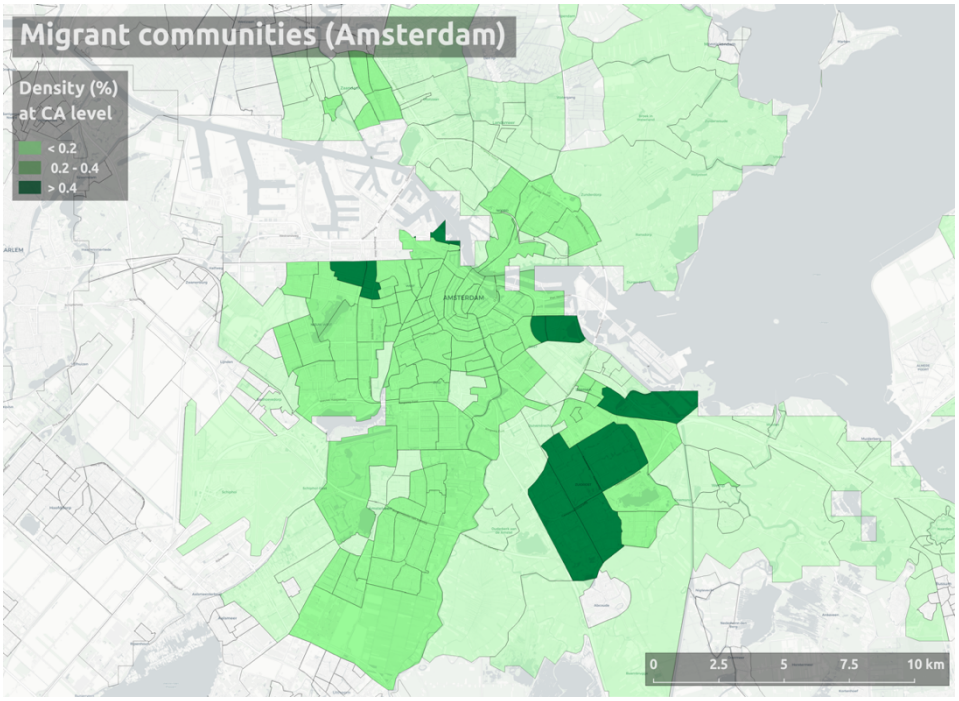
Residential segregation patterns are traditionally identified using data aggregated for fixed geographic administrative units (Kwan, 2012). The spatial scale selected is important for understanding the concentration and representation of groups within space. The use of micro-neighborhood level data allows an optimal analysis of segregation patterns, and help mitigating potential bias linked to the Modifiable Area Unit Problem (MAUP) in larger-unit analyses. In this research, we adopt Massey and Denton's (1988) definition of spatial concentration. Spatial concentration is defined as the "relative amount of physical space occupied by a minority group in the urban environment" (Massey and Denton, 1988). To provide an example, Figures 2 and 3 respectively show the distribution of different migrant communities as well as the overall share of migrants in Amsterdam.

Figure 2: Distribution of migrant ethnicities in Amsterdam



Source: KCMD elaboration, 2017

Figure 3: Density at census area level in Amsterdam



Source: KCMD elaboration, 2017

In line with our conceptual framework and consistent with data availability, the vectors of controls X and N include five main groups of variables measured at neighborhood level. In fact, our framework assumes that differences in the ethnic patterning of low income are explainable both by ethnic and individual-level factors, and by factors in the local environment which influence residential location and the ability of migrant groups to actualize their preferences.

First, we aim to capture differences in neighborhood composition by ethnic group. To do so we calculate group-specific migrant concentration indexes and run separate regressions for each of the main groups.

Second, we aim to control for individual-level differences in labor market participation (measured at neighborhood level) by controlling for the share of inactive population. We additionally account for the share of residents aged between 0-15 and those over 65, the share of single-person households (HH), the share of HHs with children, and the average HH size.

A third group of variables aims at capturing differences in housing markets and social housing provision. We include the share of housing units which are owned, and the sub-share of units rented through housing associations (as a proxy for social housing).

A fourth group of variables accounts for neighborhood local characteristics which may affect residents' social networks. Gini coefficients are included to account for intra-neighborhood income inequality. We also include an entropy index as a diversity measure.

Finally, we control for measures which should capture neighborhood accessibility, which we proxy by combining the average distance to a train station and an index of road accessibility.

To explore how each of these factors may affect the link between migrants' residential concentration and poverty we implement a simple, 'standard' approach to mediation analysis (Hicks, Tingley, 2011) by doing a stepwise test of the magnitude and statistical significance of our main beta coefficient of interest β_2 when including the list of mediators. We hence first present the baseline results on the link between migrants' residential concentration and poverty excluding mediators, and then progressively add the vectors of covariates to understand which specific variable absorbs the baseline correlation. The inclusion of a mediator in the mediation analysis is expected to result in the reduction of coefficients for the migrants. This research predicts that the more mediators used in the analysis, the lesser the impact of the regressor. Similarly, estimation results without the use of mediators would yield to higher coefficients. Under this approach, the difference between β_2 obtained excluding mediators and β_2 estimated including each group of mediators is an estimate

of the ACME, i.e. the average causal mediation effect (see Imai et al., 2011 for a conceptual discussion of this approach and its limitations).[6]

1.5.2 Results And Discussion

Table 2 presents the first set of regression outputs, where we control for the socioeconomic composition of neighborhoods (neighborhood meso-level characteristics will be included later in the analysis). In Column 1, we present the regression results with no mediators. Columns 2 adds population and population density as well as city fixed-effects, to account for any city-specific idiosyncrasies. In Column 3, we include the labor market participation and demographic variables.

Table 2. The link between migrant concentration and poverty: robust OLS estimates

Variable	(1)	(2)	(3)
Foreign-born Persons	0.7779***	0.7132***	0.2022***
	(0.0480)	(0.0625)	(0.0416)
Population		-1.6284***	-0.4143*
		(0.3727)	(0.2309)
Density		0.0004***	-0.0003***
		(0.0001)	(0.0001)
Under 15			-0.1492
			(0.0941)
Over 65			-0.1984***
			(0.0363)
Single households			0.5214***
			(0.0478)
HH with children			0.1139
			(0.0746)
HH size			0.0339
			(0.0254)
Inactive			0.4262***
			(0.0445)
Observations	1,111	1,111	1,111
R-squared	0.3116	0.3517	0.7504
City FE	no	yes	yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1.
Constant and city FE not reported.

As it can be seen in Table 2, the coefficient for the share of migrants is significant. As expected, including the controls reduces the magnitude of the coefficient from 0.78

[6] This approach is numerically equivalent to estimating a set of linear equations where: (1) one first estimates a separate regression on how the 'mediator' variable (e.g. each variable of the vector *X* here) is affected by the 'treatment' (in our case the share of migrants *SM*), conditional on other covariates *N*: $X_{ij} = \alpha_{j+} \beta_5 G_{ij} + \beta_6 SM_{ij} + \beta_7 N_{ij} + \varepsilon_{ij}$; (2) one then estimates the main equation: $Y_{ij}=\alpha_{j+} \beta_1 G_{ij} + \beta_2 SM_{ij} + \beta_3 X_{ij} + \beta_4 N_{ij} + \varepsilon_{ij}$; (3) and, finally, one interacts $\beta_6 * \beta_3$ (see Imai et al., 2011 and Hicks and Tingley, 2011).

(column 1) to 0.20 (column 3), making the ACME 0.58. The implication is that even in the most rigid estimates, a 1% increase in the spatial concentration of migrants across the 5 cities correlates to a 0.2% increase in poverty.

Column 2 shows the regression results with population, density mediators and city fixed effects. The coefficient of the share of migrants remains to be considerably high at 0.71, with the ACME at 0.07. This is expected as this model has few mediators in place, compared to the stringent model in Column 3. The coefficients for population and population density respectively suggest that poverty is comparatively lower in larger neighborhoods but higher in more densely populated ones (although the latter coefficient inverts in sign once all mediators are accounted for).

Coefficients from Column 3 suggests that neighborhood poverty is not correlated with the concentration of the over-65 population – the coefficient is negative. This is unsurprising. People tend to migrate at the earlier stages of their lives to maximize the non-economic and economic benefits of living abroad (Champion et. al., 1998 and Warnes, 1992). Migration of the older people is therefore less likely. Here, results indicate young age does not have significant influence over the settlement location. Single member households and low labor market participation are instead positively and significantly correlated with poverty.

The presence of an inactive population affects the highest drop in the migrant coefficients (from no mediators to all mediators in place), suggesting that it plays a significant role in mediating the correlation between the spatial concentration of migrants and poverty. This finding is in line with prior research which has suggested (Alivon and Guillain, 2017) that individuals are influenced by levels of community and peer labor force participation. An inactive labor force may be indicative of a lack of job opportunities locally and speak to the influence that people within a neighborhood have on an individual's willingness to seek work (e.g. social contagion).

Table 3. The link between migrant concentration and poverty: robust OLS estimates distinguishing migrant groups by nationality

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Natives	-0.7132***	-0.2022***												
	(0.0625)	(0.0416)												
Surinamese			1.1960***	0.4114***										
			(0.1461)	(0.1024)										
Turks					0.9844***	0.2968***								
					(0.1244)	(0.0884)								
Moroccans							2.0597***	0.2309*						
							(0.2449)	(0.1291)						
Arubans									3.6703***	0.2684				
									(0.5964)	(0.2157)				
Polish											4.3413***	2.0417***		
											(0.8793)	(0.4232)		
Indians													2.1204**	-2.0382**
													(0.8815)	(1.0287)
Observations	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111
R-squared	0.3517	0.7504	0.2358	0.7480	0.2407	0.7470	0.2790	0.7441	0.2684	0.7437	0.2208	0.7511	0.1888	0.7467
City FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Geog. ctrls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Ind. ctrls	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Even columns include all the controls from Table 1's Model 3. Constant, city FE, and controls not report.

Table 3 then shows the results distinguishing between the shares of natives and of the top 6 migrant groups (Surinamese, Turks, Moroccans, Arubans, Polish and Indians) separately. In even-numbered columns we include all the mediators of Table 2's model three.

Columns 1 and 2 report the coefficients for natives (i.e. the inverse of those for the overall number of migrants from Table 2). Natives are significantly less likely to live in high-poverty neighborhoods. We suggest several reasons for this. In general, the native Dutch population demonstrates lower poverty rates than foreign-born residents. This is likely in part because native households are more likely to be dual income households (Kronenberg and Carree, 2010) offering them more resources to secure housing and less likely to inhabit social housing. Also, the native populations may face less discrimination from housing proprietors and therefore be more able to access a variety of housing options. The combination of factors shapes housing choices and the access to higher income neighborhoods.

Conversely, the coefficients for the Surinamese, Turks and Moroccans (Columns 3 to 8) are positive. When controlling for sociodemographic composition effects, their coefficients range between 0.41 and 0.23. The history of migration and migration context offer insight into this finding. First, the Turkish and Moroccan populations were recruited to work in low-wage, low-skilled jobs and tend to have non-transferrable skills. In part as a result, the populations continue to experience restrictions in both income and access to housing (Houtzagar and Rodrigues, 2002). Lacking transferrable skills, the two groups are also more likely to be unemployed than their Dutch peers (ibid). Second, the commonality of family reunification within the populations has encouraged chain migration and co-location. Bolt and Van Kempen (2009) demonstrated that Turks and Moroccans rarely move away from the enclaves. The dual effect is to trap the low-wage workers, and their sponsored family members in areas with higher rates of poverty. The coefficients for the Turks and Moroccan migrants offer support for the findings of Bolt and Van Kempen (2009, 2010). Their research shows that impoverished neighborhoods are likely to be located in big cities with significant concentration of migrants. The overlapping of low societal status, low educational level and difficulty accessing to jobs constrains housing choices (Dupont, 2004).

The positive and large coefficient for the Surinamese residents is unexpected given their perceived high levels of integration, but supports the work of scholars such as Houtzager and Rodrigues (2002). Their work identified broad discrimination against the ethnic group, and of Musterd and Deurloo (2002), who stressed the propensity of the Surinamese for same-group clustering.

The coefficient for Arubans is insignificant after including the list of mediators (Column 10). In contrast to all other groups, Polish migrants show the highest significant and positive coefficient (Column 12). This evidence may be related to the temporary nature of Polish migration (cf. Bailey et al. 2002). Knowing that due to visa status they have a limited amount of time, their behavior may possibly dictate their

spending and savings patterns. Referred to as 'target earners' (Constant and Massey 2002), Polish migrants may live in areas of high concentration and in temporary poverty as a way to achieve higher saving goals in the short amount of time they were allowed to live in the host country. The finding is in line with the conclusions of Janicka and Kaczmarczyk (2016) regarding Polish migrants' poor economic standing due to their temporary status.

Last but not least, controlling for sociodemographic observables, the coefficient for Indians is significant but negative (Column 14). Given that the new wave of Indian migrants is highly skilled, they earn substantially more compared to their migrant peers (Engbersen et al, 2011). Earlier scholars have demonstrated that more privileged migrants face less constraints on mobility (Kunz, 2018) and that geographical mobility itself is a standard in the careers of highly skilled professionals (Kou and Bailey, 2014). Further, for high-skilled migrants, the presence of fellow immigrants is often not a pull-factor in choosing a residence (cf. the recent study by Maslova & Chiodelli, 2019). Thus, high-skilled migrants, or high-status migrants are more evenly distributed across space, with less restrictive income limitations when it comes to selecting settlement. This likely explains the pattern of distribution for Indian migrants. A more detailed regression of the top migrant nationalities can be seen in the Appendix.

In Table 4 we present the regression results combining nationalities by macro groups. The table represents the coefficients for the Dutch, migrant population from the EU 15 group (the combined share of migrants from Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and Sweden, as well as the UK), the EU 13 group (the combined share of migrants from Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia) and all non-European migrants (the combined share of migrants not belonging to the previous groups).

The table shows that the coefficients for the EU 15 group (Columns 3 and 4) and EU 13 migrants (Columns 5 and 6) are positive and significant, even after adding individual mediators. According to Eurostat (2018), foreign citizens face a risk of monetary poverty that is twice as high as that for nationals. While Eurostat (2018) analyses EU nationals altogether, disaggregating EU13 and EU15 provides a more nuanced picture.

Table 4. The link between migrant concentration and poverty: robust OLS estimates distinguishing migrant groups by EU and non-EU status.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Natives	-0.7132***	-0.2022***						
	(0.0625)	(0.0416)						
EU15 foreign-born persons			3.2816***	0.5775***				
			(0.3739)	(0.1880)				
EU13 foreign-born persons					3.6686***	1.9223***		
					(0.6662)	(0.2651)		
Non-EU foreign-born persons							0.7103***	0.1745***
							(0.0631)	(0.0463)
Observations	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111
R-squared	0.3517	0.7504	0.2274	0.7446	0.2383	0.7574	0.3315	0.7478
City FE	yes	yes	yes	yes	yes	yes	yes	yes
Geog. ctrls	yes	yes	yes	yes	yes	yes	yes	yes
Ind. ctrls	no	yes	no	yes	no	yes	no	yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Even columns include all the controls from Table 1's Model 3. Constant, city FE and controls not reported.

Finally, Table 5 presents the regression outputs accounting for neighborhood characteristics, as well as the full results when all groups of mediators are included. For reasons of space, here we combine again all immigrants from any origin into one category, as done in Table 2.

Table 5. The link between migrant concentration and poverty: robust OLS estimates controlling for neighbourhood structural characteristics.

	(1)	(2)	(3)	(4)	(5)
Foreign-born persons	0.2022***	0.4582***	-0.1814*	0.6832***	-0.0668
	(0.0416)	(0.0562)	(0.0927)	(0.0612)	(0.0882)
Population	-0.4143*	-0.9371***	-0.5493***	-1.6704***	-0.5000***
	(0.2309)	(0.3090)	(0.1619)	(0.3684)	(0.1433)
Density	-0.0003***	0.0001	0.0000	0.0003***	-0.0001**
	(0.0001)	(0.0001)	(0.0000)	(0.0001)	(0.0000)
Population 0 to15	-0.1492				0.0638
	(0.0941)				(0.0538)
Population over 65	-0.1984***				-0.0645**
	(0.0363)				(0.0259)
Single-person Household	0.5214***				0.2290***
	(0.0478)				(0.0392)
Household with children	0.1139				0.1380***
	(0.0746)				(0.0469)
Household size	0.0339				0.0412**
	(0.0254)				(0.0167)
Inactive	0.4262***				0.3368***
	(0.0445)				(0.0482)
Home ownership		-0.4752***			0.0240
		(0.0345)			(0.0215)
Rented houses via housing cor		-0.2448***			-0.0351**
		(0.0312)			(0.0174)
Inequality (Gini Index)			192.7447***		167.6801***
			(4.4005)		(6.7169)
Entropy Index			13.4639***		4.6996*
			(2.9313)		(2.6238)
Train accessibility (km)				-0.1504***	0.0222
				(0.0549)	(0.0167)
Road accessibility(km)				1.0820***	0.0106
				(0.2500)	(0.0777)
Observations	1,111	1,111	1,111	1,111	1,111
R-squared	0.7504	0.5593	0.8888	0.3696	0.9118
City FE	yes	yes	yes	yes	yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Constant and city FE not reported

Column 1 accounts for the full set of individual mediators from Table 2 (Column 3). Column 2 includes the housing market variables, namely home ownership and rented house via housing corporations. Column 3 adds neighborhood local characteristics which may affect social networks (Gini and entropy indexes). In Column 4 we then account for neighborhood accessibility (train and road accessibility). Finally, Column 5 pools all mediators together. When accounting for the full host of covariates the coefficient for migrants becomes very small and turns insignificant. This is reassuring, as it suggests that our mediators are able to capture – i.e. properly act as 'mediators' in – the link that connect migrants' residential concentration and poverty.

The covariates' coefficients from Column 1 are relatively stable when adding the extra set of mediators in Column 5. At the same time, including all regressors increases the precision of the estimates for the household variables, whose standard errors become smaller. Labor force participation retains a strong positive correlation with migrant concentration and poverty. The coefficient, as seen in Column 5, although decreased due to the inclusion of all mediators still remains high. This could be attributed to the combination of factors previously discussed in the interpretation of Table 2: discrimination and limited opportunities for employment in sectors which offer upward mobility may contribute to higher rates of inactivity. As for the household structure, both single person households and households with children show a positive, significant correlation with poverty. The coefficient for households with children is equally significant but not as high compared to the single-person household. The capacity to pool together earnings is likely to give a greater buffer against financial insecurity and position families for tax credits and social benefits (Gardiner and Millar, 2006).

The coefficients for the housing market variables show the expected signs: both homeownership and the presence of social housing mitigate the relationship between ethnic concentration and poverty (cf. Column 2). The variables become insignificant or dramatically reduced in magnitude when mediating for the whole set of covariates. The mediating effect of the housing markets is now absorbed by the effect of sociodemographic characteristics, likely correlated to home ownership and social housing.

Poverty is positively and significantly correlated to both inequality and entropy measures. Results of this study confirm, the findings of Hartog and Zorlu (2009), and for diversity, Tammaru et. al. (2019), and suggests that highly diverse neighborhoods are those where the link between migrants and poverty is particularly acute (although the variable loses much of its significance in Model 5).

Finally, the neighborhood accessibility measures – train and road accessibility – are significant when included singularly (Column 4) but become irrelevant when accounting for all variables in Column 5.

1.6. Conclusion

Using novel fine-grained neighborhood data from the 2011 census, the paper provides novel exploratory evidence on the link between migrants' spatial concentration and poverty across the 5 Dutch cities of Amsterdam, Eindhoven, The Hague, Rotterdam and Utrecht.

In line with previous work (cf. Hartog and Zorlu, 2009 and Boelhouwer, 2002), we do not find cases of 'ghetto-like' areas. As a matter of fact, the average share of non-native residents across the five cities is less than 4 percent with a standard deviation below 7 percent points and a maximum share slightly above 50 percent. Nevertheless, confirming our priors our analysis indicates that neighborhoods with a high concentration of migrants show significantly higher levels of poverty compared those populated by natives.

The research further identifies distinct patterns of ethnic segregation and neighborhood level poverty by migrant community. These findings suggest differences in the level of ethnic concentration and poverty with implications for social context and opportunity. Turks and Moroccans are concentrated in neighborhoods with high poverty (Bolt and Van Kempen, 2009). Surinamese residents seem to be equally concentrated in poor areas, a finding which is unexpected considering Surinamese migrants' supposedly better levels of socio-economic integration into the Dutch society (cf. Sharpe, 2005; Van Amersfoort and Penninx, 1994). The coefficients for the Polish and Indian communities are less surprising. Polish migrants are highly vulnerable to spatial concentration and poverty – likely because of their state of temporariness or their status of 'target earners' (cf. Bailey et al., 2002; Constant and Massey, 2002; Janicka and Kaczmarczyk, 2016). By contrast, Indian migrants seem to be negatively correlated to low-income neighborhood patterning. This may be linked to the fact that most Indian migrants are highly educated individuals who arrived in the Netherlands following the country's recent attempts to attract high-skill professionals. The importance of ethnic composition effects is in line with previous findings from the literature (inter alia: Arbaci, 2007; Musterd et al., 2016). Similar differences across individual ethnic communities can be seen across macro groups when distinguishing between EU15, EU13 and Non-EU migrants.

In sum, our findings with regard to migrant groups indicate that the nature of migration may be influencing the pattern of ethnic concentration with implications for long-term integration. Migrant groups with a history of low skilled labor migration and family reunification remain concentrated in areas of disadvantage; groups with a history of temporary status are concentrated in areas of concentrated disadvantage; and, high skilled migrants seem to bypass ethnic enclaves.

Findings confirm the weaker position held by non-EU migrants in particular and have implications for our understanding of neighborhood context and integration positionality for migrant groups. The group faces a risk of exposure to poverty and exclusion at least twice that of EU nationals. This level of exposure to disadvantage

over time has implications for school and work outcomes, health, and life expectancy (Crowder and South 2003; Sampson et al 2002). It may have an intergenerational effect for children born into these neighborhoods (Hedman et al 2015). The findings regarding social housing seem to suggest that migrant groups do not have access to social housing in large numbers, but that if they did it may be one way to propel spatial distribution. Further, policymakers may consider ways of integrating diverse housing unit types within neighborhoods. This could help to diversify social context and, with it, household earning types.

We then implement a simple mediation analysis to understand which specific factors may explain the co-location of poverty and migrant populations. The analysis first points to significant composition effects. Migrant spatial concentration and poverty are strongly linked to individual-level observables including age groups and household characteristics. The concentration of ethnic groups and poverty is particularly correlated to single households composed by people of working age and with children. Among the set of sociodemographic variables, labor market participation seems to have the strongest mediation effect. Last but not least, the ethnic neighborhood patterning of poverty is also linked to meso-level neighborhood characteristics such as the presence of social housing – which, as expected, correlates to a weaker link between migrants' concentration and poverty, and local income inequality.

The above findings suggest two possible policy interventions. First, there is a need for policy which encourages labor market participation. Active Labor Market Policies like job matching, job training and subsidized jobs have been used effectively in the Netherlands and within the broader region to reduce unemployment and increase wages (Boone et al 2009; Strandh and Nordlund, 2008; Forsund and Krueger 1994). Expanding the use of these programs and targeting their use geographically – within these particularly disadvantaged areas – or addressing the needs of particular populations could potentially address the concentrated inactivity. Second, the findings suggest there is a need to increase access to social housing. A potential policy proposal for the housing structure in the Netherlands is switching from a unitary to a dualist housing system where the latter singularly caters to those in urgent need (low-income groups) (Van der Heijden, 2013). The amendment of the unitary housing system to a dual system, where social housing was independent of the free housing market could reduce competition for affordable housing. This in turn could open more possibilities for disadvantaged groups and could increase the distribution spatially of groups with fewer resources.

A few important caveats must be stressed. First, individual level data on migrants' education attainments and language skills is unavailable at the spatial resolution of analysis. Although the findings about migrant distribution in such a novel spatial dimension provided notable information on concentration and poverty, additional immigrant information are needed to clarify a causal relationship. Because of this lack of information, we are unable to identify the effect of migrant characteristics on concentration (of poverty or by group). Second, longitudinal data is currently unavailable, so we are unable to track the change in concentration of ethnic groups

over time. This limitation prevents us from investigating integration (or segregation) over time. Should data become available, future research could explore the link between migrants' spatial concentration and poverty in a more advanced way and adopting more sophisticated techniques. Besides, future researchers may expand the geographical focus beyond the Netherlands' five main cities to include the whole country.

APPENDIX

Appendix Table 6. Summary Statistics for Amsterdam

Variable	Mean	SD	Min	Max
Population in lowest decile(%)	15.88202	7.854626	1.351351	65.625
Dutch (%)	97.83546	3.742681	62.20735	100
Foreign-born persons (%)	2.164539	3.742681	0	37.79265
EU15 foreign-born persons	0.1267032	0.7528651	0	14.68602
EU13 foreign-born persons	0.1604958	0.3955413	0	4.418333
Non-EU foreign-born persons	1.87734	3.33553	0	26.3959
Surinamese (%)	0.4915207	1.26394	0	9.510112
Turks (%)	0.318685	1.48725	0	20.64533
Moroccans (%)	0.2799271	0.7870414	0	7.275457
Arubans (%)	0.0698041	0.2424779	0	1.981544
Poles (%)	0.1316973	0.349865	0	4.418333
Indians (%)	0.0596245	0.1931481	0	1.904235
Population density (per km2)	4810.229	3112.893	10	25685
Population 0 to 15 (%)	17.43249	4.59239	5	42
Population over 65 (%)	16.48055	8.205375	2	53
Single-person Household (%)	33.93593	11.19676	12	83
Household with children (%)	36.53089	10.27476	5	67
Household size	21.04348	6.330387	2	32
Home ownership	57.88787	17.37719	0	95
Rented houses via housing corp.	30.12128	18.03034	0	100
Inactive (%)	20.22927	5.225583	8	50
Inequality (Gini index)	0.2378432	0.0360375	0.1327868	0.3498677
Entropy index	0.1158232	0.1692486	0	1.856595
Train accessibility (km)	4.225172	4.083392	0.3	18.5
Road accessibility (km)	1.604348	0.9084236	0.3	5.9

Appendix Table 7. Summary Statistics for Rotterdam				
Variable	Mean	SD	Min	Max
Population in lowest decile(%)	18.77023	9.884924	1.851852	56.60377
Dutch (%)	94.41291	8.301698	60.04534	100
Foreign-born persons (%)	5.587085	8.301698	0	39.95466
EU15 foreign-born persons	0.1158224	0.4257643	0	4.987783
EU13 foreign-born persons	0.2725454	0.8272832	0	6.904038
Non-EU foreign-born persons	5.198718	7.878004	0	39.07864
Surinamese (%)	1.316198	2.179599	0	10.77812
Turks (%)	1.461127	3.37477	0	22.7604
Moroccans (%)	0.6612972	1.666725	0	9.008445
Arubans (%)	0.7040988	1.37187	0	11.1505
Poles (%)	0.1709303	0.5524424	0	5.421529
Indians (%)	0.0824568	0.2097331	0	1.954127
Population density (per km2)	6917.832	4366.024	25	20682
Population 0 to 15 (%)	16.27397	4.193794	0	30
Population over 65 (%)	16.78082	9.804616	2	73
Single-person Household (%)	36.61986	12.48873	14	71
Household with children (%)	33.79795	9.826865	3	64
Household size	19.38699	7.154474	2	28
Home ownership	48.34589	20.00224	0	93
Rented houses via housing corp.	38.60616	22.06782	0	100
Inactive (%)	22.15472	7.981669	11	49
Inequality (Gini index)	0.2479611	0.0390745	0.1519863	0.3452703
Entropy index	0.2526546	0.325135	0	1.357434
Train accessibility (km)	7.418151	8.392247	0.3	38.6
Road accessibility (km)	1.814384	0.9686133	0.4	6.3

Appendix Table 8. Summary Statistics for Hague				
Variable	Mean	SD	Min	Max
Population in lowest decile(%)	19.95235	10.95454	2.272727	51.22616
Dutch (%)	92.70961	10.97637	47.6253	100
Foreign-born persons (%)	7.290392	10.97637	0	52.3747
EU15 foreign-born persons	0.4395027	0.905403	0	4.279946
EU13 foreign-born persons	0.4256631	1.087073	0	6.79511
Non-EU foreign-born persons	6.425226	10.24869	0	47.22773
Surinamese (%)	2.293461	3.927522	0	20.97318
Turks (%)	1.525853	4.056486	0	21.82963
Moroccans (%)	0.9868144	2.328613	0	15.97445
Arubans (%)	0.4244908	0.8039025	0	5.032484
Poles (%)	0.253762	0.6623449	0	4.381807
Indians (%)	0.343285	0.6241611	0	4.24016
Population density (per km2)	8064.314	]	46	23052
Population 0 to 15 (%)	16.77714	5.424671	4	33
Population over 65 (%)	16.58857	9.776343	2	61
Single-person Household (%)	40.58857	14.27126	12	70
Household with children (%)	32.91429	12.62039	7	70
Household size	18.58286	7.552326	2	31
Home ownership	49.18286	20.36028	4	90
Rented houses via housing corp.	30.76571	23.95439	0	94
Inactive (%)	21.78882	8.35719	8	48
Inequality (Gini index)	0.2482433	0.0451494	0.1386474	0.3473923
Entropy index	0.3121228	0.3587927	0	1.585668
Train accessibility (km)	3.116571	1.794567	0.4	8.3
Road accessibility (km)	2.248571	1.248072	0.2	5.9

Appendix Table 9. Summary Statistics for Utrecht				
Variable	Mean	SD	Min	Max
Population in lowest decile(%)	16.34457	9.493369	4.504505	53.38346
Dutch (%)	97.77235	3.404351	82.98206	100
Foreign-born persons (%)	2.227651	3.404351	0	17.01794
EU15 foreign-born persons	0.033531	0.1147105	0	0.6828064
EU13 foreign-born persons	0.0322017	0.0862054	0	0.3869577
Non-EU foreign-born persons	0.2161918	3.326479	0	16.38224
Surinamese (%)	0.2378296	0.5161551	0	3.3072
Turks (%)	0.1813508	0.6204648	0	4.445811
Moroccans (%)	1.334835	2.548352	0	13.80066
Arubans (%)	0.0270798	0.1054253	0	0.8076484
Poles (%)	0.0226272	0.0711582	0	0.3869577
Indians (%)	0.1008747	0.239566	0	1.4972
Population density (per km2)	5200.554	2779.669	36	13161
Population 0 to 15 (%)	18.19802	4.41366	7	31
Population over 65 (%)	14.76238	6.745589	3	41
Single-person Household (%)	34.63366	13.12457	12	70
Household with children (%)	36.68317	10.82306	11	60
Household size	22.10891	4.785188	2	29
Home ownership	56.07921	20.07271	4	88
Rented houses via housing corp.	32.51485	21.52097	0	95
Inactive (%)	20.46	6.549609	9	40
Inequality (Gini index)	0.2343637	0.0411463	0.1512095	0.3614376
Entropy index	0.1083453	0.1361376	0	0.6048629
Train accessibility (km)	4.979208	3.634923	0.3	12
Road accessibility (km)	1.673267	0.8827107	0.2	5.7

Appendix Table 10. Summary Statistics for Eindhoven

Variable	Mean	SD	Min	Max
Population in lowest decile(%)	18.68597	10.17046	2.890173	51.38889
Dutch (%)	97.92212	2.831058	84.17705	100
Foreign-born persons (%)	2.077877	2.831058	0	15.82295
EU15 foreign-born persons	0.1265771	0.2559012	0	1.49918
EU13 foreign-born persons	0.2437927	0.4382343	0	2.616466
Non-EU foreign-born persons	1.707508	2.548535	0	13.86627
Surinamese (%)	0.0404909	0.0950413	0	0.4884044
Turks (%)	0.6685342	1.603242	0	9.914643
Moroccans (%)	0.328281	0.867519	0	6.369163
Arubans (%)	0.0455728	0.1258732	0	0.8424098
Poles (%)	0.2118963	0.4017864	0	2.616466
Indians (%)	0.0761243	0.2162229	0	2.306763
Population density (per km2)	41527.14	2132.141	58	9985
Population 0 to 15 (%)	15.97253	4.270458	3	33
Population over 65 (%)	17.02747	8.093672	4	58
Single-person Household (%)	35.87912	14.88285	8	78
Household with children (%)	33.14286	11.12915	6	64
Household size	20.46154	6.36775	2	31
Home ownership	55.40659	20.11622	5	94
Rented houses via housing corp.	32.54945	20.03823	0	92
Inactive (%)	22.58523	6.375274	10	43
Inequality (Gini index)	0.2456935	0.0412363	0.1298554	0.3432595
Entropy index	0.1137297	0.132691	0	0.7127461
Train accessibility (km)	5.028022	4.342866	0.4	23.3
Road accessibility (km)	2.206044	1.110232	0.3	7

Table 11. Summary Statistics of Socio Economic Conditions in the Five Cities					
Amsterdam					
Variable	Obs	Mean	Std. Dev.	Min	Max
Income recipients	410	2384.146	1719.162	600	14500
Average Income	410	297.1073	94.9745	25	627
Low Income	410	36.85854	5.824196	23	60
Low Income HH	410	36.50488	11.062	12	69
High Income HH	410	22.8	9.592377	4	67
Low Purchasing Power HH	146	9.767123	4.362918	4	22
Rotterdam					
Income recipients	265	2948.302	2903.8	500	19800
Average Income	265	271.7245	97.47748	21	562
Low Income	265	39.56604	7.476502	23	62
Low Income HH	265	41.46038	14.13408	15	73
High Income HH	265	18.86415	9.907357	3	48
Low Purchasing Power HH	112	14.80357	7.032536	4	33
Hague					
Income recipients	161	3349.689	1930.418	800	10800
Average Income	161	303.2609	128.1143	21	747
Low Income	161	36.36025	9.7356	20	64
Low Income HH	161	40.97516	16.31102	11	78
High Income HH	161	22.20497	13.49774	2	58
Low Purchasing Power HH	108	13.25926	7.328564	3	35
Utrecht					
Income recipients	100	2401	1711.606	700	12500
Average Income	100	275.55	137.0487	23	758
Low Income	100	35.89	7.115064	19	55
Low Income HH	100	34.81	13.77796	13	73
High Income HH	100	25.82	12.88753	2	64
Low Purchasing Power HH	33	9.575758	4.242864	4	18
Eindhoven					
Income recipients	176	2384.659	1208.23	800	7600
Average Income	176	258.0909	90.92026	22	476
Low Income	176	41.44318	6.357642	21	57
Low Income HH	176	40.73864	13.77782	10	74
High Income HH	176	18.11932	9.830127	3	46
Low Purchasing Power HH	91	11	4281744	4	23

Appendix Table 12. Further Regression Excluding Natives (Separate Estimations by Cities and Top Ethnicities)					
	Amsterdam	Rotterdam	Hague	Utrecht	Eindhoven
Surinamese	-0.4418**	-0.1264	-0.3725	3.5330**	-5.3784**
	(0.2237)	(0.1929)	(0.2472)	-14.522	-26.947
Turks	-0.3854***	-0.0775	-0.2445	1.6470*	0.1444
	(0.1193)	(0.0862)	(0.2120)	(0.9413)	(0.2646)
Moroccans	-0.1761	-0.0778	0.0765	1.2049***	-0.0439
	(0.3197)	(0.2931)	(0.3505)	(0.4121)	(0.4512)
Arubans	-0.3771	-0.1210	0.7598	11.3998**	6.1013***
	(0.7079)	(0.3482)	(0.7775)	-48.031	-22.233
Poles	-0.6081	1.2836***	0.4995	-0.7080	0.0295
	(0.4019)	(0.4621)	(0.5145)	-48.720	(0.8562)
Indians	-3.1364**	-1.8963**	-0.7655	26.475	0.6034
	-15.040	(0.8535)	(0.7198)	-21.487	-10.764
Population Density	-0.0001	-0.0001	-0.0003**	0.0002	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0002)
Population 0 to 15	-0.0185	0.0889	0.0063	0.2582	-0.0997
	(0.0795)	(0.1073)	(0.1661)	(0.1743)	(0.1389)
Population over 65	-0.0669*	-0.0291	-0.0602	-0.0193	-0.0798
	(0.0343)	(0.0555)	(0.0569)	(0.1149)	(0.0492)
Single-person HH	0.1348**	0.1768**	0.2820***	0.2394*	0.2632***
	(0.0580)	(0.0888)	(0.0851)	(0.1411)	(0.0804)
HH with children	0.1038*	0.1280	0.2369*	0.0626	0.1853*
	(0.0587)	(0.0987)	(0.1327)	(0.1436)	(0.1091)
Household size	-0.0166	0.0545**	0.0626*	0.0114	0.0673
	(0.0288)	(0.0251)	(0.0373)	(0.1281)	(0.0572)
Inactive	0.2197***	0.5077***	0.4466***	0.3405*	0.2512***
	(0.0672)	(0.1187)	(0.1049)	(0.1758)	(0.0795)
Home ownership	-0.0214	0.0213	0.0801**	0.0551	0.0155
	(0.0324)	(0.0393)	(0.0339)	(0.0754)	(0.0453)
Rented houses via housing corp.	-0.0591*	-0.0517***	-0.0290	-0.0322	-0.0383
	(0.0309)	(0.0192)	(0.0354)	(0.0577)	(0.0365)
Inequality (Gini index)	170.6193***	177.7360***	153.0844***	163.8551***	161.0032***
	-131.085	-99.231	-174.914	-239.445	-162.540
Entropy index	8.8271***	0.7888	10.4772***	-36.0705***	53.249
	-32.887	-23.327	-39.945	-125.344	-73.420
Train accessibility (km)	0.0190	0.0211	0.0579	-0.1329	-0.0083
	(0.0316)	(0.0194)	(0.1555)	(0.1245)	(0.0423)
Road accessibility (km)	0.1979	-0.2102	0.1992	-0.0303	-0.0136
	(0.1381)	(0.1432)	(0.2836)	(0.3959)	(0.1441)
Constant	-33.1899***	-47.2803***	-50.6641***	-46.1125***	-41.1493***
	-59.513	-86.818	-82.529	-135.400	-78.425
Observations	409	265	161	100	176
R-squared	0.8969	0.9430	0.9303	0.8994	0.9431
City FE	yes	yes	yes	yes	yes
Geog controls	yes	yes	yes	yes	yes
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1					

Appendix Table 13. The link between migrant concentration and poverty: estimates of Table 5's model 5 on each city individually

	Amsterdam	Rotterdam	Hague	Utrecht	Eindhoven
Foreign-born persons	-0.3021	-0.0781	-0.3614**	0.6438	0.5616
	(0.2061)	(0.1295)	(0.1529)	(0.5252)	(0.5715)
Density	-0.0000	-0.0001	-0.0003***	0.0000	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0002)
Population 0 to15	-0.0281	0.1276	0.1517	0.2232	-0.1840
	(0.0861)	(0.1005)	(0.1310)	(0.1697)	(0.1529)
Population over 65	-0.0839**	-0.0299	-0.1128**	-0.0454	-0.0947**
	(0.0340)	(0.0604)	(0.0432)	(0.0983)	(0.0473)
Single-person household	0.1413**	0.1696*	0.2229***	0.2610*	0.2767***
	(0.0607)	(0.1015)	(0.0654)	(0.1384)	(0.0780)
Household with children	0.0792	0.1026	0.0934	0.0817	0.1958*
	(0.0607)	(0.1112)	(0.1032)	(0.1528)	(0.1080)
Household size	-0.0081	0.0513**	0.0537	-0.0299	0.0762
	(0.0285)	(0.0248)	(0.0365)	(0.1228)	(0.0570)
Inactive	0.2346***	0.4807***	0.5516***	0.2900*	0.2270**
	(0.0545)	(0.1074)	(0.0898)	(0.1588)	(0.0945)
Home ownership	-0.0047	0.0135	0.1024***	0.0792	0.0300
	(0.0408)	(0.0383)	(0.0384)	(0.0765)	(0.0437)
Rented houses via housing corp.	-0.0499	-0.0568***	-0.0281	-0.0145	-0.0214
	(0.0321)	(0.0217)	(0.0341)	(0.0727)	(0.0382)
Inequality (Gini index)	167.5061***	179.0902***	150.8803***	172.6545***	157.7426***
	-123.782	-101.949	-177.769	-292.917	-151.447
Entropy index	99.269	14.658	16.3188***	-167.755	-31.433
	-61.120	-33.777	-42.082	-137.991	-121.847
Train accessibility (km)	0.0494	0.0338*	0.1259	-0.1034	-0.0185
	(0.0359)	(0.0196)	(0.1595)	(0.1229)	(0.0428)
Road accessibility(km)	0.2921**	-0.2489*	0.0665	-0.0433	-0.0506
	(0.1382)	(0.1502)	(0.2834)	(0.4023)	(0.1478)
Constant	-33.5073***	-46.2657***	-47.8772***	-48.0774***	-40.4182***
	-59.183	-91.389	-80.222	-137.948	-74.379
Observations	409	265	161	100	176
R-squared	0.8910	0.9366	0.9260	0.8862	0.9392
City FE	yes	yes	yes	yes	yes
Geog controls	yes	yes	yes	yes	yes

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 controls and city FE not reported.

CHAPTER 2

The Determinants Of Migration: Italian Regional Factors And The Relationship To Filipino Migrant Labor Supply

ABSTRACT

Throughout the years, the segmentation of the Italian labor market across regions, classes, genders, skill-levels and sectors has benefited from the supply of migrant labor. Among these migrant laborers, Filipinos met the demand for labor across various sectors where native supply is insufficient for local demand. Nevertheless, despite demand, the migration inflow fluctuates in response to variations in economic and demographic conditions. This study investigates the region-specific drivers of the annual inflow of Filipino migrants to the various regions in Italy. Using the annual regional arrivals of labor migrants from the Philippines to Italy for the period of 2007-2017, this paper uses static and dynamic estimation techniques by utilizing regional economic and demographic indices. The results show adherence to and diversion from migration theories and expected movements. Regardless of the substantial regional differences, the Filipino migrant stock is the most stable and significant variable in influencing regional migration inflow.

2.1. Introduction

In Italy, recent declines in the overall population and substantial out migration has produced labor shortages, particularly within certain employment sectors. Labor migration has been important in meeting the need for low-skilled labor particularly in sectors where competition with the native population is low. Consequently, these labor migrants are particularly concentrated in manufacturing, social and domestic services and healthcare sectors (Riva & Zanfrini, 2013). Migrants represent 10% of the total workforce, the largest sources of which are Romania, Albania, Morocco, China, Ukraine and the Philippines.

Filipino migrants represent an interesting subset of the migrant population. The government of the Philippines actively encourages outmigration through a nationally administered overseas employment program that offers training and assistance which provides nearly constant migrant supply. In 2007, Filipino labor migrants comprised around 3.8% of the total labor migrant population from non-EU countries (Istituto Nazionale di Statistica or ISTAT). Between 2007 and 2017, there were significant fluctuations in the immigration of Filipino labor to Italy. The biggest single year decrease in Filipino migrant laborers was in 2013 where the percentage share of total labor migrants from non-EU countries fell from 5.58% to 2.27%. The share continued to fall until it reached 1.43% in 2017. This equates to a drop in the total number of Filipino labor migrants from 5,726 in 2007 to 175 in 2017, a 96.94% drop over the eleven year period.

This significant reduction in the Filipino labor migration flow was unequal across regions, an unsurprising finding given the great variation in unemployment, industry presence, and migrant concentration between regions. This drop, and its geographic unevenness, spurred this research. More specifically, this research explores what region-specific indicators affect the Filipino labor migrant inflow and how responsive the labor migrant flow is to non-wage determinants of migrant labor. Methodologically, this paper utilizes regional data from the years 2007 to 2017 for the twenty regions of Italy and applies both static and dynamic estimation techniques for analysis.

Existing analysis on Filipino labor migration tend to focus on case studies of subgroups within particular cities (Tacoli, 2011 and Lindio-McGovern, 2003), migrant stock (Basa et al., 2011), or the impact of migration policy at the national level (Biagi et al., 2011 and Etzo, 2011). Analysis of migration flow, in a defined subgroup on a subnational scale remains under researched. This inadequacy is concerning since numerous literature (Fischer et al., 2004; Parisi, Lichter, and Taquino, 2011; Reardon et al., 2008 and Lee et al., 2008) had emphasized the importance of scale analysis in terms of studying people's movements. The current underreported state of migration in regional scale inspired this research, together with the steep drop in the inflow of Filipino labor migrants discussed above. This study fills a gap in the literature by investigating the influencers of labor migration at the regional level for specific labor migrants – the Filipinos. In particular, we build on the

work of Etzo (2011) who has identified the impact of social networks in contributing to flows. We expand this analysis by looking at the comparative effect of migrant concentration between regions, when compared to other place specific factors identified elsewhere like wage differential and housing cost (Obstfeld and Perry, 1999). By focusing on single country of origin group, we are able to control for a greater array of variables in the sending country. In addition, this paper also contributes to our understanding of the regional determinants of the spatiality of the Filipino diaspora. We build on the work of McKenzie et al. (2014) and Etzo (2011) who have explored economic factors like the relationship of GDP and wage differential to flow. Our addition is to incorporate non-economic factors, including group specific factors, social capital and smaller-scale indicators into our understanding of the factors that shape settlement decisions. Findings have implications for policy, offering insights into the needs migrants prioritize in making settlement decisions.

The remainder of this paper is structured as follows. Section 2 reviews the literature. Section 3 briefly describes the dataset and the research design. Section 4 presents the results. Finally, section 5 draws the discussion to a conclusion.

2.2. Literature Review

This section reviews the previous literature, which has sought to explain the Philippines-Italy labor migration phenomenon. First, we review the economic models used in the literature and their application to similar questions in order to identify the variables employed in this study. Second, a review of push factors - the background context including the migration policies in the Philippines which facilitates outmigration. Third, the paper addresses the demand side factors, exploring the previous literature which analyses the distribution and spatiality of migrants in the Italian labor market, with a focus on the distribution of Filipino labor migrants across regions. Finally, the literature review concludes with a discussion of the economic geography of Italy by focusing on the analysis of the differences in the distribution of employment opportunities and labor, across regions.

2.2.1. Relevant Models Of Labor Migration

Since there is no overarching theory of labor migration, researchers employ various theories and models to explain the phenomenon. The interest in investigating the push and pull factors of labor migration resulted in identifying various explanatory variables such as, but not limited to existing migrant population and potential wage (Bauer et al., 2005), wage differentials (Harris & Todaro, 1970), cost and location of housing (Andersen et al., 2013; Sim, 2000; Potepan, 1994; Andersson & Nilsson, 2011; van der Vlist et al., 2011), economic growth or recovery (Jennissen, 2004; Beets & Willekens, 2009), and probability of employment (Reich et al., 1973; Massey et al., 1993; Jennissen, 2004; Harris & Todaro, 1970).

In the case of Italy, the various determinants of migration flows, specifically inter-regional flows, are identified in the previous studies. These analyses tend to focus on labor migrants as a general population. Salvatore (1977) found differential unemployment rates and wages were the primary determinants of interregional migration. While Furceri (2006) concludes that the unemployment rate does not shape regional variation in migration for the period of 1985-2001. Other scholars including Cannari et al. (2000) analyzed the impact of housing cost and found it to be a deterrent for internal migration in Italy. Finally, Etzo (2011) found that "social networks", i.e. the existence of migrants from the same country in the regions, per capita GDP, and housing cost were significant determinants of migration flows, and unemployment rate and per capita GDP varianceswere home-country push factors. In conclusion, the decision to migrate is often explained by a multitude of factors, specific to sending and receiving places.

A distinguishing characteristic of international migration is the congregation in immigrant clusters, especially with the migrants' own ethnic background, to take advantage of having a network, which is also known as the Network Externalities Model (Bauer et al., 2005; Sanders & Nee, 1987; Chiswick & Miller, 2005). Ethnic enclaves and location clustering are known to influence the location choice of migrants, particularly those who are in the initial adaptation phase (Bauer et al., 2005). These settlement concentrations or ethnic enclaves can be found in large cities, a good example of which is the Filipino migrant workers in Rome and Milan. The models employed in this research utilized the total Filipino migrant population to predict the inflow of Filipino labor migration. In doing so, we contribute to the existing literature exploring the effect of social and family capital on migration via the Networks Externality Model.

Buffer theory was popularized in the 1950s to explain the influx of migrant laborers in European countries. This theory postulates that in periods of economic recovery, migrant laborers are expected to arrive in host countries to fill the increase in the available jobs (Beets & Willekens, 2009). The theory predicts that migrant laborers leave the host country during economic crises to return to their home countries, therefore freein up jobs for the non-migrant population (Kuhn, 1978; Dobson et al., 2009). Economic growth affects the inflow of migrant laborers positively while economic recession discourages labor migration (Jennissen, 2004). Building on f Jennissen (2004), this paper uses real GDP, i.e. in constant prices, to represent the economic health of the country and to evaluate if real GDP indeed predicts the inflow of Filipino labor migrants.

Neo-classical economics posits that probability of employment and wage differentials are the two most significant predictors of labor migration (Harris & Todaro, 1970). The theory asserts that the chance of employment triggers labor migration. Then the potential of getting a job and the variances in potential earnings in the host country versus home are high. In this theory, employment and labor migration inflow are positively correlated: as the probability of employment in the host country increases, the labor migration increases, whereas, with increases to

unemployment labor migration inflow decreases. To further examine this theory, this paper uses regional unemployment as an independent variable.

In addition, a set of standard variables were employed to predict labor migrant flows and settlement behavior. A body of previous scholarship has identified housing cost as a significant predictor of job growth and creation. In turn, job growth spurs labor migration. Various scholars cite variables that affect housing cost such as migrants' economic standing and availability in local housing markets (Andersen et al., 2013), location (Sim, 2000), social instruments (Andersson & Nilsson, 2011), and numerous housing restrictions in general (van der Vlist et al., 2011). In order to quantify the impact of housing cost, we include it here as an independent variable.

Based on the body of the research of other scholars, this paper employs regional real GDP, unemployment, housing cost, and total Filipino population to explain the changes in the Filipino labor migration flow into the Italian regions between 2007 and 2017. This paper tests the following hypotheses:

H0: Higher real GDP leads to higher Filipino labor migrant inflow
H0: Higher unemployment leads to lower Filipino labor migrant inflow
H0: Higher housing costs lead to lower Filipino labor migrant inflow
H0: Higher total Filipino population leads to higher Filipino labor migrant inflow

2.2.2. The Philippine Government's Pro-Migration Stance And Agencies

On average about 2% of the population of the Philippines migrates abroad each year for employment purposes, and nearly ten percent of the country's total population is living and working abroad. Compensation outside of the Philippines is high enough to offset the costs of migrating away from the country (McKenzie et al., 2010). The government plays an active role in promoting labor migration as part of its national development strategy.

Table 1: Distribution of Filipino Migrant Workers by Gender, %			
Age Group	Total	Male	Female
15 – 24	6.4	5.3	7.2
25 – 29	20.4	16.0	24.1
30 – 34	21.7	19.8	23.4
35 – 39	18.1	18.6	17.6
40 – 44	16.1	17.2	15.3
45 and over	17.3	23.1	12.4
Workplace			
Africa	1.1	2.4	0.1
Asia	85.5	77.3	92.7
Australia	1.6	2.3	0.9
Europe	6.4	10.1	3.1
North and South America	5.4	7.9	3.2
Major Occupation Group			
Managers	1.1	1.4	0.9
Professionals	8.7	8.3	9.0
Technicians and associate professionals	5.8	9.5	2.5
Clerical support workers	3.4	2.6	4.0
Service and sales workers	18.0	15.7	20.0
Skilled agricultural forestry and fishery workers	0.4	0.7	0.1
Craft and related trades workers	11.4	22.1	2.1
Plant and machine operators and assemblers	13.7	26.9	2.3
Elementary occupations	37.5	12.8	59.1

Source: PSA (2018).

Note: Reference Period is April - September 2017

The high demand for the Filipino workers in the Middle East in the 1970s combined with high rates of domestic unemployment led then president Ferdinand Marcos to institute labor exportation policies. The policy was then expanded to make the program more conducive to outmigration and to ensure the generated income was remitted back to the Philippines. The Marcos administration under the Executive Order 857 in 1982 mandated the Filipino laborers abroad to send their income back to the Philippines through government-regulated channels. Remittances were called a "nationalist duty" by the Aquino government (citation). The Ramos administration pushed for more migration, calling migrants "internationally shared human resources (Rodriguez, 2010). The Estrada administration established an inter-agency committee on the shared government information system for migration (Executive Order No. 203 year 2000). In parallel to these policies, the Arroyo administration pushed the

citizenship retention and enacted the reacquisition law which allows Filipinos to maintain dual citizenship (Republic Act 9225 in 2003).

There is an array of governmental agencies and privately-operated recruitment services that facilitate and regulate the placement and enlistment of workers abroad. Agencies such as the Overseas Employment Development Board (OEDB), the National Seaman Board (NSB) and the Bureau of Employment Services (BES) were created to support government initiatives on labor exportation. The functions of OEDB, NSB and BES were consolidated into one organization, the Overseas Employment Program Administration, which later became the Philippine Overseas Employment Administration (POEA). The POEA is the agency of the Philippine government whose numerous functions include helping Filipinos in looking for employment abroad, protecting and promoting the welfare of the Filipino workers and their families, and helping overseas Filipinos in distress. As of December 2019, there are 3,728 recruitment agencies under the regulation of the POEA. The roles of these recruitment agencies mainly lies in serving as liaison to companies hiring abroad and facilitating the application processes until the potential labor migrant flies out to their country of destination.

The policy has had enormous success in facilitating job placement and remittances for several reasons. First, English is one of the official languages of the country and is used as early as pre-school as a medium of instruction. Second, the government complemented its labor exporting strategy by setting up vocational training centers around the country specializing in skills targeting the global labor economy. Training centers, among many others, in caregiving, welding, housekeeping, food and beverage services, and electrical installations have served as platforms for getting skills to find a job in the local labor markets and abroad (TESDA, 2017). Aside from centers that provide technical training, universities in the Philippines are on par with international standards. Third, the qualified professional graduates in the Philippines have comparatively lower wage rate in the international market. Finally, the abundance of these workers makes it ideal for foreign companies to hire them en masse. With the Philippines' seemingly unending supply of labor and continuous state of unemployment and underemployment, the huge reservoir of able-bodied laborers are easily utilized and ready to be sent to foreign countries.

2.2.3. Italian Reception And Use Of Labor Migrants

The current economic climate in Italy and the country's stance towards migration, in general, could have detrimental effects for its labor market, most especially to the already high regional unemployment. Between 2007 and 2017, roughly 1.3 million labor migrants or approximately 117,000 labor migrants per year arrived in Italy (ISTAT). There are stark differences in both geographical and sectoral distribution of labor migrants. The majority of the employed labor migrants are concentrated in the northern regions. The level of employment of labor migrants in the southern regions of Italy is considerably low. The foreign workers are mainly concentrated in the

regions of Trentino-Alto Aldige, Emilia Romagna and Tuscany, whereas the fewest number of foreign workers works in the regions of Sardinia, Sicily and Campania (Ministry of Labor and Social Policies, 2018). Labor migrants are heavily concentrated in the community and social services, hotels and restaurants services, agriculture, hunting and fishing, and construction sectors, and are the least concentrated in the public administration, defence and social security, finance and insurance, and information and communication sectors (Ministry of Labor and Social Policies, 2018).

The sectoral segregation of the labor migrants in low-skilled jobs may be influenced by the country's ethnicity-oriented immigration policy (Lindio-McGovern, 2003). An example of such policy is the adoption of a quota system that sets the numerical limits on work permits for specific nationalities and the purpose of stay. This contributes to the segregation of labor migrants in particular sectors, in particular the domestic service which tends to be delegated to non-EU migrants. The decree establishes restrictions, detailed practices and other mandatory obligations which accompany the work permit or visa. A good example is the situation of the Philippine migrant laborers in Rome. Rome's segmented labor market, is two tiered. Foreign labor migrants are increasingly filling the secondary labor market characterized by low-skilled and low-paid work (Sassen, 1991). There are few opportunities for upward mobility within the secondary labor, and restrictions which tie visas to type of work, prevent occupational mobility and ascendency of non-Italians or other non-EU citizens. These practices, combined with ethnically based geopolitics, indirectly classify migrants into low-ranking, low-paid employment (Lindio-McGovern, 2003).

2.2.4. Geographic Distribution Of Filipino Labor Migrants Among The Italian Regions

This sub-section gives a short overview of the changes in Filipino labor migration during the study period. Figure 1 shows the distribution of total Filipino migrant stock across Italian regions from the period of 2007-2017. Filipino migrant stock were concentrated primarily in the regions of Lombardy, Lazio, Emilia Romagna, and Tuscany. Minimum Filipino migrant stock concentration were found in the regions of Valle D'Aosta, Molise, and Basilicata

Figure 2 shows the pattern of Filipino labor migrants inflow over time. For the eleven year period, highest Filipino migrant inflow was seen in 2010. From there, steep decrease in numbers were reported by ISTAT. There was of course regional variation in overall arrivals. It can be observed that most of the regions had a surge in labor migration flow from the years 2007 to 2010 followed by the drastic decrease in 2011. The decrease in the arrival of Filipino labor migrants was reflected almost consistently in all regions. The drastic drop in inflows started in the year 2011 and continued until the end of the period. All regions reported a decrease in the labor migrant inflow except for Basilicata. The inflow of Filipino migrant labors were concentrated most at the center of Italy, in the region of Lazio during the beginning

of the study. High labor migrant inflows were also recorded in the regions of Lombardy and Emilia Romagna. The smallest numbers of Filipino labor migrant inflows were recorded in the regions of Molise, Basilicata, and Valley D'Aosta

Figure 1: Regional Filipino Migrant Stock

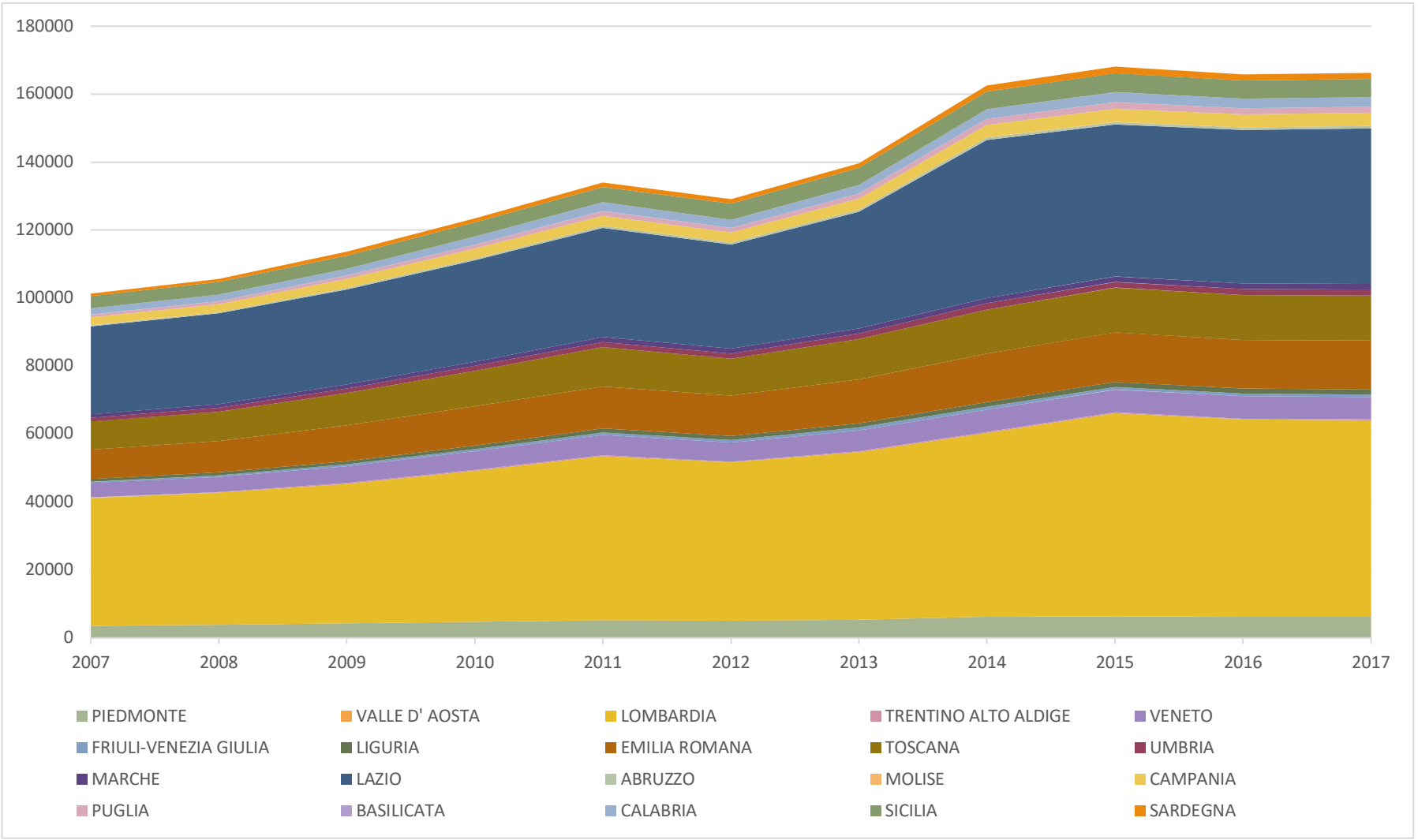
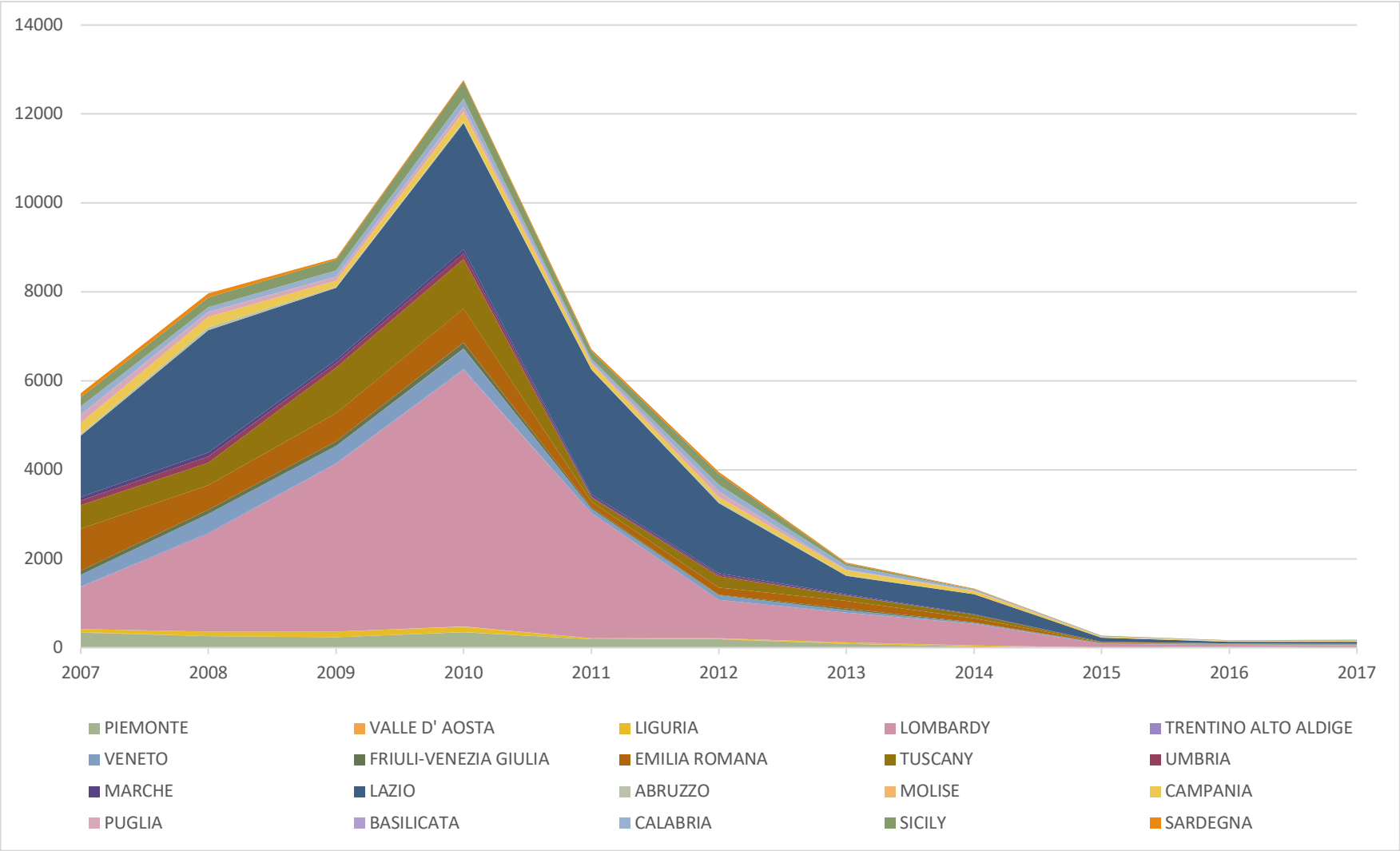


Figure 2: Inflow of Filipino Labor Migrants



2.3. Data and Methodology

2.3.1. Data

This research employs regional data retrieved from the ISTAT, the source of official statistics in Italy. Additional data for controls were obtained from the World Bank. The period of the research is from 2007 to 2017, covering all Italian regions at the level of NUTS-2 administrative division. Nomenclature of Territorial Units for Statistics (NUTS) level 2 for Italy comprises the basic regions for the application of regional policies (Eurostat, 2020). A list of variables and their abbreviations is presented in Table 2. Table 5 in the Appendix presents the summary statistics.

Table 2: Variables Description

Variable	Description	Source
RIFLM	Inflow of Filipino Labor migrant	ISTAT (Stra-Dati): Permits of stay to foreigners
RGDP	Gross Domestic Product (GDP) at constant prices	ISTAT: Gross Domestic Product
RU	Unemployment	ISTAT: Unemployed persons 15 years and more
RE	Employment	ISTAT: Labor Force
RHC	Housing cost (average monthly expenditure in euros)	ISTAT: Housing Costs
RFP	Foreign population (without Filipinos)	ISTAT (Stra-Dati): Migration and calculation of foreign resident population and structure by citizenship
RTFMS	Filipino Migrant Stock	ISTAT (Stra-Dati): Resident foreigners on 1st January - Citizenship
PGDPGR	Philippine GDP growth rate	World Bank: World Development Indicators

The independent variables were chosen based on support for their inclusion found in existing economic theories of labor migration and related studies reviewed above. These variables are: the total unemployed persons, real GDP, average housing cost in euros, and total Filipino migrant stock, all of which were obtained for each of the twenty regions in Italy for the period of study. The first two independent variables are the economic variables that represent the macroeconomic environment of the region. The latter two variables are used mainly as indicators that represent the demographic characteristics of the region. These two sets of variables highlight the various differences between regions. The relationships between the dependent variable of the research - regional annual inflow of Philippine labor migrants and the independent variables is examined to define which of these are significant determinants of Filipino labor migrant flow, the corresponding direction of the relation and its magnitude.

Dependent Variable

Regional Inflow of Filipino Labor Migrants
It refers to the total number migrants from the Philippines moving to Italy for labor reasons, as reported in the ISTAT database. The figure refers to the total number of male and female migrants, measured per year and region.

Independent Variables
Regional Gross Domestic Product
The figures are the annual GDP in millions of euros at constant prices of 2010. This refers to the inflation-corrected market value of all products and services that are produced in each region, for the reporting period.

Regional Unemployment
Refers to the total number of unemployed persons reported per region (the total figures for all citizens aged 15 years old and above).

Regional Housing Cost
Represents the average monthly expenditure on housing as measured in euros per region.

Regional Filipino Migrant Stock
It is the total number of Filipinos living in each Italian regions. The figure also refers to the total number of male and female Filipinos, measured per year and region. This research adopts the definition of European Commission for migrant stock which is the "number of migrants in a given area on a certain date of the year in question" (2003). Hence, the total Filipino migrant stock refers to the total Filipino population living in each region in a certain year.

Instruments

Philippine GDP Growth Rate
Refers to growth rate of the Philip-pines' GDP measured at constant 2010 U.S. dollars.

Regional Employment
Refers to the total number of employed persons reported per region (the total figures for all citizens aged 15 years old and above).

Regional Foreign Population
Refers to the total foreign residents, except the number of Filipinos, living in the Italian regions. The figure also refers to the total number of male and female foreigners, measured per year and region.

2.3.2. Model And Estimation Strategy

This paper adopts two empirical models, both test the different indices that drive the regional inflow of Filipino labor migration. The first empirical model employs static data analysis. The second model is a dynamic panel data analysis to handle possible issues of endogeneity. These estimates consider 11 years and 20 Italian regions. The first empirical model of this research uses the following general form:

$$\log(RIFLMt) = \beta 0 + \beta 1\log(RGDPt) + \beta 2\log(RUt) + \beta 3\log(RHCt) + \beta 4\log(RFMSt) + \varepsilon t \quad (1)$$

where *RIFLMt*, the dependent variable, refers to the regional inflow of Filipino labor migrants in year t. The independent variables are regional real GDP (*RGDPt*), regional unemployment (*RUt*), regional housing costs (*RHCt*), and regional Filipino migrant stock (*RFMSt*) in year t. ε is the error term in year t.

To measure the impact of regional indicators - GDP, housing costs, unemployment, and Filipino migrant stock on the total labor migrant inflow per region, double log regression was used. With the model, the elasticities of the independent variables in relation to the dependent variable can be identified easily. Since the research aims to quantify the responsiveness of the inflow of labor migrants, the elasticities are represented by the coefficients of the independent variables. The model gives direct results and by examining the coefficients, shows the estimated correlation between percent change in the regional inflow of Filipino labor migrants and percent change in the independent variable, holding the other independent variables constant. The coefficients also show the directions, magnitudes and patterns observed in the Italian regions. In the regression models presented in this paper, heteroskedasticity and multicollinearity were also addressed.

The second set of models used in this research is a dynamic panel data approach, specifically the generalized method of moments (GMM). The xtabond2 program in STATA brings more flexibility in fine-tuning the results. With the program, robust standard errors were obtained using Windmeijer's (2005) sample correction, Sargan-Hansen's over-identifying restriction test was used, the nonexistence of serial correlation was proven and finally, power of the instrument matrix was enhanced (Roodman, 2009). This method allows the researcher to control for possible endogeneity issues. The model also qualifies the GMM specifics which include the following: N>T (the number of groups is greater than the time span), the use of instrumental variable (IV) in estimation, exogenous instruments and instruments lower than or equal to N.

The dynamic model assumes the following general form:

$$\ln Y_{it} = \Phi \ln Y_{it-1} + \gamma Z'_{it} + \beta X'_{it} + d_t + \varepsilon_{it} \quad \textbf{(2)}$$
$$i = 1,2,\ldots, N\ ;\ t=1,2,\ldots, T$$

where Y is the inflow of Filipino labor migrant(log), $Y_{i,t-1}$ is the first lagged value of Y , Z' is the vector of the control variables, X' is the vector of the explanatory variables, d is the year dummies and ε is the error term. This dynamic model incorporates the lagged value of the dependent variable as an independent variable. The vector of explanatory variables includes the lagged regional values for the logs of unemployment, with real GDP, housing cost and Filipino migrant stock. The control variables are the GDP growth rate of the Philippines, regional total employment, and foreign population without Filipinos.

2.4. Presentation And Discussion Of Results

2.4.1. Static Models

This subsection presents the results for the static estimates. Table 3 identifies significant variables, corresponding relationships with the dependent variable, the elasticities and controls. The general observations are summarized as follows. First, regional unemployment and real GDP, positively correlate with the inflow of labor migrants, but are not statistically significant determinants of the regional labor migration flow. Second, the regional housing cost has an inverse relationship with the migrant labor inflow, but is also statistically insignificant. Finally, regardless of control variables in the model, Filipino migrant stock is significant at the 99% level of confidence, albeit inversely correlated with the dependent variable. The complete table with various model specifications is found in the Appendix Table 6 where Column 1 presents the baseline results, i.e. the regression run without controls. Columns 2, 3 and 4 are the models with one control in the model – Philippine GDP growth rate, employment and foreign population, respectively. Finally, columns 5 to 7 contains the results for simulations with gradually increased controls, and column 8 contains all of the control variables.

Table 3: Results of Static Panel Data Models	
Dependent Variable	(1)
Filipino Labor Migration	
Log Unemployment	0.491
	(0.832)
Log GDP	1.237
	(4.427)
Log Housing Cost	-1.798
	(1.824)
Log Filipino Migrant Stock	-2.002***
	(0.478)
Observations	220
R-squared	0.808
Philippine GDP growth rate	yes
Employment	yes
Foreign Migrant Stock	yes
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1	

2.4.2. Dynamic Models

Table 4 contains the results of the simulations for the dynamic panel models. The model was estimated using the difference Generalized Method of Moments (GMM) (complete models are found in the Appendix Table 7). In particular, the results in Table 4 use the one-step difference GMM (Blundell & Bond, 1998). These one-step difference GMM simulations use the dependent variable which is the log of the regional inflow of Filipino labor migrants and included the one year lag of the regional inflow of Filipino labor migrants as an explanatory variable. The other explanatory variables are the one year lags of the log of unemployment, log of real GDP, log of housing cost and log of Filipino migrant stock. The internal instrument is the lag of the dependent variable while the external instruments are Philippine GDP growth rate, employment and foreign migrant stock excluding Filipinos. The choice for the variant of estimators follows scholars whose applied works employ one-step estimates. This is because simulation studies imply moderate efficiency gains, making the one-step as valid for this purpose as the two-step variant. The model includes robust standard errors, tests the validity of instruments, and confirms the absence of serial autocorrelation.

Table 4: Results of Dynamic Panel models with Difference GMM	
Dependent Variable Filipino Labor Migration	(1)
Log Labor Migration(lagged)	-0.012
	(0.287)
Log Unemployment(lagged)	3.180
	(2.700)
Log GDP(lagged)	-28.347
	(48.142)
Log Housing Cost(lagged)	4.782
	(6.439)
Log Filipino Migrant Stock (ln lagged	-6.104*
	(3.001)
Observations	180
Year Dummies	yes
Arellano-Bond test (AR2)	0.543
Hansen Test of overidentification	0.048
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1	

2.4.3. Discussion of The Results

ISTAT records show that the number of Filipino labor migrants arriving in Italy has decreased over time. Notwithstanding erratic surges in the years 2009 and 2010, the overall trend was a decrease in arrival. Although it was the overall decrease in Filipino labor migration that inspired this research, it was the large regional variation in flow that demanded the need for a multi-scalar approach. Consequently, this research used demographic and economic indicators to predict that flow of Filipino labor migrants.

In the static models, the results find no relationship between Italy's economic performance, as measured by the regional GDP and regional unemployment with the inflow of migrant labors. Furthermore, this research finds no consistent economic predictors for the inflow of labor migrants. This lack of responsiveness of Filipino labor migrant inflow to economic variables is parallel with the findings of Daveri & Faini (1999) and Fachin (2007) in their studies of Italian migration. Respectively, their research show that in the southern regions, the unemployment has no effect on migration during the period 1970-1989, and has a feeble influence during the years between 1973 and 1996.

Interestingly, results contradict prior research which has demonstrated that job vacancies predict labor migration (Massey et al 1993; Jennissen 2004). Instead, this paper find that the inflow of Filipino labor migrants reacts to regional unemployment in a positive manner. This finding offers support instead for labor substitution as a possible explanation. Filipino migrants may be substituting for vacancies of other foreign labor migrants. Foreign labor migrants are paid lower wages compared to locals. Thus, the unemployment in various regions may serve as a reverse signal for potential Filipino labor migrants seeking opportunities in the secondary labor market (e.g. service industry and domestic work). The demographic variables, we find housing cost and Filipino migrant stock are predictors of inflow.

Moreover, the static models (Table 3) with various controls find Filipino migrant stock is a significant predictor of Filipinos labor migration. It is the existence of the Filipino communities in various Italian regions that drives the migration of Filipino labor. Although this finding is consistent across models, the inverse relationship between the dependent variable and the regional Filipino migrant stock is unexpected: as the total Filipino migrant stock increases, the inflow of labor migrants decreases. In the context of networks and connections, but not in the context of employment competition, this is counter-intuitive since having a network reduces the cost of finding a job. Etzo (2011) explains that migrants who are dependent on social networks for employment may not be applicable in the recent migrations due to the demand for specialized skills. Etzo's research suggests that modern technology such as the advances in computers may play a role in the weakening of social networks. Another explanation may be the existence of numerous public and private employment agencies in the Philippines, which may contribute to this direction of the relationship, circumventing the necessity of landing pad support.

Numerous studies in migration literature cite the importance of housing location and cost as a predictor variable for migrant settlement in general (Sim, 2000; Andersen et al.,2013 and Potepan, 1994). However, the static models of this research does not find the regional housing costs to affect the Filipino labor migration flows. The non-influence of regional housing cost to migration flow is parallel with Etzo's (2011) conclusions regarding housing cost as deterrent in selective zoning and restricted to social housing. He argued that an increase in housing cost for immigrants including both monetary and non-monetary costs deters settlement in particular locations. Because regional housing cost is not a predictive indicator in this research, further exploration of prior studies is warranted. An interesting finding by Andersson & Nilsson (2011) indicates that housing instruments (such as the access to the labor market and the right to housing) could be used intentionally or non-intentionally to control for migration inflow. Since various housing restrictions may apply to non-locals, which makes obtaining affordable housing difficult for migrants (van der Vlist et al., 2011), and generally, migrants receive lower wages compared to the locals. These previous findings regarding the role of housing costs still demand further investigation that would include wider range of factors such as social housing, bureaucratic barriers and cost in combination.

To further examine the validity of the results in the static models and rule out probable endogeneity problems, this research utilized a more sophisticated analysis in the form of dynamic panel data estimators difference GMM. Throughout the simulations, pointers for using the GMM are strictly followed. In Table 4, the Sargan-Hansen estimates are presented showing that the instrument sets used were valid. The Sargan-Hansen estimates test for the overidentification of restrictions. The Arellano-Bond test (AR2) indicate there is no second-order serial correlation for all simulations.

At the dynamic model in Table 4 column 1, only the log of Filipino migrant stock variable was significant at lower. The relationship between the unemployment and inflow of Filipino labor migrant remains positive but insignificant, the results mirror the static model.

The estimators used in this research, static and dynamic models, conclude the same driver for Filipino migration: it is the Filipino migrant stock that influences labor migration inflow. The results show the Filipino migrant workers react more significantly to a demographic variable rather than the economic variables, in this case, inversely. This study offers three possible explanations.

First, the unique dynamics of the Philippines' labor exporting policies and the willingness of Filipinos to migrate abroad for work facilitate the decision process concerning where to work. The Philippine government's development policies are regionally blind and dependent on contracts in receiving location. Therefore, any country of destination is still considered an achievement as it fulfills the government's labor exportation agendas and at the same time the Filipino migrant laborers' economic and non-economic goals of working abroad. The Philippine government-approved employment agencies facilitate individual contracts with each Filipino labor migrant applicant, it is less likely to contribute to cumulative clustering.

Second, the results may also be explained by the type of migrant worker. For the first time migrant workers who are highly dependent on government-approved but privately-run agencies to find employment abroad, the economic gains which is a potentially large income and non-economic gains such as living and working in a better environment are the primary concern. Although there is a possibility that the hiring corporations' locations could influence such cumulative clustering since they tend to hire Filipino migrant laborers en masse, first time migrant workers are also likely to be persuaded by their network whose success was made possible by the same private agency and commissioned by the same employer abroad. Prior to submitting their requirements to these employment agencies, Filipino labor migrants do their research by comparing agencies and companies based on their networks' feedback. Hence, decision on the location has already been made prior to submission of employment interests, and this decision was influenced by other Filipino labor migrants' information in the destination region. If the migrant workers are either return migrants, has more job experience or more skilled, they tend to have less reliance on agencies. Human capital and past experience pave way to better access to employment vacancies, network information and utilization. Consequently, the

reliance on private employment agencies for jobs abroad lessens or altogether vanishes. The utilization of their networks, for example, allows them to be distributed randomly. Furthermore, the prevalence of co-ethnics in a certain area is not a consideration for the settlement decision of high-skilled or more experienced migrants (Maslova & Chiodelli, 2019).

Third, the cost reduction of enclave behavior. For some labor migrants, particularly the first timers, having a network is among the most important consideration in migration decision. The positive externalities of having a network includes the reduction of monetary and non-monetary cost of moving. These social connections also facilitate easier adaptation in the host country.

2.5. Conclusion

The results of this study provide a basis for understanding the preferences and behavior of Filipino labor migrants migrating to Italy in response to regional economic and demographic indicators.

The central finding is that Filipino migrant stock remains to be the most significant influencer of labor migration in Italy. Using statistics from Italy's regions, this study investigated the effects of economic and demographic variables to the regional inflow of Filipino labor migrants from the Philippines. The Filipino migrant stock in both static and dynamic models significantly influences labor migration.

The findings provide support for prior migration scholarship (Bauer et al., 2005; Sanders & Nee, 1987; Chiswick & Miller, 2005) regarding the pivotal role that enclaves or immigrant clusters play in migration decision settlement.

However, these findings refute prior findings which argues that labor migration are responsive to unemployment, GDP and housing costs. The findings also show that there is an inverse relationship between inflow of labor migrants and migration stock. This phenomenon was seen in the study of Etzo (2011) but on a national scale. Several plausible explanations could be offered for this inverse relationship. First, recent labor migration may not be as highly dependent to social networks. The increase in the demand on specialized skills may have decrease the dependence on private employment agencies. The technological advancement which allows efficient employment search online may have also contributed to the reduction of role of private employment agencies. Finally, since social networks also function virtually particularly for high-skilled migrants, the location choice could be randomly distributed.

The key takeaway is that these findings could be interpreted as either an indication of a new flourishing trend in labor migration flow among a very specific migrant population or simply outliers in a relatively small migrant subgroup. There is a possibility that some factors which are population-specific might be lacking in the analysis. Possible variables include the dynamics between Philippines' current labor

exploration stand and regionalization in Italy, a budding niche in a developing country's migration policy among others.

The analysis leads to the following conclusions. First, the compilation of past and present findings regarding the drivers of migration to Italy infers the existence of a cyclical pattern of reaction to different indicators over time. To recap, this study, for the period of 2007-2017, confirms the findings of Salvatore (1977) for the period between 1950 and 1960 regarding unemployment causing the variances in regional migration. While the results of this research contradict with that of the similar study of Furceri (2006) whose scope is between 1985 and 2001. For the housing cost indicator, contradictory findings are noted as well. Cannari et al. (2000) claims the housing cost as deterrent to migration, and Etzo (2011) cites that it is in fact a significant determinant, this research is in parallel with the former. In this study, it is the Filipino migrant stock that significantly influences labor migration inflow, in comparison to the economic variables. With these, the findings offer support to Etzo's (2011) conclusion for the national scale. The contradictory findings for the same geographical area but different periods of time support the inference of the cyclical pattern

This study contributes to the relatively new niche in the literature that considers the spatial dimension of labor markets by giving a specific migration angle – Filipinos migrant laborers on regional scale. The regional scale of analysis provides greater analytic insight into explanations for migrant flow. Further, by focusing solely on Filipinos we are able to suggest some ways in which the population follows more general predictive theory—for instance, cumulative causation—but behaves uniquely with regard to housing indicators. The scale of analysis combined with focus on a singular group removes some of the noise from analysis. Our finding suggest that the Filipino labor export policy produce pockets of Filipino labor migrants. These pockets support ongoing migration and are important to facilitating further labor migration. However, this is not categorical. Migration varies by region. We are unable to fully explain why the relationship fluctuates between region but might suggest that the differences relate to the distribution of particular industries or types of employment. Spatial mismatch may be occurring for Filipinos who have been slotted into particular industries. Further, near constant supply of Filipino migrants through agencies may factor in to the observed distribution—as demand wanes in particular areas, agencies facilitate in-migration elsewhere given existing networks.

Since labor migration, particularly to Italy, has been a subject of great scrutiny and policy debates, the results of this paper would be useful for regional migration policies and reception. The demographics of Italian regions all show the same picture: excessive outmigration to the North of Italy or abroad, increasing older population and decreasing younger population. The entry of migrant labor continues to fill in the much-needed demand for labor, chiefly for unskilled jobs. As cited in numerous studies in the migration literature, the jobs that these migrants normally take are rather complementary, therefore, they are not a threat to the employment of the locals. The findings of this paper could help in drafting regional policies that might aid in the

falling demographics among Italian regions. By tailoring regional policies to elicit the needed migrant flow such as adjustments in the quota of work visas released in various regions, then such shortages in migrant workforce could be addressed since labor migrants are directed to where they are needed. At the same time, policy interventions that are equally sensitive to various ethnic subgroups are encouraged to address the problems of changing demographics, and labor supply shortage.

The results also suggest that we still have a long way to go as the study is limited by the data available. Though the research period encompasses eleven years, from 2007 to 2017, expanding the scope to a longer period is highly encouraged to yield stronger results. Running the analysis, for a twenty or thirty-year period is another viable option for future researchers. Additional avenues for future studies include, but is not limited to, inclusion of other demographic and economic regional indexes, expanding the scope of migrants from a single ethnicity to several macro groups, such as South-East Asian, West African or Eastern European migrants in Italy. Another equally viable option is to segregate the inflow of migrants by gender, education level or conduct cross-country studies on migration elasticities. Future research could also be devoted in examining how migration determines regional economic health. This would be a beneficial addition to the migration literature since the importance and contribution of migrants is continuously challenged.

APPENDIX

Appendix Table 5: Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Inflow of Filipino Labor Migrant	226.1364	639.6189	1	5768
Log of Inflow of Filipino Labor Migrant	3.443425	2.317535	-.6931472	8.660081
Gross Domestic Product	79635.34	78853.19	3998.9	353317
Unemployment	123257.5	110807.5	1862	442791
Employment	1110355	972048.6	53337	4293863
Housing Cost	303.5455	53.04674	196	412
Foreign Population	213932	248070.6	4834	1152237
Filipino Migrant Stock	6861.732	12677.42	18	59782
Philippine GDP Gowth Rate	5.727273	1.831281	1.2	7.6

Appendix Table 6: Results of Static Panel Data Models (Extended)								
Dependent Variable Filipino Labor Migration	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log Unemployment	0.023	0.023	0.102	0.472	0.102	0.472	0.491	0.491
	(0.866)	(0.866)	(0.841)	(0.829)	(0.841)	(0.829)	(0.832)	(0.832)
Log GDP	-0.286	-0.286	0.784	0.825	0.784	0.825	1.237	1.237
	(3.385)	(3.385)	(4.507)	(3.905)	(4.507)	(3.905)	(4.427)	(4.427)
Log Housing Cost	-0.868	-0.868	-0.851	-1.837	-0.851	-1.837	-1.798	-1.798
	(2.029)	(2.029)	(2.058)	(1.800)	(2.058)	(1.800)	(1.824)	(1.824)
Log Filipino Migrant Stock	-1.984***	-1.984***	-2.019***	-1.988***	-2.019***	-1.988***	-2.002***	-2.002***
	(0.544)	(0.544)	(0.553)	(0.468)	(0.553)	(0.468)	(0.478)	(0.478)
Observations	220	220	220	220	220	220	220	220
R-squared	0.804	0.804	0.804	0.808	0.804	0.808	0.808	0.808
Philippine GDP growth rate	no	yes	no	no	yes	yes	no	yes
Employment	no	no	yes	no	yes	no	yes	yes
Foreign Migrant Stock	no	no	no	yes	no	yes	yes	yes
Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1								

Appendix Table 7: Results of Dynamic Panel models with Difference GMM (Extended)					
Dependent Variable Filipino Labor Migration	(1)	(2)	(3)	(4)	(5)
Log Labor Migration(lagged)	0.498***	0.501***	0.111	0.096	-0.012
	(0.115)	(0.105)	(0.401)	(0.382)	(0.287)
Log Unemployment(lagged)		0.578	1.939	2.304	3.180
		(2.078)	(4.967)	(4.584)	(2.700)
Log GDP(lagged)			-70.965	-72.933	-28.347
			(63.525)	(68.839)	(48.142)
Log Housing Cost(lagged)				4.085	4.782
				(8.920)	(6.439)
Log Filipino Migrant Stock (lagged)					-6.104*
					(3.001)
Observations	180	180	180	180	180
Year Dummies	yes	yes	yes	yes	yes
Arellano-Bond test (AR2)	0.845	0.817	0.433	0.439	0.543
Hansen Test of overidentification	0.047	0.108	0.174	0.151	0.048

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

CHAPTER 3

Migration, Selection and Wages: Regional Analysis Of Great Britain

ABSTRACT

While the migration literature on wages and inequality is abundant, there is limited research that associate drivers of migration to wage differences, particularly in a sub-national scale while at the same time considering the possibility selectivity biases. This paper aims to assess the level of this relationship and identify how individual characteristics of the labor migrants are correlated to the current degree of wage differences in each of the regions of Great Britain. With the use of British Household Panel Survey (BHPS) data from 1991 to 2007 for broad regions of Great Britain, the research identified different determinants that affect the interregional migration flows and how migration impacts regional wages. The findings indicate that oversight on the regional variations are often frequent as migration is mostly studied on a national scale. This and other lapses in studying the economics of migration leads to arguable findings.

3.1. Introduction

Although there are numerous research that studies regional migration and its effects on wages and inequality (Portes, 2018; Pissarides and McMaster, 1990 and Dickey, 2007), only few studies have attempted to identify the dynamics on how differences in personal characteristics drive migration.

Regional migration changes the labor characteristics of the destination region and in turn, these variations in labor pool characteristics contribute to the wage differences in the region. The objective of this paper is to examine the extent of this relationship and identify how individual characteristics of the labor migrants (such as age, gender, marital status, occupation, etc.) are correlated to the current degree of wage differences in each of the region of Great Britain.

Inter-regional migration is different from international migration as the former is primarily grounded on the exchange of skills while the later due to wage differences (Biswas et. al, 2009). Borjas (1987) argued that the unobservable and observable skills of a person which may be effective or ineffective in his or her own origin region will encourage the worker to migrate due to incentives. Although Biswas et al. (2009) cited that in the context of productivity increasing due to the variety of skills, there is still a possible problem of skill distribution relative to their demand in a country - that skills may not be equally distributed. Thus the problem of self-selection in migration, as Borjas (1987) first coined, casts doubts on the proper determinants of migration, how skills are distributed across regions and how it affects wages.

The vital contribution of this research is primarily undertaking the issues of self-selection while at the same time quantifying the effects of interregional migration on regional wages through the use of household level panel data. To the extent of our knowledge, this is the first paper that controls regional migration selectivity using nationwide representative sample in private households.

This research picks up from the findings of Dickey (2014) who examined the relationship between regional migration and regional wage inequality using the British Household Panel Survey (BHPS) data from 1991 to 2007 for all the 6 broad regions of Great Britain - Greater London, the Midlands, the North, the rest of the South, Wales and Scotland. We contribute to the existing literature by examining the factors that drive migration in various regions. This allows us to build a region-specific profile on migration and its effect on regional wages, as compared to the abundant literature on national level analysis. At the same time, the study covers the BHPS data prior to the 2008 Global Financial crisis. Studying the data prior to the 2008 crisis would give us the base to which post-crisis analyses can be made and how changes in labor characteristics in a region affects the region’s current wage differential issues.

The remainder of this paper is structured as follows. Section 2 presents the related literature. Section 3 discusses the data used and the research methodology employed. Section 4 presents and discusses the findings. Finally, Section 5, draws the discussion into a conclusion.

3.2. Literature Review

3.2.1. Theories of Migration

This reseasrch starts by reviewing the available literature that explains the migration experience in the context of inter-regional movement. The nature of migration is complicated, dynamic and multi-layered and has yet to adhere to a single overarching theory that explains the phenomenon. Past and current theories of migration only attempted to explain a fragment of it (Massey et al., 1993). This part of the research summarizes some of the most commonly used theories and offers the weaknesses cited by critiques.

A significant theory that supports labor migration outside and within a country is the human capital model of migration. First introduced by Sjaastad (1962), the concept of migration was seen as an investment in the human agent. The training and supervision is specific to each labor participant and that the potential wage in their respective occupational sector may increase or decrease as dictated by the movement of the market. Consequently, the laborer may have the option to acquire more training or accept lower wages. Those who chose the latter has the option to migrate to regions that pay higher wages that commensurate their improved or increased human capital (Sjaastad, 1962).

Another theory that could explain inter-regional migration is the Neo Classical Theory of Migration. This theory stipulates that the wage differential between the origin and destination areas is the primary motivation of migration. Under this theory of migration, migrants are individual and rational decision makers that aim to maximize their income (Hicks, 1932; Lewis, 1954 and Harris and Todaro, 1970). The decision to move is due to the logical economic sensitivities that covers both financial and psychological costs and benefits of migrating (Todaro and Smith, 2006).

Although both theories provide a good foundation on which inter-regional migration is grounded, both are also open to criticism. For the human capital model of migration, the critique lies on the issue of selectivity and what determines it. If there are gains to moving in the long run, then the theory could not explain the existence of stayers. As Cattaneo (2007) puts it, if movers (those who chose to migrate) and stayers (those who did not migrate) are distinguished either by motivation, skills or abilities, all of which increases the chance of moving, then the theory of human capital migration is without self-selection problem. A strong criticism against the Neo Classical theory of migration is the empirical disconnect between theory and practice. Conceptual and empirical critiques were cited by Arango

(2000) and Massey et al. (1998). Critiques also cited the selectivity biases, where the more affluent groups are the ones capable of migrating.

Other significant theories of migration include the World Systems Theory of Migration (Wallerstein, 1974) which argues that neither the wage rates or variances in employment determine migration, rather the emergence of new markets and the global economy's structure; Dual Labor Market Theory (Piore, 1979) which focuses on the sorting of skilled and unskilled labor into two occupational organizations mostly in advanced market economies; and the New Economic Theory of migration, which argues that the decision to migrate is a communal choice in order to maximize the family's income, diversify sources, minimize financial risk, prepare for unfortunate life events, sending a family member abroad serves as a financial anchor.

3.2.2. Determinants of Migration

Ritsilä & Ovaskainen (2010) cited the various factors that migrants consider in making the decision to move or not, and stipulated that these migration determinants are combinations of intrinsic and extrinsic characteristics. Other scholars explicitly cited the various determinants of migration under the two broad categories of pull and push factors. These include: potential wage (Bauer, Epstein and Gang, 2005), wage differentials (Harris and Todaro, 1970), economic growth (Beets and Willekens, 2009), the prospect of employment (Jennissen, 2004), human capital investment in education (Faggian & McCann, 2009).

As for the observed traits of migrants, we discuss below the individual characteristics that are most common among migrants and how these affect their migration decisions.

Additional training continually adds to the existing human capital. Consequently, education plays a critical role in migrant decision-making. Faggian & McCann (2009) cited the increase in human capital as a contributor to the increase in people's mobility or migration decision. In the same study, the authors found that university graduates in the U.K. demonstrate greater mobility across British regions.

Since education affects earnings, the relationship between migration and earnings are found to be direct. Higher earnings contribute to in-migration to a region and lower earnings affects out migration from a region (Sjaastad, 1962). Borjas (1992) also contributed to this topic when he argued that the differences in the returns to skill are major determinant of internal migration flows. Formal education or training in a specific vocation allows the labor migrant to have higher compensation compared to the non-skilled or low-skilled migrant competition.

Gender has been seen to negatively affect the probability of migration. For women, Mincer (1978) cited family ties, among many things, as a deterrent to mobility. Long (1973) argued that women's primary choices in employment may have an effect in terms of being less mobile. He cited that participation of women in occupations that

are geographically transferable may have contributed to the change in women's mobility. If we look back at Ravenstein's (1885) work, it suggests that at least in short distances, women are more mobile compared to men. Detang-Dessendre and Molho (2000) provided support for this statement by claiming that women are more migratory as a consequence of the move decisions of their partner, given the change in occupation location. Recent studies in the U.K. by Faggian, Mccann, & Sheppard (2007) however, found that in terms of gender's effect on migration decision, women have higher mobility compared to men, at least on interregional scale.

Household size, marriage, and children also affect the probability of moving. An individual with no partner or children can easily make the decision to migrate as he or she is unrestricted by family ties. However, Mincer (1978) argued that in family migration decisions, certain considerations have to be made such as the job status of the spouse and children's schooling. Long (1975) further contributed to the literature of migration by studying the effect of migration decisions vis-à-vis with the presence of children. The location choice of the migrant family is influenced by the school choice for the children, whether it is financially viable or within their preferred geographical distance from home. It is the occurrence of school-age children that impedes migration. However, in the same study, school-age children, were also used as a variable that encourages migration. The decision to migrate is accelerated specifically among families with pre-school age children.

Similar with the presence of children, Mincer (1978) cites the effects of husband and wife family structure in migration decisions. Young couples, or recently married couples are found to have higher probability of moving. As the duration of the marriage increases, the probability of migration declines. Similarly, the wife's employment status also deters migration. Long (1973) finds that the probability of moving for a married couple is lower when the wife is employed, compared to when the wife is not employed.

3.2.3. Inter-regional Migration Flows

Scholars have identified various regional economic characteristics that affect the interregional migration flows in Great Britain. These include per capita GDP, unemployment level in the destination region and university undergraduate employment (Biswas et al, 2009), higher levels of unemployment and employment status (Pissarides and Wadsworth, 1989), regional housing prices, (Cameron et al., 2006), wage predictions (Ghatak and Levine, 1996), unemployment rates and house prices (McCormick, 1997), total number of job hirings in a region and house prices (Jackman and Savouri, 1992) and net immigration (Hatton and Tani, 2005).

These findings, however relevant, remain to have gaps. The current literature still lacks up to date findings, even though interregional migrations in the U.K. has been studied. While the research of Blackaby and Murphy (1991) shed light to wage gaps across industries and regions, their study was restricted only to only one year of data (1982). Studies by Biswas et. al. (2009) only covered the historical divisions of the

U.K. – England, Scotland, Wales and Northern Ireland and only covered the period 1985-2000. Another research by Hatton and Tani (2005) covered the 11 Standard Statistical Regions of the U.K. from the period of 1982–2000. Although research by Nakosteen and Zimmer (1982) estimated the returns to migration while accounting for self-selection bias for the working population, their research was limited because the explicit consequences of crucial factors were not accounted for in influencing the decision to migrate. These include factors such as education level and family member's labor force status. Apart from the need for more up-to-date findings, we fill these two gaps in literature by utilizing a more recent dataset and controlling for self-selection issues.

3.2.4. Inter-regional Migration Trends in The U.K.

This research used regional data from six broad regions of Great Britain - Greater London, the Midlands, the North, the Rest of the South, Wales and Scotland from years 1991 to 2007. The regional means for the hourly real wages are displayed in Table 1, while Table 2 shows the sample statistics for hourly real wages across the 6 broad regions.

The United Kingdom experienced a 28% increase in the mean of real hourly wages from 1991 to 2007. Dickey (2014) attributed this increase to the rapid rise in the upper portion of the wage distribution.

Table 1: Mean of Hourly Real Wages across 6 Regions

Region	1991	1995	2000	2005	2007
Greater London	7.721067	8.340799	9.188303	10.70013	10.98623
Rest of South	6.5727	6.863724	7.432701	8.310899	8.372042
The Midlands	5.536671	6.002428	6.717291	7.662456	7.944973
The North	5.792339	6.47105	6.872639	7.720071	7.892662
Wales	5.55079	5.980196	6.650891	7.027775	6.925296
Scotland	6.008932	6.404199	7.144034	7.608913	8.066042
Great Britain	6.193986	6.686911	7.164361	7.770815	7.929416

Source: Authors' computations based on BHPS data

The mean of hourly real wages at the regional level has been consistently higher in the regions of Greater London and the Rest of the South compared to that of the national level. The mean was lowest in the Midlands, lower than the national average by almost 12% at the beginning of the period in 1991.The Midlands and Scotland already surpassed the national mean of hourly real wages by 0.2% and 1.7% respectively during the final year of the BHPS survey in 2007. Wales experienced a 24.8% increase in the hourly wage among the 6 regions, the lowest rise in the hourly wage over a 16 year period. Consequently, the Midlands recorded an increase of 43.5%, the biggest over the same period, followed by Greater London at 42.3%.

Table 2: Descriptive Statistics (6 Regions)

1991

Region	No. of Observations	Mean of Hourly Wages	Standard Deviation	Minimum	Maximum
Greater London	498	7.721067	4.370453	.5566801	35.92764
Rest of the South	1,475	6.5727	4.223645	.452381	50
The Midlands	842	5.536671	3.053596	.2165127	35.2194
The North	1,303	5.792339	3.184422	.6410257	25
Wales	236	5.55079	2.905308	.75	19.63049
Scotland	489	6.008932	3.137205	.8974359	21.83498
Great Britain	4,843	6.193986	3.68304	.2165127	50

1995

Region	No. of Observations	Mean of Hourly Wages	Standard Deviation	Minimum	Maximum
Greater London	431	8.340799	5.74847	.4843553	79.8174
Rest of the South	1,426	6.863724	4.476473	.2761107	42.42304
The Midlands	704	6.002428	3.490328	.5054682	45.52716
The North	1,111	6.47105	4.202877	1.052867	58.36816
Wales	187	5.980196	3.15557	1.212845	20.97382
Scotland	393	6.404199	3.420939	1.433692	23.28094
Great Britain	4,252	6.686911	4.313781	.2761107	79.8174

2000

Region	No. of Observations	Mean of Hourly Wages	Standard Deviation	Minimum	Maximum
Greater London	465	9.188303	5.603777	1.250124	60.6983
Rest of the South	1,640	7.432701	4.602275	.5486451	64.82982
The Midlands	918	6.717291	4.737779	.581692	82.59444
The North	1,276	6.872639	3.778519	.4862236	44.91674
Wales	1,203	6.650891	5.837405	.506483	168.4378
Scotland	1,619	7.144034	4.200409	.5181435	41.58957
Great Britain	7,245	7.164361	4.742632	.4862236	168.4378

2005

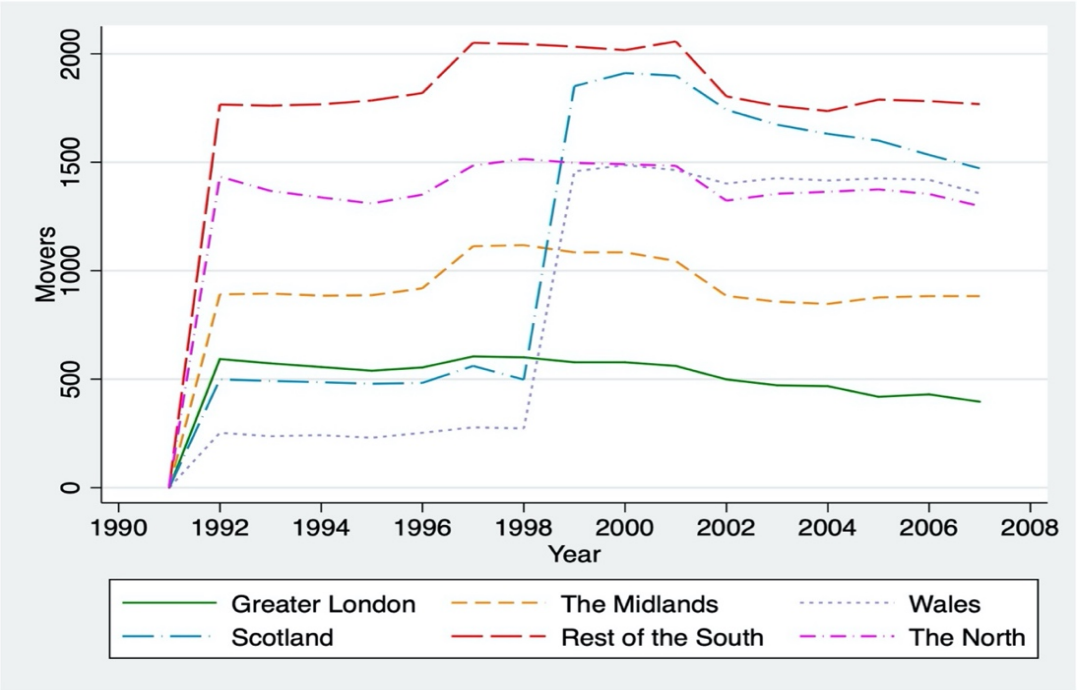
Region	No. of Observations	Mean of Hourly Wages	Standard Deviation	Minimum	Maximum
Greater London	319	10.70013	6.906769	1.377263	75.109
Rest of the South	1,398	8.310899	4.924824	.4029759	43.65004
The Midlands	716	7.662456	4.777587	.7761732	59.23965
The North	1,141	7.720071	5.526038	.5157298	108.3866
Wales	1,126	7.027775	3.98838	.1300786	45.21661
Scotland	1,286	7.608913	4.419264	.4813478	47.64247
Great Britain	7,072	7.770815	4.791316	.1300786	108.3866

2007

Region	No. of Observations	Mean of Hourly Wages	Standard Deviation	Minimum	Maximum
Greater London	295	10.98623	8.565744	.6914586	100.9156
Rest of the South	1,389	8.372042	5.220125	.0700803	45.27217
The Midlands	712	7.944973	5.661713	1234835	68.20224
The North	1,077	7.892662	4.406913	.6788867	35.28486
Wales	1,072	6.925296	3.619447	.2752243	36.55543
Scotland	1,199	8.066042	5.611617	.3753844	103.0698
Great Britain	6,757	7.929416	5.160395	.0700803	103.0698

Source: Authors' computations based on BHPS data

Figure 1: Regional Migrant Distributions



Mobility in 1991 across the various regions of Great Britain was recorded to be historically low (Champion et. al, 1998). The largest number of migrants were recorded in the Rest of the South and the North during the first half of the survey. While the lowest numbers were reported for Wales and Scotland. The Rest of the South still recorded the highest numbers of movers for the second half of the period followed by Scotland and the North.

3.3. Data and Methodology

3.3.1. Data

The methodology of this paper is to apply three sets of estimators to examine the effects of regional migration on regional wages while controlling for possible self-selection biases due to migrants' personal characteristics differences. The data was obtained from the British Household Panel Survey (BHPS), a broad longitudinal study of the United Kingdom that interviewed a nationally representative sample of British households starting in 1991. These original households have been interviewed yearly to observe the variations on social and economic standing (Taylor,1994). The scope of this research includes data from years 1991 to 2007 and covers six broad regions of Great Britain - Greater London, the Midlands, the North, the rest of the South, Wales and Scotland. The basis of comparison is the log of real earnings per hour (adjusted to 1991 prices using the Retail Price Index). Table 3 presents the variables used in this research.

Table 3: Variable Definitions

Variable	Description
Age	age at the date of the interview
Age(squared)	age squared
Gender	gender (male or female)
Marital Status	marital status
Education	educational groups classified into three categories
Housing	housing status or tenure classified into three categories
Household Size	number of people in the household
Public Sector Job	employed in a public sector job
Skilled	skill levels classified into three categories
Fulltime	the individual works more than 35 hours per week
Move	means individual participated in migration to another region
Bonus	pay include bonuses or profit sharing
Pension	member of employee pension scheme
Opportunities	promotion opportunities in current job

The variables used in this study are presented in Table 3. Age has always been a crucial variable in studying migration decision and its effects on wages. The square of age was also included to accurately estimate the effects at various ages and to rule out the assumption that the effect of age is linear throughout one's lifetime. Migration considerations rely significantly on both gender and marital status as influencers in migration decisions, hence both variables are included. Education and skills are both irreplaceable variables in studying migration decisions and wage effects. In this research, education levels were classified into three categories – low educated (GCE levels or equivalent, Commercial qualification, CSE grade, No O levels, Apprenticeship), semi educated (Other higher qualifications, Nursing qualifications, GCE A levels) and highly educated (Higher degree, First Degree, Teaching Qualifications). Migration studies also cite housing as a significant influencer in migration decision, hence the inclusion of housing status of migrants (House owner, Public renting, Private renting). Household size consideration is equally irreplaceable since family ties greatly influence family migration decisions. Public sector job simply refers to the individual holding a job at the public sector. Fulltime variable refers to the individual working more than 35 hours per week.

The probit models used the move variable, which simply means migration participation of individuals to another region within Great Britain. These last three variables were used as exclusion restrictions for the first stage of the Heckman model. Bonus simply refers to the availability of bonuses or profit sharing in the individuals current job. Pension variable refers to the individual being part of a pension employee scheme. Opportunities refer to the promotion opportunities in the individual's current job. These three variables will be discussed further in the next section.

3.3.2. Model and Estimation Strategy

(I) The first set of equations test the determinants of migration at the regional level. These sets of equations aim to explore how the differences in migrant characteristics affect their decision to migrate by testing the coefficients across different regions. Using regression models across all years, we first estimate the probability of migrating for each region with a probit model.

A typical OLS regression, which has a continuous y variable, takes the form:

$$y = x' \beta + \varepsilon$$

However, in this research, the dependent variable, y, is defined by a binary response: 0 if the subject stayed and 1 if the subject migrated or moved to another region.

$$\boldsymbol{y} = \begin{cases} \mathbf{1}, & \boldsymbol{y} * > \mathbf{0} \\ \mathbf{0}, & \boldsymbol{y} * \leq \mathbf{0} \end{cases}$$

We then utilize the binary outcome model which estimates the probability that y=1 as a function of the independent variables:

$$p = pr\,(y = 1|x) = F\,(x' \beta)$$

The probit model ensures the predicted probability is limited between 0 and 1, takes the functional form:

$$\boldsymbol{F(x'\beta) = \phi(x'\beta) = \int_{-\infty}^{x'\beta} \phi(z)dz}$$

Where is F (x′ β) is the cumulative distribution function of the standard normal distribution.

The pooled probit models with clustered standard errors are then tested to resolve if the determinants of migration are significantly different across the 6 regions. The models were again run as fixed effects models to check the panel estimates of the probability of migrating for each region as additional robustness checks.

(II) The second sets of equations are the wage equations estimated at regional level. These equations aim to examine the effects of migration on the individual wages, specifically the log of hourly wages, by using simple wage equations.

The functional form of the wage equations in this research can be seen as:

$$y = \beta_0 + \beta_1 x + \varepsilon$$

where y, the dependent variable is the log of hourly wage, x are the independent variables, β_0 is the constant term, β_1 is the coefficient of x and ε is the error term.

We approach this stage by first running 6 regional pooled OLS regression equations using all years to estimate the effect of migration on individual wages per region. We then test whether the effect of migrating on wages is significantly different across the 6 regions. Finally, we then estimate the wage equations as fixed effects models as a robustness check.

(III) Further analyses are necessary to obtain unbiased results since the characteristics of the migrants and non-migrants may differ from each other. We have to rule out the possibility of self-selection biases due to the nature of the sample. The differences in the characteristics of the labor force participants might induce a selectivity bias problem. Labor markets in the 6 broad regions of Great Britain would only engage the most capable individuals from the labor force. To control for this, the Heckman two stage model was employed for the third set of equations. The classic model, as argued by Heckman (1974), focuses on the labor force participation. The Heckman model is a fitting estimator for this research as it aims to address the probable issues of non-random sampling possibilities.

The first stage of the Heckman model is the migration equation that uses a probit regression to model the self-selection process. The first stage estimates the probability of migration which is binary - we model participation in migration as move=1 and stay=0. This stage addresses possible non-random sampling issue including self-selection bias. Using this model, we can use the sample to make general observations about the population. We also include in this equation the stayers, in order to avoid having a biased (upward) and inconsistent estimates. A full set of regional dummy variables will be used in this probit model. The same group of variables will also be used in the second stage regression. This first stage is critical as it computes for the Inverse Mills Ratio (IMR) which is the error obtained from the probit regression that explains the self-selection.

To be able to identify the complete structural model, we should first identify the exclusion restrictions for the migration decision. The exclusion restrictions used in the probit model are: if the pay include bonuses or profit sharing; if the current job includes promotion opportunities; and if the individual is a member of pension employee scheme. These exclusion restrictions were selected since the decision to participate in labor migration is influenced by the participant's bonus, promotion and pension schemes but not necessarily directly affects the log of hourly wages for the participant. We present three justifications in selecting the variables. First, migrants' wages per Colussi (2015) which includes the bonuses and overtime, are still lower than the natives. Second, promotion opportunities impact profession decision making (Large and Saunders, 1995). Finally, participation in a pension scheme program progressively influences a person's move decisions (Góra and Ruzik-Sierdzińska, 2018). This selection process is also in accordance with Certo et. al's (2016) conditions in choosing the exclusion restrictions.

The second stage is a multiple regression equation that allows the correction of the possible biases in the sample composition. This stage drops the exclusion restrictions, run the regression for the model with the same set of indicators that were used in the first stage probit regression, but with the inclusion of the computed IMR from the first stage (functioning as an independent variable). The second stage involves estimating the effect of migration on the earnings equation. In this stage, we use the log of hourly wage as the dependent variable.

This methodology is appropriate since this part takes into account the selectivity in migration. We are working under the possible scenario that migrants should be systematically different in terms of personal and human capital characteristics, as compared to the non-migrants. Therefore, the Heckman Two stage model controls for migration self-selection, while at the same time measures how the different job characteristics affect the log of the hourly real wages.

3.4. Presentation and Discussion of Results

3.4.1. Probability of Migrating

The results for the first set of equations, which measures the probability of migrating from the 6 regions, were displayed in Table 4. Categorical variables include educational level, housing tenure and skill level, of which their respective categories can be seen in the Appendix section of this chapter.

Personal characteristics such as marital status, employment in a public sector job, or low educational level tend to be insignificant in predicting the probability of moving. In contrast, private renters have a higher probability of migrating compared to home owners and private renters. These observations are consistent throughout all 6 regions.

Following the general observations, results for each region are presented forward. For Greater London, age and household size are both highly significant predictors, albeit in an inverse relationship. Private renting is highly significant in influencing the decision to migrate, as compared to the base group in the housing tenure – which is house owner. For Rest of the South, high level of education is a positively significant predictor for migration, compared to our base group in the education status which is no education. Private renting is also highly significant. Indicators for the Midlands region also vary in direction and significance. The most important result is private renting remains to be a significant influencer of migration compared to the base group. Results in the North show that low skills negatively predicts migration compared to our skill base group which is highly skilled which is expected. Findings for Wales are similar to The North – private renting positively influences migration, as compared to the base group. Being low skilled negatively affects migration as compared to the skill base group which is highly skilled. Finally, public renting in Scotland discourages migration.

We ran the migration equations using panel commands as additional robustness check. The results for the panel regressions for the same set of migration equations are presented in Table 5. In terms of both the general and regional observations, the results are similar to the probit regressions in Table 4.

The results for the migrations equations, using the probit models, were then subjected to further analysis. We used the *suest* and *test* commands in Stata to check whether the coefficients of the determinants of migration are significantly different across the 6 regions. By using the *suest* command, we were able to cluster the analyses using the individual sample (person ID) which allows us to account for the fact that there are multiple observations per person.

The *ttest* for significant differences between the regional coefficients allows us to reject the hypothesis of no differences between regions. This imply that coefficients are significantly different across regions. This means the factors that affect the probability of migrating in a region are different compared to the rest of the regions. These findings infer that the migration equation should not solely be run at the national level, but instead at the regional level to prevent the oversight of regional variations in the determinants of the migration decision.

Table 4: Probit Regression Results for Migration Equations

	Greater London	Rest of The South	Midlands	The North	Wales	Scotland
Age	-0.109***	-0.020	0.026	-0.014	0.022	0.040*
	(0.023)	(0.013)	(0.021)	(0.023)	(0.023)	(0.024)
Age (squared)	0.001***	-0.000	-0.001*	-0.000	-0.000	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Gender	-0.092	0.085*	-0.004	-0.064	0.181**	0.004
	(0.077)	(0.048)	(0.070)	(0.071)	(0.087)	(0.087)
Marital Status	0.128	0.011	0.056	0.012	0.035	0.086
	(0.079)	(0.049)	(0.074)	(0.069)	(0.088)	(0.083)
Low Educated	0.251	-0.002	0.272*	-0.188	0.297	-0.203
	(0.282)	(0.106)	(0.164)	(0.159)	(0.203)	(0.162)
Semi Educated	0.510*	0.147	0.396**	-0.042	0.347*	-0.002
	(0.276)	(0.107)	(0.165)	(0.159)	(0.205)	(0.161)
Highly Educted	0.465*	0.371***	0.432**	0.169	0.484**	0.007
	(0.282)	(0.111)	(0.168)	(0.163)	(0.218)	(0.174)
Public Renting	-0.360**	-0.172*	-0.237*	-0.069	0.129	-0.418***
	(0.182)	(0.102)	(0.130)	(0.134)	(0.142)	(0.155)
Private Renting	0.667***	0.395***	0.510***	0.492***	0.461***	0.252**
	(0.084)	(0.054)	(0.079)	(0.081)	(0.109)	(0.108)
Household Size	-0.175***	-0.030	-0.096***	-0.053**	-0.037	-0.033
	(0.036)	(0.019)	(0.031)	(0.026)	(0.034)	(0.030)
Public Sector Job	-0.107	0.093*	-0.063	-0.098	-0.056	-0.010
	(0.086)	(0.051)	(0.073)	(0.079)	(0.081)	(0.079)
Semi Skilled	-0.097	-0.035	-0.151**	-0.182**	-0.184**	-0.230**
	(0.079)	(0.052)	(0.072)	(0.075)	(0.092)	(0.090)
Low Skilled	0.039	-0.171**	-0.298***	-0.471***	-0.535***	-0.085
	(0.149)	(0.070)	(0.092)	(0.113)	(0.124)	(0.115)
Fulltime Job	0.055	0.078	0.124	0.277***	0.041	0.047
	(0.113)	(0.059)	(0.089)	(0.093)	(0.097)	(0.105)
Constant	0.326	-1.494***	-2.374***	-1.520***	-2.657***	-2.538***
	(0.502)	(0.265)	(0.402)	(0.437)	(0.514)	(0.467)
Observations	6,284	22,889	12,006	17,889	11,449	15,171

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 5: Panel Regression Results for Migration Equations

	Greater London	Rest of The South	Midlands	The North	Wales	Scotland
Age	-0.109***	-0.020	0.027	-0.014	0.022	0.040
	(0.026)	(0.015)	(0.021)	(0.023)	(0.023)	(0.024)
Age (squared)	0.001***	-0.000	-0.001*	-0.000	-0.000	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Gender	-0.092	0.095*	-0.004	-0.064	0.183**	0.004
	(0.077)	(0.054)	(0.072)	(0.071)	(0.089)	(0.087)
Marital Status	0.128	0.008	0.056	0.012	0.036	0.086
	(0.083)	(0.053)	(0.076)	(0.069)	(0.090)	(0.082)
Low Educated	0.251	-0.002	0.279*	-0.188	0.302	-0.203
	(0.283)	(0.116)	(0.169)	(0.158)	(0.208)	(0.162)
Semi Educated	0.510*	0.167	0.407**	-0.042	0.353*	-0.002
	(0.282)	(0.118)	(0.171)	(0.159)	(0.211)	(0.161)
Highly Educted	0.465	0.407***	0.444**	0.169	0.494**	0.007
	(0.285)	(0.124)	(0.173)	(0.165)	(0.227)	(0.174)
Public Renting	-0.360**	-0.196*	-0.245*	-0.069	0.127	-0.418***
	(0.184)	(0.112)	(0.135)	(0.133)	(0.142)	(0.158)
Private Renting	0.667***	0.419***	0.519***	0.492***	0.467***	0.252**
	(0.124)	(0.061)	(0.083)	(0.094)	(0.113)	(0.108)
Household Size	-0.175***	-0.034*	-0.099***	-0.053**	-0.038	-0.033
	(0.045)	(0.020)	(0.032)	(0.026)	(0.034)	(0.030)
Public Sector Job	-0.107	0.103*	-0.064	-0.098	-0.058	-0.010
	(0.087)	(0.057)	(0.075)	(0.079)	(0.083)	(0.079)
Semi Skilled	-0.097	-0.044	-0.151**	-0.182**	-0.189**	-0.230**
	(0.080)	(0.056)	(0.074)	(0.076)	(0.091)	(0.090)
Low Skilled	0.039	-0.186**	-0.301***	-0.472***	-0.544***	-0.085
	(0.149)	(0.077)	(0.094)	(0.108)	(0.129)	(0.115)
Fulltime Job	0.055	0.083	0.127	0.277***	0.041	0.047
	(0.113)	(0.064)	(0.091)	(0.095)	(0.099)	(0.105)
Constant	0.326	-1.599***	-2.420***	-1.520***	-2.695***	-2.538***
	(0.512)	(0.296)	(0.427)	(0.446)	(0.542)	(0.500)
Observations	6,284	22,889	12,006	17,889	11,449	15,171

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

3.4.2. Wage Equations

We then estimate how migration and personal characteristics affect individual wages at the regional level. We run pooled OLS regressions across all years for the wage equations. Panel regressions were also estimated as a robustness check. The results can be seen in Tables 6 and 7 respectively.

The results for the pooled OLS estimators are almost similar across regions, therefore, the findings will be presented per determinant.

Among all 6 regions, age positively and significantly influences the wage with Greater London the highest and least in Scotland. This implies age, as proxy for returns to experience, is higher in Greater London. This indicates that older, and more experienced workers are valued more in the capital city. Qualifications such as nursing and GCE A levels (under the Semi Educated category) positively affect wages, the most responsive region for this level of education would be the Rest of the South, wherein having these qualifications increases wages by 0.34%. The wage is expectedly higher as the educational level increases. In this case, the returns to having postgraduate qualifications (under the Highly Educated category) are positive and highest in the region of Wales at 0.55%. The lowest returns to the highest educational level in this research was recorded in the Midlands at 0.38%.

Although the relationship between educational levels and wage are reported to be positive across regions, as seen in Table 6, the opposite can be seen for the skill level. The base group for the skill level is the highly skilled. It can be seen from the results that across the 6 regions, semi-skilled and low skilled negatively affect the wage compared to the highly skilled group, which was expected. Those who were classified as semi-skilled were recorded to have a higher negative impact on the wage compared to those who are low-skilled. This can be seen by the differences in the coefficients. Returns to wage coefficients of those who are semi-skilled are lowest in The North at -0.33, and highest in Greater London at -0.24. For the low-skilled, the lowest returns to wage was reported in Rest of the South at -0.30, while the highest in Greater London at -0.21. Being employed fulltime yields a positive significant effect on the wage, throughout the regions. The lowest returns was recorded in Wales and highest in the Rest of the South.

The next set of variables in the discussion are those which affected the wage significantly, but in varying levels of confidence. These are marital status, low-educational levels, and housing (public and private renting). In general, marital status negatively affects the wage for all regions, but less significantly in Scotland and Wales. Having low education qualifications (which includes GCE levels or equivalent, commercial qualification, CSE grade, no O levels and apprenticeship), similar to the semi and highly educated levels, contributed to wages positively, but to a lesser degree as compared to the other two. This finding is consistent with the predictions of human capital theory. Those who are either privately or publicly renting have, on average, lower wages relative to the home owners.

Household size has a significant impact on wages only in Greater London and Scotland. However, higher household size affects the wage negatively in the former, but positively increases the wage in the latter. Being employed in a public sector job is positively significant in all regions except Greater London and the Rest of the South. The Midlands is where public sector job gives the highest return to wages among the four other regions. Finally, migrating or moving to another region is negatively significant in Greater London, while positively significant at 10% level of confidence in The North and Wales. A possible explanation for the negative correlation of moving and wages in Greater London was provided by Dickey (2001), where it has been recorded that although the region has the highest level of average earnings, Greater London also recorded to have the highest level of earnings inequality among the other regions of Great Britain. This high level of inequality in earnings distribution may serve as a negative signal that deters prospective migrants from moving to Greater London.

Table 6: Pooled OLS Regression Results for Wage Equations

	Greater London	Rest of The South	Midlands	The North	Wales	Scotland
Age	0.0895***	0.0739***	0.0761***	0.0763***	0.0625***	0.0433***
	(0.00918)	(0.00474)	(0.00598)	(0.00522)	(0.00562)	(0.00606)
Age (squared)	-0.000929***	-0.000737***	-0.000741***	-0.000764***	-0.000653***	-0.000375***
	(0.000115)	(0.0000598)	(0.0000737)	(0.0000662)	(0.0000704)	(0.0000753)
Marital Status	-0.132***	-0.159***	-0.132***	-0.161***	-0.0803**	-0.0708*
	(0.0356)	(0.0206)	(0.0272)	(0.0231)	(0.0245)	(0.0278)
Low Educated	0.147**	0.182***	0.153***	0.171***	0.170***	0.121**
	(0.0552)	(0.0325)	(0.0373)	(0.0340)	(0.0357)	(0.0396)
Semi Educated	0.264***	0.341***	0.298***	0.300***	0.333***	0.324***
	(0.0579)	(0.0341)	(0.0387)	(0.0357)	(0.0367)	(0.0409)
Highly Educted	0.395***	0.479***	0.386***	0.442***	0.550***	0.426***
	(0.0664)	(0.0401)	(0.0511)	(0.0437)	(0.0439)	(0.0500)
Public Renting	-0.158**	-0.138***	-0.136***	-0.189***	-0.340***	-0.305***
	(0.0494)	(0.0291)	(0.0336)	(0.0309)	(0.0368)	(0.0302)
Private Renting	-0.443***	-0.325***	-0.207***	-0.315***	-0.133**	-0.153**
	(0.0419)	(0.0275)	(0.0390)	(0.0363)	(0.0407)	(0.0478)
Household Size	-0.0615***	0.00166	-0.00977	-0.0205*	-0.0139	0.0415***
	(0.0142)	(0.00735)	(0.00947)	(0.00887)	(0.00934)	(0.0103)
Public Sector Job	0.00571	0.0467*	0.130***	0.0969***	0.0865***	0.105***
	(0.0339)	(0.0225)	(0.0300)	(0.0216)	(0.0236)	(0.0268)
Semi Skilled	-0.235***	-0.307***	-0.316***	-0.328***	-0.310***	-0.320***
	(0.0364)	(0.0222)	(0.0286)	(0.0254)	(0.0272)	(0.0305)
Low Skilled	-0.210***	-0.296***	-0.263***	-0.224***	-0.214***	-0.237***
	(0.0530)	(0.0275)	(0.0322)	(0.0310)	(0.0325)	(0.0354)
Fulltime Job	0.215***	0.308***	0.252***	0.241***	0.177***	0.228***
	(0.0363)	(0.0205)	(0.0266)	(0.0212)	(0.0220)	(0.0247)
Move	-0.143**	0.0269	0.0680	0.0997*	0.169*	0.0618
	(0.0537)	(0.0375)	(0.0457)	(0.0507)	(0.0854)	(0.0851)
Constant	0.237	-0.0482	-0.184	-0.0620	0.254*	0.360**
	(0.189)	(0.0966)	(0.127)	(0.107)	(0.116)	(0.129)
Observations	5953	21508	11088	16921	11041	14679

Standard errors in parentheses * p<0.05,** p<0.01, *** p<0.001

Table7: Panel Regression Results for Wage Equations

	Greater London	Rest of The South	Midlands	The North	Wales	Scotland
Age	0.144***	0.114***	0.112***	0.121***	0.0793***	0.128***
	(0.0115)	(0.00546)	(0.00766)	(0.00626)	(0.00935)	(0.00810)
Age (squared)	-0.00126***	-0.00104***	-0.000973***	-0.00113***	-0.000720***	-0.00114***
	(0.000135)	(0.0000642)	(0.0000902)	(0.0000747)	(0.000108)	(0.0000936)
Marital Status	-0.300***	-0.299***	-0.321***	-0.362***	-0.280***	-0.285***
	(0.0411)	(0.0212)	(0.0338)	(0.0281)	(0.0371)	(0.0299)
Low Educated	0.0337	0.00392	0.0468	0.0708	0.0733	0.0314
	(0.0787)	(0.0450)	(0.0605)	(0.0521)	(0.0542)	(0.0625)
Semi Educated	0.0425	0.0667	0.0656	0.0794	0.0801	0.0312
	(0.0748)	(0.0445)	(0.0557)	(0.0502)	(0.0524)	(0.0602)
Highly Educted	0.0607	0.167*	0.101	0.242***	0.273**	0.135
	(0.147)	(0.0699)	(0.0732)	(0.0693)	(0.100)	(0.0957)
Public Renting	-0.135*	-0.0935**	-0.0820	-0.0478	-0.0277	-0.0312
	(0.0644)	(0.0289)	(0.0464)	(0.0327)	(0.0523)	(0.0268)
Private Renting	-0.160***	-0.123***	-0.0862*	-0.113***	-0.151***	-0.102**
	(0.0431)	(0.0245)	(0.0376)	(0.0326)	(0.0406)	(0.0343)
Household Size	-0.0887***	-0.0474***	-0.0374***	-0.0536***	-0.0204	-0.0328***
	(0.0155)	(0.00691)	(0.0105)	(0.00907)	(0.0113)	(0.00993)
Public Sector Job	0.119**	0.0422	0.00940	0.0321	0.106***	0.0645**
	(0.0400)	(0.0221)	(0.0316)	(0.0216)	(0.0295)	(0.0230)
Semi Skilled	-0.0889***	-0.0965***	-0.108***	-0.0933***	-0.0662**	-0.0994***
	(0.0235)	(0.0138)	(0.0178)	(0.0174)	(0.0202)	(0.0174)
Low Skilled	-0.132***	-0.0967***	-0.0551*	-0.0760***	-0.0691**	-0.0645**
	(0.0366)	(0.0173)	(0.0232)	(0.0221)	(0.0254)	(0.0197)
Fulltime Job	-0.0770*	-0.0301	-0.0527*	-0.0486*	-0.0968***	-0.0654***
	(0.0325)	(0.0160)	(0.0231)	(0.0193)	(0.0212)	(0.0189)
Move	-0.0868	-0.0285	-0.0491	-0.0418	0.151*	-0.0476
	(0.0455)	(0.0285)	(0.0321)	(0.0380)	(0.0727)	(0.0585)
Constant	-0.869***	-0.584***	-0.728***	-0.741***	0.0303	-1.072***
	(0.249)	(0.119)	(0.170)	(0.132)	(0.204)	(0.173)
Observations	5953	21508	11088	16921	11041	14679

Standard errors in parentheses * p<0.05,** p<0.01, *** p<0.001

3.4.3. Selectivity Biases

The final stage of our analysis is the Heckman Two Stage model that takes into account the possibility of selectivity biases. The results are found in Table 8 where both the migration equation (first stage) and the wage equation (second stage) are presented.

The coefficient of the Inverse Mills' Ratio is significant for all regions except for Greater London and Rest of the South, meaning the selectivity bias is present in the model for the other four regions. This means that estimating the effects of migration on wages through the use of OLS would have been erroneous. The signs of the Inverse Mills' Ratio justify that using OLS would result into a downward biased estimate for Wales and Scotland and upward biased for Midlands and the North.

The findings for age vary. Migration is predicted to decrease with age (Warnes, 1992; Mincer, 1978; Long, 1973 and 1975). Only in Greater London was age significant, with the predicted negative sign. Throughout all the regions, the age of the migrant significantly and positively influences the wage, with the largest impact in Greater London and the smallest impact in Wales.

Marital status positively and significantly influences migration in Greater London. In the wage equation, marital status is negatively but significantly correlated to the wage across all regions. The least impact was recorded in The North, while the highest effect of marital status was recorded in the Rest of The South.

Only the highest level of education resulted to positively significant determinants of migration in the regions of Midlands and Wales. However, it is only in the regions of the North and Scotland that education significantly affects wages. In fact, all educational levels in the North positively and significantly affects wages to varying degrees of confidence levels. The highest impact to wages was recorded from the highest educational level, as expected.

Different housing tenure affects the probability of migration differently. This research used house ownership as the base group. The results show that being a private renter in all regions positively affects the probability of migration, relative to house owners. On the other hand, compared to the house owners, public renting significantly discourages migration in the regions of Midlands and Scotland. General observation shows that those who rent public housing have, on average, lower wages compared to home owners. The housing tenure also affects wages differently. Those who rent public housing, have on average, lower wages compared to owners. Public renting affects wages negatively and significantly in Greater London, Rest of the South, Midlands and The North, relative to home owners. It is only in Scotland where public renting positively and significantly affects wages. Finally, private renting negatively and significantly affects wages in the regions of Rest of the South, Wales and Scotland.

Household size deters migration. This variable resulted to be highly significant in the regions of Midlands and Greater London. In terms of its effect on wages, household size remained to be negatively correlated and significant in all regions except for Scotland.

Relative to our base group which is highly skilled, being semi or low skilled discourages migration. In the regions of The North, Midlands and Rest of the South, the results show that those who are low and semi-skilled levels, relative to those who are highly skilled, have a lower probability of undertaking regional migration.

Table 8: Estimates of migration participation and effect on wages

	Greater London		Rest of the South		Midlands	
	Migration Equation	Wage Equation	Migration Equation	Wage Equation	Migration Equation	Wage Equation
Age	-.1019916***	.1390281***	-.0205307	.1174894***	.0374185	.1257368***
	(.0335926)	(.0149177)	(.0200039)	(.0070338)	(.027671)	(.0103678)
Age (squared)	.0009192**	-.0012455***	-.0000267	-.0010589***	-.0006409*	-.001146***
	(.0004324)	(.0001707)	(.0002621)	(.0000806)	(.000358)	(.0001232)
Marital Status	.1970615*	-.3344018***	.0516706	-.2894824***	.0515718	-.3520879***
	(.1015532)	(.0503952)	(.0689616)	(.0264974)	(.0916052)	(.0416503)
Education						
Low Educated	.1643367	.0798153	-.1096774	.0296682	.3111568	.0702193
	(.384916)	(.1033948)	(.1599685)	(.0446794)	(.2579541)	(.0882293)
Semi Educated	.3728561	.0566227	.0737646	.0438484	.3375376	.056225
	(.3808148)	(.099037)	(.1593205)	(.0432856)	(.2596288)	(.0820106)
Highly Educated	.3622452	.0547163	.1905562	.0599766	.4438522*	.0748136
	(.3821541)	(.1912399)	(.1647825)	(.0708494)	(.2649411)	(.0940842)
Housing						
Public Renting	-.2634929	-.1634859**	-.0089554	-.066268*	-.3808379*	-.1097204*
	(.2342532)	(.0782352)	(.1350015)	(.0376347)	(.2182438)	(.0585812)
Private Renting	.5128608***	-.0859641	.5383744***	-.1221766***	.3257383***	.0280308
	(.1058187)	(.0601209)	(.0741353)	(.0371526)	(.109362)	(.0533606)
Household Size	-.1739215***	-.0782966***	-.0284585	-.0450922***	-.1586903***	-.0647071***
	(.044971)	(.0207293)	(.0248361)	(.0092211)	(.037865)	(.0166061)
Public Sector Job	-.1235641	.0409114	.1217038*	-.0203409	.0335792	-.0619528
	(.1114442)	(.0524856)	(.0710241)	(.0256864)	(.0941197)	(.0382938)
Skills						
Semi-Skilled	-.1595739	-.0812916***	-.129303*	-.088634***	-.1943741**	-.1505582***
	(.1005814)	(.0262757)	(.0670981)	(.0169954)	(.088697)	(.0209981)
Low Skilled	-.1132766	-.1689019***	-.3531173**	-.0233556	-.3965982***	-.1245623***
	(.1926582)	(.0433713)	(.104755)	(.0251683)	(.1272523)	(.0341335)
Full Time Job	.0728657	-.0867217**	.202121**	-.0639481**	.1155787	-.0796624**
	(.1589804)	(.0392471)	(.0852358)	(.0229071)	(.1074994)	(.0287603)
Move	-	-.0602982	-	-.0100317	-	-.0330876
		(.0463267)		(.0334396)		(.0370135)
IMR	-	.0453543	-	-.064833	-	.2655163***
		(.0696993)		(.0492473)		(.0658505)
Bonus	.1535044	-	.0062034	-	.0751888	-
	(.108051)		(.065182)		(.0899425)	
Pension	.0754827	-	.003117	-	.2408767***	-
	(.1069366)		(.071611)		(.0893932)	
Opportunities	-.2199839**	-	-.2036421***	-	-.1501379*	-
	(.1120503)		(.0653746)		(.082782)	
Constant	.2644442	-.7893853**	-1337042***	-.3706367**	-2668871***	-1362762***
	(.7966505)	(.3108039)	(.4520912)	(.1820926)	.6321977)	(.2763722)

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

Table 8: Estimates of migration participation and effect on wages

	The North		Wales		Scotland	
	Migration Equation	Wage Equation	Migration Equation	Wage Equation	Migration Equation	Wage Equation
Age	-.010559	.1058193***	.0301065	.0573692***	.0560632	.1000376***
	(.031572)	(.008792)	(.0328203)	(.0105854)	(.0383444)	(.0114652)
Age (squared)	-.0002583	-.10764***	-.0005225	-.0004437***	-.0010139**	-.0006804***
	(.0004337)	(.0001072)	(.0004205)	(.0001268)	(.0005168)	(.0001515)
Marital Status	-.0068916	-.374175***	-.0052433	-.2925437***	.137228	-.3474727***
	(.0903406)	(.0326411)	(.1089106)	(.0393853)	(.1125423)	(.0362902)
Education						
Low Educated	-.1656017	.1238803*	.3704507	-.0700034	-.081046	.1114093*
	(.2259631)	(.0745465)	(.3193101)	(.0770502)	(.2697637)	(.0637647)
Semi Educated	-.1255345	.1258039*	.4620936	-.0773904	.1094282	-.0063454
	(.2280698)	(.0718635)	(.3187624)	(.0834275)	(.2654561)	(.0638465)
Highly Educated	.1000369	.3503558***	.6570113**	.0333428	.0993633	-.0049994
	(.2305252)	(.0856673)	(.3248102)	(.13404TS34)	(.2727008)	(.0959801)
Housing						
Public Renting	-.1005729	-.0765781*	.2385463	-.0297908	-.4036917*	.1563171***
	(.1980298)	(.0395204)	(.184232)	(.0709396)	(.2306223)	(.0489164)
Private Renting	.5546445***	.0938143	.5659196***	-.3912972***	.4178006***	-.2878839***
	(.1087103)	(.0916832)	(.1309076)	(.0706148)	(.1256982)	(.0524818)
Household Size	-.0501081	-.0437135***	-.0132959	-.0237009*	-.0393682	-.0067047
	(.0354477)	(.0140975)	(.0397732)	(.0135847)	(.0425908)	(.0132114)
Public Sector Job	-.0162724	-.0433232	-.1047082	.0357726	-.0042509	-.0214823
	(.0966262)	(.0271165)	(.1072869)	(.0341939)	(.1057511)	(.0269379)
Skills						
Semi-Skilled	-.1725802*	-.1325049***	-.1243522	-.0348543	-.2488132**	.0402101
	(.088305)	(.032931)	(.1029851)	(.0242734)	(.104362)	(.0270633)
Low Skilled	-.4841225***	-.2056229**	-.4207902***	.077481	-.1272946	5.48e-06
	(.145006)	(.0792274)	(.1514188)	(.0500363)	(.1372139)	(.0257585)
Full Time Job	.3769181***	.0216385	.2363009*	-.1860237***	-.031222	-.0930864***
	(.1359112)	(.0640088)	(.1263355)	(.0340024)	(.1196947)	(.0229968)
Move	-	-.0928287**	-	.0828939	-	-.04184
		(.0414784)		(.0881853)		(.064182)
IMR	-	.2905437*	-	-.3741838***	-	-.4593229***
		(.1714332)		(.1116307)		(.0970006)
Bonus	-.0381441	-	-.0643018	-	-.0526979	-
	(.0881581)		(.1089212)		(.1056462)	
Pension	.1127407	-	-.2116769*	-	-.0752548	-
	(.0953006)		(.1265533)		(.1193488)	
Opportunities	.0266477	-	-.004826	-	-.1239495	-
	(.0834753)		(.0952982)		(.102503)	
Constant	-177698***	-1075796***	-2790842***	1807586***	-2616747**	.6544526*
	(.6712876)	(.386681)	(.7732351)	(.4540756)	(.8115844)	(.3893491)

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level.

3.4.4. Discussion of Results

This part of the discussion will solely focus on the Heckman two stage results. Our results demonstrated that personal characteristics such as age and marital status appear to be only significant drivers of migration in Greater London region. As discussed by Mateos (2013), the population is composed mainly of extremely young residents as compared to the rest of the United Kingdom.

The results provide evidence to the life cycle course. Explained by Champion et. al (1998), age can be seen as substitute indicator that gauges various groups of circumstances that covers life cycle, life course or one's career path. Warnes (1992) provided a life-course transition analysis and argued that migration for those who are in their 20s and 30s, is frequent at short, medium and even at long distances. Although Warnes (1992) argued that the transition throughout the life course should not be treated as the recommended path for everybody. In relation to the life-course transition, Mateos (2013) cited that in the case of London, people usually have their children there and settle outside London either during their late 30s or after retirement. This is also a possible explanation for the positive, albeit weak, relationship between marital status and migration. Most people who do move to this region are married or young families. Stillwell et al. (1996) on the other hand, argued that there is the over-representation of people in the working age when it comes to the interregional flows. Hence, children and the elderly are underrepresented. The findings found clear support for the life cycle course. These life cycle changes may have contributed to the negative correlation between age and migration in Greater London, as the life course transition analyses could have captured various stages of the migrants life stages that lead to the negative correlation.

Another possible explanation for the negative relationship is oversaturation of the labor market, which picks up from the influx of young people between 20s and 30s into the area. The concentration of such able-bodied, potentially skilled and educated labor creates tight competition for limited job vacancies. Oversaturation in the labor market which causes more difficulties in entering employment in the Greater London region possibly deters potential labor migrants to move to that region.

Finally, the results of the study now provides additional evidence to the study of Dickey (2001). Her findings present the highest level of earnings inequality in Greater London, despite having the highest level of average earnings. The working age population, which are the highly probable migrants to Greater London, may be deterred by the greater variance (uncertainty) in earnings after migrating to the Greater London region.

Higher educational categories (higher degree, first degree and teaching qualifications) positively influenced migration in Midlands and Wales, but surprisingly not in all regions. While the skill levels resulted to higher correlation in determining migration across regions except Greater London. This suggests that in the period of the study, potential migrants gave more weight to the assessment of their skills rather than their educational attainment. Our findings showed that relative to

those who are highly skilled, the chances of moving decreases for those who are semi or low skilled, consistent with the Human Capital Theory. The results lead to similar conclusion across all regions except Greater London.

The only likely explanation on how skill level became more significant determinant in inter-regional migration compared to educational level was offered by Biswas et al. (2009). Although their research implies that the increase in skill level may either increase or decrease the probability of migration, they cited the roles of other factors in deliberating whether to migrate or not. They argued that manual skills, may be more important in influencing migration decisions than education level, even university education.

Variables such as household size and housing tenure are considered to be proxies for the costs of moving. Another promising finding show that in regions such as the Midlands and Scotland, public renting relative to house owners, deters migration. Public renting may deter migration to other regions due to possible policies that favor applicants under certain categories. Since under public renting, local housing authorities are inclined to give reasonable preferences towards renters who are among the following groups: homeless, or owned homelessness duty, people who occupy unsanitary or overcrowded housing, people in need of medical and welfare assistance, and finally, people who need to move in a specific locality to access welfare services such as medical treatment, education, training and employment (Ministry of Housing, Communities & Local Government, 2012). These allocation guidelines, serve as limitations to interregional migration, most particularly if the destination region highly favors certain groups over the rest.

This analysis also finds support in the positive influence of private renting to migration across regions. The present findings confirm the claims of Cameron and Mellbauer (1998) that housing concerns are priority in the inter-regional migration of Great Britain. The results of the analysis also found clear support for Jackman and Savouri's (1992) claims that housing impacts migration in the expected direction for the case of regional migration in Britain. From the results, it is clear that positive and significant influence of private renting has been demonstrated by several reasons. First, the private renting sector is the only growing housing tenure in the U.K. (Perry, 2012). The increasing demand for rented accommodation comes from the increase of mobile workers, fresh graduates, students and migrants and other families that has no access to public renting (ibid). Second, recent migrants resort to private renting due to the limited access to other sorts of accommodation (ibid). In fact, data from the Migration Observatory (2011) shows that in the past five years, three fourths of the recently arrived migrants rely on private renting accommodations.

The household size results show that it significantly affects migration in a negative direction (albeit only significant in the regions of the Midlands and Greater London). These results tie well with the previous studies of Mincer (1978) and Long (1973, 1975), and support the idea that household size increases the (financial and psychic) costs of migration.

Overall, our findings show that personal characteristics appear to be less important. Age, gender, marital status and education influences migration less significantly as compared to other factors in the research.

The relationship of these variables to migration decision was discussed extensively in the above paragraphs. However, the relationship of the above variables to wages merits further discussion. Among the theories that present migration and wages interlinked is the Human Capital Theory. Although the above findings regarding personal characteristics and migration does not contradict the Human Capital theory, they somehow stress the shortages of the theory.

The human capital theory asserts that various investments (e.g education, training and vocational skills) employed to develop human capacities with the expectation that an improvement in the individual welfare in the future happens (Bodenhofer, 1967). It assumes that at the beginning of one's livelihood, when one is young and relatively inexperienced, human capital returns is low. The returns to investment in human capital increases later in the career. However, Welch (1975) argues that the human capital theory is grounded on the idea that labor skills or the market's insights of skills are equally durable and malleable. A critique brought up against the human capital theory is the existence of declining investment with increasing age (Welch,1975). The duration from which earnings or returns to the human capital investments can be recovered declines as age increases (ibid).

These results of the personal characteristics could be a reflection of how the labor market sees age and education (as proxy for human capital investment) as something that is not durable and malleable as opposed to the "ideal" theoretical treatment without considering the labor market and time perceptions of these investments.

From the results, it is clear that housing is the most important variable in our models. Together, the present findings confirm that housing type, whether it be private renting or public renting, determines one's mobility. A similar conclusion was reached by Cameron and Mellbauer (1998) whose findings show that housing concerns is the primary consideration when it comes to the inter-regional migration in Great Britain. Related to housing but not housing tenure, Cameron et. al (2006) cited that the house prices in Greater London have been preventing people from accepting jobs in the area and therefore discourages mobility from other parts of the UK.

Coupling with the discouraging house prices, there is less social or public housing available. The availability of social housing is imperative since it contributes to mobility – one becomes less mobile because one may need to join a queue in the destination region to be able to rent in the limited public housing available. Aside from that, preferences is given in favor of applicants from select groups. The role of public renting and how it dissuades inter-regional mobility becomes emphasized when Perry (2012) cited that in terms of the housing tenures, it is only the private renting sector that is growing.

The migrants resort to private renting accommodations since public renting is limited and prioritizes certain groups of people. While there is the pressing need to address the concerns that the private renting sector faces, given the UK's changing demographics including the increase in single person household, young couples unable to buy a house, huge population of students and increased migration, there is still the lack of political actions that consider migrant use of these private renting accommodations (Perry, 2012).

Although this research had demonstrated that the type of the housing tenure influences mobility – in particular, private renting relative to house owners, there are still a number of problems that migrants face in gaining access to privately rented accommodations. For one, accessing a privately rented accommodation creates difficulties for migrants. Most private renters were able to secure accommodation through the help of networks (Spencer et. al, 2007 and Kassayie, 2011). Perry (2012) also cited the lack of monetary deposits and references to acquire an accommodation. Aside from the difficulty in access, there is also the problem of living in poor-quality housing. New migrants are often left in places where housing demand is the lowest, which means they have no choice but to make do with the unsatisfactory dwellings vacated by previous tenants who advance to better conditions (Robinson, et. al. 2007).

3.4. Conclusion

This paper examined how the determinants of migration vary across the different regions of Great Britain, and whether the effect of migration on individual wages varies at the regional level. One important contribution of this research to the regional migration literature is the importance of regional differences. The analysis leads to the following conclusions: differences between regions play an important role in understanding migration decisions and migration and wages respond differently to several variables in diverse regions.

There are three main conclusions that can be drawn from this research. First, the authors found that personal characteristics such as age and marital status are largely unimportant in explaining individual migration decisions, with the exception of the Greater London region. In contrast, these personal characteristics are more important in influencing individual wage levels. Second, the authors concluded that variables that affect migration and wages are not limited to education. Rather, migration and wages are more sensitive to skill levels. The two skill levels (low and semi-skilled) relative to highly skilled consistently remains to negatively affect the decision to migrate and wages in any of the regions. Third, the present findings confirm that the type of housing tenure is important in determining both migration decisions and wages. Relative to home owners, those who rent privately are, on average, more likely to migrate and have lower wages.

The present findings confirm that the determinants of migration vary across the different regions of Great Britain. The regional differences that contribute to migration inflow also contribute to both regional wage differentials and differences in

human capital of the migrants. We have shown a more detailed profile on the 6 broad regions of Great Britain and their roles in contributing to the differences in wages and migration decisions. This research used the migration and wage equations using a modelling approach that considered selectivity biases – problems that many migration papers in the literature do not take into consideration. With the extensive models used in this research, we provide more accurate regional profile and findings.

Our results show how housing tenure influences migration and wages across the 6 regions of Great Britain. We conclude that public housing deters migration due to factors such as limited public housing accommodations and preferences over certain groups of applicants. The findings confirm that private renting significantly encourages migration in all regions and negatively affects wage in some regions. In the previous paragraphs, we were able to summarize the pressing problems that the migrants faces while trying to access these accommodation.

Although this paper managed to further clarify inter-regional migration in Great Britain, this research is limited in several ways. First, the scope of this study only covers the years prior to the 2008 Financial Crisis. Future research should strategically investigate the dynamics between migration, wage and personal characteristics past the 2008 Financial Crisis. Second, regional variations which includes economic performance, demographic characteristics, natural endowments and infrastructure among other things may also influence personal characteristics, and therefore individual's migration decisions.

Future research should certainly focus on two possible areas for further investigation. First would be expanding the period of the study. Since the pre-2008 Global Financial crisis has been examined, a study on the drivers and determinants of migration and wages in the same geographical scope would be ideal to see how the same variables react post crisis. Second, since we have already established the role of housing tenure in inter-regional migration, we propose for the future researchers to concentrate on the role of private renting particularly focusing on how government policies could alleviate the shortcomings that the private renting sector currently faces. As improving private renting sector, particularly access and status of private rented accommodations, could encourage mobility of people.

APPENDIX

Appendix Table 9: Education Categories	
Level	Classifications
Low Educated	GCE levels or equivalent
	Commercial qualification
	CSE grade
	No O levels
	Apprenticeship
Semi Educated	Other higher qualifications
	Nursing qualifications
	GCE A levels
Highly Educated	Higher degree
	First Degree
	Teaching Qualifications

Appendix Table 10: Housing Categories
House owner
Public renting
Private renting

CONCLUSION

The effects of migration has been increasingly recognized. In the host countries or regions, migrants are instrumental in filling labor force gaps, establishing entrepreneurial activities, subsidizing taxes and pension systems, development of skills and promoting cultural diversity, among many others. Particularly important are the contribution of the migrants which fill in the much needed labor demand in specific regions where local labor supply is depleted due to reasons such as falling demographics, refusal of locals to work dirty jobs or outmigration of locals from their own countries. Hence, understanding the complexities of migration which includes having a significant grasp on the emerging trends and investigating the characteristics that influence migrant settlement is necessary to fully apprehend the phenomenon.

This thesis supplies assessment on the different elements that influence migration settlement decisions by expanding the investigation across two scopes: economic and national scales. The continuous evolution of migration processes, our highly fragmented knowledge on the phenomenon and the need to interpret it in an interdisciplinary lens inspired this thesis to dive deeper and probe past the bigger picture approach.

Written in three academic style papers, this thesis aims to fill the gaps in the literature which include the significant role of individual agencies, communities and regions in migrant settlement location. Furthermore, this thesis deals with specific areas that addresses migration settlement selection in different regions. The three chapters were arranged in a macro, micro and meso approach to highlight the significance of the contribution and ease the readers in understanding the findings. By using this multi-scalar analyses, results and contribution to literature are straightforward and easier to comprehend. In the following paragraphs, the findings and contributions of each chapter are briefly summarized.

The first chapter utilized high spatial resolution census data using five cities in the Netherlands (Amsterdam, Rotterdam, The Hague, Utrecht, and Eindhoven). Using these 1100 neighborhoods at postal codes scale, Chapter 1 provided a robust investigation on the segregation patterns of the five cities and how it is linked with poverty among the cities' top migrant groups. The empirical analysis was accomplished through the use of various sets of regression analyses that considered the migrants' individual characteristics, heterogenous preferences, housing provisions and access to labor markets. By utilizing the residential distribution of migrants from the EC and combining it with the income distribution data of the OECD, Chapter 1 was able to provide spatial segregation patterns on the top migrant ethnicities.

The findings of the first chapter confirm that the neighborhoods with high concentration of migrants indicates a considerably higher levels of poverty, as compared with other neighborhoods mostly inhabited by the locals. This finding is attributed mainly to the neighborhoods' ethnic composition. This thesis also presented how migrant concentration in a neighborhood is associated with individual-level

observables such as migrants' age group and household features. Another crucial result of the first chapter shows ethnic settlement patterns of migrants and its link to neighborhood characteristics such as social housing availability.

Chapter 2 of this thesis primarily utilized ISTAT data - the principal source of official data in Italy. Using data from Italy's 20 region (Abruzzo, Basilicata, Calabria, Campania, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Liguria, Lombardia, Marche, Molise, Piedmonte, Puglia, Sardegna, Sicilia, Toscana, Trentino-Alto Adige, Umbria, Valle d'Aosta, and Veneto), this chapter focused mainly on the analysis of how regional economic and demographic characteristics influence the settlement choice of Filipino labor migrants from the Philippines. The analyses was accomplished using dynamic and estimation techniques to provide robust results. Chapter 2 attached spatial dimension to the labor migration of a sub-ethnic group – the Filipino labor migrants on Italian regions and hence contributed to our understanding of migration drivers and migration variation at a regional level.

The results for this chapter show that demographic variables weigh more in Filipino labor migrants' settlement decision as compared to economic variables such as the regions' GDP and employment possibilities. For the Filipino labor migrants, economic characteristics of the Italian region is insignificant. Rather, the existence of Filipino migrant stock in the different regions determine Filipino labor migration. This chapter contributed to the literature on labor migrant settlement decision through the investigation of a specific sub-ethnic group. These are important findings as it add to the few literature that study the roles of regions in the migration and migration settlement process, particularly how the host regions' economic and demographic features affect settlement patterns of labor migrants.

The third chapter used the British Household Panel Survey (BHPS), a comprehensive panel data on nationally represented household, in examining the 6 main regions of Great Britain (Greater London, the Midlands, the North, the Rest of the South, Wales and Scotland). Using the Heckman two stage procedure, this chapter investigated whether human capital and/or personal traits significantly contributes to the wage variations among regions. The methodology used allowed the control for self-selection that occurs in inter-regional migration.

In the final chapter, the results show how personal characteristics influence both migration decision and wage differentials in between the six regions of Great Britain. The findings conclude that in the scope of the study, migrants' skill level, not educational attainment, consistently affects migration decision, apart from wages. Another crucial finding cites the indispensable role of housing tenure in people's mobility across regions.

This thesis has demonstrated the importance in studying different spatial scales in investigating migration settlement decision. The multi-scalar approach had proven that national scale analyses produce a lot of oversight in migration analysis. Purely economic strategy also has its shortcomings. Hence, the adopted approach which also includes place-based considerations is a novel take in studying migrant settlement selection. Also, the findings of this research show that it is the combination of complex elements involving local and regional dimensions that predominantly influences migration. From this perspective, subnational analysis is recommended to prevent inaccuracy of findings and to capture smaller scale nuances. It presented various ways on using multi-scalar analysis that enabled the researcher to provide robust results. These results supplied further understanding on how neighborhood affects migrant decisions, understanding on group variations in migration and sub-ethnic migrant mobility and settlement patterns.

These findings contribute to the current literature in several ways. This thesis contributes to the under researched area of spatial segregation among ethnic communities in Europe. Chapter 1 contributed to the gap in migration literature by providing empirical evidence between concentration and poverty in the case of Netherlands. This thesis also contributes to migration literature by bringing clarity to the determinants of labor migration of a specific sub-ethnic population in a regional scale of analysis. Findings in Chapter 2 contributed to the importance in considering non-economic variables in settlement decisions. Finally, this thesis also contributes to the underrepresented area of migration and self-selection biases. Chapter 3 used household level panel data that gives further understanding of personal characteristics and housing tenures and how it correlates to interregional movements.

This thesis highlighted the role of the local and regional attributes of migrants' landing pads and settlement site selection. This consequently emphasized the importance of including these characteristics in policy making. Accordingly, the thesis findings are particularly pertinent to policy makers since the findings could be the basis for project proposals that target local migrant integration, place-based developmental policies and restructuring of social housing mechanisms to address poverty and concentration, among many things. Specifically, the findings of this research could be used as the basis for policy proposals in the revamping of inefficient housing systems. The findings could also be used by regional government to adjust the local quotas placed on working visas for labor migrants. This suggested policy could address the labor shortages in local or regional areas that struggle with falling demographics.

The findings of this research had confirmed and disproved some existing theories in migration literature. Simultaneously, compelling questions arise as a consequences of the thesis findings. The results of this thesis has acknowledged further areas of investigation. Chapter 1 establishes the link between migrant concentration and higher poverty incidence, citing ethnic composition in neighborhoods, labor force participation and individual level observables as the elements that influences poverty. Further research might also look at this link but in an expanded geographical lens which includes other cities in the Netherlands. Another possible research direction

includes deeper scrutiny in the social housing sector of migrants' landing pads. Chapter 2 focuses on determinants of labor migration in the Italian regions, suggesting that in the case of Filipino labor migrants, settlement choice is highly influenced by a non-economic variable which is the Filipino migrant stock. Although previous studies already cited this variable on a national level scale, further research might be dedicated to expanding the focus to include migrants macro groups to expand the provide an array of behavioral decisions. Considering self-selection biases, Chapter 3 cites skill level and housing tenure condition in identifying intra-regional migration,. This chapter also provided a firm argument in investigating the migration process at a subnational level on the basis of capturing distinct geographic nuances. Two further research areas are encouraged: one devoting to the expansion of the study to focus on the changes brought about by the Global Financial crisis and two devoting to the investigation of the role of private renting in mobility decision.

Bibliography

Adelman, R. M. (2005). The Roles of Race, Class, and Residential Preferences in the Neighbourhood Racial Composition of Middle-Class Blacks and Whites, *Social Science Quarterly*, 86(1), 209–228.

Alba, R., Deane, G., Denton, N., Disha, I., McKenzie, B., and Napierala, J. (2013). The Role of Immigrant Enclaves for Latino Residential Inequalities. *Journal of Ethnic and Migration Studies*, 40(1), 1–20.

Alba, R. D., and Logan, J. R. (1991). Variations on Two Themes: Racial and Ethnic Patterns in the Attainment of Suburban Residence, *Demography*, 28(3).

Alivon, F., & Guillain, R. (2017). Urban segregation and unemployment: A case study of the urban area of Marseille – Aix-en-Provence (France). *Regional Science and Urban Economics.* doi:10.1016/j.regsciurbeco.2017.06.004

Ambrosini, M. (2011). Immigration in Italy: Between Economic Acceptance and Political Rejection. Journal of International Migration and Integration, 14, 175-194. doi:10.1007/s12134-011-0231-3

Ananat, E.O. (2011). The wrong side(s) of the tracks: The causal effects of racial segregation on urban poverty and inequality. *American Economic Journal: Applied Economics*, 3(2), 34-66.

Andersen, H. S., Magnusson T., L., and Søholt, S. (2013). The Special Importance of Housing Policy for Ethnic Minorities: Evidence from a Comparison of Four Nordic Countries. *International Journal of Housing Policy*, 13(1), 20-44.

Anderson, E. (1991). Neighbourhood effects on teenage pregnancy, In: C. Jencks and P. E. Peterson (eds) *The Urban Underclass*. Washington DC: The Brookings Institute, 375–398.

Andersson, R., and Musterd, S. (2008). Social Mix: Social Mix, Social Networks and Stigmatisation in Post-war Housing Estates. Urban Studies. 45(4), 897-915 DOI: 10.1177/0042098007088473

Andersson, H.E., and Nilsson, S. (2009). Asylum-seekers and Undocumented Migrants Increased Social Rights in Sweden. *International Migration*, 49(4), 167-188.

Arango, J. (2000). Explaining migration: a critical view. International Social Science Journal 52 (165): 283-296.

Arbaci, S. (2007). Ethnic segregation, housing systems and welfare regimes in Europe. *European Journal of Housing Policy*, 7(4), 401–433.

Bailey, A. J., Wright, R. A., Mountz, A., and Miyares, I. M. (2002). Reproducing Salvadoran transnational geographies. *Annals of the Association of American Geographers*, 92(1), 125–144.

Bailey, T., and Waldinger, R. (1991). Primary, Secondary, and Enclave Labour Markets: A Training Systems Approach. *American Sociological Review*, 56(4), 432.

Basa, C., Harcourt, W., & Zarro, A. (2011). Remittances and transnational families in Italy and The Philippines: breaking the global care chain. Gender & Development, 19(1), 11–22. doi:10.1080/13552074.2011.554196

Bauer, T., Epstein, G., and Gang, I. (2005). Enclaves, language and the location choice of immigrants. *Journal of Population Economics*, 18(4).

Beets, G., and Willekens, F. (2009). The Global Economic Crisis and International Migration: An Uncertain Outlook. *Vienna Yearbook of Population Research* (7).

Bertola, G. (2000). Labour Markets in the European Union. *IFO Studien,* 46, 99-122.

Biagi, B., Faggian, F., and McCann, P. (2011). Long and Short Distance Migration in Italy: The Role of Economic, Social and Environmental Characteristics. *Spatial Economic Analysis*, 6(1), 111-131.

Biagi B., Dotzel K.R. (2018) Theoretical Advances on Interregional Migration Models. In: Biagi B., Faggian A., Rajbhandari I., Venhorst V. (eds) New Frontiers in Interregional Migration Research. Advances in Spatial Science (The Regional Science Series). Springer, Cham, Switzerland. https://doi.org/10.1007/978-3-319-75886-2

Biagi, B., Faggian, F., and McCann, P. (2011). Long and Short Distance Migration in Italy: The Role of Economic, Social and Environmental Characteristics. *Spatial Economic Analysis*, 6(1), 111-131.

Biswas, T., McHardy, J., and Nolan, M.A., (2009) Inter-regional Migration: The UK experience. Sheffield Economic Research Paper Series. SERP Number: 2008003 ISSN 1749-8368.

Blackaby, D. H. and Murphy, P.D. (1991). "Industry Characteristics and Inter-regional Wage Differences," Scottish Journal of Political Economy, 38 (2), 142–161.

Blundell, R., and Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143.

Bodenhofer, H.J. (1967). The Mobility of Labor and the Theory of Human Capital. The Journal of Human Resources, 2(4), 431. doi:10.2307/144764

Boelhouwer, P.J (2002) .Segregation and Problem Accumulation in the Netherlands: The Case of the Hague. *Urban Geography.* 23(6), 560-580, DOI: 10.2747/0272-3638.23.6.560

Boeri, T., De Philippis, M., Patacchini, E., and Pellizzari, M. (2012). Moving to Segregation: Evidence from 8 Italian Cities, Discussion Paper Number 6834. *Institute for Study of Labour*. Bonn, Germany. Retrieved from https://www.iza.org/publications/dp/6834/moving-to-segregation-evidence-from-8-italian-cities (Accessed: 22 January 2019).

Bolt, G. and Van Kempen, R. (2009). Ethnic Segregation and Residential Mobility: Relocations of Minority Ethnic Groups in the Netherlands, *Journal of Ethnic and Migration Studies*, 36(2), 333-354.

Bolt, G. and Van Kempen, R. (2010). Escaping poverty neighbourhoods in the Netherlands, *Housing, Theory and Society*, 20(4), 209-222.

Bolt, G., Hooimeijer, P., and Van Kempen, R., (2002). Ethnic Segregation in the Netherlands: New Patterns, New Policies?. *Tijdschrift voor Economische en Sociale Geografie*, 93(2), 214–220.

Bond, S. (2002). Dynamic panel data models: A guide to micro data methods and practice. Working Paper 09/02. Institute for Fiscal Studies. London.

Boone, J., & van Ours, J.,C. (2009). Bringing unemployed back to work: Effective active labor market policies. De Economist, 157(3), 293-313. doi:http://dx.doi.org.ezaccess.libraries.psu.edu/10.1007/s10645-009-9127-4

Borjas, G.J. (1987). Self-selection and the earnings of immigrants. American Economic Review 77(4), 531-553.

Borjas, G.J. (1992). Ethnic Capital and Intergenerational Mobility. The Quarterly Journal of Economics, Volume 107, Number 1, pp. 123-150

Borjas, G.J. (1994) The Economics of Immigration, *Journal of Economic Literature*, 32:4, 1667-1717

Borjas, G.J. (1998). To Ghetto or Not to Ghetto: Ethnicity and Residential Segregation, *Journal of Urban Economics*, 44(2), 228–253.

Boterman, W., Musterd, S., and Manting, D. (2020) Multiple dimensions of residential segregation. The case of the metropolitan area of Amsterdam, *Urban Geography*, DOI: 10.1080/02723638.2020.1724439

Brama, A. (2006). 'White flight'? The production and reproduction of immigrant concentration areas in Swedish cities, 1990–2000. *Urban Studies*, 43(7), 1127–1146.

Brandsen, T., Broersma, F. & Fledderus, J. (2011) "Local welfare in The Netherlands: Housing, employment and child care", *WILCO Publication no. 04*, Nijmegen: Radboud Universiteit Nijme

Brown, L. A. and Chung, S.-Y., 2008, Market-led pluralism: Rethinking our understanding of racial/ethnic spatial patterning in U.S. cities. *Annals of the Association of American Geographers*, Vol. 98, 180–212.

Burridge, P., and Gordon, I. (1981). Unemployment in the British Metropolitan Labour Areas. *Oxford Economic Papers,* 33, 274-297.

Cameron, G. and J. Muellbauer (1998). "The Housing Market and Regional Commuting and Migration Choices." *Scottish Journal of Political Economy* **45**(4): 420–446.

Cameron, G., Muelbauer, J., Murphy, A. (2006). Migration within England and Wales and the Housing Market. (2005). *Economic Outlook*, 29(3), 9–19. doi:10.1111/j.1468-0319.2005.00500.x

Cannari, L., Nucci,F., and Sestito, P. (2000). Geographic Labour Mobility and the Cost of Housing: Evidence from Italy. *Applied Economics*, 32(14), 1899–1906.

Castles, S. (2010). Understanding Global Migration: A Social Transformation Perspective, *Journal of Ethnic and Migration Studies*, 36(10): 1565-1586.

Cattaneo, C.,(2007). The Self-selection in the Migration Process: What Can We Learn? Liuc Papers vol. 199, Serie Economia e Impresa vol. 52, Castellanza, Italy: Università Carlo Cattaneo

Certo ST, Busenbark JR, Woo H-S, Semadeni M. (2016). Sample selection bias and Heckman models in strategic management research. Strategic Management Journal 37(13): 2639–2657.

Champion, T., Fotheringham, S., Rees, P., Boyle, P., and Stillwell, J. (1998) The Determinants Of Migration Flows In England: A Review Of Existing Data And Evidence**.** Department of the Environment, Transport and the Regions. The Department of Geography University of Newcastle upon Tyne. ISBN 0 902155 39 3

Chetty, R., and Hendren, N. (2015). The Impacts of Neighbourhoods on Intergenerational Mobility: Childhood Exposure Effects and County-Level Estimates. http://equality-of-opportunity. org/images/nbhds_paper.pdf

Chiswick, B. and Miller, P. W. (2005). Do Enclaves Matter in Immigrant Adjustment*? City and Community*, 4(1), 5–35. doi: 10.1111/j.1535-6841.2005.00101.x.

Clark, W. A. V. (2009). Changing Residential Preferences across Income, Education, and Age: Findings from the Multi-City Study of Urban Inequality, *Urban Affairs Review*, 44(3), 334–355.

Clark, W. A. V. and Blue, S. A. (2004). Race, Class, and Segregation Patterns in U.S. Immigrant Gateway Cities, *Urban Affairs Review*, 39(6), 667–688.

Colussi, T. (2015). Migrant Networks and Job Search Outcomes: Evidence from Displaced Workers. Institute for the Study of Labor Discussion Paper Series 9339.

Communication from the Commission to the Council, the European Parliament, the European Economic and Social committee and the Committee of the Regions - A Common Agenda for Integration - Framework for the Integration of Third-Country Nationals in the European Union
COM(2005)0389 final

Communication from the Commission to the Council to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Action Plan on the Integration of Third Country Nationals COM(2016)377 final

Constant, A., and Massey, D. (2002). Return migration by German guest workers: Neoclassical versus new economic theories. *International Migration*, 40(4), 5-38

Crane, J. (1991). The Epidemic Theory of Ghettos and Neighbourhood Effects on Dropping out and Teenage Childbearing. *American Journal of Sociology* (96)1226-59.

Crescenzi, R., Luca, D., Milio, S. (2016). Resistance to the crisis in Europe: National macroeconomic conditions, regional structural factors and short-term economic performance. *Cambridge Journal of Regions, Economy and Society*, 9(1), 13-32.

Crowder, K. D. (1999). Residential segregation of West Indians in the New York/New Jersey metropolitan area: the roles of race and ethnicity. *International Migration Review*, *33*(1), 79-113.

Crowder, K. and South, S. J. (2003) 'Neighborhood distress and school dropout: the variable significance of community context', Social Science Research, 32(4), pp. 659–698. doi: 10.1016/S0049-089X(03)00035-8.

Cutler, D. M., Glaeser, E. L. and Vigdor, J. L. (2008). When are ghettos bad? Lessons from immigrant segregation in the United States. *Journal of Urban Economics*, 63(3), 759–774.

Daveri, F. and Faini, R. (1999). Where Do Migrants Go? *Oxford Economic Papers*, 51(4), 595–622.

Detang-Dessendre, C. & I. Molho. (2000) Residence Spells and Migration: A Comparison for Men and Women, Urban Studies, 37(2), 247–260.

Dickey, H. (2001). Regional Earnings Inequality in Great Britain: A Decomposition Analysis. Regional Studies, 35(7), 605–612. doi:10.1080/00343400120075876

Dickey, H. (2007) Regional Earnings Inequality In Great Britain: Evidence From Quantile Regressions, Journal of Regional Science, 47(4), 775–806.

Dickey, H. (2014) The Impact Of Migration On Regional Wage Inequality: A Semiparametric Approach, Journal of Regional Science, 54 (5), 893-915.

Dobson, J., Latham, A., and Salt, J. (2009). On the move? Labour migration in times of recession. Policy Network Paper. Retrieved from https://www.geog.ucl.ac.uk/research/research- centres/migration-research-unit/publications/mru-publications/pdfs/on_the_move.pdf

Dupont, V. (2004). Socio-spatial differentiation and residential segregation in Delhi: a question of scale? *Geoforum*, 35(2), 157–175.

Dustmann, C, and Frattini, T. (2011). The impact of migration on the provision of UK public services. Final report to the Migration Advisory Committee. UK Home Office.

Edin, P.-A., Fredriksson, P. and Aslund, O. (2003). Ethnic Enclaves and the Economic Success of Immigrants--Evidence from a Natural Experiment, *The Quarterly Journal of Economics*, 118(1), 329–357.

EESC (2016). Opinion of the European Economic and Social Committee on Integration of refugees in the EU. Official Journal of the European Union. C264/19.

Eichengreen, B. (1993). Labor Markets and European Monetary Unification, in: Masson PR, Taylor MP (eds.), Policy Issues in the Operation of Currency Unions, Cambridge University Press.

Engbersen, G., Snel, E., and de Boom, J. (2010). A van full of Poles: Liquid migration from Central and Eastern Europe. In R. Black, G. Engbersen, and M. Okólski (Eds), A continent moving west, EU enlargement and labour migration from Central and Eastern Europe (pages 115–140). Amsterdam: Amsterdam University Press.

Engbersen, G., Snel, E., Van Meeteren, M., Van de pol, S., and Dekker, R. (2011). Destination Netherlands: The Evolution of Migration from Six Origin Countries to the Netherlands. Theorizing the Evolution of European Migration Systems (THEMIS).

Etzo, I. (2011). Determinants of Interregional Migration in Italy: A Panel Data Analysis, *MPRA Paper* 5307, University Library of Munich, Germany.

European Commission .(2003). Demographic Statistics: Definitions And Methods Of Collection In 31 European Countries, (3/2003/E/no 25). ISBN 92-894-6051-2

Eurostat (2018). Migration integration statistics-at risk of poverty and social exclusion. Accessed 20 April 2018, from http://ec.europa.eu/eurostat/statisticsexplained/index.php/Migration_integration_statistics.at_risk_of_poverty_and_social_exclusion#Further_Eurostat_information. ISSN 2443-8219

Eurostat (2020). Background. Accessed 6 June 2020. Retrieved from: https://ec.europa.eu/eurostat/web/nuts/background

Fachin, S. (2007). Long-Run Trends in Internal Migrations in Italy: A Study in Panel Cointegration with Dependent Units. *Journal of Applied Econometrics*, 22(2), 401–428.

Faggian, A., & McCann, P. (2009). Human capital, graduate migration and innovation in British regions. Cambridge Journal of Economics, 33(2), 317–333. https://doi.org/10.1093/cje/ben042

Faggian, A., Mccann, P., & Sheppard, S. (2007). Some evidence that women are more mobile than men: Gender differences in U.K. graduate migration behavior. Journal of Regional Science, 47(3), 517–539. https://doi.org/10.1111/j.1467-9787.2007.00518.x
Favell, A. (2008) The New Face of East–West Migration in Europe, Journal of Ethnic and Migration Studies, 34:5, 701-716, DOI: 10.1080/13691830802105947

Fischer, C.S., Stockmayer, G., Stiles, J., Hout, M. (2004) Distinguishing the Geographic Levels and Social Dimensions of U.S. Metropolitan Segregation 1960–2000. *Demography*.41(1):37–59.

Florida, R. (2015). Economic Segregation and Inequality in Europe's Cities. *Citylab*, 16 November 2015.

Forslund, A. and Krueger, A. B. (1994) An Evaluation Of The Swedish Active Labor Market Poucy: New And Received Wisdom. Available at: https://www.nber.org/papers/w4802.pdf (Accessed: 13 May 2020).

Fowler, C.S. (2016). Segregation as a multiscalar phenomenon and its implications for neighborhood-scale research: The case of South Seattle 1990-2010. Urban Geography. 37(1), 1–25.

Friedrichs, J., Galster, G., and Musterd, S. (2003). Neighbourhood effects on social opportunities: the European and American research and policy context, *Housing Studies*, 18(6), 797-806.

Fujita, K., and Maloutas, T. (Eds.) (2016). Residential segregation in comparative perspective: Making sense of contextual diversity. London: Routledge.

Furceri, D. (2006). Does Labour Respond to Cyclical Fluctuations? The Case of Italy. *Applied Economic Letters*, 13, 135–139.

Galster, G. (1999). The evolving challenges of fair housing since 1968: open housing, integration, and the reduction of ghettoization, City- scape: *A Journal of Policy Development and Research* 4(3), 123–138.

Galster, G. (2001). On the nature of neighbourhood. Urban Studies, 38(12), 2111–2124.

Gardiner, K., & Millar, J. (2006). How Low-Paid Employees Avoid Poverty: An Analysis by Family Type and Household Structure. *Journal of Social Policy, 35(03), 351.* doi:10.1017/s0047279406009822

Ghatak, S., Levine, P., & Price, S. W. (1996). Migration Theories And Evidence: An Assessment. *Journal of Economic Surveys, 10(2), 159–198.* doi:10.1111/j.1467-6419.1996.tb00008.x

Góra, M. and Ruzik-Sierdzińska, A. (2018) Migration with Pension Reform Expectations. Institute for the Study of Labor Discussion Paper Series 11960.

Gold, S. J. (1992). Refugee Communities: A Comparative Field Study. SAGE Publications.

Gotham, K. F. (2002). Beyond Invasion and Succession: School Segregation, Real Estate Blockbusting, and the Political Economy of Neighbourhood, *City and Community*, 1(1), 83–111.

Grubanov-Boskovic, S. and Magante, M.C. (2017). Income Inequality and Concentration of Migrants in the Netherlands, European Commission, JRC110182.

Gunzler, D., Morris, N., & Tu, X. M. (2016). Causal Mediation Analysis Using Structure Equation Models. ICSA Book Series in Statistics, 295–314. doi:10.1007/978-3-319-41259-7_15

Gurak, D. T. and Kritz, M. M. (2000). The Interstate Migration of US Immigrants: Individual and Contextual Determinants, *Social Forces*, 78(3), 1017–1039.

Harris, J. R. and Todaro, M. P. (1970). Migration, unemployment and development: a two-sector analysis. *The American Economic Review*, 60(1), 126-142.

Hartog, J., and Zorlu, A. (2009). Ethnic Segregation In The Netherlands: An Analysis At Neighbourhood Level. *International Journal of Manpower*. (30)1/2, 15-25.

Hatton, T.J, and Tani M. (2005). Immigration and inter-regional mobility in the UK, 1982-2000. The Economic Journal 115(507). F342-358

Heckman,J. (1974) Shadow Prices, Market Wages and Labor Supply. *Econometricia* 679-694

Hedberg, C., and Tammaru, T. (2010). Neighbourhood effects and city effects : Immigrants transition to employment in Swedish large city-regions (SULCIS Working Papers 6). Stockholm: University Linnaeus Center for Integration Studies.

Hicks, J.R. (1932). The Theory of Wages. London: Macmillan.

Hicks, R., Tingley, D. (2011). Causal mediation analysis. The Stata Journal, 11(4), pp. 605-619.

Hooijer G., and Picot, G. (2015). European welfare states and migrant poverty: the institutional determinations of disadvantage. *Comparative Political Studies* 48(14), 1879–1904.

Houtzager, D. and Rodrigues, P.R. (2002). Migrants, Minorities and Employment in the Netherlands: Exclusion, Discrimination and Anti-Discrimination, in European Monitoring Centre on Racism and Zenophobia (EUMC) (ed.) RAXEN 3 Report to the European Monitoring Centre on Racism and Zenophobia (EUMC), Vienna

Iceland, J. (2004). Beyond Black and White: Metropolitan Residential Segregation in Multi-ethnic America, *Social Science Research*, (33), 248-271

Imai, K., Keele, L., Tingley, D., & Yamamoto, T. (2011). Unpacking the Black Box of Causality: Learning about Causal Mechanisms from Experimental and Observational Studies. American Political Science Review, 105(04), 765–789. doi:10.1017/s0003055411000414

Imeraj, L., Willaert, D., & de Valk, H. A. G. (2018). A comparative approach towards ethnic segregation patterns in Belgian cities using multiscalar individualized neighborhoods. *Urban Geography*. 1–26. doi:10.1080/02723638.2018.1446584

Immigrants in the Netherlands (2020). Immigrants in the Netherlands. Accessed 10 June 2020. Retrieved from:https://www.ucl.ac.uk/dutchstudies/an/SP_LINKS_UCL_POPUP/SPs_english/multicultureel_gev_ENG/pages/allochtonen.html

International Migration Institute (2006) Towards A New Agenda for International Migration Research. Retrieved from https://www.migrationinstitute.org/files/news/imi-research-agenda.pdf

Jackman, R. and Savouri, S. (1992), "Regional Migration in Britain: An Analysis of Gross Flows using NHS Central Register Data," Economic Journal, 102, pp. 1433-1450.

Janicka, A. and Kaczmarczyk, P. (2016). Mobilities in the crisis and post-crisis times: migration strategies of Poles on the EU labour market, *Journal of Ethnic and Migration Studies*. 42(10), 1693–1710.

Jennissen, R. P. W. (2004). Macro-economic Determinants of International Migration in Europe. *Dutch University Press*. ISBN 9036190223, 9789036190220.

Kahanec, M. and Zimmerman, K. (2009). Migration in an enlarged EU: A challenging solution? Economic Papers 363. ISBN 978-92-79-11174-7

Kassayie, B. (2011) 'New to east London: turning life strategies into housing solutions', summarised in Wadhams, C. (2011) *Connecting with the Private Rented Sector: Building Integrated Housing Services for Refugees*. London: HACT

King, R. (1993). Recent Immigration to Italy: Character, Causes and Consequences. *GeoJournal*, 30(3), 283-292

King, R., & Andall, J. (1999). The Geography and Economic Sociology of Recent Immigration to Italy. Modern Italy, 4(2), 135–158. doi:10.1080/13532949908454826

King, R. (2002) Towards a new map of European migration, International Journal of Population Geography, 8, 89-106

Kõu, A., & Bailey, A. (2014). "Movement is a constant feature in my life": Contextualising migration processes of highly skilled Indians. Geoforum, 52, 113–122. doi:10.1016/j.geoforum.2014.01.002

Kronenberg, K., and Carree, M. (2010). Job and residential mobility in the Netherlands: the influence of human capital, household composition and location, *Munich Personal RePEc Archive Pape*r No. 2584

Krysan, M., and Bader, M. (2007). Perceiving the metropolis: Seeing the city through a prism of race. *Social Forces* 86(2), 699-733.

Kuhn, W.E. (1978). Guest workers as an automatic stabiliser of cyclical unemployment in Switzerland and Germany. *International Migration Review,* 12 (2), 210–224.

Kunz, S. (2018). Making space in Cairo: Expatriate movements and spatial practices. *Geoforum*, 88, 109–117.

Kwan, M.-P. (2012). The Uncertain Geographic Context Problem. *Annals of the Association of American Geographers*, 102(5), 958–968. doi:10.1080/00045608.2012.687349

Lan, T., Kandt, J., & Longley, P. (2019). Geographic scales of residential segregation in English cities. *Urban Geography*. DOI: 10.1080/02723638.2019.1645554

Large, M., & Saunders, M. N. K. (1995). A decision-making model for analysing how the glass ceiling is maintained: unblocking equal promotion opportunities. *International Journal of Career Management*. 7(2), 21–28. doi:10.1108/09556219510083853

Lazaridis, G. and Williams, A. (2002). Editorial Introduction: European migration: flows, structures and regulation. *International Journal of Population Geography*. 8(2), pp 83-87. https://doi.org/10.1002/ijpg.245

Lee, E. (1966) A Theory of Migration. Demography, 3:1, 47-57

Lee, B.A., Reardon S.F., Firebaugh, G., Farrell C.R., Matthews, S.A., Sullivan D.O. (2008). Beyond the census tract: Patterns and determinants of racial segregation at multiple geographic scales. *American Sociological Review*. 73(5):766–791.

Lewis, W.A. (1954). Economic development with unlimited supplies of labor, The Manchester School of Economic and Social Studies 22: 139-191.

Light, I. (2006) Deflecting Immigration: Networks, Markets, and Regulation in Los Angeles. Russell Sage Foundation.

Lindio-McGovern, L. (2003). Labor Export in the Context of Globalization. *International Sociology*, 18(3), 513–534. https://doi.org/10.1177/02685809030183004.

Logan, J. R., Zhang, W., and Alba, R. D. (2002). Immigrant Enclaves and Ethnic Communities in New York and Los Angeles. *American Sociological Review*, 67(2), 299. doi:10.2307/3088897

Long, L.H. (1973). Migration differentials by education and occupation: Trends and variations. Demography, Volume 10, Number 2, Page 243

Long, L.H. (1975). Does Migration Interfere with Children's Progress in School? Sociology of Education, 48(3), 369. doi:10.2307/2112460

Lumley-Sapanski, A. (forthcoming). Explaining contemporary patterns of residential mobility: Insights from resettled refugees in Chicago. Geoforum, X, XX.

MacDonald, J.S, and MacDonald, L.D. (1964) Chain migration ethnic neighborhood formation and social networks. *The Milbank Memorial Fund Quaterly*, 42:82–97.

Malmberg, B., Andersson, E. K., Nielsen, M. M., and Haandrikman, K. (2018). Residential Segregation of European and Non-European Migrants in Sweden: 1990–2012. *European Journal of Population*, 34(2), 169–193. doi:10.1007/s10680-018-9478-0

Marcińczak, S., Musterd, S., van Ham, M,, & Tammaru, T. (2015). Inequality and rising levels of socio-economic segregation. Lessons from a pan-European comparative study. In Tiit Tammaru, Maarten van Ham, Szymon Marcińczak, & Sako Musterd (Eds.), Socio-economic segregation in European capital cities – East meets West (1st ed., pp. 358–382). London: Routledge.

Marcuse, P. (1997). The enclave, the citadel, and the ghetto: what has changed in the post-Fordist U.S. city*? Urban Affairs Review*, 33(2), 228-264.

Maslova, S., and Chiodelli, F. (2018). Expatriates and the city: The spatialities of the high-skilled migrants transnational living in Moscow. *Geoforum*.

Massey, D.S. (1985). Ethnic Residential Segregation: A Theoretical Synthesis and Empirical Review. *Sociology and Social Research* (69), 315–350.

Massey, D.S. and Denton, N.A., (1988). The Dimensions of Residential Segregation. *Social Forces* (67), 281-31.

Massey, D.S. and Denton, N.A., (1993). American Apartheid – Segregation and the Making of the Underclass. Cambridge: Harvard University Press.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, J. E. (1993). Theories of international migration: a review and appraisal. Population & Development Review, 19(3), 431–466. https://doi.org/10.2307/2938462

Massey, D.S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., and Taylor, J.E. (1994) An Evaluation of International Migration Theory: The North American Case Population and Development Review 20:4, 699-751

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, J.E. (1998) Worlds in motion. Understanding international migration at the end of the millennium. Clarendon Press Oxford.

Massey, D. S., and Denton, N.A. (2005). The Continuing Causes of Segregation. Pp. 235- 250 in Great Divides: Readings in Social Inequality in the United States. New York, NY: McGraw Hill.

Massey D. S., Gross A. B. and Shibuya K. (1994). Migration, segregation and the geographic concentration of poverty. *American Sociological Review,* (59), 425–445.

Massey, D.S., Hugo, G., Pellegrino, A., Arango, J., Kouaouci, A. and Taylor, J.E. (1999) Worlds in Motion: Understanding International Migration at the End of the Millennium. Oxford University Press. ISBN 0-19-829442-5

Mateos, P. (2013). London's population. In: Imagining the Future City: London 2062 (S. Bell & J. Paskins, eds). Ubiquity Press, London.

McCormick, B. (1997), "Regional Unemployment and Labour Mobility in the UK," European Economic Review, 41, pp. 581-589.

McKenzie, D., Theoharides, C., and Yang, D. (2014). Distortions in the international migrant labor market: Evidence from filipino migration and wage responses to destination country economic shocks. *American Economic Journal: Applied Economics*, *6*(2), 49–75. https://doi.org/10.1257/app.6.2.49

McKenzie, D., Stillman, S., and Gibson, J. (2010). How Important is Selection? Experimental vs Non-experimental Measures of the Income Gains from Migration. *Journal of the European Economic Association,* 8(4): 913–45.

Migration Observatory (2011) Migrants and Housing in the UK: Experiences and Impacts. Oxford: Migration Observatory.

Mincer, J. (1978).Family Migration Decisions. Journal of Political Economy, Volume 48, No.5, pp. 749-773

Ministry of Housing, Communities & Local Government (2012). Allocation of accommodation: guidance for local housing authorities in England. Accessed from: https://www.gov.uk/government/publications/allocation-of-accommodation-guidance-for-local-housing-authorities-in-england

Ministero del Lavoro e delle Politeche Sociali (2018). Eighth Annual Report Foreigners in the Italian Labour Market. Available at: https://ec.europa.eu/migrant-integration/librarydoc/foreigners-in-the-italian-labour-market-eighth-annual-report (Accessed: 22 April 2019)

Musterd, S. (2005). Social and Ethnic Segregation in Europe: Levels, Causes, and Effects. *Journal of Urban Affairs*, (27), 331–348. DOI:10.1111/j.0735-2166.2005.00239.x.

Musterd, S., and Ostendorf, W. (2009). Residential segregation and integration in the Netherlands. *Journal of Ethnic and Migration Studies*, 35(9), 1515-1532.

Musterd, S., and Deurloo, R., (2002). Unstable Immigrant Concentrations in Amsterdam: Spatial Segregation and Integration of Newcomers, *Housing Studies*, (17)3, 487-503. DOI: 10.1080/02673030220134962.

Musterd, S., and Van Kempen, R. (2009). Segregation and housing of minority ethnic groups in Western European cities. *Tijdschrift voor economische en sociale geografie*, 100(4), 559-566.

Musterd, S., Marcińczak, S., van Ham, M., and Tammaru, T. (2016). Socioeconomic segregation in European capital cities. Increasing separation between poor and rich. *Urban Geography*, 38(7), 1062–1083. doi:10.1080/02723638.2016.1228371.

Musterd, S., Andersson, R., Galster, G., and Kauppinen, T., (2008). Are immigrants earnings influenced by the characteristics of their neighbours? *Environment and Planning*, 40(4), 785–805.

Musterd, S. and W. Ostendorf (2000) Segregatie, concentratie en beleid (Segregation, concentration and policy). In R. Van Kempen, P. Hooimeijer, G. Bolt, J. Burgers, S. Musterd, W. Ostendorf, and E. Snel, editors, *Segregatie en Concentratie in Nederlandse Steden: Mogelijke Effecten en Mogeljik Beleid.* Utrecht, Netherlands: Urban Research Centre Utrecht, 35-37.

Nakosteen, R. A., Zimmer, M. A. (1982) The effects on earnings of interregional and Interindustry migration. *Journal of Regional Science*, 22: 325–341.

Natale, F., Scipioni, M., Alessandrini, A. (2018). Spatial segregation of migrants in EU cities, in OECD (eds.), Divided cities. Understanding intra-urban inequalities, Paris: OECD Publishing, pages 75-110.

Niebuhr, A. (2003). Spatial Interaction and Regional Unemployment in Europe. *European Journal of Spatial Development,* 5.

Nord, M., A.E. Luloff, andL. Jensen. (1995). Migration and Spatial Concentration of Poverty. *Rural Sociology*,(60) 399–415.

Novara, M., Loury, A., Khare, A. (2017). The cost of segregation: lost income, lost lives, lost potential. Chicago, IL: Metropolitan Planning Council.

Obstfeld, M. and Peri, G. (1999). Regional Non-adjustment and Fiscal Policy: Lessons for EMU. *National Bureau of Economic Research* Working Paper No.6431.

OECD (2008), Jobs for immigrants (vol. 2): Labour market integration in Belgium, France, the Netherlands and Portugal, Paris: OECD publishing.

OECD (2018) (eds.), Divided Cities: Understanding income segregation in OECD metropolitan areas, Paris: OECD Publishing.

Okólski, M. (2001). Incomplete migration. A new form of mobility in Central and Eastern Europe. The case of Polish and Ukrainian migrants. In C. Wallace and D. Stola (Eds.), Patterns of Migration in Central Europe (pp. 105–128). Basingstoke: Palgrave Macmillan

O'Loughlin, J. (1988). Migration, Nationality, And Housing: Migration Of Germans And Foreigners In Düsseldorf, West Germany. *Urban Geography*, 9(4), 335–357. doi:10.2747/0272-3638.9.4.335

Pais, J., South, S. J. and Crowder, K. (2012). Metropolitan Heterogeneity and Minority Neighbourhood Attainment: Spatial Assimilation or Place Stratification? Social Problems, 59(2), 258–281. doi: 10.1525/sp.2012.59.2.258

Parisi, D., Lichter D.T., Taquino M.C. (2011) Multi-Scale Residential Segregation: Black Exceptionalism and America's Changing Color Line. *Social Forces*. 89(3):829–852.

Park. R.E., Burgess, E.W., McKenzie, R.D. (1925). The City. Chicago: University of Chicago Press.

Peeples, F. and Loeber, R. (1994). Do invididual factors and neighbourhood context explain ethnic differences in juvenile delinquency? *Journal of Quantitative Criminology*, 10(1), 141-157.

Perry, J., (2012). UK migrants and the private rented sector. Joseph Rowntree Foundation. Accessed from: http://www.cih.org/resources/PDF/Policy%20free%20download%20pdfs/migrants-private-rental-sector-full.pdf

Pers-Anders Edin., Fredriksson, P. and Aslund, O. (2003). Ethnic Enclaves and the Economic Success of Immigrants--Evidence from a Natural Experiment, *The Quarterly Journal of Economics*, 118(1), 329–357.

Philippine Statistical Authority (2018). 2017 Survey on Overseas Filipino. Retrieved from https://psa.gov.ph/content/2017-survey-overseas-filipinos-results-2017-survey-overseas-filipinos

Piché, V., & Dutreuilh, C. (2013). Contemporary Migration Theories as Reflected in their Founding Texts. Population (English Edition), 68(1), 141. doi:10.3917/pope.1301.0141

Piore, M. J. (1979) Birds of Passage. Migrant Labor and Industrial Societies. Cambridge University Press.

Pissarides, C.A. and McMaster, Ian. (1990) Regional Migration, Wages And Unemployment: Empirical Evidence And Implications For Policy. *Oxford Economic Papers*, 42: 4, 812-831, https://doi.org/10.1093/oxfordjournals.oep.a041980

Pissarides, C.A., Wadsworth J. (1989). Unemployment and the inter-regional mobility of labour. Economic Journal 99, 739-55.

Pissarides, C.A. and McMaster, Ian., (1990) Regional Migration, Wages And Unemployment: Empirical Evidence And Implications For Policy. *Oxford Economic Papers*, 42: 4, 812-831, https://doi.org/10.1093/oxfordjournals.oep.a041980

Pissarides, C.A., Wadsworth J., (1989). Unemployment and the inter-regional mobility of labour. Economic Journal 99, 739-55.

Poggio, T., and D., Boreiko. (2017) Social Housing in Italy: Old Problems, Older Vices and Some New Virtues? *Critical Housing Analysis.* 4(1), 112-123. DOI: 10.13060/23362839.2017.4.1.330

Poppe, W. (2013). Patterns and Meanings of Housing: Residential Mobility and Homeownership Among Former Refugees, *Urban Geography*, 34(2),218–241.

Poppe, W. (2010). Habitus and the reasons and intentions for residential mobility and homeownership: A mixed-method study among former refugees in Buffalo. University at Buffalo State University of New York.

Portes, A. (1999). Towards a New World – The Origin and Effects of Transnational Activities, *Ethnic and Racial Studies,* 22(2): 465-477.

Portes, A. (2010). Migration and Social Change: Some Conceptual Reflections, Journal of Ethnic and Migration Studies, 36(10): 1537- 1563.

Portes, J., (2018) The economic impacts of immigration to the UK. Retrieved from https://voxeu.org/article/economic-impacts-immigration-uk

Portes, A., and Bach, R., (1985). Latin journey: Cuban and Mexican immigrants in the United States. Univerity of California Press

Portes, A. and Jensen, L. (1989). The Enclave and the Entrants: Patterns of Ethnic Enterprise in Miami Before and Ater Marial, *American Sociological Review*, 54(6), 929.

Portes, A. and Rumbaut, R., (2006). Immigrant America: A portrait. 3rd ed. Berkeley: University of California Press.

Potepan, M. J. (1994). Intermetropolitan Migration and Housing Prices: Simultaneously Determined? *Journal of Housing Economics*, 3(2), 77–91. doi:10.1006/jhec.1994.1001

Ravenstein, E. J. (1885). The Laws of Migration, *Journal of the Royal Statistical Society*, XLVIII, Part 2, 167–227.

Reardon, S. F. and Bischoff, K. (2011). Income inequality and income segregation. , AJS; *American Journal of Sociology,* 116(4), 1092–1153. doi: 10.1086/657114.

Reardon, S.F., Matthews, S.A., Sullivan D.O., Lee B.A., Firebaugh, G., Farrell C.R., Bischoff K.(2008) The Geographic Scale of Metropolitan Racial Segregation. *Demography*. 45(3):489–514.

Reardon, S.F., & O'Sullivan, D. (2004). Measures of spatial segregation. Sociological Methodology, 34(1), 121–162.

Reich, M., Gordon, D., and Edwards, R. (1973). Dual Labor Markets: A Theory of Labor Market Segmentation. *American Econmic Review.* 63(2), 359-365.

Ritsilä, J., & Ovaskainen, M. (2010). Migration and regional centralization of human capital Migration and regional centralization of human capital, (December 2014), 37–41. https://doi.org/10.1080/0003684012248

Riva, E., and Zanfrini, L. (2013). The Labor Market Condition of Immigrants in Italy: The case of Lombardy. *Revue Interventions Économiques*, *47*, 0–26.

Robinson, D., Reeve, K., and Casey, R. (2007). The Housing Pathways of New Migrants. York: Joseph Rowntree Foundation.

Rodriguez, R. (2010). The Emergence of Labor Brokerage: U.S. Colonial Legacies in the Philippines. In Migrants for Export: How the Philippine State Brokers Labor to the World . *University of Minnesota Press*. ISBN 9780816673605.

Roodman, D. (2009). How to do Xtabond2: An Introduction to Difference and System GMM in Stata. *The Stata Journal: Promoting Communications on Statistics and Stata*, 9(1), 86–136. doi:10.1177/1536867x0900900106 .

Roseman, C.C., Laux, H.D., Thieme, G. (1996). EthniCity: Geographic Perspectives on Ethnic Change in Modern Cities, Lanham: Rowman and Littlefield.

Salvatore, D. (1977). An Econometric Analysis of Internal Migration in Italy. *Journal of Regional Science*, 17, 395–408.

Sampson, R. J., Morenoff, J. D. and Gannon-Rowley, T. (2002) 'Assessing "neighborhood effects'': Social processes and new directions in research"', Annual Review of Sociology, 28(1), pp. 443–478. doi: 10.1146/annurev.soc.28.110601.141114.

Sanders, J.M. and Nee, V. (1987) Limits of ethnic solidarity in the enclave economy. *American Sociological Review*. 52:745–767.

Sanders, J.M. and Nee, V. (1987) On testing the enclave-economy hypothesis. *American Sociological Review*. 52, 771–773.

Sassen, S. (1991). The global city: New York, London, Tokyo. Princeton, N.J: Princeton University Press.

Sciortino, G., & Colombo, A. (2004). The flows and the flood: the public discourse on immigration in Italy, 1969–2001. Journal of Modern Italian Studies, 9(1), 94–113. doi:10.1080/1354571042000179209

Sharpe, M. (2005). Globalization and Migration: Post-Colonial Dutch Antillean and Aruban Immigrant Political Incorporation in the Netherlands. *Dialectical*

Anthropology, (29) 3-4

Sim, D. (2000). 'Housing Inequalities and Minority Ethnic Groups', IN: Anderson, I. and Sim, D. (Eds.) (2000) Social Exclusion and Housing: Context and Challenges. Chartered Institute of Housing: Coventry.

Sjaastad, L. A. (1962). The Costs and Returns of Human Migration. Journal of Political Economy. https://doi.org/10.1086/258726

Skop, E. and Li, W. (2005). Asians in America's Suburbs: Patterns and Consequences Of Settlement, *Geographical Review*, 95(2), 167–188.

Skop, E., Peters, P. A., Amaral, E. F., Potter, J. E., & Fusco, W. (2006). Chain Migration and Residential Segregation of Internal Migrants in the Metropolitan Area of São Paulo, Brazil. *Urban Geography*, 27(5), 397–421. doi:10.2747/0272-3638.27.5.397

Sleutjes, B., de Valk, H. A. G., and Ooijevaar, J. (2018). The Measurement of Ethnic Segregation in the Netherlands: Differences Between Administrative and Individualized Neighbourhoods. *European Journal of Population*, 34(2), 195–224. doi:10.1007/s10680-018-9479-z

South, S., Crowder, K. and Chavez, E. (2005). Geographic Mobility and Spatial Assimilation among U.S. Latino Immigrants , *The International Migration*, 39(3), 577–607.

Spencer, S., Ruhs, R., Anderson, B. and Rogaly, B. (2007). *Migrants' Lives Beyond the Workplace: The Experiences of Central and East Europeans in the UK*. York: Joseph Rowntree Foundation

Stark, O. and Bloom, D.E. (1985). The New Economics of Labour Migration, *American Economic Review*, 75(2), 173-178

Stillwell J.C.H., Rees, P., and Duke Williams, O. (1996). Migration between NUTS level 2 Regions in the United Kingdom. In P. Rees, J. Stillwell, A. Convey and M. Kupiszewski (eds.) Population Migration the The European Union. Chichester: John Wiley.

Strandh, M. and Nordlund, M. (2008) 'Active labour market policy and unemployment scarring: A ten-year Swedish panel study', Journal of Social Policy. Cambridge University Press, 37(3), pp. 357–382. doi: 10.1017/S0047279408001955.

Sun, S. and Manson, S. (2012) Intraurban Migration, Neighborhoods, and City Structure, *Urban Geography*. 33:7, 1008-1029, DOI: 10.2747/0272-3638.33.7.1008

Tacoli, C. (2011). International Migration and the Restructuring of Gender Asymmetries : Continuity and Change among Filipino Labor Migrants in Rome

Author (s): Cecilia Tacoli Source : International Migration Review , Vol . 33 , No . 3 (Autumn , 1999), pp . 658-682 Publ. International Migration, 33(3), 658–682

Tammaru, T., Marcinczak, S., Aunap, R., Van Ham. M., and Janssen, H., (2019). Relationship between income inequality and residential segregation of socioeconomic groups, *Regional Studies*, DOI: 10.1080/00343404.2018.1540035.

Taylor, A. (1994). "Sample Characteristics, Attrition and Weighting," in Nick Buck, Jonathan Gershuny, David Rose and Jacqueline Scott, (eds.), Changing Households: The British Household Panel Survey 1990-1992, pp. 291-311. ESRC Research Centre on Micro-social Change, University of Essex.

Technical Education and Skills Development Authority. (2017, April 12). TESDA to give free trainings to returning OFWs. [Press release]. Retrieved from https://www.tesda.gov.ph/News/Details/17642

Timberlake, J., Howell, A. and Staight, A. (2010). Trends in the Suburbanization of Racial/Ethnic Groups in U.S. Metropolitan Areas, 1970 to 2000, *Urban Affairs Review*, 47(2), 218–255.

Todaro, M.P. & Smith, S. (2006). Economic Development. Boston: Addison Wesley.

Tzaninis, Y. (2019). Cosmopolitanism beyond the city: discourses and experiences of young migrants in post-suburban Netherlands. *Urban Geography*. 1–19. doi:10.1080/02723638.2019.1637212

United Nations (2017). *International Migration Report*. Retrieved from https://www.un.org/en/development/desa/population/migration/publications/migrationreport/docs/MigrationReport2017_Highlights.pdf

Urry J. 2000. Sociology Beyond Societies. Sage: London.

Van Amersfoort H., and Penninx, R. (1994). Regulating Migration in Europe: The Dutch Experience, 1960-92. *The Annals of the American Academy of Political and Social Science*, 534(1), 133–146. doi:10.1177/0002716294534001011

Van der Heijden, H. (2013). West European Housing Systems in a Comparative Perspective. IOS Press.

Van der Vlist, A., Czamanski, D., Folmer, H. (2011). Immigration and Urban Housing Market Dynamics: The Case of Haifa, *Annals of Regional Science*, 47(3),585-598.

Van Ham M., and Tammaru, T., (2016). New perspectives on ethnic segregation over time and space. A domains approach, *Urban Geography*, DOI: 10.1080/02723638.2016.1142152.

Van Ham, M., and Manley, D. (2009). The effect of neighbourhood housing tenure mix on labour market outcomes: a longitudinal investigation of neighbourhood effects. *Journal of Economic Geography*, 10(2), 257–282. doi:10.1093/jeg/lbp017

Van Kempen, R., and Ozuekren, S. (1997). Introduction , in Ozuekren, S. and van Kempen, R. (eds) Turks in European Cities: Housing and Urban Segregation. Utrecht: ERCOMER, 1-11.

Vertovec, S. (1999). Conceiving and Researching Transnationalism, *Ethnic and Racial Studies,* 22(2): 447-462.

Vertovec. S. (2007). Super-diversity and its implications. *Ethnic and Racial Studies*, 30(6), 1024-1054.

Van Kempen, R., and Ozuekren, S. (1997). Introduction, in Ozuekren, S. and van Kempen, R. (eds) Turks in European Cities: Housing and Urban Segregation. Utrecht: ERCOMER, 1-11.

Vrooman, C. and Hoff, S. (2004). The Poor Side of the Netherlands Results from the Dutch Poverty Monitor , 1997-2003 Accessed 2 July 2018, from https://www.scp.nl/english/Publications/Publications_by_year/Publications_2004/The_Poor_Side_of_the_Netherlands.

Waldinger, R. (1994). The making of an immigrant niche. *International Migration Review* 28, 3–30.

Waldinger, R. (1996). Still the Promised City? African-Americans and New Immigrants in Post Industrial New York. Harvard University, Cambridge.

Walks, R.A., Bourne, L.S. (2006). Ghettos in Canada s cities? Racial segregation, ethnic enclaves and poverty concentration in Canadian urban areas. *The Canadian Geographer*, 50(3), 272-297.

Wallerstein, E. (1974). The Modern World System. Capitalist Agriculture and the Origins of the European World Economy in the 16-th Century. New York.: Academic Press.

Warnes A. (1992) Migration and the life course. In A. Champion and A. Fielding (eds.) *Migration Processes and Patterns. Volume 1: Research Progress and Prospects*. London: Belhaven.

Welch, F. (1975). Human Capital Theory: Education, Discrimination, and Life Cycles. The American Economic Review, 65(2), pp. 63-73.

White, M. J., Biddlecom, A. E. and Guo, S. (1993). Immigration, Naturalization, and Residential Assimilation among Asian Americans in 1980 , *Social Forces*, 72(1), p. 93.

Wilson, W. J. (1987). The Truly Disadvantaged; the Inner City, the Under-class and Public Policy. Chicago: University of Chicago Press.

Wilson, W.J. (1935). When Work Disappears : the World of the New Urban Poor. New York :Knopf, 1996.

Windmeijer, F. (2005). A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics*, 126 (1), 25–51.

World Bank (2019) *Record High Remittances Sent Globally in 2018.* Retrieved from https://www.worldbank.org/en/news/press-release/2019/04/08/record-high-remittances-sent-globally-in-2018

Yang, D. (2008). International Migration, Remittances and Household Investment: Evidence from Philippine M

Zhou, M. (1992). Chinatown: the socioeconomic potential of an urban enclave , in. Philadelphia, PA: Temple University Press.

Zhou, M. (1997). Segmented assimilation: issues, controversies, and recent research on the new second generation. *The International Migration Review*, 31(4), 975–971.

Zorlu, A. and C.Mulder (2008). Initial and Subsequent Location Choices of Immigrants to the Netherlands, Regional Studies, 42(2), 245-264, DOI: 10.1080/00343400601145210