Aliaksei Kazlou

IMMIGRANT ENTREPRENEURS IN A CHANGING INSTITUTIONAL CONTEXT

A MIXED EMBEDDEDNESS APPROACH

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Aliaksei Kazlou
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embeddedness approach

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Abstract

Immigrant entrepreneurs are known to be heterogeneous in terms of available resources and entrepreneurial outcomes. However, this heterogeneity, as well as immigrant entrepreneurs' embeddedness in social networks and the institutional context of high-income welfare states such as Sweden, remains understudied. Sweden represents an interesting case as a popular immigration destination which liberalized its migration policy for entrepreneurs and changed other regulations, encouraging immigrant entrepreneurship after 2008.

Theoretically, the dissertation contributes to the mixed embeddedness approach to immigrant entrepreneurship by considering three stages of the entrepreneurial process – entry, performance, and potential exit – in a changing institutional environment.

Methodologically, the dissertation operationalizes the mixed embeddedness approach by studying these three stages – entry (propensity to start a business), performance (entrepreneurial incomes), and potential exit (duration in business) – among different categories of immigrants. Explanatory factors are drawn from three levels of analysis: institutional change (macro), social, ethnic and family networks (meso), and the individual's human capital (micro). A range of statistical tools is used for empirical analyses: Difference-in-difference methods in combination with Coarsened Exact Matching and Oaxaca-Blinder decomposition are used to investigate the influence of institutional change on entrepreneurial entry and performance. Survival models based on Cox regression are applied to investigate the influence of social and family ties on the likelihood of entrepreneurial exit. A combination of clustering and association analysis allows heterogeneity to be approached via the categorization of immigrant entrepreneurs.

Empirically, based on rich data from Swedish registers, the dissertation reveals that the propensity to start businesses in expanding ICT industries among labour immigrants was increased, and performance in terms of income among new immigrant entrepreneurs was improved after institutional change, compared to earlier. It also stresses that family networks mitigate a lack of other resources for refugee entrepreneurs, allowing them to stay in business longer. Two main categories of new immigrant entrepreneurs were distinguished in the overall heterogeneous population.

The dissertation consists of four papers and an introductory chapter.

Key words: immigrant entrepreneurs, mixed embeddedness, entrepreneurial process, institutional change.

Sammanfattning

Invandrarföretagare uppvisar stor heterogenitet när det gäller tillgängliga resurser och framgång i sitt företagande. Denna heterogenitet, liksom invandrarföretagens inbäddning i sociala nätverk och i den svenska välfärdsstatens institutionella kontext, är emellertid understuderad. Sverige utgör ett intressant fall eftersom det är ett land med relativt stor invandring som efter 2008 liberaliserade migrationspolitiken för företagare och på olika sätt uppmuntrade invandrares företagande.

Teoretiskt bidrar avhandlingen till *mixed embeddedness*- perspektivet genom att analysera tre stadier i entreprenörprocessen: uppstart, utveckling och eventuell avveckling, i förhållande till institutionell förändring.

Mixed embeddedness operationaliseras i avhandlingen genom att olika kategorier invandrare studeras vid olika steg i entreprenörprocessen; uppstart (benägenhet att starta ett företag), utveckling (företagarinkomster) samt eventuell avveckling (varaktighet i företaget) och genom att förklarande faktorer studeras på tre analysnivåer: institutionell förändring (makro), sociala, etniska och familjenätverk (meso) samt individens humankapital (mikro). En rad statistiska verktyg används för de empiriska analyserna; *Difference-in-difference*-metoder i kombination med *Coarsened Exact Matching* och *Oaxaca-Blinder decomposition* används för att undersöka hur institutionella förändringar påverkar uppstart och utveckling. Överlevnadsmodeller baserade på Cox-regression tillämpas för att undersöka hur sociala nätverk och familjeband påverkar sannolikheten för avveckling. Med en kombination av klusteranalys och associationsanalys undersöks mönster i heterogeniteten bland invandrarföretagarna genom kategorisering.

Empiriskt, baserat på detaljerade data från svenska register, visar avhandlingen att benägenheten att starta verksamhet inom IKT-branschen ökade bland arbetskraftsinvandrare, samt att inkomsterna bland nya invandrarföretagare förbättrades efter en period av institutionell förändring. Avhandlingen visar även att familjenätverk motverkar bristen på andra resurser för företagare med flyktningbakgrund, vilket gör att de kan stanna i verksamheten längre. Två huvudkategorier går att urskilja i den heterogena gruppen av företagare.

Avhandlingen är en sammanläggning av fyra artiklar och en inledande kapp.

Nyckelord: invandrarföretagare, *mixed embeddedness*, entreprenörprocess, institutionell förändring.

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Linköping, September 2019
Aliaksei Kazlou

Appended studies

Paper A

Kazlou, A. **Diversity in immigrant entrepreneurship: exploring mixed embeddedness with data mining.** Earlier version presented at the *Wharton Conference on Migration, Organizations, and Management May 30, 2019–May 31, 2019, University of Pennsylvania, Philadelphia.* Working paper.

Paper B

Kazlou A. and Urban S. **New immigrants in ICT start-ups: regulation, location and education.** Earlier version presented at *RENT XXXI conference, Lund, 2017.* Working paper.

Paper C

Kazlou, A., and Klinthall, M. (2019). **Entrepreneurial response to changing opportunity structures: Self-selection and incomes among new immigrant entrepreneurs in Sweden.** *International Journal of Entrepreneurial Behavior and Research*, 25(5), 859–879.

Paper D

Kazlou, A., Wennberg K. **How Kinship Resources alleviate Structural Disadvantage: Self-Employment Duration among Refugees and Economic Migrants.** Earlier version presented at the *Nordic Conference for Small Business (NCSB2018), Lulea, May 2018.* Working paper.

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CHAPTER 1. INTRODUCTION

1.1. Immigrant entrepreneurs in a changing institutional context

This thesis is about immigrant entrepreneurship in Sweden. The concept ‘immigrant entrepreneurship’ carries an implicit assumption of immigrants’ businesses being somehow different from other businesses. Immigrants could in some way be different as entrepreneurs, or there may be special preconditions for entrepreneurship in the context of migration and settlement in a new country. Or both. This thesis investigates immigrant entrepreneurship from both the perspective of the business owners and their individual characteristics, and the institutional context in which they act. **The overall purpose of the thesis is to investigate why and how immigrant entrepreneurs respond to changing opportunity structures in different phases of the entrepreneurial process, in the institutional context of the Swedish welfare state.**

Early research on immigrant entrepreneurship, starting with Ivan Light in the 1970s (Light, 1972), generally focused on culture and ethnicity as explanations for different features of migrants’ businesses. Later, researchers started to seek explanations in the structural conditions in which immigrant entrepreneurship was taking place (e.g. Cobas, 1986; Phizacklea and Ram, 1995; Clark and Drinkwater, 1998). This thesis is inspired by the so-called ‘mixed embeddedness’ perspective, a theoretical approach where immigrant entrepreneurship is analyzed in the light of their individual resources, access to social or ethnic capital, as well as the surrounding institutional context (e.g. Kloosterman et al., 1999; Rath 2000). The mixed embeddedness (ME) theoretical approach will be further discussed below (section 1.2).

Since the institutional setting is crucial in explaining entrepreneurship according to the ME approach, entrepreneurial preconditions and outcomes are assumed to differ between various social and institutional contexts. Most of the research within the ME theoretical approach has been carried out in Great Britain and the Netherlands. In this thesis, immigrant entrepreneurship is analyzed in the context of Sweden, with a different institutional framework than much of the prevailing ME research and hence, different preconditions for entrepreneurship. The study considers a period of gradual transformation from more of a traditional ‘social democratic

welfare state' (Esping-Andersen, 1990) to a system increasingly characterized by market liberal structures. An overarching research question in the thesis regards **how immigrant entrepreneurship is affected by institutional change in the specific context of the Swedish welfare state.**

Immigrant entrepreneurship has become a broadly discussed topic, both politically and theoretically (Aliaga-Isla and Rialp, 2013). In view of recently increased migration trends worldwide and the migration crisis in Europe in 2015 (Trauner, 2016), immigrant entrepreneurship is often considered as one of the remedies to solve challenges related to the increasing migration streams, such as unemployment. Governments in Western welfare states thus tend to promote immigrant entrepreneurship, aiming to collect more tax revenues and decrease unemployment, poverty and crime, and costs for the welfare system (OECD, 2015). Recent investigation also shows that the total level of entrepreneurial activity correlates to the proportion of immigrants in a country (Li et al., 2017). At the same time, immigrants see entrepreneurship in a host country as a source of income and self-realization (Baycan-Levent and Kundak, 2009). They create jobs for themselves and others (Hammarstedt and Miao, 2019; Jones, Ram and Villares-Varela, 2018), but many of them find themselves overexploited, in low-end sectors with limited incomes and long working hours (Waldinger, Aldrich and Ward, 1990). Nevertheless, some immigrant entrepreneurs are able to start businesses in more innovative and growing sectors and become successful entrepreneurs (Saxenian, 2012; Fairlie and Chatterji, 2013), which may be related to specific market opportunities.

Indeed, immigrants are overrepresented among entrepreneurs compared to natives in Sweden (Ohlsson, Broome and Bevelander, 2012b) as in other Western welfare states (Aliaga-Isla and Rialp, 2013). Political challenges remain in efficiently promoting entrepreneurship among immigrants, taking into account their heterogeneity and the differences in market structures in their new countries (Acs et al., 2016, Rath and Swagerman, 2015). In this vein, study of immigrant entrepreneurs embedded in a changing institutional context helps to understand the dynamic of entrepreneurship in different phases of the entrepreneurial process with possible implications for practice and policy.

Theoretical explanations of immigrants' entrepreneurial response to changing opportunity structures in different contexts have grown to become a vibrant and largely interdisciplinary field. For example, economists and sociologists differ in approaches and fundamental assumptions. Yet the stylized results from sociological and economic studies on immigrant

entrepreneurship are complementary and the results tend to converge (Bates, 2011). Some economists consider immigrant entrepreneurship itself as a factor of innovation and economic growth (Kerr and Kerr, 2016, Fairlie and Lofstrom, 2015). Many sociologists see immigrant entrepreneurship as a vulnerable form of self-employment with low incomes and minor access to welfare benefits (e.g. Hjerm, 2004). With management studies on immigrant entrepreneurship frequently drawing on either or both of the traditions in economics and sociology, management studies have contributed deeper explanations of the cultural (Vinogradov and Kolvereid, 2007) and contextual (Ram, Jones and Villares-Varela, 2016) dimensions. The importance of institutional contexts (Carter *et al.*, 2015), social network connections (Portes, 1995) and the heterogeneous individual characteristics of immigrants are central concepts in immigrant entrepreneurship studies (Ndofor and Priem, 2011).

The structure of the rest of the introduction is as follows. In the next section, I introduce the main definitions and main theoretical perspective of this dissertation – the mixed embeddedness approach. I problematize the theoretical approach to highlight the theoretical gaps I seek to address and formulate the research problem. Then, I present the main purpose and research questions of the dissertation. Finally, I summarize four appended research papers and discuss contributions.

1.2. Research Problem

Changes in the institutional context are widely acknowledged to influence immigrants' entrepreneurship, but how do such changes affect immigrant entrepreneurs' entry, performance and potential exit, respectively? In this dissertation, I use the term immigrant entrepreneur synonymously with self-employed immigrant, a person who runs and owns a business in a country of residence different from where she was born (Efendic, Andersson and Wennberg, 2016; Ohlsson *et al.*, 2012; Rath and Kloosterman, 2001). Following the Schumpeterian definition of entrepreneurship (Schumpeter, 1934), scholars have of late been increasingly carefully to distinguish entrepreneurs with an element of innovation from self-employed people who simply run a firm. I am interested primarily in the broader patterns of 'everyday entrepreneurship' which may or may not include innovative elements during inception or later on (Welter *et al.*, 2016).

Immigrant entrepreneurship differs from ethnic entrepreneurship, which can be defined as an entrepreneurial activity of an ethnic minority group based on a “set of connections and regular patterns of interaction among people sharing common national background or migratory experiences” (Aldrich and Waldinger, 1990, p. 112). While ethnic entrepreneurship was sometimes used as a synonym for immigrant entrepreneurship (Jones and Ram, 2012; Ram and Jones, 2008; Kloosterman and Rath, 2018), ethnic minorities are not always related to migration. In Sweden there are several officially recognized ethnic minorities, such as indigenous groups, who are not migrants. Moreover, immigrant entrepreneurship may include different categories such as migrants in a host country or returnees to home countries. Therefore, the dissertation focuses on immigrant entrepreneurs, who were born outside a country, immigrated to the country, started a firm and continue to run it.

Immigrant entrepreneurs are not a homogenous, but a very diverse group in terms of accessible resources and different motivations and expectations. For example, economic migrant entrepreneurs plan their migration in advance and make preparations regarding financial resources and social connections, in contrast to refugee immigrants, who were often forced to move and therefore lack certain resources (Andersson, 2018). Both as individuals and as groups, immigrant entrepreneurs differ in terms of human, social and financial capital resources, which has consequences for the entrepreneurial processes of entry, performance and exit. For example, an individual’s alertness to entrepreneurial opportunities largely depends on their previous experience, skills, knowledge (Shane, 2000). Connections to people allow mobilization of additional resources such as financial capital or labour, but also information, know-how etc., which is known as social capital (Coleman, 1988; Davidsson and Honig, 2003). Immigrants with different constellations of human and social resources are embedded into the institutional environments of a host country, where they may maintain ties to other immigrants of the same national background as well as building new social ties (Portes and Sensenbrenner, 1993; Waldinger, 1995).

Heterogeneity of immigrant entrepreneurs has been stressed in research on ‘new’ immigrant entrepreneurship in the US (Valdez, 2011) and the UK (Jones et al., 2014; Jones, Ram and Villares-Varela, 2018). The ‘new’ immigrant entrepreneurs usually refer to those who come from non-traditional countries of origin, differ in motivations, such as economic immigrants, use a variety of ways for immigration, and tend to turn to non-traditionally immigrant sectors, such as financial, consulting and similar services (Jones et al., 2014; Ram et al., 2013; Jones, Ram and Villares-Varela, 2018).

‘New’ immigrant entrepreneurship often relates to the concept of ‘super-diversity’ (Vertovec, 2007; Ram et al., 2013; Jones et al., 2014), which emphasizes the significant and often increasing heterogeneity among migrants in different dimensions, such as available resources and choice of industry and market with different growth potential. The structural dimensions of diversity such as market opportunities in different industries are not stable in time, but change when institutions are transformed and new regulations are involved. It is still unclear how the diversity of immigrant entrepreneurs changes over time when the institutional context evolves. The Swedish experience of liberalization in migration legislation (and in more recent years, strong restrictions for refugees and asylum seekers) provides an interesting opportunity to investigate how immigrant entrepreneurs respond to a changing institutional context.

Within mainstream entrepreneurship research, Gartner, (1985) developed a comprehensive model from the perspective of the venture creation process to explain diversity among entrepreneurs and to understand by which factors they differ (Gartner, 1985). Gartner’s (1985) model includes four dimensions for classification of entrepreneurs – individuals, organizations, process and environment. The ‘individual(s)’ dimension involves individual characteristics of entrepreneurs such as intentions, education, age etc. The ‘organization’ dimension’s characteristics distinguish different market strategies – ‘cost leadership’, ‘differentiation’ and ‘focus’, borrowed from Porter’s approach (Porter, 1985). ‘Environment’ in Gartner’s model includes such factors as urban areas, barriers to entry, bargaining powers of buyers and suppliers, governmental influences, proportion of recent immigrants and others. A ‘process’ describes venture creation via accumulation of resources, responding to government’s and society’ incentives. While well developed, the model does not explain why diverse immigrants turn to similar bottom-end industries. It neither explains immigrants’ responses to changes in institutional context as interactions between institutional and market environment, nor clarifies how social capital influences immigrant entrepreneurship. A drawback of the model is that it is missing the ‘embeddedness’ of the entrepreneurship into formal and informal institutions (Williamson, 2000), which is particularly important for immigrant entrepreneurs (Portes, 1995).

Several alternative theories are available to explain why and how the immigrant entrepreneurs respond to institutional changes. For example, the ‘Middleman’ model (Bonacich, 1973) views the role of ethnic minority business as a mediator between producers and consumers, elites and the masses, as a broker in the host society. The model includes several different factors such as individual desire to stay or return, host society hostility and solidarity with co-ethnics, and homeland conditions. Nevertheless, the model was criticized because of competitive and

cultural fallacies (Waldinger, 2000). In general, the model lacks institutional regulations in a host country. It considers only limited low end industries. Therefore, the model offers a rather limited explanation of immigrant entrepreneurship within changing opportunity structures. Interactionist theory applied to immigrant entrepreneurship (Light and Rosenstein, 1995) explains immigrant entrepreneurship as a product of interaction between supply of immigrants with individual characteristics and resources and demand for them on the part of industries and society, also called opportunity structures. Opportunity structures are defined as market conditions that are socially and culturally structured (Light and Rosenstein, 1995; Waldinger *et al.*, 1990). Light and Rosenstein (1995) further extended the interactionist theory to include general and specific resources on the supply side. The demand or opportunity structures for immigrant entrepreneurs often arise in a ‘vacancy chain’ manner when natives or other immigrants move up to more prospective opportunities (Portes, 1995). The institutional framework in a host country influences both the demand and supply of immigrant entrepreneurs. The extended interactionist theory is more advanced compared to the earlier ‘disadvantage’ and ‘blocked mobility’ mono-explanative theories (Peters, 2002), because the ‘disadvantage’ and ‘blocked mobility’ theories consider only the supply aspect of immigrant entrepreneurs, with a focus on individual demographic characteristics, education level, cultural background, but lacking the demand side of opportunity structures. The demand for immigrant entrepreneurs often depends on the institutional framework of economic conditions in a host country and their location, which ‘disadvantage’ and ‘blocked mobility’ do not include.

For these purposes industrial sociologist and economic geographers developed the mixed-embeddedness (ME) approach to tackle the complexity of immigrant entrepreneurship (Kloosterman, van der Leun and Rath, 1999). The ME approach has rapidly become a popular approach in explaining immigrant entrepreneurship. Like the interactionist model, it includes both the supply of and demand for immigrant entrepreneurs (Edwards *et al.*, 2016). In the ME approach, the demand side of immigrant entrepreneurship represents the opportunity structures (Kloosterman, Rusinovic and Yeboah, 2016). It also considers discrimination and ‘blocked mobility’ (Li, 2001), which may influence the supply side of immigrant entrepreneurs. ME considers embeddedness of immigrant entrepreneurs within three levels of factors – individual human capital, meso-level social capital and macro-level institutions. It also incorporates historical context into the study of immigrant entrepreneurship, which is helpful for understanding differences among the ‘new’ and ‘traditional’ immigrants, who immigrated

during the post-industrial period and differ from those who previously immigrated during the post-war industrial period (Ram, Jones and Villares-Varela, 2017).

Several similarities and dissimilarities can be identified between Gartner's model and the ME approach. Both approaches consider individual characteristics of entrepreneurs, such as educational level and previous experience, as measures of human capital. In terms of the 'organization' dimension, the Gartner's model operates with generic exclusive strategies, named by Porter (1985) as *cost leadership* (competition by low prices), *differentiation* (competition by diverse goods and services) and *focus* (competition by concentration on a small segment).

The ME approach vaguely defines similar strategies of immigrant entrepreneurs, such as 'competition by lower prices' when entry barriers are low (Kloosterman and Rath, 2018) (similar to 'cost leadership') and 'competition by quality' (similar to the 'differentiation strategy' in Gartner's model). However, the ME approach does not incorporate the notion of a 'focused' strategy. Gartner's model also includes an *environment* dimension, which is similar to the notion of 'institutional embeddedness' on the macro level within the ME approach. Gartner's model additionally includes *bargaining power of buyers* borrowed from (Porter, 1985) and *proportion of recent immigrants*, which can be considered as social ethnic capital in the ME approach. A major difference, however, is that Gartner's model does not clearly emphasize the social embeddedness of entrepreneurs, which has proven to be very important in analyzing immigrant entrepreneurship (Granovetter, 1985; Portes, 1995; Williamson, 2000). Nevertheless, it remains unclear why and how categories of immigrant entrepreneurs differ regarding their response to changing opportunity structures in different stages of the entrepreneurial process of entry, performance and exit.

A previously developed process model of immigrant entrepreneurship (Vinogradov and Elam, 2010) adds a dynamic to the ME approach by considering the venture creation process in time. Nevertheless, the model does not consider growth (Mitchell, 2015), or indeed exit stages, which are important in understanding immigrant entrepreneurship (Johannisson, Ramírez-Pasillas and Karlsson, 2010). There is a rather fragmented field of empirical studies that use the ME approach to explain why and how immigrants 'enter' (Evansluong, 2016), 'perform' (Kloosterman, 2010) and 'exit' entrepreneurship (Kloosterman et al., 2016). It is to this nascent stream of research that I seek to make my main contribution in this thesis.

Previous research on immigrant entrepreneurship often does not distinguish how immigrant entrepreneurs respond to changing opportunity structures in each of the three stages. For example, ME distinguishes four types of opportunity structures, to which immigrant entrepreneurs can be pushed or pulled (Kloosterman, 2010). Our understanding of how immigrant entrepreneurs respond to opportunity change at each stage of entry, performance and exit is still limited.

In summary, the ME approach is arguably richer than other theories in explaining immigrants' response to changing opportunity structures, but in current state-of-the-art ME research, the time perspective is basically lacking. Moreover, the different stages of entrepreneurial process, namely entry, performance and exit, are lumped together, which may give misleading results. Therefore, in this dissertation, I use ME as the main theoretical approach and consider different stages of the entrepreneurial process, inspired by entrepreneurial process theory (Delmar, 2005; Shane, 2003), to further our knowledge on why and how immigrant entrepreneurs respond to changing opportunity structures from a time perspective, i.e. in each of the stages. I argue that there are different responses among categories and in each of the stages. I support my argument with appended empirical studies.

1.3. Purpose and Research questions

The overall purpose of this dissertation is to investigate why and how immigrant entrepreneurs respond to changing opportunity structures in different stages of the entrepreneurial process – entry, performance and exit – in the Swedish institutional context of an advanced welfare state. To explain this, I adopt the mixed embeddedness theoretical approach, and considering the gaps and weaknesses shown in the previous sub-section, I aim to contribute **theoretically**:

- to the mixed embeddedness approach by adding elements from entrepreneurial process theory and analyzing the three stages of entry, performance and exit separately, showing the relative salience of mixed embeddedness theoretical approach at each of these stages; and
- by enriching the mixed embeddedness model through consideration of institutional change from a time perspective at each stage of the entrepreneurial process.

Methodologically, the dissertation aims to:

- operationalize the mixed embeddedness model to make the secondary data such as Swedish register-based data applicable to research on immigrant entrepreneurship;
- apply a data mining approach to address the high diversity of immigrant entrepreneurs.

Empirically, it aims to:

- investigate different categories of immigrant entrepreneurs and their entrepreneurship in the three stages of entry, performance and exit, based on detailed quantitative data;
- assess the influence of institutional change on entrepreneurial entry, performance and exit by comparing at least two time periods.

It also aims to contribute to **policy** assessment by

- investigating how changes to the institutional context on a macro level, such as migration policy liberalization in Sweden, affected immigrant entrepreneurship in the different stages.

To reach the aims the appended studies address particular research questions, listed below.

Previous research has investigated particular categories of immigrant entrepreneurs such as young people (Slavnic, 2013) and second generation immigrants (Klinthäll and Urban, 2014), or immigrant entrepreneurship in specific sectors such as taxi driving (Slavnic, 2015; Slavnic and Urban, 2018) or the healthcare sector (Urban and Schölin, 2017), or the research has focused on specific groups of immigrants separately, such as refugees' entrepreneurship (Andersson, 2018) and expatriate entrepreneurs (Efendic, 2016). The groups of immigrant entrepreneurs differ significantly in terms of their motivation or access to resources in different stages of the entrepreneurial process. Nevertheless, little attention has been paid to comparing categories of immigrant entrepreneurs where ME places them in terms of available resources and growth potential. Therefore, the first research question is related to categorization of immigrant entrepreneurs in Sweden according to the three stages of the entrepreneurial process.

Research question 1: *How do different categories of immigrant entrepreneurs differ across the three stages of the entrepreneurial process (entry, performance and exit)?*

This research question is addressed in the appended Paper A, which investigates heterogeneity of immigrant entrepreneurs by cluster and association analysis. Paper B controls for the

immigrant categories in the entry stage and Paper C controls for the categories in income performance. Paper D compares refugee and economic migrant entrepreneurs in the ‘exit’ stage.

The second question focuses on reasons why some immigrants (but not others) turn to entrepreneurship in high-skilled expanding industries such as information and communication technologies (ICT). ME classifies ICT as growing and innovative, allowing immigrant entrepreneurs better perspectives (Kloosterman et al., 2016). It is still unclear how each of the three level factors contributes to immigrants’ propensity to start a business in ICT, which is a high-tech, non-traditional immigrant sector. This question is related to the first stage of the entrepreneurial process – entry – and can be summarized as set out below. I address this question in Paper B.

Research question 2: *How do different factors (on a micro, meso and macro level) affect immigrants’ propensity to start a business in an expanding, high-threshold industry?*

The third question refers to the second stage of the entrepreneurial process – performance. It addresses immigrants’ incomes from entrepreneurship compared to natives, namely how (if any) incomes of immigrant entrepreneurs evolve over time when the institutional context changes, in terms of migration policy liberalization and market conditions. I investigate this question in Paper C

Research question 3. *How do changes in migration policy and market conditions affect entrepreneurial incomes among immigrant entrepreneurs ?*

The fourth question pertains to the exit stage of immigrants. Immigrants are differently endowed with resources on both a micro and a meso level and it is therefore interesting to investigate how their duration in business changes over time, especially in a period when the migration policy was changed.

Research question 4: *Why do categories of immigrant entrepreneurs differ regarding exit from entrepreneurship?*

I address this question in Paper D.

1.4 Contributions of appended papers

This dissertation contributes to academic knowledge in several ways. First, previous research using an ME approach did not study immigrant entrepreneurs during changing opportunity structures in different stages of the entrepreneurial process. In this dissertation I further elaborate the ME approach by filling two gaps. I add a time perspective into the mixed embeddedness approach by comparing entry, performance and exit at different time points before and after institutional changes. I also distinguish three levels of analysis by including factors on the macro, meso and micro level and consider them at each of the three stages.

I consider the entrepreneurial process in three stages, by expanding the initial entry stage with the addition of the performance and exit stages (Shane, 2003; Delmar, 2005). Immigrant entrepreneurs ‘do not act in a vacuum’ but their actions are embedded in both socio-cultural traditions related to ethnic groups and location at the meso level of social networks and macro level of institutional regulation (mixed embedded). The appended studies contribute to the ME approach by separating each stage of the entrepreneurial process. The first appended paper contributes explanations as to how new immigrants in Sweden can be classified into two major groups of most/less successful and shows that, when opportunity structures change over time, classification patterns of immigrant entrepreneurs also change. The second paper contributes by showing how immigrant entrepreneurs’ entry into an industry with high entry barriers is facilitated by individual characteristics and ethnic capital, factors which become more important over time when institutional regulations change. The third appended paper contributes by considering the role of mixed embeddedness for entrepreneurial performance. A liberalization of the labour immigration regime in Sweden is associated with an increase in entrepreneurial incomes among new immigrant entrepreneurs, due to positive self-selection and an improving business environment for immigrant entrepreneurs. The fourth paper contributes by examining how different types of social capital resources stemming from the proximity of immigrant entrepreneurs’ family and ethnic group affect their likelihood of exiting entrepreneurship. The results of Paper D show that some categories of immigrants, such as refugees or labour migrants, stay longer in business when they have access to family social capital, compared to those without access to such family capital.

Together, the papers also contribute methodologically through the operationalization of mixed embeddedness using a quantitative approach. Regarding policy implications, empirical results suggest that specific regulations on immigration and starting businesses, as well as family

unification, may support immigrant entrepreneurship during the different stages of entry, performance and exit.

1.5 Structure of the dissertation

The dissertation is composed of the cover essay and four appended papers. The cover essay consists of six chapters. While this introduction chapter sets out the aims and research questions, the following chapter presents a theoretical model based on a critical review of the mixed embeddedness approach and of the entrepreneurial process theory. The third chapter presents the Swedish institutional context. In the fourth chapter, I present methods and operationalize the mixed embeddedness approach, as well as discussing application of the model at each stage of the entrepreneurial process. I adjust the mixed embeddedness model to the time-related methodology at each of the stages – entry, performance and exit. I also describe available secondary data from Swedish registers and discuss the level of analysis and research methods applied in each of the four appended studies in the fourth chapter. This is followed by a summary of the four appended studies in the fifth chapter. Finally, I discuss the results of the four studies and contributions and present conclusions in the sixth chapter.

CHAPTER 2. THEORY

In this section, I first define the main concepts and consider the literature on the entrepreneurial process. I emphasize the gap in the contextualization of the entrepreneurial process and consider embeddedness of particular stages of the entrepreneurial process as crucial for the way immigrant entrepreneurs respond to changing opportunity structures.

2.1. Entrepreneurial process

The study of immigrant entrepreneurship lies at the intersection of the fields of entrepreneurship and migration studies (Kloosterman, 2010; Portes, 1995). Like mainstream entrepreneurship, immigrant entrepreneurship pertains to exploitation of market opportunities at different stages. Like migrant studies, it examines immigrants' embeddedness in social, cultural and geographical restrictions. In the previous chapter, I highlighted the mixed embeddedness (ME) theoretical approach as suitable for the study of immigrant entrepreneurship. The entrepreneurial action of immigrants regarding opportunity exploitation as initial organization, early development and continuation are embedded in institutional constraints of governmental regulation and cultural norms of ethnic network (Portes, 1995). In this chapter, I join the entrepreneurial process theory and the ME approach to explain why and how immigrant entrepreneurs respond to changing opportunity structures during different stages of the entrepreneurial process. First, I present and critically discuss the entrepreneurial process theory and then problematize the ME approach. Finally, I join the two and show how the mixed embeddedness of immigrant entrepreneurs at each stage of the entrepreneurial process explains their response to changing opportunity structures.

The concept of entrepreneurship is defined differently in the literature, following the Schumpeterian definition (Schumpeter, 1934), but most commonly as “an activity that involves the discovery, evaluation and exploitation of opportunities to introduce new goods and services, ways of organizing, markets, processes, and raw materials through organizing efforts that previously had not existed” (Shane, 2003). It is a “new business creation in any organizational form or context, such as new start-ups, internal corporate venturing, and joint interorganizational ventures” (Van de Ven and Engleman, 2004), and independent business

ownership which is usually operationalized as self-employment (Portes and Zhou, 1996). In this dissertation I consider entrepreneurship as broader patterns of ‘everyday entrepreneurship’ which may or may not include innovative elements during initial or later stages, which allows for acceptance and understanding of the diversity of entrepreneurship (Welter *et al.*, 2016).

Immigrant entrepreneurship is a very broad and complex concept. Often, the term is used interchangeably with ethnic entrepreneurship (Aldrich and Waldinger, 1990), which is related to ethnic groups who may or may not be immigrants (Ma *et al.*, 2013). For example, in Sweden, some ethnic minority groups are not always immigrants but may belong to the indigenous population (e.g. Efendic, 2016). Minority entrepreneurship (Chaganti and Greene, 2003) may also include immigrant entrepreneurs as well as natives who are not considered part of the majority in society in terms of ethnicity, gender or citizenship, who usually encounter barriers to regular employment because of a lack of proper education or skills (Bates, 2011). Closely aligned with immigrant entrepreneurship is transnational entrepreneurship, which focuses on entrepreneurship in a cross-national contexts (Drori, Honig and Wright, 2009). Transnational entrepreneurs are embedded in the contexts of two or more countries (Bagwell, 2018). International entrepreneurship instead focuses on a firm level of research, and studies value creation in the organization of opportunity exploitation across borders (Godesiabo, 2005; Oviatt and McDougall, 2005). Returnee entrepreneurship (Evansluong, 2016; Filatotchev *et al.*, 2009) relates to those immigrants who return to their home country after business experience or study in a foreign, often developed, country and start and run their own business in their home country (Bai, 2017). Expatriate entrepreneurship (Efendic, 2016) instead investigates those opportunity-driven immigrant entrepreneurs aiming for fast growth in a global market rather than a specific host country. Immigrant entrepreneurs are those who have recently arrived, start, and run a business in the host country (Kloosterman, 2003; Aliaga-Isla and Rialp, 2013).

These definitions of immigrant entrepreneurship do not always fulfil the assumptions of the entrepreneurial ‘nexus’ (Shane and Venkataraman, 2000). Therefore a broad range of the ‘other’ entrepreneurs are missed in mainstream entrepreneurship research, which is restricted and dichotomizes innovative and prosperous entrepreneurs of the Silicon Valley type (Baker and Welter, 2017; Welter *et al.*, 2016). Even though a large proportion of entrepreneurs in Silicon Valley are of immigrant origin (Kerr and Kerr, 2016), the innovative group of the immigrant entrepreneurial population remains small. The majority of immigrant entrepreneurs are ‘everyday’ entrepreneurs.

Instead of focusing only on successful immigrant entrepreneurs (Ndofor and Priem, 2011), in this dissertation, I consider a broader definition of immigrant entrepreneurship as those who were born outside a host country, started and run their own business in the host country and may or may not be innovative. This definition covers 'everyday entrepreneurship', which has been shown to be of practical and theoretical importance (Welter et al., 2016), including such distinct groups as 'portfolio' entrepreneurs (Carter and Ram, 2003) or the 'false' self-employed (Vershina et al., 2018; Woolfson and Likic-Brboric, 2008). Immigrant entrepreneurs are diverse and unequally distributed in terms of income performance. Not all of them contribute to economic growth; some contribute socially (Jones et al., 2018). The definition above allows for the investigation of different categories of immigrant entrepreneurs facing the great challenge of increasing economic and social inequality (Baker and Powell, 2016). Summarizing the broader definition of immigrant entrepreneurship, which includes both most innovative and 'everyday' entrepreneurs, allows for an investigation into the diversity of entrepreneurial responses to changing opportunity structures in the specific context of a high-income welfare state.

Opportunities are defined as situations in which people believe that they can generate a profit by recombining resources in a specific, often new, way (Shane, 2000, 2003). Usually two types of opportunities are distinguished (Shane, 2003) – the Schumpeterian (1934) (radically new) and the Kirznerian (1973) (improvement of existing). Continuous technological, political/regulatory, or social changes provide new opportunities, which entrepreneurs can recognize. The ability to recognize and exploit an opportunity depends on personal characteristics of entrepreneurs such as previous knowledge (Shane, 2000) and access to asymmetric information (Shane, 2003). The nature and kind of existing opportunities also defines the entrepreneurial reaction to them (Gartner, 1985; Shane, 2003). As Gartner (1985, p. 696) put it, "entrepreneurs do not operate in a vacuum, they respond to their environments". Thus, the nature of entrepreneurial opportunities and the reaction to them are often defined by their embeddedness in social structures (Granovetter, 1985). The social structures are formed according to formal and informal rules (Williamson, 2000) and create the context for entrepreneurship (Welter, 2011).

Taking a broader view, the context includes the four levels of institutional factors distinguished by the New Institutional Economics (Williamson, 2000). The cultural characteristics and informal institutions are among those that are less changeable, often taken for granted, and those that play an important role in the ethnic social networks. Social networks as a structure

play a crucial role in the ability of immigrant entrepreneurs to raise resources (Portes, 1995). The context and opportunity structures are interrelated in this dissertation, in that changes in the context (e.g. governmental policy) may influence demand (opportunity structures) for immigrant entrepreneurs.

Entrepreneurship as a 'reaction to opportunities' is dynamic and considered as a process (Shane, 2003). There are rather different definitions of a process and specifically the 'entrepreneurial process'. Kirzner (1985, p. 68) defined the entrepreneurial process as "entrepreneurial discovery, invention, and innovation through which long-run economic growth is stimulated and nourished". Models of the entrepreneurial process consist of components and duration (Gartner, 1985). The components part includes opportunities, individuals with their characteristics and context, while duration means the continuation or sequence of stages (Gartner, 1985). Gartner's model includes six following stages of the entrepreneurial process – locating a business opportunity, accumulating resources, marketing products and services, production, building an organization, and responding to regulatory and social changes. The last stage of Gartner's (1985) model suggests that the entrepreneurial process responds to institutional changes, but the model only weakly explains how and why immigrant entrepreneurs respond to the institutional changes, while also lacking an explanation of interrelations between individuals and opportunities.

Shane (2003) explained the interrelations between individuals and opportunities by stressing the 'individual-opportunity nexus'. Shane's (2003) general theory of entrepreneurship distinguishes the following stages of the entrepreneurial process: discovery and exploitation of opportunities, acquisition of resources, entrepreneurial strategy, and the organizing process. Baker et al. (2005) extended the model to include an initial stage of comparative discovery, useful for explaining the immigrants' choice of a destination country as the opportunity structures vary among countries (Baker, Gedajlovic and Lubatkin, 2005). The general entrepreneurship theory also relates the entrepreneurial process to the economic, political and cultural context, called the institutional environment. Shane (2003) distinguished the economic environment (wealth, economic stability, capital availability and taxation), the political environment (political freedom, property rights and the centralization of power), and the socio-cultural environment (desirability of entrepreneurship among members of society, entrepreneurial role models, specific cultural beliefs). The social structures restrict the economic actions to legitimate and acceptable (Shane, 2003). Economic environment factors such economic growth and economic stability and lowering taxation rates increase the level of opportunity exploitation. Nevertheless,

Shane's (2003) theory focuses on the innovative entrepreneurs and misses out the 'everyday' type of entrepreneurship (Welter et al., 2016), which is mostly covered in this dissertation.

The majority of process scholars have an in-depth qualitative view, but in this dissertation, I use Delmar's (2005) approach, which suits well for quantitative study and register based data. Delmar's approach to the entrepreneurial process includes two major components – 'existing opportunities' and 'enterprising individuals' (Delmar, 2005). According to the approach, the entrepreneurial process starts from a disequilibrium, which is a "source of both new opportunities and enterprising individuals prepared to exploit them" (Delmar, 2005, p. 58). The main assumption for disequilibrium is that "individuals try to maximize profits, that information and resources are randomly distributed, and that the process is independent from its historical and cultural context" (Delmar, 2005, p. 58). Even though the assumptions rarely hold, because the entrepreneurial process is embedded in a socio-institutional context (Granovetter, 1985), distribution of resources correlates to immigrants' background and individual characteristics, and access to information depends on social networks (Portes, 1995). The Delmar's (2005) approach distinguishes three areas of investigation, namely the 'start of independent firms', the 'early development of the new firms', and the 'evolution of new organizational forms and population', which form the basis of the entrepreneurial process. Delmar (2005) investigated how different entrepreneurial opportunities and individual entrepreneurs evolve over time and under different conditions. The approach combines entrepreneurial theory with evolutionary theory to explain a firm's ability to adapt to a changing environment. Only adaptable firms 'survive' longer. The adaptation can be voluntary or due to an initial fit into the environment (Delmar, 2005). Thus, three major stages of the entrepreneurial process can be distinguished – the initial stage of a new firm's organization – 'entry', the developmental stage of adapting the existing firm, which I call the 'performance' stage (see also Shane, 2003) and 'exit'. The final stage of 'exit' can happen because of failing to adapt to the changing environment or due to a better option such as new entry or regular employment (Wennberg, 2009). The main drawback of this theoretical approach remains the unclear interrelation between entrepreneurial action and the changing environment, in other words it lacks the 'effect of embeddedness' (Jack and Anderson, 2002). Entrepreneurial process as economic activity is embedded into social networking, "its initiation, continuity and dissolution" (Johannisson, Ramírez-Pasillas and Karlsson, 2010, p. 297). I argue that the firms adapt differently to the environment at each named stage of entry, performance and exit. To

further develop my argument, I turn to the mixed embeddedness theoretical approach (Kloosterman, 2010; Kloosterman et al., 1999; Ram et al., 2016) in the subsection 2.2.

Van de Ven and Engleman (2004) distinguished process-based and variance-based approaches in the entrepreneurial process research. They criticized assumptions behind the variance-based approach and advocated the ‘process-based’ narrative approach with a focus on ‘entities’ changing over time (Van de Ven and Engleman, 2004). Nevertheless, they also recognized that the narrative approach is often subjective while “the variance approach represents the basic, objective approach of social science” (Van de Ven and Engleman, 2004, p. 351), which can be appropriate for study of the entrepreneurial process. Nevertheless, they also suggest variabilization of the process, as they put it: “Deriving a variance theory requires the researcher to construct the development and change process in a particular way. This construction emphasizes those aspects of the phenomenon amenable to variabilization and may also require translation of concepts into variable forms” (Van de Ven and Engleman, 2004, p. 356).

The life cycle approach, as an alternative to the entrepreneurial process theory, also suggests that including organization in different stages into the same sample is the same as assuming that differences between “very young ones, some middle-aged ones, some senior-citizen ones, and some very elderly ones” are unimportant (Kimberly and Miles, 1981, p. 4). The life cycle theorists distinguish the same three stages of the organizations’ existence – organizations are (i) created (entry), (ii) grow or stagnate or revitalize (performance) and (iii) go from the scene (exit). However, death is not inevitable in the organizational life cycle, and the life cycle approach was not empirically supported (Kazanjian and Drazin, 1990; Kimberly and Miles, 1981).

Literature on mainstream entrepreneurship explains the mechanism of entrepreneurial response to changes in institutional context via the effect of embeddedness on the entrepreneurial process (Jack and Anderson, 2002). Still, there is no clear explanation why and how immigrant entrepreneurs respond to the changing opportunity structures due to changes in institutional context. Baker, Gedajlovic and Lubatkin, (2005) argued that the entrepreneurial process has ‘under-socialized assumptions’ about entrepreneurial opportunities and the entrepreneurs themselves. When Shane (2003) writes about external environment, he overlooks the importance of cultural resistance which impedes the economic forces. This resistance is called the embeddedness of the economy in society (Krippner et al., 2004). A drawback of the theory is that it does not consider the diversity of entrepreneurs, including cultural diversity related to

the group of immigrants who more often tend to be entrepreneurs in society. A summary of different entrepreneurial process theories is presented in Table 1.

Table 1. Summary of theories on stages and entrepreneurial process

Study	Entry				Performance	Exit
Gartner, (1985)	Locating a business opportunity	Accumulating resources	Marketing products and services	Building an organization	Production	-
	Responding to government and society					
Shane, (2003)	Discovery and exploitation of opportunities	Acquisition of resources	Entrepreneurial strategy	Organizing process	Growth as an indicator of performance	Survival is an indicator of performance
(Delmar, 2005a)	Initial adaptation to institutional environment				Adaptation via development	Failure to adapt
(Johannisson <i>et al.</i> , 2010)	Initiation				Continuity	Dissolution

Entrepreneurial process theory is well-developed and emphasises dynamics via different stages. Nevertheless, the theory considers contextual embeddedness unsystematically, especially at the meso level. In the next sections, I present and discuss the mixed embeddedness approach, which emphasizes multilevel embeddedness of entrepreneurship.

2.2. Mixed embeddedness theoretical approach

The complexity of immigrant entrepreneurship has been explored with the mixed embeddedness theoretical approach (ME) (Evansluong, 2016; Jones et al., 2014; Klinthäll et al., 2016; Kloosterman, 2010; Kloosterman et al., 1999, 2016; Mitchell, 2015). The ME approach is particularly broad in scope by considering both demand and supply sides of immigrant entrepreneurs (Jones and Ram, 2012; Kloosterman et al., 1999). It matches together economic and social relationships to contextualise immigrant entrepreneurship (Ram et al., 2013, 2017). ME hence considers economic factors embedded in social structures at three levels – institutions at the macro level, social networks, often localized in neighbourhoods of cities, at the meso level, and human capital resources of entrepreneurs at the micro level (Kloosterman, 2010; Kloosterman et al., 2016). Is mixed embeddedness a complete theory? It has alternatively been labelled ‘an approach’ (Kloosterman and Rath, 2018), ‘a model’ (Kloosterman et al., 2016) or ‘a conceptual framework’ (Kloosterman, 2013). Philosophy of science defines a ‘model’ as a formal and often mathematically described interrelation of explanatory factors or variables, while a ‘theory’ explains ‘why things happen’ (Lave and March, 1993; Steuer, 2003). Therefore, I believe mixed embeddedness should be considered a (theoretical) ‘approach’ rather than a (mature) theory or a (mathematical) model.

As the introduction emphasizes, the increasing number of immigrants in Western welfare states is challenging policy makers to effectively regulate immigrant entrepreneurship. Therefore, it is crucial to understand how and why immigrant entrepreneurs respond to a changing macro institutional environment, also called opportunity structures. As follows from the introduction, the ME approach is well suited to explaining the interconnections between macro-level contexts and individual entrepreneurial responses. According to the mixed embeddedness approach, immigrant entrepreneurs are ‘embedded’ in the institutional framework of a host country. The institutional framework changes over time, gradually or radically (North, 1990, 1993; Williamson, 2000). Some institutions and policies aimed at decreasing entry barriers to entrepreneurship create new opportunities (Bates, 2011). Nevertheless, ME approach in less extend considers a gradual change of macro institutional context, and not systematically explains how immigrant entrepreneurs respond to the change. I argue that immigrant entrepreneurs respond differently to institutional changes at different stages of the entrepreneurial process. Those in the initial entry stage might see opportunities differently compared to those at the stage of growth, also called performance, and differ from those in the

final stage who have decided to exit. The stages approach has not been systematically addressed within the ME approach before. While ME posits that immigrant entrepreneurial actions are embedded in institutions and social structures, also called ‘opportunity structures’ (Kazlou and Klinthall, 2019; Kloosterman *et al.*, 1999), it says little about how immigrants respond when the opportunity structures change over time and at different stages of the entrepreneurial process (Vinogradov and Elam, 2010). For example, an immigrant entrepreneur can decide to enter a high-skilled, growing segment as a consequence of entry barriers decreasing. Immigrant entrepreneurs might perform better because of a support programme that was adopted by government (Andersson Joona and Nekby, 2012) or exit due to recognizing new opportunities (Wennberg, 2009). Immigrant entrepreneurs may adjust to the new environment via acquiring financial resources, entrepreneurial experience and developing stronger social network resources. This theoretical prediction may be in line with the empirical findings of Kloosterman *et al.* (2016) for the Netherlands and Edwards *et al.* (2016) for the UK.

2.2.1. Institutional context

At the macro level, the ME approach considers institutional factors elaborated within the New Institutional Economics theory (Williamson, 2000), including both formal and informal ‘rules of the game’ (North, 1990). The ‘rules’ represent both constraints and boundaries, but also enablers and encouragers of human behaviour applied to entrepreneurship. The formal institutions include constraints officially accepted and enforced by the state such as laws, property rights and regulations (North, 1990), which can be more easily affected by decision-makers. The informal institutions consist of social factors such as culture and social norms. These are non-codified rules of behaviour, values and norms accepted in society and controlled by private persons or their networks. The informal institutions are less easily affected by decision-makers and generally change much more slowly (Kim, Wennberg and Crodieu, 2016; Williamson, 2000). Some formal regulations may predefine entry or exit thresholds via official policies and laws, while informal institutions may affect entrepreneurs via consumer discrimination or (dis)trust. The formal and informal institutions have differing paces of change. Governments can suddenly change formal institutions such as policies or regulations. The informal institutions, such as cultural traditions or attitudes, transform slowly in society. The institutional theory offers a good explanation of how institutional changes influence entrepreneurship (Davidsson, Hunter and Klofsten, 2006).

The institutional context in the ME approach is defined in a similar way to the definition offered by comparative institutional theory (Esping-Andersen, 1990) and the varieties of

capitalism theory (VoC) (Hall and Soskice, 2001) – that the external institutional factors created by national governments structure economic activities and behavioural norms, expectations and entrepreneurial strategies (Hall and Soskice, 2001, Hall and Gingerich, 2009). Entrepreneurs become embedded in the interrelated and complementary institutions of product, labour and financial markets. An institutional environment with strong trade unions, which inhibit firing, offers efficiencies through returns on specific human capital investments over a prolonged period of stable employment. The institutions frame the opportunity structure (Rath and Kloosterman, 2001, Ram, Jones and Villares-Varela, 2016, Waldinger, Aldrich and Ward, 1990).

The opportunity structure concept is part of ME. It was initially developed in sociology (Roberts, 1970, Roberts, 2009), assuming that family, education and labour market factors predefine options for individuals' further job transfer. The concept then became part of the research on ethnic entrepreneurship and was used synonymously with the 'structure of opportunities' (Waldinger et al., 1990, p. 21). The opportunity structure includes market conditions for (non-)ethnic products/services and access barriers (Waldinger et al., 1990) and depends on state policies and inter-ethnic competition (Aldrich and Waldinger, 1990). In the ME approach, the opportunity structure refers to the demand side of the market as a macro-level concept. As Kloosterman put it, "*different welfare regimes create different economic opportunity structures (types and sizes of economic sectors) because of their distinct ways of interfering with the labour market*" (Kloosterman, 2000, p. 92). Opportunity structures as market conditions are limited to distinguishing only between ethnic and mainstream/non-ethnic markets (Mitchell, 2015). Macro-level opportunity structures are defined by the varieties of capitalism theory (Hall and Soskice, 2001), while meso-level opportunity structures refer to urban economies (Kloosterman and Rath, 2018). I consider them as parts of ethnic and family social networks. Embeddedness shows links between micro-level individual entrepreneurs' characteristics and the meso- and macro-level opportunity structures.

The opportunity structure concept differs from the concept of (entrepreneurial) opportunities, which has been discussed in depth by e.g. Shane (2000, 2003). Davidsson (2015) distinguished three levels of analysis within the opportunity concept: 'external enablers', referring to factors regulating the supply of opportunities, and on the micro level 'new venture ideas', referring to individuals' perception of such opportunities, and 'opportunity confidence', referring to the attractiveness of some stimulus to spur an individual to act on a perceived opportunity. Some studies consider opportunities as 'the emerging ventures and ideas' on a micro level (Klofsten, 2005), and others have considered opportunities as endogenously created within the mixed

embeddedness framework (Evansluong, 2016). In this dissertation, I primarily consider the broader ‘opportunity structures’ as an external macro construct relating the supply of opportunities and demand for entrepreneurs, rather than attending to how individuals perceive and act on opportunities per se. I refer to opportunity structures in terms of the institutional environment, such as regulations and policies, which is similar to other researchers (Aldrich and Waldinger, 1990; Kloosterman, 2003; Kloosterman et al., 1999), and similar to the notion of ‘external enablers’ (Davidsson, 2015).

Changes in the institutional context at the macro level (North, 1993) influence the opportunity structures. Immigrant entrepreneurs respond to the changes by recognizing and exploiting opportunities. However, opportunity recognition strongly depends on micro-level individual characteristics, such as prior knowledge (Shane, 2000), experience, level and background of education. The ability to recognize and exploit opportunities even more depends on immigrants’ social capital, which may provide access to valuable information, labour and financial capital (Portes, 1995).

In the next sub-sections, I consider in detail how social and human capital serves opportunity recognition by immigrant entrepreneurs.

2.2.2. Social capital

At the meso level, ME considers social and ethnic capital (Klaesson and Larsson, 2014). Heterogeneous social networks of immigrants usually in large cities provide easier access to valuable resources, ease information flow and may boost creativity (Florida et al., 2016, Jacobs, 1969, Portes, 1995). Different ethnic groups of immigrants who share their cultural and religious norms interconnect in cities with other ethnic groups and with the host society and become ‘embedded’ in social relations (Kloosterman et al., 1999). This process is often called *“Social embeddedness...a process of becoming part of the structure. However, it is more than simply developing social networks. Embeddedness involves understanding the nature of the structure, enacting or re-enacting the structure, which forges new ties, and maintaining both the link and the structure. As a process, this entailed developing credibility and acquiring knowledge of how business is conducted”* (Jack and Anderson, 2002, p. 468).

Lin (1999) defined social capital as “investment in social relations with expected returns” and distinguished two important parts of the social capital – resources and structure. The former answers the question of *what (what kind of resource)* one can achieve via a social connection and the latter answers the question of *how* (which strong or weak ties one has to activate or

where in the social connections' structure) one can obtain the necessary resources. Lin (1999) further distinguishes between structural (what resources are available in the stock of social network) and positional (what position an individual has – e.g. cultural, ethnic strata) variation. Following this logic, I address the question of *how* (related to structure in the general model) by investigating immigrants' connection to family and co-ethnic groups. This provides two forms of social capital related to the structure of key relevance for my thesis – *ethnic capital* and *family capital*. Ethnic capital has been described by Borjas (1992), for instance, and family capital by Bird and Wennberg (2016) and Evansluong and Pasillas (2017). Lin (1999) primarily discussed how different resources available within social networks such as “wealth, power, and status”, as well as other resources such as land, physical capital, human capital, information and entrepreneurial abilities can be reached via a social network. Combining the two important components of social capital theory defined by Lin (1999), namely structure and resources, with the two types of social connection (family and ethnicity) gives new theoretical constructs within social capital. *Ethnic entrepreneurial capital* is part of social capital, which is ethnic regarding *structure* and entrepreneurial in terms of *resource*. *Immigrants* can access the ethnic entrepreneurial capital within their ethnic social network. This theoretical construct allows the operationalization of different types of social capital for quantitative research (see Papers B and D). I discuss operationalization of social capital in the methodological section.

Kim, Wennberg and Croidieu (2016) explain the intermediating role of social capital in the micro adjustment of individuals in response to the macro regulation changes (top-down) as well as the impact of individuals via social groups on the institutions (down-top). Even though the social capital of immigrants has been intensively investigated (Portes, 1995), the role of social capital in the adjustment of policy is still understudied.

Borjas (1992) defined ethnic capital as an externality of human capital, and found that the average level of skills of certain ethnic groups depends on the previous generation's skill level in this ethnic group. Portes (1995) described ethnic resources as “*socio-cultural features of whole group which co-ethnic entrepreneurs actively utilize in business or from which their business passively benefits. Ethnic resources include an ethnic culture, structural and relational embeddedness, social capital, and multiplex social network that connect the entire group*”. Merging the definitions of ethnic capital as an externality of human capital (Borjas, 1992) with Portes' (1995) ethnic resources and theory on social capital (Lin, 1999), I define ethnic social capital as an access to different types of resources embedded in ethnic groups and accessible to individuals of the same ethnic background. Based on the above discussion, the ethnic capital

consists of two parts: the ethnic (structural component defines accessibility of resources) and social (type of capital). I argue that ethnic social capital explains how (via access to the ethnic group's resources – knowledge, skills, entrepreneurial experience, finances) and where (in traditional ethnic or post-industrial sectors) immigrants recognize and exploit opportunities. Ethnic social capital also affects immigrant business duration and success.

Family capital is also a part of social capital and, by analogy with the ethnic capital, can be divided into three parts: family financial capital, family human capital, and family entrepreneurial capital. *Family financial capital* represents financial resources accessible within a family network, including the incomes of family members (Bates, 1997, 2011). Family (and ethnic) financial capital represents an important alternative to the financial capital available on formal financial markets, because immigrants often suffer from restrictions and discrimination on the financial markets (Aldén and Hammarstedt, 2016). As immigrants have limited access to regular financial institutions, family financial capital supports the length of time in business (Aldrich and Kim, 2007; Light and Rosenstein, 1995).

Family human capital represents the average educational level of all adult family members in a household (Bird and Wennberg, 2016). Human capital in the form of education is a central factor for successful entrepreneurship (Unger et al., 2011), perhaps in particular for ethnic minorities (Bates, 1990). Longer education often comes with higher literacy and financial literacy, as well as a cognitive resource base to better assess the viability of new ideas such as those initiated by early-stage entrepreneurs (Shane, 2003). Higher levels of human capital also allow immigrants to better assess profitable market niches (Kloosterman, 2010), which can affect their likelihood to sustain themselves as self-employed entrepreneurs. Here, family members' human capital is important since family members are those with whom the entrepreneur shares his ideas and discusses entrepreneurial plans (Aldrich and Cliff, 2003). However, human capital in the form of formal education varies strongly among immigrant families and family members, meaning that the average level of education within a family approximates the shared cognitive resources that self-employed immigrant entrepreneurs can draw upon from their family (Bird and Wennberg, 2016).

Family entrepreneurial capital represents the entrepreneurial experience of family members living in the same household as an entrepreneur or of extended family. Extended family includes cousins, uncles, aunts and other family members (Andersson and Hammarstedt, 2010; Bird and Wennberg, 2016). Family members possessing entrepreneurial experience are able to

give suggestions and constructive advice and share valuable information with relatives in a family (Bird and Wennberg, 2016; Sanders and Nee, 1996). Sanders and Nee (1996) and Özcan (2011) have shown the importance of family relations in sharing entrepreneurial experience.

Other researchers have shown that geographic distance restricts access to social capital. As such, social networks are strong within neighbourhoods of cities (Jacobs, 1961, 1969; Robert J. Sampson, 2012). Feldman (2006) shows that social networks and interrelations with natives, in particular, can be of importance for the entry into and success of entrepreneurship in the ICT sector in Sweden. Large cities may offer small distances between agent-entrepreneurs in diverse neighbourhoods (Portes, 1995), thus supporting the development of local ecosystems that benefit entrepreneurial activities. In addition, Zhou (1998) stressed the importance of geographical location to immigrants from China running a business in ethnic communities. This further bears witness to their embeddedness in ethnic social capital in a spatial proximity (Andersson, 2018).

2.2.3. Individual Characteristics

At the micro level, the ME approach considers individual resources that immigrants bring to the host country such as human or financial capital. Immigrant entrepreneurs usually lack financial capital. Therefore, ME considers it to be at a constantly low level (Kloosterman, 2010). Human capital includes knowledge, skills and abilities, health and other individual characteristics (Becker, 1975; Dimov, 2017; Marvel, Davis and Sproul, 2016). I argue that it affects recognition of opportunities at each stage of the entrepreneurial process – entry, performance and exit.

The mixed embeddedness approach (Kloosterman, 2010) explains the role of formal education in entrepreneurship for different industries. Highly educated and skilled immigrants are able to employ the ‘break-through’ strategy and overcome entry barriers to innovative and growing sectors, such as ICT (Baycan et al., 2012). The type of formal education affects industry choice (Urban and Schölin, 2017). Lofstrom et al. (2016) found that low-skilled individuals tend to start business in highly standardized industries, while high-skilled entrepreneurs enter industries with diversified production. According to (Lazear, 2005), ‘generalists’ have a higher propensity to start and run an entrepreneurial enterprise, while ‘specialists’ tend to be in wage-employment.

2.2.4. Diversity and opportunity change

The mixed embeddedness approach usefully considers diversity of immigrant entrepreneurs by clustering their industries in two dimensions – required level of human capital and growth potential (see figure 1) (Kloosterman, 2010, Kloosterman, Rusinovic and Yeboah, 2016). Immigrant entrepreneurs may turn to one of the segments that define their strategy and perspectives (Rath and Swagerman, 2015). ME contrasts opportunities within expanding post-industrial and stagnating traditional industries. It assumes that well educated immigrants tend to recognize opportunities in ‘expanding post-industrial’ segments such as ICT, finance, real estate, media, tourism and entertainment (Rath and Swagerman, 2015). The less educated immigrants turn to stagnating ‘low-end’ market segments with limited economic prospects. The post-industrial expanding segments can include sub-segments with both low and high entry thresholds, in terms of required human capital. The mixed embeddedness approach considers vertical mobility of immigrant entrepreneurs between stagnating and growing markets, which occurs either for the same generation of entrepreneurs over time (Rusinovic, 2006) or as intergenerational mobility (Andersson and Hammarstedt, 2010; Klinthäll and Urban, 2014). Ethnic social capital plays a more important role in the intergenerational mobility of children whose parents are recent immigrants (Borjas, 1992). Intergenerational mobility of immigrants in the labour market (Borjas, 1992) and intergenerational mobility of immigrant entrepreneurs (Baycan et al., 2012) are particular cases of a more general response by immigrants (upward-downward mobility) to changes in opportunity structures.

The vertical mobility may explain immigrant entrepreneurs’ choices of industries as a ‘break-through’ strategy of immigrant entrepreneurs according to the mixed embeddedness approach (Kloosterman, 2010, Kloosterman, Rusinovic and Yeboah, 2016). The movement from the ‘low end’ of a traditional market into an expanding post-industrial segment indicates upward mobility; a successful breakthrough of immigrant entrepreneurs (Kloosterman, 2010). A typology of industries that considers two dimensions – human capital and industry growth potential – was suggested by Kloosterman (2010), see Figure 1. Kloosterman (2010) argued that immigrant entrepreneurship follows the dynamic of the particular industry. For example, if immigrants start a business in a growing and highly innovative industry, their businesses will also expand. Nevertheless, the ME approach holds that immigrant entrepreneurs primarily rely on the ‘vacancy chain’ strategy in the ‘low-end’ markets with low entry barriers in terms of required human capital. As such, ME distinguishes two types of opportunities: expanding and stagnating. Immigrant entrepreneurs respond to the change in opportunity structures by

acquiring considerable human as well as social capital resources to undertake ‘upward mobility’ (Kloosterman, Rusinovic and Yeboah, 2016).

Human Capital Threshold	H i g h		Post-industrial/high-skilled
	L o w	Vacancy-chain openings	Post-industrial/low-skilled
		Stagnating	Expanding
Growth Potential			

Figure 1. A typology of the opportunity structures (Kloosterman, 2010)

The high diversity of immigrant entrepreneurs requires clear classification with respect to ME as part of operationalization and quantitative analysis. ME suggests four segments of immigrant entrepreneurs in two dimensions of entry threshold and growth potential. Highly qualified immigrants enter either growing sectors as a ‘breakthrough’ into mainstream markets (Kloosterman, 2010) or a stagnating sector. Low-educated immigrants more often use a ‘vacancy chain’ strategy, entering marginal ethnic segments or post-industrial low-skilled industries such as services (Rath and Kloosterman, 2001).

Mitchell (2015) stressed that ME research lacks analyses of the growth phase. Some empirical studies consider exit from entrepreneurship by immigrants as an indicator of performance (Kloosterman et al., 2016) or business failure, since exit could be the result of failure as well as success.

2.3. Mixed Embedded Entry, Performance and Exit

Developing a theoretical approach that explains how immigrants respond to changing opportunity structures is important because the entrepreneurship literature is fragmented and the response in the three stages of the entrepreneurial process is under-researched, especially with institutions changing gradually. A basic tenet in this dissertation is that institutional change has an important but not necessarily linear effect on entrepreneurial response in each of the three stages – entrepreneurial entry, performance and exit. Entrepreneurial immigrants exploit opportunities within social settings (Baker et al., 2005; Shane, 2003), in other words ‘embedded’ in the social and institutional context. Therefore, changes in the surrounding context may influence why and how immigrants start a business, how they perform and why they exit. The use of a mixed embeddedness approach in the three stages inspired by the entrepreneurial process theory (Delmar, 2005; Shane, 2003) leads to a number of theoretical and empirical advantages. ME can explain how immigrants respond to changes in macro-level institutional regulation via individual efforts and raising knowledge and resources from their social networks in each stage of entry, performance and exit. The ME approach provides the ability to analyze the three stages on different levels of analysis. This is especially important for understanding the relationships between changes on macro levels, via adjustments to meso social networks and outcomes on an individual micro level. Research into immigrant entrepreneurship distinguishes three types of entrepreneurial process model – static, stages and dynamic (Vinogradov and Elam, 2008, Aliaga-Isla and Rialp, 2013). Vinogradov and Elam (2008) proposed a model of the entrepreneurial process for immigrant entrepreneurship which explains how an immigrant entrepreneur creates a new venture. The process in the model includes discovering an opportunity, exploiting the opportunity, acquiring resources and creating a new venture. The limitation of this model is that it says little about embeddedness of the performance and exit stages. While some studies included the exit rate (Kloosterman et al., 2016), applying the mixed embeddedness model, and others focused on the entry part of the venture creation process (Vinogradov and Elam, 2010), there was systematic distinguishing of mixed embeddedness in the three stages of the entrepreneurial process.

In mainstream entrepreneurship research, the concept of the entrepreneurial process initially consisted of the entry stage – recognition of opportunities and creation of a new venture (Shane, 2000; Shane and Venkataraman, 2000). Others considered growth as a performance stage

(Delmar, 2005; Wiklund, Davidsson, and Delmar, 2003). Wennberg (2009) studied exit and argued that it constitutes an essential part of the entrepreneurial process. I follow the three stages of the entrepreneurial process as a theoretical concept and argue that each stage is mixed embedded in social and institutional structures, which are interrelated. The influence of institutional changes on individual outcomes in terms of entry, performance or exit via social meso-level embeddedness should, in a similar way to Coleman's model (Coleman, 1986; Hedström and Wennberg, 2017), be considered within the social frameworks.

I argue that considering the three stages lumped together in the mixed embeddedness approach might be misleading, as immigrant entrepreneurs differ significantly in their outcomes in each of the stages. Immigrant entrepreneurs differ in which industry they choose to enter, level of performance and duration (Kloosterman et al., 2016), and reasons for exit, in terms of their aims and social embeddedness. For example, many recent immigrants may try to 'enter' growing industries such as ICT, but their duration in the business might be short. Nevertheless, a study based on the current ME approach, avoiding the stages, might erroneously conclude that immigrant entrepreneurs 'break through' into a growing industry, while only a few remain. On the other hand, immigrant entrepreneurs might have low or high performance because of changing policy, which might not be captured without distinguishing the performance stage. Similarly, a policy change may influence a decision to enter a specific industry or exit because of better opportunities. Such interrelations may remain hidden when the stages are pulled together. While there are different models, I consider the most complete model to be one that includes three stages from starting a business, through performance and exit.

The dynamics in the entrepreneurial process approach represent shifts in the three stages of the entrepreneurial process – entry, growth/performance and exit (see Figure 2). I argue that factors of mixed embeddedness differently impact immigrant entrepreneurs in each stage of the entrepreneurial process. Immigrant entrepreneurs respond to changing opportunity differently in each stage of entry, performance and exit. The relationship between human capital and entrepreneurial entry is not linear. For example, the occupational choice model (Lucas, 1978) shows that managers with higher human capital often prefer to become entrepreneurs rather than taking wage-employment. The model, however, lacks an explanation as to why some entrepreneurs with a low level of education enter entrepreneurship. Kloosterman (2010) contributed by showing that the level of human capital may impact individuals' choices about the industry in which they start a business. More able and skilled individuals enter growing post-industrial sectors that require a high level of education (e.g. ICT, consulting etc.) and low-

skilled entrepreneurs enter industries with low human capital thresholds, often stagnating ‘vacancy chain’ businesses. Immigrants might turn to entrepreneurship because of better opportunities than in regular employment or inactivity (pension, study etc.). They also might start a business because of regulations aimed at stimulating entrepreneurship or receiving unique information via social networks. In the entry stage, immigrant entrepreneurs recognize an opportunity and choose an industry (Kloosterman, 2010). The market/industry choice defines the future path for immigrant entrepreneurs within expanding or stagnating industries (Vinogradov and Elam, 2008). Paper B of the dissertation addresses the entrepreneurial entry of immigrants in the Swedish context with a focus on the industry of information and communication technologies (ICT). Entrepreneurial performance positively correlates to human capital (Unger *et al.*, 2011). Vertical mobility can also happen in the performance stage, when an immigrant entrepreneur reaches a higher level of earnings and can shift to another industry. Entrepreneurial exit also depends on human capital, as less able entrepreneurs quit faster, while entrepreneurs with a higher level of human capital stay in business longer. In the exit stage several strategies are possible (Wennberg, 2009). In general, any improvement in the exit stage can be seen as upward mobility, whether it is about a transfer to an expanding industry or income gains from selling a business. Institutional regulations can influence exit from entrepreneurship by facilitating or hindering it, shortening or prolonging the performance stage.

While the mixed embeddedness approach includes the macro institutional context, the institutional changes over time are under-represented. Based on the institutional change approach (North, 1990, 1993; Örnerheim and Wihlborg, 2014), I argue that the mixed embeddedness approach can be enriched by considering institutional change over time. Institutional change might change the opportunity structure, which directly or indirectly influences the entrepreneurial activity of immigrants. The impact of such changes can be captured by comparing institutional indicators in at least two time periods. Immigrant entrepreneurs who are in different stages of the entrepreneurial process are often lumped together within ME research, which might influence the results of analysis. Based on entrepreneurial process theory (Delmar, 2005; Shane, 2003; Wennberg, 2009), I propose considering the mixed embeddedness of immigrant entrepreneurs in the stages of entry, performance and exit separately.

Summary of the theories is presented in table 2.

Table 2. Summary of studies considering mixed embeddedness in different stages

	Theory: Mixed embeddedness through entrepreneurial process and institutional change	Research Questions
Diversity and Institutional context <i>(Applied in appended Paper A)</i>	Institutional change (North, 1990) (North, 1993) (Welter and Smallbone, 2012) Mixed embeddedness (Kloosterman, 2010) Human capital (Becker, 1975)	1) How do new immigrant entrepreneurs segment in a host country's institutional context? 2) How do segmentation patterns differ between two time points, when institutional context changes?
Entry and institutional change <i>(Applied in appended Paper B)</i>	Entrepreneurial entry Human capital (Becker, 1975) Social capital (Portes, 1998) Institutional change (North, 1990) (North, 1993); Mixed-embeddedness (Kloosterman, 2010)	How do 1) migration liberalization, 2a) location in metropolitan area, 2b) location in ethnically dense neighbourhood and 3a) level and 3b) type of education impact on the propensity to form digital start-ups among immigrants?
Performance and institutional change <i>(Applied in appended Paper C)</i>	Income performance Self-selection (Borjas 1998) Mixed embeddedness (Kloosterman, 2010)	How do immigrants' incomes from entrepreneurship change over time after the migration liberalization?
Exit from time perspective <i>(Applied in appended Paper D)</i>	Entrepreneurial exit (Wennberg, 2009); Family capital (Bird and Wennberg, 2016); Ethnic capital; Mixed embeddedness (Kloosterman, 2010)	How do 1) family (a) financial, (b) human and (c) entrepreneurial capital and 2) ethnic capital affect immigrants' exit from entrepreneurship?

CHAPTER 3. INSTITUTIONAL CONTEXT

The institutional context defines the ‘rules of the game’ (North, 1990) for immigrant entrepreneurs and impacts on the demand for entrepreneurs and the opportunity structure in a host country (Kloosterman, 2000, 2010), and as such it needs to be considered in immigrant entrepreneurship studies (Bates, 2011).

3.1. Swedish welfare state

Sweden constitutes an interesting case to study changes to the rules, because previous studies were mostly focused on an examination of immigrant entrepreneurship in two welfare state types, representing the neoliberal American model and the Continental European model (Esping-Andersen, 1990; Hall and Soskice, 2001; Kloosterman *et al.*, 1999). The Swedish institutional context represents a corporatist welfare state, similar to the other Nordic countries (Esping-Andersen, 1990; Hall and Soskice, 2001). The (neo-)corporatist regime is considered a ‘political exchange’ or cooperation between the state and trade unions (Hall and Soskice, 2001). However, the Swedish welfare state has been reforming since the early 1990s and today has many more features resembling those of neo-liberal market economies like the United States and United Kingdom (Welfare Commission, 2002). Of particular relevance for immigrant entrepreneurs are the reforms in social insurance systems (lower benefits for the unemployed) and deregulation of healthcare, social and elderly care, plus the educational sectors, leading to many more small businesses in these sectors (Sköld, 2015), many which are started by immigrants. Some authors argue that Sweden is “a small country with institutional obstacles to entrepreneurship, high personal tax levels and a rigid labour market” (Frykfors and Klofsten, 2011, p. 188). Different parties such as trade unions and organizations of employers negotiate in the Swedish labour market regarding wages and the working environment (Westin, 2000). In Sweden, the principle of social equity means that residing immigrants with permanent residency have access to the same social benefits as natives. For instance, immigrants can participate in adult education free of charge in Sweden and have opportunities to adjust their qualifications to labour market requirements. Compared to other countries, Swedish society arguably treats immigrants positively and Sweden is highly ranked in the labour mobility index

(Migrant Integration Policy Index; MIPEX 2015). While Sweden has a comparatively high ranking for labour mobility (MIPEX 2015), economic inactivity among non-EU immigrants still stands at around 23%, one of the highest figures in Europe (MIPEX 2015). Henrekson (2005) argued that Swedish welfare institutions such as the social security system provide disincentives for individual saving and individual wealth accumulation. Lower savings decrease opportunities for equity financing of start-ups and growing enterprises since bank financing is often not available. Among immigrant entrepreneurs, however, it is not uncommon for family members – even extended family members – to assist in the funding of new businesses (Bates, Bradford and Seamans, 2017; Bird and Wennberg, 2016). The alternative sources of income from social benefits may discourage entrepreneurial incentives and thus the rate of necessity entrepreneurship in low-income segments of the population, among which are many immigrants. The Swedish labour market, as governed by the Swedish Employment Security Act (LAS) from 1974, uses the ‘last in – first out’ principle, which protects employees from undue dismissal by employers. The high level of wage-employment security arguably thus decreases motives for less secure self-employment. Hjerm, (2004, p. 739), questioned the effectiveness of the Social Democratic welfare state in integrating immigrants into society.

Research suggests the prevalence of discrimination against immigrant entrepreneurs seeking debt funding to start a business internationally (Bates *et al.*, 2017), as well as in Sweden, (Ohlsson *et al.*, 2012b) and reported some discrimination against ethnic groups in the Swedish labour market (Carlsson and Rooth, 2007). Specifically, a recent study based on survey and register data of immigrants, in combination with a control group of natives, found that banks discriminated against immigrants in issuing loans on the financial market (Aldén and Hammarstedt, 2016). This may explain lower self-employment rates among some ethnic groups. However, customers in Sweden do not seem to discriminate against immigrant entrepreneurs in Sweden – at least not in the fast-food industry (Ahmed and Hammarstedt, 2018).

3.2. Recent changes in the Swedish institutional structure

While it has been argued that welfare states such as Sweden are relatively weak at promoting a ‘supply of entrepreneurial talent’ (Henrekson, 2005), some institutional changes, such as work and entrepreneurship-related migration policy liberalization in 2008 (Berg and Spehar, 2013)

may affect the supply of immigrant entrepreneurs by decreasing entry barriers. Moreover, Sweden implemented a number of labour market policies (not least acts on introduction and discrimination in 2009) and programmes to improve recognition of immigrants' education and skills. A labour market adaptation policy launched in Sweden in 2010 at national level showed a positive impact on the employment of immigrants, compared to the prior municipality-based policy (Andersson Joona, Wennemo Lanninger and Sundström, 2017). Beyond governmental introduction programmes, various employment and integration programmes have been run over the past few decades. These include a coaching programme to help new immigrants navigate the labour market, which was implemented in 2006 and was shown to be successful (Andersson Joona and Nekby, 2012). At the same time, immigrants are over-represented among the self-employed in Sweden (Andersson and Wadensjö, 2004) and some groups of immigrants tend to turn to self-employment during an economic downturn (Miao, 2015). Acceleration programmes and policies to promote entrepreneurship also encouraged entrepreneurship among immigrants in Sweden (Efendic, 2016). For example, the 'National Strategy for Regional Competitiveness, Entrepreneurship and Employment 2007-2013' promoted business start-ups and their access to financial capital. "Sweden shall be one of the best countries in the world in which to start up and run a business, where starting a business is an attractive proposition regardless of age or ethnic background" (Ministry of Enterprise, Energy and Communications, 2007, p. 14). A new law implemented in 2010 reduced the minimum requirement for share capital in private limited companies from SEK 100,000 to SEK 50,000, which encouraged self-employment among immigrants (Halvarsson, Korpi and Wennberg, 2018). Various other projects and programmes promoting entrepreneurship were launched in Sweden over the same period, for instance support for business start-ups, the provision of entrepreneurship education, advisory services for (potential) entrepreneurs, support for entrepreneurial networks, and programmes for target groups such as women entrepreneurs, and young entrepreneurs (Swedish Agency for Economic and Regional Growth, 2010). While Sweden traditionally relied on innovations by large companies, Swedish industrial policy has in latter years changed its orientation towards seeking more involvement of entrepreneurs in the innovation process (Frykfors and Klofsten, 2011). For instance, the Swedish Innovation Centre's programme aimed at entrepreneurship support in earlier public innovations contributed to the development of ideas (Norrmann and Klofsten, 2009).

Different groups of immigrant entrepreneurs respond differently to such institutional changes and new opportunity structures. As such, outcomes from institutional reforms may be different

and sometimes unexpected for some groups of immigrant entrepreneurs. For example, (Andersson and Jutvik, 2018) found that the number of refugees increased considerably when Sweden changed migration rules for asylum seekers by granting a permanent residence permit for Syrian refugees in 2013 instead of the previous temporary permit, and yet those with a temporary residence permit had higher employment rates over a short time perspective.

3.3. Migration policy liberalization in Sweden

The Swedish migration regime determines the flows and stocks. With liberal asylum rules, Sweden accepts refugees and their families on a large scale (Ohlsson, Bevelander and Broome, 2012). It attracted groups of refugees from Iraq, former Yugoslavia and Eastern Europe during 1990, from Africa and Middle Eastern regions in 2000. Many immigrants from Poland and Baltic States and other new EU countries came after EU enlargement in 2004 and 2007. Although it is important to consider the migration regime when explaining immigrant entrepreneurship (Efendic, 2016), less attention has been paid to the liberalization of migration rules for economic migrants in 2008 (Calleman and Herzfeld Olsson (eds), 2015; Ministry of Justice, 2008), specifically the new rule for immigrant entrepreneurs. The outcomes of the migration reforms were mostly assessed and discussed in literature from the perspective of regular wage-labour migration and employment in the Swedish labour market (Berg and Spehar, 2013; Emilsson, 2014; Forslund, Liljeberg, and Åslund, 2017; Wadensjö, 2015) or of refugees' employment (Calleman and Herzfeld Olsson (eds), 2015). Less attention has been paid to the impact of the migration policy on immigrant entrepreneurship, even though it played a key role in attracting immigrant entrepreneurs from non-EU countries to Sweden.

In December 2008, the Swedish government implemented a new law (SFS 2008:884), allowing immigrants temporary residence for a period of two years if they run their own business and are able to support themselves and dependent family members with incomes generated from the entrepreneurial activity. The temporary residence permit can be made permanent if immigrants continue their entrepreneurial activity after two years. The new migration regulation didn't have specific requirements regarding the amount of investment, as was the case in other countries (Efendic, 2016). While a migration policy attracting immigrant entrepreneurs was developed in various countries (see more (Efendic, 2016), the expected outcome of the migration policy liberalization in Sweden in 2008 was to attract more innovative immigrant entrepreneurs to the

country, who would create more jobs and contribute to employment in general, and the employment of immigrants in particular, as well as contributing to economic growth (Ministry of Justice, 2008). The impact of the migration policy liberalization on immigrant entrepreneurs has still yet to be explicitly evaluated, to the best of my knowledge.

In summary, Sweden implemented a number of quite liberal reforms in relation to entrepreneurship and migration regulations, which may influence the supply of immigrant entrepreneurs and demand for them, or opportunity structures.

This migration policy liberalization, which is a form of macro-level institutional regulation, might signal new opportunities for potential entrepreneurs worldwide and other categories of immigrants in Sweden. The opportunities might impact on immigrants' adjustments on micro and meso levels. On the micro individual level, immigrants recognize new opportunities, created by access to the Swedish environment. On a meso level of social networks, immigrants mobilize different resources in order to start and sustain their businesses. I consider the social institutions within the social capital discussion on the meso level below.

In short, Sweden represents an interesting institutional context as a high-income welfare regime with dynamic changes on migration regulation, labour market inclusion and entrepreneurship promotion. Nevertheless, previous research has paid little attention to explaining immigrant entrepreneurship in such a context, especially with a focus on the time perspective, when regulations such as migration policy were changing. In this dissertation I thus seek to find out how opportunity structures arising from a changing labour market and entrepreneurship policies, as well as migration policy liberalization, in Sweden have influenced the entrepreneurial activity of immigrants in different stages of the entrepreneurial process (Gartner, 1990).

CHAPTER 4. RESEARCH DESIGN AND METHODS – OPERATIONALIZATION OF THE MIXED EMBEDDEDNESS

4.1. Register Data

In order to answer the dissertation's overall research questions – why and how immigrant entrepreneurs respond to changes in opportunity structures in the context of the Swedish welfare state – as well as specific research questions named in the introduction, I need detailed individual level data. The data from Swedish registers administered by Statistics Sweden (SCB) provides rich sources of information on immigrants' entrepreneurial activity. SCB receives information from various official agencies (e.g. Swedish Tax Agency).

In this dissertation, I used data from the LISA database (Longitudinal Integration Database for Health Insurance and Labour Market Studies)¹, the Total Population Register (Registret över total befolkningen), the Register for Migration and Asylum Statistics (Register för migrations- och asylstatistik), the Real Estate Register (Fastighetsregistret), and the FAD Register (Registren för Företagens och arbetsställenas dynamic). The LISA database and the other registers are administered by Statistics Sweden and delivered to the Institute for Research on Migration, Ethnicity and Society (REMESO) at Linköping University by Statistics Sweden for research purposes. Data from the different registers are combined by use of the ID code based on the individual social security number (personnummer), and the code based on a company's corporate ID number.

The LISA database comprises annual information from many different registers on all residents of Sweden from 16 years of age and up. The data from the LISA database that I use in this dissertation originates from the Income and Taxation Register (Inkomst- och Taxeringsregistret), the Employment and Occupation Register (Sysselsättningsregistret), the Education Register (Utbildningsregistret) and the Register for Migration and Asylum Statistics (Register för Migrations och asylstatistik).

¹ LISA is the acronym for “Longitudinell integrationsdatabas för Sjukförsäkrings- och Arbetsmarknadsstudier.”

I combined the data on annual occupation status, income, civil status, number of children, family ID number, corporate ID number, education, and year of latest immigration from the LISA database (SCB, 2016), with data containing information on date and country of birth, geocodes for residence and workplace in Sweden, gender, and other demographic information from the Population and Real Estate Register, type of residence permit from the Register for Migration and Asylum Statistics, and the number of years since company registration and number of employees from the FAD Register.

Even though an entrepreneur in Schumpeter's view differs significantly from 'everyday entrepreneurs' (Welter et al., 2017) or the self-employed (Henrekson and Sanandaji, 2018), I distinguish entrepreneurs as either self-employed or incorporated self-employed, based on the available data. Consistent with the information from LISA database, I approximate an entrepreneur as an individual who reported their main source of income in November from a company in which they have a majority ownership stake and at which they work full time (Folta, Delmar and Wennberg, 2010; Halvarsson et al., 2018). I include entrepreneurs whose major income comes from their own business and exclude part-time entrepreneurs who reported their major income from other activities. I included only 'active' entrepreneurs in the sense that they worked at least 600 hours a year in own business and I excluded 'passive' entrepreneurs from the analysis. I defined an immigrant as someone who was born outside Sweden and immigrated to Sweden, excluding foreign-born Swedish citizens (based on data from the Total Population Register). An immigrant entrepreneur is an immigrant who is full-time self-employed² in his or her own business.

Data on income and occupational status (including status as self-employed) in the LISA database originated from the Income and Taxation Register, which includes data collected through individuals' annual tax returns and company surveys conducted annually in November. The LISA database includes incomes from entrepreneurship, as well as disposable incomes and wages for natives and immigrants. Income from unincorporated self-employment is reported to the Tax Agency as net income from business activity during a year. Disposable income refers to income after taxes and social transfers and is well suited for use in a time comparison. These registers can be considered to be of high quality since they are regulated by law. The measures of incomes are not always consistent over time because of changes in laws and rules.

² Individuals are classified as full-time self-employed by Statistics Sweden if their occupation is specified as being an entrepreneur either in a sole proprietorship, partnership, or a privately held business and they receive their highest source of income from being an entrepreneur (similar to e.g. Block and Sandner, 2009).

The combination of geocoded data and incomes made it possible to compute a variable for regional GDP. Controlling for development of GDP removes the influence of inflation and other external factors from the analysis.

Demographic characteristics such as age, sex, marital status, number of children, and region or country of origin work well as control variables in regression analysis. Other variables such as number of years since immigration and residence in a neighbourhood may approximate immigrants' access to different resources such as social capital. The large variance in the number of years immigrants reside in Sweden allows me to investigate the relative effects of country tenure on migrants' likelihood of entry into and exit from self-employment. The type of residence permit in Sweden may serve as an approximation of migration policy change when tracking over time. Even though the available data do not distinguish immigration for entrepreneurship from immigration for work, as they are both part of a broader economic migrant group, migrants who arrived for family unification reasons, for humanitarian reasons or for study are reported separately.

The Education Register provides information on the highest level of educational attainment, as recorded by the Swedish authorities for every individual. This register is of relatively high quality with regard to educational attainment in Sweden and uses several sources to collect data on education obtained abroad, such as information from any assessment of foreign education and applications to further education (SCB, 2016). The data on education obtained abroad sometimes have missing information. The most common problem is that the level of education is underestimated. To overcome this weakness, I used information from later years to obtain the most accurate information on level of education.

The LISA database also includes the identity numbers of mothers and fathers, and the family identification number shared by married couples and cohabiting parents with children, and children in their household. Based on the definition of a family as consisted of members related by social ties (i.e. spouses) and by blood relationships (i.e. mother, father and siblings) (Bird and Wennberg, 2016), I approximated both types of family in the LISA data. A family by social ties is approximated by connecting family members by family identification numbers. A family by blood relationship is identified based on the identity numbers of biological mothers and fathers. However, it is impossible to identify cohabiting partners without children as a family in the LISA data.

The geocoded places of residence and work from the Real Estate Register give information on the county and municipality of an immigrant's residence in Sweden. The registers also provide information on the property geocode, including SAMS (Small Area Market Statistics), which I included in the analysis as an approximation of a neighbourhood. SAMS has some weaknesses such as unequal sizes across Sweden, as discussed in Amcoff (2012).

The Migration Board changed the way it reported the type of residence permit in 2010. This affected the comparability of the variable over time.

4.1.1. Samples

The first three papers (A, B, C) use similar samples of new immigrant entrepreneurs who recently (during the last four years in 2008 and 2012) immigrated to Sweden and started a business. I compared these two samples in order to see whether the institutional changes over time influenced the variables of interest (entry to entrepreneurship and performance).

In Paper A, I include demographic variables such as age, gender and children (value =1, if an individual has at least one child) (see variables 10-13 in Table 1) in the analysis. Variables 13-18 indicate region of origin of immigrants (if an immigrant comes from the specific region, the value = 1, otherwise 0). Residence permits give information about immigrants' reasons for immigration to Sweden (variables 19-22) and information on residence in large cities (variables 23-25 in Table 1). I restricted the samples to the age range 20-64 years. This complete data set covering the entire population of immigrant entrepreneurs allows me to implement descriptive methods such as cluster and association analysis, with the analyses being presented in the next section.

Samples in Paper B consist of two cohorts of new immigrants, who arrived in Sweden during 2005-2008 (first cohort of 5,023 immigrant entrepreneurs, arrived before the immigration rules changed in 2008) and during 2009-2012 (second cohort of 5,460 arrived after the reform). I constructed the samples in order to consider the propensity to enter self-employment in the ICT sector in 2008 and 2012. The type of residence permit includes the following categories: 1) work and entrepreneurship, 2) family reunification, 3) refugees, 4) study and 5) unknown (mostly comprising immigrants from EU countries). I considered regional context as residence in the three largest cities in Sweden: Stockholm, Malmö and Gothenburg and regional GDP (RGDP). I approximated social human capital (SHC) as the proportion of neighbours³ who

³ Neighbourhood is approximated as SAMS – small marketing area – as a proxy for a neighbourhood in the calculation, as defined by SCB.

have a high level of education; social entrepreneurship capital (SEC), which is the proportion of neighbours who are self-employed; social ethnic human capital (SEHC), which is the proportion of highly educated individuals who are born in the same country or region, and social ethnic entrepreneurship capital (SEEC).

Paper C considers incomes from unincorporated self-employment reported to the Tax Agency as net income from business activity during the year. Disposable income in Paper C refers to income after taxes and social transfers (InkFnetto in LISA database). Other variables available from the registers described above include individual characteristics such as age, sex, marital status, number of children, and region or country of origin, level and field of education, and number of years since immigration. Information from the FAD Register about number of years since firm registration and number of employees was included. Samples were created based on *Number of years in Sweden* and *Number of years since firm registration*. Cohort A includes immigrants who arrived in 2004-2007 and cohort B those who arrived in 2009-2012. The periods of observation are related to the immigration policy reform in 2008. The samples of entrepreneurs consist of immigrants and natives who started their business during the periods 2004-2007 and 2009-2012.

Paper D sampled all Swedish residents born outside Sweden of working age (20-65) who entered full-time self-employment by means of starting their own firm at any time in the time period 2006-2012. The period follows entrants for up to seven years to account for the common duration of self-employment (Van Praag, 2003). Refugees (N=10,559) comprise the majority of our study population. Among the refugees sampled, the most common countries of origin are Bosnia (8.3%), Lebanon (7.5%), Serbia/Croatia (5.8%), Syria (5.5%), Turkey (3.3%), Afghanistan (2.7%) and the former Soviet Union republics (outside of Russia) (2.5%), but there is also a fairly large group of stateless refugees, mostly originating from the Middle East. On average, the refugees in our sample have lived in Sweden for 14 years and are 40 years of age, but our sample includes those who have lived in Sweden for up to 38 years, as well as those arriving in 2005. The population of economic migrants is comparatively small, comprising 2,536 individuals who at some point during 2005-2012 entered self-employment. Economic migrants originate mostly from Poland (37.2%), Germany (10.5%), Lithuania (7.3%), the Netherlands (5.6%), the UK (5.6%), Turkey (2.4%) and Romania (2.1%) as well as about 5% originating from unknown countries in the Middle East.

4.1.2. Research Design – Time Perspective in the Mixed Embeddedness

I consider the dynamic perspective in the ME approach by following changes over time. Assuming that institutional changes to ‘rules of the game’ (North, 1993) and the transition of the welfare institutions towards more liberal policies may effect opportunity structures for immigrant entrepreneurs as well as the supply of them. For example, the migration policy change in Sweden in 2008 (Berg and Spehar, 2013) may affect the structure of newly arriving immigrants and their social networks. One approach to considering changes over time is to compare ME’s three level factors at two time points, before and after the institutional change. I use this approach in Papers A, B and C. The comparison reveals a difference but may not exclude the impact of other factors such as other institutional regulations or the economic cycle. In order to control for the other factors, I include specific variables such as Regional GDP to control for the economic trend and regional economic differences. While different methods suit time-relevant comparison, I find the Blinder-Oaxaca (B-O) (Oaxaca, 1973; Blinder, 1973) decomposition approach straightforward and intuitively understandable. The B-O decomposition breaks the differential between two cohorts into ‘due to endowments’ and ‘due to coefficients’ parts. The first part captures the influence of the impact of cohorts’ compositional change, and the second explains the impact of change in the general business environment. In addition, a threefold decomposition estimates the intersection of both parts. The decomposition model can be applied to linear as well as non-linear regressions. I apply this method in Paper B based on linear regression decomposition and in Paper C based on non-linear decomposition.

Another time-related approach includes the panel model, which is a cross-sectional time series. I use this approach in Paper D to identify duration in business among refugees and economic migrants and apply the Cox regression model. I also use a kind of difference in difference approach for log-regression comparing two cohorts in Paper B.

Comparing results at two time points, as done by Kloosterman et al. (2016), is another way to add a time perspective to the ME approach. In Paper A, I compare the results of clustering and association analysis separately applied to two cohorts of new immigrants related to two time points in 2012 and 2008.

In summary, I applied the following research design in order to operationalize the ME approach over time. First, I constructed two cohorts of recently arrived (in the last four years before observation) immigrant entrepreneurs at two time points: 2008 and 2012. Then I compared the

results of clustering and association applied separately to the two cross-sections in Paper A. I decomposed linear regression results in Paper B and log-regression in Paper C with B-O decomposition. I applied the Cox regression for panel data in Paper D. I used secondary time-varying data from Statistics Sweden, as available in the REMESO database.

4.2. Operationalization of the Mixed Embeddedness

I consider the operational definition of entrepreneurship to be self-employment, which is most appropriate for ‘everyday’ entrepreneurship – performing work for personal profit rather than for wages paid by others (Portes, 1995; Welter *et al.*, 2016). Mixed Embeddedness is defined here as an “interplay between the social, economic and institutional contexts” (Kloosterman *et al.*, 1999). I operationalize the mixed embeddedness with a focus on three levels of analysis – macro institutional level, meso social capital, and micro individual resources (e.g. human capital).

4.2.1. Macro-level factors

Institutional context and its changes over time affect entrepreneurial activity among immigrants. Different approaches operationalize the macro-institutional changes. A complexity of interrelated institutions evolving over time challenges empirical studies because of impossibility of identifying their separate individual impacts. For example, at the time of the migration reform in 2008, Sweden was also recovering from an economic downturn. It also implemented several other reforms such as a regulation on education for third-country national (TCN) immigrants, and decreased the required start-up capital. The impact of each macro factor is hard to assess separately. I use the Swedish case to demonstrate how I approach the macro-level factors analysis in ME. The changed migration rules in 2008 affected the category of immigrants who came for (self-)employment and did not affect other categories of immigrants. I approach the institutional changes on a macro level for the migration rules via variables related to the residence permit. The database that Statistics Sweden made available to REMESO includes information on the residence permits of immigrants in Sweden but does not distinguish between residence permits for entrepreneurship and for employment because of an ethnic board decision. Instead, the two categories are united in one – for work and entrepreneurship as labour migrants. The types of residence permit available in the database

include the following: 1) for work and entrepreneurship, 2) for family re-unification, 3) refugees, 4) for study, 5) unknown (mostly immigrants from EU countries).

4.2.2. *Meso-level factors*

To operationalize meso-level social capital in ME, I experimented with different variables defined in the theoretical part (see chapter 2). First, I use ‘*ethnic capital*’ and ‘location in large cities’ in Paper B as an approximation of social capital. I assessed indexes of ‘ethnic human capital’ and ‘ethnic entrepreneurial capital’ as proxies for measuring immigrants’ ethnic capital (see explanation of ethnic capital in subsection 2.2.2). I calculated the first index of ‘ethnic human capital’ as the number of individuals with tertiary education from the same country of birth as the observed individual and residing in the same neighbourhood, divided by the number of residents in the same neighbourhood excluding ego. I use the Small Area Market Statistics (SAMS) variable from the LISA data as a proxy for a neighbourhood of residence in the calculation (see the discussion on SAMS weaknesses in the Data section). Location in large metropolises serves as an approximation of social network connection. I approximate meso-level social capital in Papers B and D via assessment of immigrants’ 1) Location in large cities, 2) Ethnic human capital, 3) Ethnic entrepreneurial capital.

Further, I operationalize the *family social capital* variable as family human capital, which is human capital of an immigrant entrepreneur that can be mobilized via a family social network (see definition of the family in section 4.1 of this dissertation). I calculate this variable as the number of adults with tertiary education in a family to which an immigrant entrepreneur belongs, divided by the total number of adult family members excluding ego. Similarly, I operationalized family entrepreneurial capital, which is entrepreneurial skills and experience of family members. I counted the number of entrepreneurs in a family and divided it by the total number of adult family members (see section 4.1 for details) excluding ego.

4.2.3. *Micro-level factors*

As a proxy for detecting human capital at the micro level, I use the individual’s level of education (Becker, 1975), following the example of other studies (Kloosterman *et al.*, 2016). The level of education is aggregated into three levels: 1) primary education, including (a) compulsory schooling of less than 9 years, (b) compulsory schooling of nine years (equivalent); 2) secondary education including (a) secondary education, (b) post-secondary education of less than two years, (c) post-secondary education of two years or more; 3) higher level of education including (a) graduate and (b) post-graduate programmes. 4) The ‘unknown’ level of education refers either to people whose education was not officially recognized or to non-applicable

cases. As discussed in section 4.1, the education that immigrants received before immigration to Sweden is not always correctly registered and is often based on self-reporting (Wallgren and Wallgren, 2014).

The fields of education are divided into three categories: 1) technical education; 2) medical education and 3) other fields including the humanities.

Other individual demographic characteristics of immigrant entrepreneurs include age, gender, and region of birth (countries of birth I aggregated into 7 regions), civil status (married or cohabiting, divorced, widowed, unmarried), and number of children. Registers show the year of first immigration. The variable may suffer from circular migration, when migrants leave Sweden and re-immigrate. I restrict cohorts to the recent immigrants with the number of years since immigration to Sweden ranging from 0 to 4 years, which approximates tenure/experience in the country.

4.3 Analytical techniques applied to the three stages of the entrepreneurial process

4.3.1. Typology

I address the high level of heterogeneity of immigrant entrepreneurs by the clustering and association analyses, which complement each other. Cluster analysis is useful to decrease complexity of data via grouping most similar observations into same and dissimilar in different clusters. Grouping on first stage improves quality of association analysis on second stage, because some strong positive relations discovered in one group can be weak or negative in another group. Such relations remain hidden in bulk, not prepared by clustering, data. Moreover, cluster analysis discovers persistent patterns in data such as distinguished groups of immigrant entrepreneurs. distinguished groups with association rules. The rules explain nature of the groups by highlighting most frequently occurred characters. The association analysis also discovers interesting relations for specified characters, such that researcher can inquire which characters are correlated with a character of interest. I use both techniques in Paper A.

4.3.2. Entry

The entry stage assumes that an individual makes a choice to become self-employed instead of other alternatives. Probability models can be applied over time to explore the likelihood of entry changes. The entry stage is addressed in Paper B appended to the thesis, which examines

the propensity among newly arrived immigrants to start a business in the information and communication technologies (ICT) industry. The ICT industry is classified as a post-industrial growing sector in ME (Kloosterman, 2010). This classification is troublesome as the ICT industry includes both unskilled and highly skilled jobs.

The nonlinear extension of the Blinder-Oaxaca decomposition based on log regression ideally shows the contribution of all of the factors at the three levels to the propensity change in selected samples. It explains the difference between the two cohorts by decomposing the propensity gap into two parts: differences in the mean values of the independent variable within the groups, on the one hand, and unexplained differences between groups in the effects of the independent variable, on the other hand. It separates the effects that are due to a change in the composition of the immigrant group from the effects that are not explained by a change in the composition of the immigrant group. The explained effects show the contribution of each of the abovementioned factors to the propensity change over the period of four years. The unexplained effects show the contribution of change in the coefficients of the regressions over time. To check the robustness of the results I additionally use a kind of difference in difference approach (Angrist and Pischke, 2008) based on logistics regression.

4.3.3. Performance

In the performance stage of the entrepreneurial process in the ME approach I operationalized business performance by comparing business outcomes such as incomes over time. “Defining what is ‘business success’ is rather problematic and there are various ways of defining” (Kloosterman et al., 2016, p. 14). In Paper A, I consider different criteria for business performance as stated in the literature and analyze some of them. While income was logically applied in previous studies (Andersson Joona and Wadensjö, 2013; Halvarsson *et al.*, 2018), it does not always approximate the entrepreneurial performance or success. For example, (Jones, Ram and Villares-Varela, 2018) applied social criteria of performance to immigrant entrepreneurship research, such as creation of employment in deprived areas with a related reduction in crime. Duration in business represents another indicator of performance (Kloosterman et al., 2016, p. 14). The ME approach uses entrepreneurial activity of immigrants in the ICT industry as an indicator of upward mobility and performance (Kloosterman, 2010; Baycan, Sahin and Nijkamp, 2012). Entry into incorporated business compared to self-employment also indicates a level of performance (Ng and Stuart, 2016; Halvarsson et al., 2018; Asoni, 2010). Every indicator of performance has its drawbacks, but their combination provides a clearer understanding of performance.

Matching methods are well suited for use with register data to compose a matched ‘synthetic control group’ based on variables from a ‘pre-treatment’ period (Bygren and Szulkin, 2017). The comparison of the two ‘matched’ groups reveals information on particularly interesting factors, given that other characteristics between the matched cohorts are similar. The propensity score matching (PSM) method (Rosenbaum and Rubin, 1984), which became popular in entrepreneurship research (e.g. Elert, Andersson and Wennberg, 2015), has some reported weaknesses such as a predefined size of the control group before matching (Iacus et al., 2011). Coarsened exact matching (CEM) belongs to the ‘monotonic imbalance bounding’ class (Iacus, King and Porro, 2012; Iacus et al., 2011), which generalizes and outperforms the PSM (King and Nielsen, 2016). CEM prunes cases based on coarsened data such that there is at least one corresponding observation in both groups. Difference-in-difference is a commonly used approach in causality research, but it produces results that can be sensitive to the control group selection (see Bertrand, et al., 2004). Therefore, a combination of the Difference-in-difference analysis with CEM (Iacus et al., 2012) balances the ‘control’ sample of natives and the ‘treatment’ group of immigrants. The CEM method belongs to the ‘monotonic imbalance bounding’ class (Iacus et al., 2011), which generalizes and outperforms ‘equal percent bias reducing’ (EPRB), of which propensity score matching (PSM) is a member. CEM overcomes the reported weaknesses of PSM such as a predefined size of the control group before matching. CEM prunes cases based on coarsened data such that there is at least one corresponding observation in both groups.

Difference-in-difference and coarsened exact matching (CEM) methods, mentioned above, allow for the detection of the income change of immigrant entrepreneurs after the immigration policy reform. Linear Blinder-Oaxaca decomposition allows an estimate of changes in income trends for the ‘treated’ group of immigrant entrepreneurs. Similarly to the non-linear application of Blinder-Oaxaca decomposition in the entry stage, the first part captures the influence of the impact of composition change, and the second captures the estimated impact of change in the environment.

4.3.4. Exit

Duration analysis based on the flexible Cox regression model is a classic way of estimating the exit of immigrant entrepreneurs (Van Praag, 2003). The Cox regression includes time (t) as a function of an underlying hazard h and a set of exponential beta coefficients (b_{ij}) and covariates (x) for individual i at year j . The Cox regression is based on maximum-likelihood estimation and models the risk of an exit from entrepreneurship. Paper C employs this method.

4.4. Summary and reflection on the methods

I aimed to operationalize the ME via approximation on the three levels – on micro human capital I approximated with the level of education, on meso social capital I distinguished ethnic social capital, which I approximated as an index of the same ethnicity in a neighbourhood and family social capital was approached as kinship links.

Methodologically, I approached the diversity of immigrant entrepreneurs by combining two data-mining techniques – clustering and association analysis, which is an innovative approach. In the first stage, I categorized immigrant entrepreneurs based on their resources and individual characteristics/endowments (human capital, social capital, ethnicity etc.) and investigated associations of the groups to entrepreneurial outcomes in the second stage. I approached the institutional change on a macro level with several aspects. First, I distinguished and compared two cohorts in different times before and after the immigration policy change. Then I formally compared the two cohorts with the logistic regression method akin to difference-in-difference and Oaxaca-Blinder decomposition, also based on logistic regression in the entry stage (assessed the propensity to entry of the ICT sector in Paper B). In the performance stage, I also compared two cohorts formally based on linear regression and combined the difference-in-difference method with the Coarsened Exact Matching and also via Oaxaca-Blinder decomposition. On the exit stage I followed probability to exit among immigrant entrepreneurs during seven years with formal Cox regression.

I apply the methodology to the register-based data in order to test the hypothesis. While many studies on immigrant entrepreneurship in Sweden are based on interviews (e.g. Hogberg et al., 2014; Evansluong, 2016), fewer studies use predictive methods and quantitative data to test the ME approach, even though it was acknowledged a decade ago (Kloosterman and Rath, 2003). Register-based data overcomes several problems which may arise using the survey-based data, such as measurement errors due to unclear questions, mis-recording and inappropriate informants. But other problems, such as data being too register-based and the length of the period of observation, are still common. Too short a time observation might lead to missing some information. On the other hand, it is impossible to observe the process for infinity. The cost of observations and errors increase with the length of observation. More homogeneous samples are needed to study the entrepreneurial process, as there are huge differences between immigrant entrepreneurs in different sectors and forms. As such, I assume that the register-based data are most reliable and contain most of the information needed on a micro level, from

which meso-level estimators can be derived. I have chosen to use the register-based data because it is most promising for answering my research questions and achieving the dissertation's overall goal. Statistics Sweden has developed a number of longitudinal databases using registers for the whole population that gave me a unique opportunity to compare immigrant entrepreneurs in different time periods before and after institutional change.

There are several advantages to a longitudinal methodology for examining immigrant entrepreneurship in different stages. It allows for a control of individual heterogeneity and a comparison over a time span. This means that comparing cohorts in two or more time periods gives an opportunity to examine how they develop when variables on a macro level may change. Studies based on such a longitudinal methodology also have several disadvantages, for example when it comes to a deep analysis of the entrepreneurial stages based on interviews with specifically prepared questions. This questions details of the 'process', but a broader investigation comes at an obvious cost to hypothesis testing. It is impossible to investigate how the opportunities were discovered and who particularly initiated the entrepreneurial process in each stage with such an approach. The methods are summarised in table 3.

Table 3. Methods implemented in the appended papers

	three level of analysis (micro, meso and macro) and time perspective
Paper A – Diversity and Categorization	Cluster analysis of entrepreneurs in two points of time, Association analysis including categories obtained from clustering, comparing two time cohorts
Paper B – Entry	Non-linear (log) decomposition of probability of entry, difference-in-difference, comparing two times cross-sectional cohorts with Blinder-Oaxaca decomposition.
Paper C – Performance	Difference-in-Difference with matching (natives are a group for comparison), comparing two times cross-sectional cohorts with Blinder-Oaxaca decomposition.
Paper D – Exit	Exit – Cox regression based on panel model of exit probability over a seven-year period

CHAPTER 5. SUMMARY OF PAPERS

The four appended papers in this dissertation operationalize mixed embeddedness in different aspects within the context of the Swedish welfare state. Paper A explores the diversity of immigrant entrepreneurs and relationships between their characteristics and outcomes in the three stages of the entrepreneurial process – entry, performance and exit. Paper B provides a deeper investigation of the entry stage, Paper C analyzes income performance, and Paper D investigates the role of embeddedness in entrepreneurial exit. While the four papers use the same register-based data, different methodological approaches are applied in each paper. Paper A explores diversity and weaker relationships between immigrants’ resources and outcomes using data mining methods of clustering and association. Paper B considers immigrant entrepreneurs’ probability of entry into ICT industry, a ‘post-industrial high-skilled’ segment (Kloosterman, 2010). Paper C investigates how immigrants’ income performance relates to macro institutional changes and micro individual characteristics. Paper D explores entrepreneurial exit among labour and refugee migrants, following their entrepreneurship over a period of seven years.

5.1. Diversity in immigrant entrepreneurship: exploring mixed embeddedness with data mining

‘New’ immigrant entrepreneurs have been shown to differ from ‘traditional’ immigrant entrepreneurs and be more heterogeneous in terms of average level of education and countries of origin. The heterogeneity cannot be approached using the traditional methods of regression to the mean, which leads to reduced diversity and lost information (Gartner, 1985).

Theoretically, the paper explains how and why heterogeneous ‘new’ immigrant entrepreneurs sort into groups. In this paper I use the mixed embeddedness theoretical approach (Kloosterman, van der Leun and Rath, 1999, Barberis and Solano, 2018) as a suitable theoretical framework to look beyond the two extremes of necessity-based and opportunity-based entrepreneurship. The framework has been used earlier to e.g. explain segmentation by combining immigrants’ individual characteristics with external features of industries, classifying immigrant entrepreneurs into four ‘segments’ (Kloosterman, 2010, Kloosterman et al., 2016). According to the mixed embeddedness approach, segmentation occurs by matching

industries with immigrant entrepreneurs according to required/available human and social resources. The way business opportunities in different industries appear, the so-called ‘opportunity structures’ (Roberts, 2009), depend on the institutional environment and may change over time, when new regulations or technologies open up new opportunities. The four segments in Kloosterman’s (2010) model represent deductively created Weberian ‘ideal types’ (Weber, 1904)

Methodologically, the paper addresses the diversity of immigrant entrepreneurship with a more flexible data mining approach instead of traditional regression analysis. The paper reveals common patterns which change over time. The paper combines two data mining approaches, clustering and association analysis. While the first allows classification of different cases into categories, the second describes the categories. I argue that such a combination provides an advantage of diminishing misinterpretation of patterns.

The paper explores immigrant entrepreneurship by addressing the first research questions on context and diversity of immigrant entrepreneurs. This paper addresses the diversity of ‘new’ immigrant entrepreneurs and classifies them based on similarities. Further, the identified categories are compared at two time points in order to identify the influence of institutional changes over time. Weak relationships between immigrants’ resources and outcomes have been found.

Contribution to Paper A

This is a solo-authored paper, in which I was exclusively responsible for data analysis, research design and writing a theoretical problematization of mixed embeddedness. I benefitted from feedback by supervisors.

5.2. Immigrant digital start-ups: regulation, location and education (Paper B)

Immigrant entrepreneurship in the sector of information and communication technologies (ICT) attracts the attention of investors, policymakers and scholars for many reasons. First, some extremely successful high-tech start-ups founded by immigrants have shown unprecedented growth and returns, contributing to the host country’s competitiveness (Saxenian, 2002). Second, developed countries are noticing a gap in ICT skills, which can be filled by attracting

immigrant IT specialists (European Commission, 2014). Third, while immigrants are traditionally over-represented in entrepreneurship in low-skill sectors (Waldinger *et al.*, 1990), immigrants' propensity towards forming digital start-ups might represent a development of more advantageous opportunities. The relative propensity among immigrants for digital start-ups and the importance of different institutional factors in creating and supporting this developing field of opportunity is currently under-researched. The paper uses a change in the regulation of immigration policy in Sweden as a case for studying the impacts of macro-, meso- and micro-level factors on the propensity to start a business in the ICT sector in Sweden.

Investigation of immigrants' propensity towards forming digital start-ups is timely and interesting in the face of digitalization (e.g. Bergström and Wennberg, 2016) and increased migration. EU countries have a high rate of digitalization and ICT infrastructure, promoting inclusive entrepreneurship (European Commission, 2013). This paper argues that the liberalization of the migration policy has an impact on what resources (human, social and financial capital) new immigrants bring and that the changed composition of more recent migrants may impact on the immigrants' propensity to become entrepreneurs in the ICT sector.

Digital entrepreneurship ecosystems (Isenberg, 2011) in large cities may support an ethnically diverse immigrant entrepreneurship community and involve a higher level of growth than that of traditional immigrant sectors. Therefore, it is argued that post-industrial urban changes will open up new opportunities, especially to immigrant entrepreneurs in the growing ICT sector (Kloosterman, 2003). These factors on the meso level are important for immigrant entrepreneurs in the ICT sector, who often choose large cities as innovative places to start businesses (Florida, Adler and Mellander, 2016), where their talents are better utilized. This is also in line with the argument by Jacobs (1969) that economic diversity stimulates innovation and urban growth, which places cities at the centre of the processes of innovation, entrepreneurship and economic growth. "Cities are not just containers for smart people: they are the enabling infrastructure where connections occur, networks are built and innovative combinations are consummated" (Florida *et al.*, 2016).

This study contributes to the entrepreneurship research by presenting an empirical investigation into how the propensity to form digital start-ups among immigrants changed during the period after the migration regulation was changed in Sweden. The study determines the main factors that contributed to the change in the propensity, with a particular focus on regulation changes (macro level), immigrants' location (meso level), and immigrants' education (micro level). In

particular, we investigate how the propensity towards forming digital start-ups changed among immigrants to Sweden who arrived before and those who arrived after the migration policy was liberalized in 2008, and we estimate the contributions of access to ethnic networks, location in large cities and human capital to this change in propensity.

The ME approach combines macro-, meso- and micro-level explanations to explain entrepreneurial behaviour (Kloosterman 2010). The macro level includes policy and institutions at the national level (Welter, 2011) (Welter and Smallbone, 2012), the meso level includes social and local context, and the micro level includes the human capital resources of entrepreneurs. All three levels can be viewed from a time perspective.

Contribution to Paper B

The paper was originally a solo-authored paper. I operationalized mixed embeddedness for the entrepreneurial entry stage by combining factors of the three levels – micro, meso and macro. I conducted my analysis, wrote the first version of the paper and revised it. I discussed the analysis with co-author Susanne Urban, who also contributed revisions to the introductory section of the paper. We discussed and Susanne proposed the algorithm for the calculation of the ethnic capital indicators for neighbourhoods.

5.3. Incomes from entrepreneurship of new immigrants in Sweden (Paper C)

This study analyses how the introduction of a liberalized regime for labour immigration in Sweden affected the self-selection of new immigrant entrepreneurs and to what extent changes in entrepreneurial income among new immigrants were due to self-selection or to a changing business environment. Based on rich microdata from Swedish administrative registers, this paper investigates how incomes changed during the years before and after the migration policy reform. By decomposing the income differential of new immigrant entrepreneurs arriving before and after the reform, this study estimates the contribution of a changed composition of migrants to a change in entrepreneurial income.

Entrepreneurial income among self-employed new immigrants improved after the reform, narrowing the immigrant-native income gap, while among employees, the income gap remained during the whole period of the study. Out of the total 10.9% increase in log income, we find that 2.7% was due to selectivity, i.e. changing characteristics of new immigrant entrepreneurs. The remaining 8.2% was due to increased returns for characteristics, i.e. the characteristics of

new immigrant entrepreneurs were better rewarded in the markets in the latter period. Hence, increases in entrepreneurial income among new immigrants were due both to self-selection and to changes in the business environment. Nevertheless the self-selection for immigrant entrepreneurs differ from immigrant workers (Emilsson and Irastorza, 2019).

The paper finds that the migration policy reform had the effect of attracting successful immigrant entrepreneurs. Hence, our findings have implications for migration policy as well as for growth and employment policy.

This paper reveals a positive trend regarding income from the entrepreneurship of new immigrants after the liberalization of labour immigration policy in Sweden. Theoretically and methodologically, we combine self-selection theory and the mixed-embeddedness perspective in a novel way, using rich data and a quantitative approach.

Contribution to Paper C

The idea for the paper arose from discussions within the context of the StraS research project. I developed the paper jointly with co-author Martin Klinthäll. I took the initiative to change the analytical approach and implement the difference-in-difference method, together with the Blinder-Oaxaca decomposition. I narrowed and re-wrote the paper. Martin Klinthäll contributed revisions and structuring of the paper. The paper was published in the International Journal on Entrepreneurial Behaviour and Research, 2019, Vol. 25, No. 5.

5.4. How Kinship Resources alleviate Structural Disadvantage: Self-Employment Duration among Refugees and Economic Migrants (Paper D)

This paper distinguishes refugee migrants and economic migrants on their exit from entrepreneurship. Refugee migrants and economic migrants are unequally equipped in terms of preparedness for working in a new country, as well as the human, social and financial capital resources they bring (Castles et al., 2013). While refugees differ greatly from economic migrants in available resources and motivation towards self-employment, prevailing studies on minority and ethnic entrepreneurship tend to lump these differing categories of migrants together.

This paper operationalizes the meso level of social capital with family kinship of two different groups of immigrant entrepreneurs – refugees and economic migrants. It addresses the last

stage of the entrepreneurial process – exit. While there exists a sizeable body of literature on minority entrepreneurship (see e.g. Bates, 2011; Aliaga-Isla and Rialp, 2013; Basu, 2006; Dana, 2007 for recent reviews), this research has tended to examine and compare the conditions for specific groups of migrant entrepreneurs. We compare the relative disadvantages facing the full population of self-employed economic migrants and refugees in Sweden during the period 2005-2012. We focus on these two groups since they represent two distinct root cases of migration, yet face differing types of conditions, which may put them at a disadvantage in entrepreneurship, but for differing reasons. While on the one hand, refugees could be expected to be at a general disadvantage to economic migrants in terms of available resources (Chiswick et al., 2005) and psychological resilience after extended periods of hardship and flight (Bhugra, 2004), economic migrants on the other hand more often migrate on their own without family members (Taylor, 1999), and may thus lack some of the social support structures that are useful for entrepreneurial success (Kim et al., 2013). Family support is vital for entrepreneurs for a number of reasons, including access to unpaid family labour (Dahl and Sorenson, 2009; Sanders and Nee, 1996), informal advice and emotional support (Kim et al., 2013), not to mention the access to financial capital that is so vital in the early entrepreneurial stages (Light and Rosenstein, 1995). Hence, while we know little about the relative rates of disadvantage in entrepreneurship among refugees and economic migrants, theoretical arguments suggest that those disadvantages could be partly alleviated with access to family- and kinship-based resources.

We theorize on three generic forms of family-based capital resources (financial, human and entrepreneurial capital) (Davidsson and Honig, 2003) as well as the indirect access to potential resources through kinship-based local networks (Aldrich and Waldinger, 1990; Andersson and Hammarstedt, 2015). We use register-based data on the complete population of economic immigrants and refugees in Sweden that entered self-employment during the period 2006-2012. Rich micro-level data allows us to control for a range of individual-level and macro-level factors, while at the same time creating measures to test our theoretical arguments regarding family-based capital resources and local kinship-based networks. Duration models (Cox regression) are used to assess the likelihood of exit from self-employment at each time point up to their first seven years in business. We find that the family's financial capital and entrepreneurial capital decrease the likelihood of exit from self-employment for both refugees and economic migrants. However, a higher level of family human capital increases the likelihood of exit from self-employment among self-employed refugees (but not for economic

migrants), Further, we find no apparent effects of ethnic capital, in the form of co-ethnics in the nearby area, on either category of migrant's likelihood of exit from self-employment.

The paper provides several theoretical and empirical contributions to entrepreneurship research, specifically to the mixed embeddedness theory. First, we contribute to research on migrant self-employment success by comparing two large groups of migrants that are often lumped together. While economic migrants exhibit higher rates of self-employment duration than refugees do, refugee entrepreneurs have on average larger households and also seem to benefit more strongly from the available capital resources in the household: financial, human and entrepreneurial capital. These results serve to moderate prevailing expectations that refugees are at an economic disadvantage compared to other groups of migrants, and furthermore pinpoint a set of important candidates for what makes certain refugee entrepreneurs relatively less at a disadvantage than others, which was missing in the mixed embeddedness model before. Second, our study is, to the best of our knowledge, among the first to transfer insights from research on the economic embeddedness of migrants in economic sociology from their original contexts in the United States to the setting of a high-income European Welfare state, where self-employment and conditions for self-employment success among migrants are a more recent source of academic research and public policy debate. Third, we study a complete population data set, where we follow all labour immigrants and refugees engaging in self-employment in Sweden over a period of seven years, using a rich set of independent and control variables.

Contribution to Paper D

Initially I discussed the idea of comparing refugees and economic migrants with Karl Wennberg, my co-author and we decided to compare them in the exit stage of the entrepreneurial process. I fulfilled the analysis with the Cox regression model and wrote the results chapter. Karl helped to write the introduction, theory and conclusion chapters of the paper.

The papers are summarised in table 4.

Table 4. Summary of appended papers

Paper	Paper A	Paper B	Paper C	Paper D
Research design	Comparing two cohorts of immigrant entrepreneurs, who arrived before and after the migration reform in 2008.	Comparing two cohorts of immigrant entrepreneurs, who arrived before and after the migration reform in 2008.	Comparing two cohorts before and after the migration reform in 2008.	Panel model with a number of control variables.
Samples	Cohort 1 (arrived 2005-2008), N=5023. Cohort 2 (arrived 2009-2012), N=5457.	Cohort 1 (arrived 2005-2008), N=5023. Cohort 2 (arrived 2009-2012), N=5457.	Cohort A (arrived 2004-2007), N=3945. Cohort B arrived 2009-2012) N=4988	Labour Migrants N=2503 Refugees N=10,519
Dependent variables	Groups of immigrant entrepreneurs .	Probability to start entrepreneurship in the ICT sector.	Log Income from entrepreneurship.	Probability to exit from entrepreneurship.
Independent variables	Education (level of education, field of education), industry, residence permit, country of birth	Macro: Residence Permit. Meso: Location in metropolitan area; Social capital: 1) social human capital (SHC), 2) social entrepreneurship capital (SEC), 3) social ethnic human capital (SEHC), 4) social ethnic entrepreneurship capital (SEEC), and country of birth. Micro: Human capital (level of education, field of education).	Level of education, field of education, sector, residence permit.	Family financial capital Family human capital Family entrepreneurial capital Ethnic Capital
Control variables	Number of children, civil status, number of years since immigration, gender, age.	Number of children, civil status, gender, age.	Number of children, civil status, number of years since immigration, gender, age, country of birth.	Number of children, civil status, number of years since immigration, gender, age, country of birth

Method	Association analysis pre-proceeded with cluster analysis separately for two cohorts	Logistic regression, difference-in-difference model, Oaxaca-Blinder decomposition based for non-linear logit regression model.	Difference-in-difference in combination with CEM, Oaxaca-Blinder Decomposition based on linear regression model applied for robustness check.	Survival analysis, Cox regression model on panel model.
Time Perspective	Diversity in two different time periods before and after migration policy liberalisation.	Entry stage in two different time periods before and after migration policy liberalisation.	Performance/organisation stage of the entrepreneurial process in two different time periods before and after migration policy liberalisation.	Exit stage of the entrepreneurial process based on 7 years panel model.
Level of comparison	Two significantly different types of immigrant entrepreneurs identified.	Two cohorts of new immigrants.	New immigrants compared to matched natives in two cohorts before and after.	Comparing two different groups of immigrant entrepreneurs – refugees and economic migrants
Presentation at Conferences	1) Wharton Conference on Migration, Organisation, and Management, May 30-31, 2019, Philadelphia, USA	1) SWEGPEC PhD Workshop 2017, HUI, Stockholm. 2) International Conference on Immigration and Labour Market Integration, 13-15 of November, Gothenburg. 3) The RENT 2017 Conference – Research in Entrepreneurship and Small Business, Lund. 4) Seminar presentation at National Economics division, LiU.	1) The RENT 2016 Conference – Research in Entrepreneurship and Small Business, Zagreb. 2) Seminar presentation at IBF, Uppsala University. 3) SWEGPEC PhD Workshop 2016, LiU, Linköping. 4) Research Symposium on Migration, Enterprise and Society, January 10, 2018. Birmingham Business School.	1) The Nordic Conference for Small Business (NCSB2018), Lulea, May 2018. 2) Research Seminar: Taking Stock and Moving Forward in Research on Refugee Entrepreneurship, Sten K. Johnson Centre for Entrepreneurship, Lund University, 28th May 2019.
Current Status	Working Paper	Working Paper	Published: International Journal of Entrepreneurial Behavior and Research	

CHAPTER 6. CONCLUDING DISCUSSION

This chapter presents a discussion of the main results, synthesized conclusions and the main contributions of the dissertation, including the four appended papers.

In this dissertation, I aimed to investigate how and why immigrant entrepreneurs respond to changing opportunity structures in different phases of the entrepreneurial process, in the institutional context of the Swedish welfare state. The dissertation draws on the mixed embeddedness theoretical approach (Jones *et al.*, 2014) and considers different stages of the entrepreneurial process, inspired by entrepreneurial process theory (Delmar, 2005a), in contrast to prior research considering the stages in one process model (Vinogradov and Elam, 2010). Most previous research within the mixed embeddedness tradition investigated entrepreneurship in the institutional context of the UK and the Netherlands, while this dissertation focused on the institutional framework of the Swedish welfare state.

6.1. Conclusions

Prior research found high diversity among new immigrant entrepreneurs in the UK (Jones *et al.*, 2014) and the Netherlands (Kloosterman, Rusinovic and Yeboah, 2016) but, in spite of this heterogeneity, they displayed similar ‘trajectories’ to low-end industries. This dissertation shows that new immigrant entrepreneurs in Sweden are also heterogeneous in terms of resources and entrepreneurial outcomes. Moreover, the dissertation shows that immigrant entrepreneurs cluster differently after institutional changes in time.

In contrast to previous findings in the Netherlands (Kloosterman *et al.*, 2016), this dissertation shows that in the Swedish context, the propensity to start business among new immigrant entrepreneurs in the growing and competitive ICT sector increased over time. On the macro level, migration policy liberalization affected the tendency indirectly, allowing different categories of immigrants to live in Sweden as entrepreneurs. On the meso level, social capital positively influenced entrepreneurial entry into the high-tech industry among immigrants in Sweden. Residence in an urban neighbourhood and access to ethnic social capital support

immigrants' entry into ICT business. On a micro level, the high human capital of immigrant entrepreneurs played an important role in starting a business in the growing ICT industry.

This dissertation shows that the income performance of immigrant entrepreneurs improved, while the previously observed income gap between immigrant and native entrepreneurs (Andersson Joona, 2011) decreased over time in response to changing opportunity structures. The opportunity structures changed due to recovery after the economic crisis of 2008 and proactive entrepreneurial policies and liberalization of migration restrictions for labour migrants, including migrant entrepreneurs. An improved business environment coupled with the compositional change of new immigrants explains the relative improvement in income performance.

Another finding of this dissertation is that the mixed embeddedness of immigrant entrepreneurs in family and kinship relations influences their propensity to exit from entrepreneurship. A higher level of social financial, entrepreneurial and human capital accessible to immigrant entrepreneurs via their family and kinship networks prolongs their duration in business, for both economic and refugee immigrants. In contrast to a long tradition of ethnic enclave studies in the USA and Europe, the investigation of ethnic capital in this dissertation did not show a significant influence on duration in business for refugees and economic migrants.

Taken together, the findings provide insights related to the research questions posed in the introductory chapter of the dissertation. I approached the main research question of the dissertation – how immigrant entrepreneurship is affected by institutional change in the specific context of the Swedish welfare state – by considering institutional change in a Sweden recovering from the financial crisis of 2008 and immigrants' entrepreneurial response to changing opportunity structures in the entry, performance and exit stages. I conclude that immigrant entrepreneurs are diverse and respond differently depending on which of the stages in the entrepreneurial process are being considered. Therefore, diversity has to be taken into consideration in future policy interventions.

I seek explanations as to why categories of immigrant entrepreneurs respond differently to institutional change in different stages of the entrepreneurial process by hypothesizing the entry, performance and exit of immigrant entrepreneurs on macro, meso and micro levels. I hypothesized in the appended papers that immigrant entrepreneurs respond to the changes in opportunity structures in line with the mixed embeddedness theoretical predictions. In the entry stage, and in line with the theoretical predictions of the ME approach, I found that the meso-

level social capital, and micro-level individual human capital influenced the entrepreneurial entry of immigrants into the high-skilled and growing ICT industry. The results suggest that immigrants' entrepreneurial response to changing opportunity structures in the entry stages is related to both their social embeddedness and individual characteristics. The income performance of immigrant entrepreneurs is a response to institutional changes due to self-selection. Categories of immigrant entrepreneurs differ regarding exit from entrepreneurship due to varying access to resources within their social networks, as well as different human capital. Taken together, my results show that individual characteristics and access to resources through embeddedness in social networks explain why immigrant entrepreneurs respond differently to changing opportunity structures in different stages of the entrepreneurial process. The dissertation supports the claim that more liberal migration regulations allow new immigrants to perform better. The social capital of immigrants, such as access to finance and knowledge or expertise, helps immigrant entrepreneurs in the entry stage to enter more dynamic industries such as ICT and allows them to stay in business for longer. The mixed embeddedness approach (Kloosterman, 2010; Kloosterman, van der Leun and Rath, 1999; Ram, Jones and Villares-Varela, 2016) was further elaborated in this dissertation by considering immigrants' entrepreneurship and their mixed embeddedness in each of the three stages of the entrepreneurial process.

6.2. Contributions

6.1.1. Theoretical contributions

In this dissertation I further elaborate the mixed embeddedness theoretical approach by filling two gaps. First, I consider mixed embeddedness in each of the three stages – entry, performance and exit, inspired by entrepreneurial process theory (Delmar, 2005a; Wennberg, 2009). Second, I include institutional change from a time perspective in the ME model. I operationalize mixed embeddedness concepts and theoretical definitions by approximating variables on the three levels from secondary register-based data. Secondary data poses certain challenges regarding validity of the operational definitions and a discussion of this is provided in chapter 4 of this dissertation. I consider changes in opportunity structures from a time perspective by comparing two cohorts of immigrant entrepreneurs before and after institutional change (Papers A-C) or by following entrepreneurs over several years on panel data (Paper D).

6.2.2. Methodological contributions

The methodological contributions of the dissertation include analysis of mixed embeddedness using large-scale quantitative data. Modelling the quantitative analyses required approximation of factors on three levels of analysis. On a micro level, I approximated immigrants' human capital using the information about individual level of education. On the meso level of social capital, I distinguished between ethnic social capital, which I approximated as an index of same ethnicity in a neighbourhood, and family social capital, which I approximated as kinship links. I approached institutional change by controlling for specific policy change variables, such as implementation of residence permit for entrepreneurship. I distinguished and compared two cohorts at different times before and after immigration policy change. I formally compared the two cohorts using a range of different statistical techniques, described above in chapter 4. When investigating the probability of exit among immigrant entrepreneurs, I employed duration analysis modelling (Cox regression).

I approached the diversity of immigrant entrepreneurs by combining two data-mining techniques – clustering and association analysis, which is an innovative approach. In the first stage, I categorized immigrant entrepreneurs based on their resources and individual characteristics/endowments (human capital, social capital, ethnicity etc.) and investigated group associations with entrepreneurial outcomes in the second stage.

6.2.3. Empirical contributions

Empirically, the dissertation contributes a categorization of immigrant entrepreneurs into two distinct groups, which can be treated differently by policymakers. Contrary to the mainstream focus on innovative entrepreneurship, 'everyday entrepreneurship' received more attention in this dissertation. The dissertation shows that, in the context of the Swedish high-income welfare state and coordinated market economy (Hall and Soskice, 2001), with a more compressed income distribution, the income performance of immigrant entrepreneurs improved after the liberalization of migration regulations. The distribution of income from the entrepreneurship of immigrants became closer to the income distribution of natives. These results would be interesting to verify in other institutional contexts in future studies, for example for liberal market economies such as the UK or the USA and for low-income countries such as India. Future investigation is also required for the period after 2015, when Sweden introduced very restrictive immigration practices to curb refugee immigration.

6.3. Discussion

I categorized new immigrant entrepreneurs based on their endowments and resources and distinguished two groups which structurally changed over time after immigration policy liberalization. I also compared two time periods in studies A, B and C and followed immigrant entrepreneurs over seven years in study D, trying to assess the influence of institutional change on entrepreneurial entry, performance and exit.

In the entry stage, the propensity towards forming new ventures in a growing post-industrial industry such as ICT increased over time, when certain entry barriers were abolished. Several institutional changes were implemented during the period of study, such as migration policy liberalization and a decrease in the financial requirements for starting a business, and it is difficult to distinguish the influence of a particular policy. Data limitations, such as the merging of two reasons for residence permit (for work and for entrepreneurship) into one category in the registers, created difficulties for empirical assessment of the theory. Nevertheless, the mixed embeddedness approach explains well the entry stage of immigrant entrepreneurs combining three levels of indicators: macro-level institutions, meso-level opportunity structure and micro-level individual endowments. The Swedish welfare regime offers specific insights on the institutional context of the immigrants' entry into business, when studied from a mixed-embeddedness perspective. Since the ICT industry is part of a post-industrial growing sector, it is therefore more competitive and restrictive for new entrants and requires a high level of education. In agreement with the mixed embeddedness approach, I conclude that entering post-industrial expanding industries requires a high level of individual human capital, compared to other 'traditional' and stagnating industries (see results in Paper B appended). In the entry stage, comparison using the difference-in-difference method reveals an increase in the propensity of economic migrants to enter the ICT industry compared to a control group of family migrants. This means that immigrants who came to Sweden for economic reasons also demonstrate upward mobility by turning to ICT in the expanding high-tech sector, consistent with the prediction of the mixed embeddedness model (Kloosterman, 2010). The location in large cities, closeness to resourceful peers from the same country of birth and high levels of education did increase ICT entrepreneurship among all migrants before and after the reform. The results are in line with Emilsson (2014), who highlights the importance of migration policy regulation as an instrument for creating opportunities that help migrants to become self-employed in the high-tech sector.

In the performance stage, I conclude that immigrant entrepreneurs perform better in terms of incomes when institutions change toward liberalization. The results from appended Paper C show that, when migration policy was liberalized in Sweden, the incomes from entrepreneurship of newly arrived immigrants increased, due to self-selection of immigrant entrepreneurs who were better equipped, with different resources. The opportunities created by the immigration policy reform and changes in the business environment in Sweden on a macro level positively affected the income performance of immigrant entrepreneurs. The newly arrived immigrants after the institutional change had a higher level of education. While there was no test of the impact of social capital on the performance stage, that could be a topic for future research. While the mixed embeddedness approach takes into account the demand side, in terms of analyzing opportunity structures, the changing opportunity structures affect the performance of immigrant entrepreneurs also in terms of supply (see appended Paper C). In the performance stage, a liberalization of the labour immigration regime in Sweden positively relates to an increase in entrepreneurial incomes among new immigrants, compared to natives as well as to earlier cohorts of immigrant entrepreneurs. This was partly due to self-selection, but to an even larger extent due to an improved business environment for immigrant entrepreneurs.

In the exit stage, comparison of economic migrant entrepreneurs to refugee migrant entrepreneurs reveals strong effects of all three different forms of family members' capital resources on the lower likelihood of exiting from entrepreneurship for refugee entrepreneurs, but not for economic migrants. These findings show the generality of the meso level of social embeddedness in the mixed embeddedness approach.

The macro-level institutional regulation, such as the liberalization of migration rules, was difficult to capture with the available data, but a proxy concerning the reason for a residence permit and time-related research design allow for the conclusion that the lower entry barriers attract more innovative immigrant entrepreneurs to the post-industrial growing sector (Paper B). This result is in line with the findings of Kwak (2013) that the entrepreneurial activities of Korean immigrants in Canada increased in the educational industry after the visa-free agreement was concluded between South Korea and Canada.

The meso-level factors, operationalized as location in large cities, ethnic human capital and ethnic entrepreneurial capital, also positively contribute to the entry into the ICT industry among new immigrants, as the mixed embeddedness approach predicts. The location in large

cities seems to be a driver of development, attracting more digital start-ups (Florida, Adler and Mellander, 2016). The three large agglomerations in Sweden (Stockholm, Malmö and Lund, and Gothenburg) show different effects on the propensity for entrepreneurship, which is consistent with the previous finding for Chinese entrepreneurs in the USA, (Zhou, 1998) in that the spatial location of immigrant businesses can differ as a result of the interaction of cultural and industry factors. Ethnic human capital and ethnic entrepreneurial capital, measured as closeness to other highly educated immigrants and immigrants with entrepreneurial background from the same country, contributed positively to the propensity increase in the entry stage (see results in Paper B, appended). Meso-level social capital also operationalized as family human capital, family entrepreneurial capital, family financial capital, ethnic human capital, ethnic entrepreneurial capital and ethnic financial capital in the exit stage is positively associated with duration in business for immigrant entrepreneurs. The financial capital and the level of entrepreneurial capital among household family members decrease the likelihood of exit from self-employment for different types of immigrant entrepreneurs such as refugees and economic migrants. On the other hand, a higher level of family human capital seems to increase the likelihood of exit from self-employment among self-employed refugees (but not among economic migrants). Since some prior research suggests that individual migrants' level of education is negatively associated with self-employment entry (Hammarstedt, 2001), it may well be that family members with higher education could be in a position to help the rest of the family to find employment instead of being self-employed, which could serve to explain these results, i.e. if self-employment is a forced rather than an active choice among refugees. More detailed regional data is needed to parcel out the nuanced effects of ethnic capital on self-employment duration among various categories of immigrants (see results in Paper D, appended).

The micro-level individual human capital resources of immigrants contribute positively to the duration of immigrants' entrepreneurship. Immigrant entrepreneurs with a higher level of education stay in business longer and vice-versa; low-educated immigrants exit more often. This finding is in line with the mixed embeddedness approach and previous results for immigrant entrepreneurs in the Netherlands (Kloosterman *et al.*, 2016).

The dissertation provides empirical and theoretical contributions to research on migrant self-employment. By comparing two large categories of migrants that are often lumped together, this study shows that not only do their relative rates of disadvantage, in terms of the likelihood of sustaining themselves as self-employed entrepreneurs, differ, but also that the

different types of capital resources available in their families and ethnic kinship serve to mitigate these disadvantages in distinct ways. While labour migrants exhibit higher rates of self-employment duration than refugees do, refugee entrepreneurs have larger households on average and also seem to benefit more strongly from the available financial capital resources in their family. The study integrates insights from research on mixed embeddedness in high-income European welfare states, where self-employment and conditions for self-employment success among migrants are a more recent source of academic research and public policy debate.

6.4. Implications

The findings support the theoretical predictions of the mixed embeddedness hypothesis. I find that highly educated immigrants with a technical background have a higher probability of starting entrepreneurship in the high-tech ICT sector. Immigrants with lower education have a higher propensity for entrepreneurship in low-tech service industries. However, contrary to expectations, immigrants who arrived as ‘refugees’ and for ‘family reasons’ display a higher propensity for entrepreneurship compared to those arriving for ‘work and entrepreneurship’, the main category impacted by the immigration liberalization reform. These results have implications for institutional research on immigrant entrepreneurship as well as for public policy. The study suggests that while migration liberalization may attract more entrepreneurs in general, in the case of the Swedish migration liberalization reform comparatively more immigrants entered entrepreneurship in low-tech sectors than the high-tech sector. Prior-knowledge may explain the results in that potential immigrant entrepreneurs may not recognise opportunities depending on country-specific prior knowledge of context, such as in the network-intensive high-tech industry. Instead, those who entered for other reasons than work and entrepreneurship and appeared to have become embedded in the country’s institutional context display a higher propensity to start entrepreneurship.

6.5. Limitations and Future Research

Previous research has contributed greatly to our understanding of immigrant entrepreneurship and mixed embeddedness. However, to the best of my knowledge, mixed embeddedness has not been operationalized for analysis with quantitative data. The available register-based secondary data is detailed and of high quality, but does not perfectly suit the operationalization of some variables and in those cases, only approximation was possible. For instance, in order to capture the meso level of social network embeddedness, I distinguished between social ethnic and social family capital. Further I approximated ethnicity based on available register

information on country of birth of immigrants, although birth country and ethnicity do not perfectly overlap, certainly in the case of several multi-ethnic countries. I constructed family variables based on register information on spouses, although this operationalization does not cover all family relations in society, for instance unmarried but cohabiting couples without children.

On a micro level, approximating human capital with the level of education of immigrants might be troublesome, for several reasons. One reason is that the concept of human capital includes more than just formal education, another is that the information available in the register data regarding education obtained abroad is based on self-reporting. The comparability of education from different countries may vary and the quality of educational information seems to vary across immigrant categories, in particular regarding newly arrived migrants.

A major challenge I faced relates to the approximation of macro-level institutional change. As many institutional changes may occur at the same time, it is always difficult to distinguish the impact of one macro-level factor. The way I approximated the impact of migration policy was by controlling for residence permit for work and entrepreneurship, both being categories of labour immigrants. Unfortunately, while Statistics Sweden collects information on residence permits for entrepreneurship separately, it is not available for research purposes, but is merged into a single category.

While I apply advanced quantitative research methods to the longitudinal detailed data, the analysis is by no means exhaustive. An obvious limitation, but also an avenue for future research, relates to qualitative analysis and the collection of data better suited to the operationalization of mixed embeddedness.

Future research on immigrant entrepreneurship in the Swedish welfare context might be devoted to a deeper understanding of specific industries. As Paper A shows, immigrants originating from particular countries or holding a specific status specialise in particular industries. For instance, immigrants in the sector of hotels and restaurants originate mostly from the Middle East countries and hold the status of refugees. A detailed investigation of immigrants in the tourism industry is needed, paying particular attention to sustainability.

Finally, further steps in developing the mixed embeddedness approach to grow it into a mature theory and further empirical verification in different contexts would shed more light on immigrant entrepreneurship.

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