Social Capital and Development Trends in Rural Areas

Volume 10

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editors
Abstract: This volume contains the examined and selected papers of the 11th International Workshop on “Social Capital and Development Trends in Japan’s and Sweden’s Countryside.” The workshop was held in August 21–23, 2014 in Östersund, Jämtland, Sweden and its aim was to discuss common topics of non-metropolitan and rural regions and urban-rural interaction in Sweden and Japan, with the concepts of social capital and social entrepreneurship as common denominators. The volume consists of 17 contributions by authors from Sweden and Japan, successfully accepted through peer review. The book presents interesting and diverse viewpoints on the interface between the concept of social capital and the development of rural regions.
Preface

Yvonne von Friedrichs, Hans Westlund, and Kiyoshi Kobayashi

Urban-rural relations are rapidly changing all over the world. Globalization and urbanization, but also economic and political crises and conflicts are in various ways influencing rural areas. Many new questions arise on the future of countryside. This situation calls for new research on rural development, urban-rural relations and the factors having impacts on them.

The yearly workshop Social Capital and Development Trends in Rural Areas is a forum for presenting and analyzing research on these important issues. The first workshop took place in Östersund, Sweden in August 2004 and thereafter the workshop has been organized every second year in Japan and every second year in Sweden. Ten years later, in August 20-22, the workshop returned to the Mid Sweden University in Östersund for its eleventh meeting; this time with a special focus on the role of social entrepreneurship and social capital in rural renewal.

This volume, the tenth volume of contributions from this workshop series, contains 16 peer reviewed chapters presented at the workshop. We would like to thank the Mid Sweden University for important support to the organizing of the workshop, the Mayor of the City of Östersund, Ms. Annsofie Andersson for hosting the workshop dinner, and Mr. Jens Nilsson, Member of the European Parliament for his speech on rural policy in the European Union.

Also, we thank all the contributors of the workshop. Especially we would like to thank Professor Yansui Liu and Dr. Yuheng Li from the Institute of Geographic Sciences and Natural Resources Research of the Chinese Academy of Sciences, for their keynote speech New-type urbanization and rural transformation development in China. Last but not least, we thank Dr. Maria Bogren for organizational assistance.
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1 The Role of Social Entrepreneurship and Social Capital in Rural Renewal

Yvonne von Friedrichs, Hans Westlund, and Kiyoshi Kobayashi

1.1 Introduction

The last decades, nations and regions have experienced times of rapid globalization in the economy. Globalization affects the ability of regions and local communities to thrive and innovate to ensure residents’ welfare. Many regions are affected by rapid and ongoing social changes that are reinforced by various social phenomena such as rapid development of information and communication technology, new international division of work, and changing roles of nation states, which all together have had major impacts on the prerequisites for economic growth and social progress in various regions all over the world. Such rapid and radical changes urge reflection on institutionalized and taken-for-granted views on what, why and how things are done and organized in society and who to take responsibility for individual and common needs. One challenge in the twenty-first century will be how established institutional structures in economies could be adapted to the rapidly changing society. The increased competition between regions for labor and growth has together with the globalized economy fueled the need for restructuring in order to achieve sufficient levels of innovativeness and attractiveness in regions.

Encouraging entrepreneurs, entrepreneurship and new business creation are often emphasized as a means to create local development and growth in the global economy. In times of rapid social changes the urge for rethinking entrepreneurship in a broader sense have become an issue to better approach the challenges about the division between private and public responsibilities for individual and common necessities in local communities. As an answer to these challenges a broadened approach to the concept of entrepreneurship has emerged, related not only to economic value creation but also to human, cultural and social value creation.

The notion of cooperation and alliances between regional public, private and volunteer actors has become strategies to meet up with the increasing global competition between regions which affect local welfare and wellbeing and will occur in different contexts and on various levels in society. A collective approach to the entrepreneurship concept, such as social entrepreneurship, is not new but has become a more useful concept in times of national, regional and local renewal processes.

Social entrepreneurship is a powerful means to stimulate innovative and creative actions with the purpose to develop and organize functions of advantage to society. Social entrepreneurs has been proposed to make significant and diverse contributions to regions and communities, adopting business models in their work to find innovative solutions to complex and pressing social problems. That is why a suggested definition of social entrepreneurship includes any and all entrepreneurial activities that have community-based goals that strive for profitability in some
way to become sustainable. The social entrepreneurs identify society’s failures and transform them to opportunities for the benefit of the local community. Much of the value of research on social entrepreneurship lies in the non-restricted and innovative manner in which the social entrepreneurs pursue their goals, which allows us to consider several pressing issues in social science without getting “locked” in a certain institutional setting. The social entrepreneur is a person or a group of persons that are involved in common causes at the local community. The range of issues that is possible to address with social entrepreneurship is almost limitless and the remaining 16 chapters in this book aims to address various fields in the research of social entrepreneurship with close connection to social capital and rural development.

1.2 The Content of the Book

Part i. Social networking as a collaborative model for renewal

Societal entrepreneurship – model for regional renewal? – The case of a table tennis club as social bricoleur, by Yvonne von Friederichs and Olof Wahlberg

This chapter is about how a sports club has taken over the role as community developer when lives changed for people and organizations in the local community. Using a small community in the northern parts of Sweden, which struggle to meet challenges to locals followed by severe changes in society, the chapter shows how the sports club and its enthusiasts work as a local societal entrepreneur to protect the village welfare. It is shown how a sports club by being on location can use its members’ networks to commit resources to the local social entrepreneurship. The chapter also shows how local social entrepreneurship needs to attract various types of capital and resources to succeed such as: people, money and social capital. One of the conclusions drawn is that, to achieve a sustainable local social entrepreneurship it needs to be institutionalized and organized to help reduce dependency on individuals and to be a sustainable model for local development and prosperity. There is a risk otherwise that the capital attenuates. For small villages, there are therefore a risk of falling into a downward spiral of population decline and further reduction of local public services.

Social entrepreneurship in the early modern Japan: proposal of an alternative view, by Yasutaka Matsuo

In chapter 3 Matsuo discuss how Japanese villages in early modern days generally are regarded as the ones under subsistence economy and that the need to correspond to the commercial paradigm made them disintegrated. The chapter proposes an alternative view that various mechanisms based on social entrepreneurship partly devised and partly accepted by the families and communities existed and functioned endurably and continuously since the former time of early modern days to the modern time, and that they have made it possible to enhance economic conditions positively through all its time.

In its former days the movement was often limited within its village and neighborhood or its district. However, in its latter days the prevalence of education and publishing enabled them to accept the movement from outside. Various kinds of local vitalization movements combined with certain philosophical thought occurred. The role of “Gouzoku” since the beginning of the early modern days to the modern days is noteworthy. Both urban and rural communities arbitrarly chose some movement and pursued for their promotion and stable reproduction. Up to the modern days this activity was succeeded. However, the spontaneous social entrepreneurship waned after the Taisho Period when the industrialization flourished in Japan. Finally, in the...
progress of urbanized society in the 1950’s and after the movements in villages for reproduction and vitalization fell in shrink and disrupt.

Visualization of the diversity of the community using social network analysis in Iwamura and Yanagase, by Kazumasa Iwamoto, Hirotaka Ishida, and Yoshifumi Demura

In chapter 4 Iwamoto, Ishida and Demura raise the question of what it is that distinguishes a vital society from a declining society. They argue that relationships between neighbors in the Japanese society have become weak which results in lack of shared sense of community prohibiting local development. Through the results from a social network analysis conducted in the shopping district of Yanagase in Gifu City the authors visualize a society structure within four shopping unions. The results show that the difference between being a vital or a declining society depends on whether the relationships are centered to associations or persons.

Residents’ cooperative behavior in neighborhood associations, by Sachiko Ohno and Akiyoshi Takagi

In chapter 5 Ohno and Takagi address a policy shift in Japan’s regional development. They have observed that policies more often than before focus on cooperation, co-production, collaboration, and partnership among various stakeholders. In such cooperative policies and programs the expectations on residents’ active participation have become a key issue. In order to support people in their daily life or help out during disasters municipalities like residents to engage in public service by working together with other residential stakeholders in public common areas. Based on a study of neighborhood associations in Japan the focus is on understanding residents’ cooperative behavior in neighborhood associations.

Junior Sports Club and Regional Social Capital in Japan, by Kenji Tsutsumi

In chapter 6 Tsutsumi examine the function that regional sport clubs (JSC) have on the development of regional social capital in Japan. He means that the wide spread JSCs in the Japanese society has an important role to breed children outside of family and school, through sport in a region and that JSC can be a platform of social capital for children in a region. In the wake of rapid aging and natural depopulation the power of JSCs has been abolished; population of JSC children members, leaders and instructors is declining. This has also meant deprivation of regional social capital. The chapter shows several factors in the Japanese society that hinder junior sports clubs to maintain as enablers for young peoples’ socialization. Tsutsumi argues that a revitalization of JSCs will have positive effect on the social capital for children in a region.

Part II. Key factors for rural development

The Value of Countryside, by Lars Westin

In chapter 7 the problem of defining the countryside is discussed by Westin who claim that lack of a clear definition is especially problematic when measuring the value of a place from their assets. The Swedish countryside has for a long time experienced a fundamental transformation from being a country specialized in basic assets for human living, being mainly agricultural, to becoming a deliverer of rather basic products from forests and minerals. The countryside, defined as a geographical area, has become a place with relatively small shares of human assets compared to the city. Due to those circumstances it is suggested that the development of countryside assets is facilitated by accessibility to growing cities where labor saving technologies and communication possibilities are more developed. In the chapter different successful policies and
strategies for developing the countryside are discussed and examples from the Swedish county of Västerbotten are presented.

**Measuring Regional Well-being – New “Affluence Indicators” in Hokkaido**, by Kazuo Machino

In chapter 8 the focus for the author Machino is how to measure regional social well-being. Machino present a development of an earlier developed set of “affluence indicators” derived from survey data as the base for the measurement of regional well-being. The chapter demonstrates a method to capture resident happiness through subjective opinion surveys as the base for the weighted indicators. The indicators are meant to measure both material wealth and spiritual richness. In the chapter it is shown how the indicators can be used as a tool to increase regional well-being in local areas in Japan, using the island of Hokkaido as an example.

**Rural resilience in the post-industrial society – an empirical case study of a northern Swedish region**, by Wilhelm Skoglund and Olof Wahlberg

In chapter 9 the authors Skoglund and Wahlberg problematize the present image of rural societies as left in the backwaters of the economic development in society resulting in a dark image of rural societies, with people leaving for a better life elsewhere. In the chapter, the authors present a more positive image of life in rural areas. Certain conditions are suggested to be central to a rural lifestyle, conditions hence crucial for rural resilience. The findings reported from Sweden does, however, also point to the providing of services – in a wide meaning – as crucial to rural life. The findings point at certain such services that shall be addressed in a rural development scheme.

**Demographic and economic trends in a rural Europe in transition**, by Mats Johansson, Pia Nilsson, and Hans Westlund

In Chapter 10 Johansson, Nilsson and Westlund study the vast demographic and economic-structural transitions that rural Europe is going through. Studies have shown that demographic development differs a lot when comparing urban regions with more sparsely populated peripheral regions. These diverging patterns is shown to be especially strong in the northern and eastern parts of Europe where a redistribution of people contributes to a concentration process to the metropolitan or big city areas as well as to shrinkage and depopulating. The chapter empirically addresses these differing demographic development paths by analyzing the influence of key underlying demographic factors on population growth across European rural regions. Key findings indicate that migration is the prime driver behind population growth and shrinkage, the age structure is of importance with regard to population changes and there exists an east-west divide between the growing west and declining east where the declining sectors are more frequent. The chapter is finished by a discussion of impacts of social capital on shrinkage and effects of shrinkage on social capital.

**The influence of related and unrelated variety on firm performance across European urban and rural regions**, by Pia Nilsson, Lucia Naldi, Hans Westlund, and Sofia Wixe

In Chapter 11 Naldi, Nilsson, Westlund and Wixe empirically address some of the factors that are identified as the key underlying ideas behind the policy-oriented concept of smart specialization e.g. factors related to the influence of specialized diversification, innovation and knowledge on firm performance. It has been argued that while the logic is well suited for intermediate regions it offers only limited possibilities for very isolated regions due to lack of scale in their population and industrial base. In order to analyze the influence of these factors on firm performance and diverging patterns across regions the chapter uses firm-level micro data across Europe. It is found that when the model is estimated across European urban and rural regions,
indicators of smart specialization in terms of related and unrelated variety do not affect firm performance homogenously. While consistent support is found for the positive influence of proximity to firms with similar settings in terms of knowledge base and technology, results are diverging in terms of the influence of unrelated variety depending on regional characteristics.

**Part iii. Social capital in transition**

*A study of elderly residents in a small New Town – an example of Tsurukabuto Kobe City*, by *Kinuko Fujimori*

In chapter 12 Fujimori report the results from a study of the situation for elderly people in contemporary Japan. Fujimori discuss the problem with the rapidly ageing of the population in the country and why there is a growing problem with the caretaking of the increasing number of elderly people. It is shown that there is still a general practice in Japan for different generations to live together and further that it is considered to be a duty for the family to take care of the elderly. To this background Fujimori show that due to structural changing in the Japanese society, where opportunities for the elderly to work are decreasing and that there are changes in the family system, elderly people live alone or with the spouse. In the chapter empirical evidence from the study conducted in the "New Town" of Tsurukabuto outside Kobe City show that the living conditions and the caretaking of elderly people in Japan today depends on a strong social capital where neighbors and volunteers have become vital resources for the care of elderly.

*Social capital for business development – developing relationships and trust in development programs for women entrepreneurs*, by *Maria Bogren*

In chapter 13 Bogren argue that a high level of social capital in a region often correlates with a high level of entrepreneurship and that social capital creates wealth in society. She means that the underrepresentation of women entrepreneurs in northern Europe has negative effect on economic and social capital development in countries and regions. Further, the positive relationship between social capital and business performance is shown and that this relationship could be developed through development programs aiming at encouraging women networking and the social capital. Bogren shows that development programs encourage women entrepreneurs to grow their businesses as well as the identity as business owners. The question if such programs are organized and designed in a way that they facilitate the development of social capital is raised in the paper and how to measure social capital, in the form of relationships and trust. Thereby the chapter gives a contribution to the discussion on how social capital can be visualized and measured.

**Part iv. Smart welfare in society renewal**

*“Ka-Ki-Ku-Ke-Ko” Businesses will save local regions*, by *Kiyoshi Kobayashi*

In chapter 14 Kobayashi draws attention to the growing number of middle-income countries among the developing countries in the world and that a huge middle-income class is going to be born in the near future. Kobayashi argue that for middle-income countries to transform into developed countries, developing the human and social capital of the huge middle class is essential. Due to their close connection with local communities, social capital and infrastructure investment are essential for expanding and developing the growing Ka (‘tourism’), Ki (‘education’), Ku (‘lifestyle’), Ke (‘health’), and Ko (‘communication’) businesses. No country has
ever achieved sustained high growth without maintaining a highly qualified social capital in these fields. The chapter concludes that a local contextual identity that local residents can share is central to achieve regional development, and the role played by Ka-Ki-Ku-Ke-Ko businesses in this process is significant.

**What is smart rural development?** by Lucia Naldi, Pia Nilsson, Hans Westlund, and Sofia Wixe

In Chapter 15 Naldi, Nilsson, Westlund and Wixe discuss the consequences for rural areas of the European Union's new ten year growth strategy called Europe 2020 that states that Europe should become a *smart, sustainable and inclusive* economy. This chapter attempts to answer the question: what is smart rural development? Also, it presents indicators of smart rural development and analyzes their relevance in further empirical studies of issues related to smart growth. The chapter starts by presenting an overview of the emergence of the concepts of smart growth and smart development and continues with a comparison between 'smart development' and the related term 'sustainable development'. Thereafter, the chapter discusses what smart development implies for intermediate and peripheral regions, respectively. Finally, the chapter discusses and presents indicators of smart rural development that are relevant and applicable in future empirical studies that focus on the evaluation of European smart growth policies.

**A New Vision for a Traditional Manufacturing Village in Mino** by Yoshifumi Demura and Kemmei Hayashi

In chapter 16 Demura and Hayashi demonstrate what effects the decline of traditional industries have on depopulation, lifestyle changes and the cultural landscape in rural areas in Japan. They show that even if residents have shared values about the community identity, as manufacturing and trading centers having a long history, it is difficult to preserve traditional townscape due to economic difficulties. With the village of Mino and the long tradition of manufacturing *washi* paper as an example, the authors demonstrate how the preservation and improvement of traditional paper manufacturing could serve as a common vision for the industrial landscape both as a tourist attraction but foremost as a base for economic revitalization.

**Social ties and temporal migrant workers in rural areas** by Gunawan Prayitno, Kakuya Matsushima, and Kiyoshi Kobayashi

In the final chapter Prayitno, Matsushima and Kobayashi measure the relationship between social capital and migration in rural areas. The issue of migration is particularly important to Indonesia, a country with a long tradition of population mobility and high rates of rural–urban and rural–abroad migration. Moving to towns or abroad has been an important part of the farm households' livelihood strategies for many years. In Indonesia, as in other developing countries, migratory movements have multiplied greatly in volume in recent years, as transport and communications have improved. Prospective migrants are using their relation with relatives and friends in making decision to migrate. Migration decision is commonly agreed influenced not only by economic aspects but also by social aspects of home countries as well as the host one. Using data from 500 household respondents in rural Indonesian the authors measures the relation between social capital and migration using the concept of social ties or social network.
Part I

Social Networking as a Collaborative Model for Renewal
2 Societal Entrepreneurship – Model for Regional Renewal? – the Case of a Table Tennis Club as Social Bricoleur

Yvonne von Friedrichs and Olof Wahlberg

2.1 Introduction

Something odd happened in a small society called Docksta during the last decades of the 20th century. When economic and administrative forces threatened local social service and the base for business in the society, a table tennis club emerged as a societal entrepreneur and counterforce. This paper is about the growth, roots and concerns of social entrepreneurship in a small, peripheral society, where the sports club replaced the common public responsibilities and became agent for the community development. The purpose of the paper is to contribute to the knowledge about the prerequisites and perils of social entrepreneurship when the volunteer sector take over traditional public commitments in small, peripheral societies. It is shown how social entrepreneurship as “volunteering” and voluntary organizations are moving towards commercial models for local development and welfare and how the collective entrepreneurship, non-profit and commercial forces together, taking over the role from the public sector as welfare developers in small communities outside the dense city centres.

Societies are constantly changing. New patterns of communication via itc, global competition, structural changes in the economy, state budget cuts and more are fundamental forces driving the changes that may be more or less significant consequences, both at the local as well as national level. One notable change is that the trends towards urbanization, where the big cities are attracting population while locations in outlying areas lose population. Approximately 70 per cent of the population growth in Sweden is currently in the three metropolitan counties (Stockholm, Gothenburg, Malmö), while the population in rural areas and small towns decreases (scb 2013). This tendency contributes to a downward spiral in which a reduced population base means a reduced tax base, which in Sweden has the affect that the small communities disappears in sparsely populated locations outside major cities. Thus reducing rural amenities include schools, health facilities, and elder care, as well as gas stations and convenience stores, which in turn affects the willingness of people to settle outside the bigger towns and communities (Tillväxterket 2014). What disappear are the many important elements that are largely included in the families’ calculations when considering where to settle down and make a living.

In this development, with a negative sign for sparsely populated locations and periphery, there is a counter force in the form of a social entrepreneurship. That is, individuals who alone or in a collective community sees opportunities to contribute to positive social development in a situation where government initiatives and efforts proved insufficient to counteract negative
changes in society, and also has the ability to translate these opportunities into action (Dees 1998, Johannisson and Nilsson 1989, Johannisson and Lundqvist 2009, Pastor et al., 2003). Such entrepreneurship that aims to influence change in society requires access to and mobilization of the necessary resources for such processes. One challenge in social entrepreneurship is to mobilize resources to create a long-term sustainable development.

As social entrepreneurship has shown to facilitate positive local and regional development, it is important to increase the understanding of the opportunities and challenges with the social entrepreneurs as change agents. On an international level, there are relatively extensive research on how individuals and communities mobilizing resources to create a positive social development (Pierre, von Friedrichs and Wincent 2013a), but such research has mainly focused on the phenomenon of social entrepreneurship in a developing country context where problems can significantly differ from one context into a more developed economy (Bjerke 2013, Gawell 2013).

As a base for the discussion in this paper we use the case of a small rural community located outside the principal town in the middle of Sweden. Furthermore, we show club members’ efforts to create an organization that can engage people in a sustainable way, and help to influence individual and collective living conditions of local communities. After introducing social entrepreneurship and social changes, a description of the development of a local sports club as a social entrepreneur is made. The case data is based upon study of documents (Docksta btk 2013), on site visit and interview with representative from the club (Näslund 2011). The description is followed by a discussion of major prerequisites for the relative success of the social entrepreneurship put in action by the volunteers in the sports club. Finally, the perils made evident during the past years and implications for the implementation of community development initiatives based upon social entrepreneurship are discussed.

2.2 Local society- adaptive to societal changes

Since mid 1990s the development in information and communication technology has exploded and have together with the rapid globalization of industrial economy, the new international workforce division, and changing roles of nation states, had major impact on the local society changes. Such rapid and radical changes urge reflection on institutionalized and ‘taken-for-granted’ on what, why, how, things are done and organised in society and who to take responsibility for the common needs. The increased competition between regions has together with the more globalised economy urged a need for restructuring institutionalized patterns in order to achieve welfare and prosperity together with sufficient level of innovativeness and competitiveness in regions (Asheim and Isaksen 1997). This paper discuss how social entrepreneurship could be a driving force for local development in a welfare society context undergoing severe societal changes.

Encouraging entrepreneurs, entrepreneurship and new business creation are often emphasized as a means to create local development and growth in the global economy (e.g. Reynolds, Storey and Westhead 1994). In times of rapid social changes the urge for rethinking entrepreneurship in a broader sense have become an issue to better approach the challenge about the division between private and public responsibilities for individual and common necessities in local communities. As an answer to these challenges a broadened approach to the concept of entrepreneurship, i.e. social entrepreneurship, has been related not only to economic value creation but also to humanity, cultural, social and societal value creation (Mair and Martí 2006, Lundström et al. 2014). A broader perspective on the entrepreneurship concept is not new (e.g.
Johannisson and Nilsson 1989) but has become a more useful concept in times of national, regional and local renewal processes (Dees 1998, Arbuthnott and von Friedrichs 2012).

The rapid changes in society have impact not only on regions and local communities in developing countries but also in welfare countries. Previous studies show that entrepreneurship could be catalysts for economic growth, but that the number of entrepreneurial activities varies in different regions (Bygrave and Minniti 2000). It is argued that perceived uncertainty in society will open up for the employment of an entrepreneurial mindset (McGrath and MacMillan 2000) as it provides opportunities for different actors to challenge established norms and values in the society. Previous research show that the impact of structural transformation processes varies in different parts of the world and that the globalization of society has made it even more important to discuss various regional conditions for socially, economically and environmentally sustainable development (Malecki 1994, von Friedrichs and Boter 2009).

The definition of an entrepreneur has for a long time often focused on the individual aspect, who the entrepreneur is and what he/she do (Venkataraman 1997) and the context is most often the private sector. But since entrepreneurship “is concerned with the discovery and exploitation of profitable opportunities” (Shane and Venkataraman 2000) the concept could as well embrace a collective of individuals from various contexts (Johannisson and Nilsson 1998). The more globalized world the more opportunities for alternative thinking, to do things differently and for support systems to generate regional dynamic. The use of cooperation and alliances between local public, private and volunteer actors has been discussed as strategies to meet up with the increasing global competition between regions (e.g. Berglund et al. 2012). If entrepreneurship in seen in such a wider sense it may bring opportunities for different actors to question cultural and institutionalized patterns and solutions on how to solve problems and how to create wealth in different regions and contexts. Such movements will occur at different levels in society such as an individual level, i.e. the entrepreneur and a common level, i.e. the regional context.

Recent research show that the concept of entrepreneurship is intertwined with societal responsibility, which means that social benefit could as well be seen as the major organisational outcome (Weerawardena et al. 2010). This will most certainly challenge the institutionalised norms and values of entrepreneurship. Such wider perspective on entrepreneurship as a conceptual notion will incorporate human, economic and social values, which can be found in various contexts and be related to different sectors in society (von Friedrichs at al. 2014, Lundström et al. 2014). Also the notion of cooperation and alliances between regional public, private and volunteer actors has become strategies to meet up with the increasing global competition between regions which affect local welfare and wellbeing and will occur in different contexts and on various levels in society. Social entrepreneurs has been proposed to make significant and diverse contributions to communities and societies, adopting business models in their work to find innovative solutions to complex and pressing social problems (Nicholls 2010, Zahra et al. 2009).

2.3 On prerequisites of social entrepreneurship

Social entrepreneurship has gained momentum and increased attention over the last decades (Ziegler 2009; Pierre, von Friedrichs & Wincent 2013a). In an academic perspective it is a variant of entrepreneurship not focused until the beginning of the 1990s, and in the societal discussion at large, it has received attention as a source of positive society development beside traditional administrative means. Most commonly entrepreneurship and entrepreneurial behaviour is discussed from a profit making perspective. The mainstream definition of entrepreneurship
is linked to private companies, but there are also broader perspectives linked to the creation of new organizations (Gartner 1985) and various types of entrepreneurial activities associated with, and often within, larger companies and organizations, e.g. corporate entrepreneurship and intrapreneurship (Zahra, Jennings and Kuratko 1999). Entrepreneurship in this market oriented-tradition most often aims at economic return and firm creation as an end (see e.g. Shane and Venkataraman 2000).

During the last decennium there is also a growing interest for entrepreneurship from a philanthropic perspective, which brings in a focus on social and/or ecologic issues as in the concept of social entrepreneurship. Social entrepreneurship is a powerful means to stimulate innovative and creative actions with the purpose to develop and organize functions of advantage to society (Elkington and Hartigan 2008). Although Gawell et al. (2009) claims that social entrepreneurship in Sweden is most seen as individual social entrepreneurs experimenting with new venture forms and as how to transform social good to private transactional offerings. As a contrast to this view the notion of a more balanced view on the role of individuals and engaged communities behind an initiative have been emphasized by Swedish scholars and policymakers. The concept of "societal entrepreneurship" has been developed with the attempt to capture a phenomenon that has many facets depending on focus and context. Gawell et al. (2009:15) argue that "Swedish societal entrepreneurship has been strongly related to local mobilization, to employment, to the will and opportunity to remain in and reclaim a local context, and to mobilize around new business opportunities." Societal entrepreneurship assembles research perspectives that hold different focus depending on the purpose or actors involved. Further Gawell et al. (2009) argue that the concept has been developed with the purpose to draw attention to the Swedish tradition of solidarity and non-transactional collective actions in local proximity. The concept of societal entrepreneurship may perhaps be best characterized as the network forming and persistent "fiery spirits" that have enabled the reconstruction of the structures and functions which today's society no longer can maintain.

Much of the value of research on societal entrepreneurship lies in the non-restricted and innovative manner in which the societal entrepreneurs pursue their goals, which allows us to consider several pressing issues in social science without getting "locked in" a certain institutional settings. The societal entrepreneur is a person or group of persons that are involved in common causes at the local community. The range of issues that is possible to address with societal entrepreneurship is almost limitless and the field of study is therefore divided into several subcategories. One such subcategory is social entrepreneurship, an area in which there now exists a quite extensive research tradition (Pierre, von Friedrichs and Wincent, 2013a). According to Zahra et al. (2009) "Social entrepreneurship encompasses the activities and processes undertaken to discover, define, and exploit opportunities in order to enhance social wealth by creating new ventures or managing existing organisations in an innovative manner". The people involved make a difference to societal entrepreneurship as they are responsive, have strong emotional bonds to the community, and are able to build networks and to interact with other societal actors (Johannisson, 2005). The social entrepreneur, in other words, acts innovatively towards relevant structures as well as actors while attempting a predefined social goal. These goals can still be of many different kinds in spite of their common denominator of being "social". The goals of social entrepreneurship is, however, always collective and related to a greater social need. The concept of societal entrepreneurship is most often related to actors in local proximity where community based problems plays an important role (Pierre, von Friedrichs and Wincent, 2013b).
2.4 Social entrepreneurship and resource mobilizing

There is a large variation in the definition and meaning of the social entrepreneurship phenomenon in literature (Dees 1998; Paredo and McLean 2006; Pierre, von Friedrichs and Vincent 2013a; Short, Moss and Lumpkin 2009). A common denominator is, however, that it is a kind of entrepreneurship that it is motivated by social values rather than economic, as presumed in traditional entrepreneurship. Yet, the difference is not sharp: considering traditional entrepreneurship Drucker (1985) and Austin, Stevenson and Wei-Skillern (2006) note that entrepreneurship may rest on both economic values and social. Social entrepreneurship in its turn often requires an economic basis for its social value oriented activities. The difference between commercial entrepreneurship and social entrepreneurship thus lies in the relative attention to commercial respective social value generation, and whether the economic outcome is a means to an end or an end in itself (Peredo and McLean 2006; Ratten and Welpe 2011; Venkataraman 1997).

At the core of social entrepreneurship is the ability to mobilize different kinds of resources. It is also part of the picture that this is done by combining resources in new ways (Peredo and McLean 2006). Not just economic resources, nota bene, but all kinds of resources needed for initiating and implementing change initiatives. The existence of social capital is crucial to such mobilizing. It is commonly conceptualized as a societal resource itself, linking citizens and enabling them to pursue common objectives (Stolle 2003). Adler & Kwon define social capital as: “Social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor’s social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor” (Adler and Kwon, 2002:23). This kind of capital is crucial for voluntary involvement in development initiatives – and it tends to build up successively in contexts where citizens participate for a common purpose. Onyx and Bullen (2000, p. 195) argue that: “The development of social capital requires the active and willing engagement of citizens working together within a participative community.”

The embeddedness (Granovetter 1985) in a social network of relations is identified to be vital to all kinds of entrepreneurship. Quintessentially, the personal network of an entrepreneur is his/her unique capital, which is utilized as a platform for entrepreneurial activities (Johannisson et al. 2002). This is relevant also for social entrepreneurship. Ratten and Welpe (2011) discuss how such entrepreneurship involves and requires cooperative relationship between different actors, and the impact of formal and informal networks. In the same vein, Smith and Stevens (2010) point to the importance of embeddedness for the development of variants of social entrepreneurship and its mobilizing of resources. Notable is that a high degree of embeddedness/integration in a society is held to be facilitating the “bricoleur” function (Baker and Nelson 2005) when social entrepreneurship is based upon a pragmatic mobilization of resources (Di Domenico et al. 2010). The embeddedness can take the form of organizational affiliation (Zahra et al., 2009). Such affiliation provides the social entrepreneur with a net of contacts which facilitates the gathering of the necessary resources for societal entrepreneurship initiatives, since it implies a context in which resources can be found and mobilized. The organization itself can belong to both the non-profit sector or the commercial sector, and it can be a public organization (Austin, Stevenson and Wei-Skillern, 2006; Mair and Marti, 2006).
2.5 The case of Docksta Table Tennis Club

THE CASE OF DBTK

During the last decades several municipalities in Västernorrland have experienced that the total number of inhabitants have been reduced and how the people who still lives there are forced to find new models on how to secure wealth and prosperity for the inhabitants and enterprises in local society. Cross-border collaborations between actors from private, public and civil sectors have been developed in different ways and these initiatives try to solve the organisation of several functions that previous have been taken care of by public sector and financed by taxes.

Docksta is a small community in the county of Västernorrland in middle of Sweden. The population in 2010 was 378 inhabitants. The location of the society makes it vulnerable to the recent urbanisation forces. There has also been certain immigration from the society in the last decades, even though it is not amongst the societies that have suffered most from the on-going migration from rural and peripheral locations. The development of the society at large is more negative than the development of the population, though, with enterprises wrestling with financial problems, and a school and housing for elders that are both threatened to be closed down for economic reasons. To counteract the negative development, Docksta Table Tennis Club (dbtk) has developed into a social entrepreneur to save local jobs and mitigate the consequences of the negative development at large.

THE BEGINNING

In the beginning of the 1960s, table tennis was a fast growing sport in Sweden, with some prominent Swedish players evoking a nation-wide interest in the sport. Some teenage boys in Docksta desired that they wanted to play, and turned to the local sports club to be able to do so in an organized way. This club was, however, focusing the traditional sports activities in the local society: cross country skiing and ice hockey, and was not particularly interested in widening its activities to start with table tennis. The boys were therefore advised to start a table tennis club on their own. In 1963, the boys followed the advice and established dbtk. The new club resided in very simple conditions in the attic of a house in the village, where they played on simple chipboard. The club soon turned out to be a meeting point and gathered many of the younger generation in the village, which played table tennis and socialized. After a while the club moved to an old barn house in the vicinity, which the club members renovated themselves with their own means.

THE CLUB GREW INTO A HUB OF DIFFERENT SPORTS, FOCUSING DIFFERENT CATEGORIES OF SOCIETY MEMBERS

The boys who started the club were interested in more sports than table tennis – the first purchase made by the table tennis club was actually a javelin. The club also successively grew to be the hub of an increasing number of sports activities. Over time, these activities did not only involve the youths, but most categories from the local population. Notable is that the involvement in different sports activities were combined with sports related building activities, which were carried out with a great share of voluntary work. Already in 1965, the club commenced with soccer, and the same year the club built a tennis court close to the village school. In 1965, the old sports club in the village turned to the new club and asked it to take over the hockey section too, which the club accepted. In 1967 the club also started with keep-fit exercises for the villagers. In 1985 they started a section for water skiing and in 1987 they started a climbing section.
inspired by a couple of the club members who had experienced climbing abroad. The climbing was performed on a route that was built at a steep slope of the neighboring mountain. The club established a separate climbing section and told people that they were welcome to climb – for a fee. In spite of much reluctance both amongst club members and in the local society at large in the beginning, the climbing route turned out to be a good business for the club, with both an increasing number of climbers and increasing fees. In 1988, a bridge section was established intended for the elder generation in the society. In the same year, the club erected a house at the top of the local ski slope, where coffee and buns were sold to the skiers. In 2004 the club took over all alpine activities, together with lifts and serving in the top cabin. In 2005 yet another section was established within the club: horseback riding primarily intended for girls in the local society – as a balance to the boy-orientation of other sports in the club.

The Club also Invested in Tourism Activities and Music Festival

In the 1980s, the trust in industry as a driver of economic development started to give away – both in the society at large and in Docksta. Instead, there was a growing attention paid to tourism as a post-industrial alternative. In the end of the 1980ies, the municipality was reconsidering its ownership of an alpine complex at a nearby mountain. Eventually it approached DRTK and asked if the club was interested to take over the operations of that complex. The club accepted, since it saw it to be important to the development of the local society. The alpine complex became part of the club’s activities, first as a separate enterprise and then, after 2010 included in the club’s ordinary operations. In the 1990s the club also decided to invest even more in tourist activities both by erecting small houses in a camping site managed by the club, and by building recreation facilities for children. The reason for these investments was that the club wanted to contribute to the positive development of the local society. The financing of the investments was partly made with regional funds admitted by the County Board.

A music festival was arranged close to the mountain nearby for the first time in the middle of the 1980s. The club was one of the founders, together with local tourist organizations. They also contributed to the festival with voluntary work. In 1996 the tourist organizations withdrew from the festival, and the club took over the whole responsibility. The club made some substantial investments in the festival facilities – including parking space, sanitary facilities and the like. The festival has therefore been quite demanding – both in investments of financial resources and voluntary work to make it function. But it has also proven to be a source of substantial financial resources that the club has used for other objectives.

The Property Section of the Club Emerged from the Need for Club Facilities

Ever since the club was founded and the first localities were adapted to the need of the club, construction and renovation of buildings have been important club activities. It started when the club was rejected in the old sports club in the local society. The club was required to cater for its own needs for facilities for meetings and for playing table tennis. The club continued with a wide range of construction, adaption and renovating projects undertaken to provide the club’s growing array of sports activities with necessary facilities, and later also with construction work as part of the social entrepreneurship activities. The club renovated and adjusted an old barn house to be able to have a place for meetings and practice. Shortly after (1967) the club realized that there was a need for a dressing room next to the hockey arena in the village. They received no public funding for this, why the club had to fund the dressing room with own means. The
club mobilized its members and built the dressing room— with quite a lot of voluntary work. In the 1980s there was a need for a dressing room for the table tennis club as well. At that time there was a facility for sale in the village centre, with a couple of flats and a small business - and some empty rooms for the club to use. The club bought the building and changed it to fit the own activities. Including rooms for the club’s management.

There was a great reliance on the industry as a driver of societal development in the 1970s. The Swedish government and administration discussed the possibility to support local economies through investments in industry facilities. It was also discussions in the village of Docksta that the municipality should invest in an industry premise to support the local economic development, but nothing happened. This was discussed among the club’s “core” members as a problem for the local society. The club members knew about an entrepreneur who was willing to rent facilities for his business. So they decided: “Let’s do something!” This was the prime event that marking the development of the club into a social entrepreneur committed to the economic development of the local society. After the possibilities for renting were considered, the club negotiated with the local bank for a loan to finance the building of the industrial premise. The bank was willing to lend the club sek 500 000 on the basis of the budget compiled and presented. Still, there was a further lack of 800 00 that needed to be raised to be able to erect the premise. The Club turned to the municipality, and gave an offer that if the public authority lent sek 400 000 to the club, the club would fix the rest of the money themselves. The municipality representative thought it was a crazy idea: how could the club think they were able to do it if the municipality did not see the possibility. But since the club management had received a good reputation as a trustworthy “fixer” in the local society, and if the club believed in it – and managed to fix its part of the financing, the municipality promised to contribute with its part. The club management turned to organizations in the surrounding society, including political organizations, sports organizations, religious organizations and the lot. The organizations were invited to a meeting where the club management told them that it had the idea of erecting an industry premise in the village. They invited any one who wanted to take over and be responsible for the project. The organizations invited thought it was a great idea and promised to help. But the responsibility for the project was delegated to the club in the meeting. In a follow-up meeting, the club announced that they had invested sek 20 000 themselves, and the other organizations then came up with corresponding contributions – which made them committed to the project too. Eventually the financing of the premise was guaranteed “So we built an industry premise!”. The premise was erected in 1987, and “after this everything was on the roll!”, and the club developed into an organization with two main activities sports and social entrepreneurship. A tenant in the industry premise needed more exhibition space for his business, and attempted to convince the club build another flat in the premise. Soon after, another local entrepreneur turned up and said that he was willing to be a tenant if we built the extra space. The club agreed and built one more flat – with much voluntary work nota bene. The club became a property owner besides being a spots club.

The club saved a local factory

The good reputation grew stronger over time and was made particularly evident in an interview in a regional newspaper when a local shoe factory was threatened with bankruptcy. The closing of this shoe factory would have had serious consequences for the employees and for the local labour market. In a media interview an employee was asked if she thought that the municipality would offer assistance, and she replied that she did not see that the municipality could do much — “but most certainly the table tennis club might help!” When the club management recognized...
the confidence for the club, they organized a series of meetings to which people from the local society were invited to discuss what measures that could be taken. The opinions were, of course, diverse many felt that nothing should be done and the development should take its cause. Others, again, thought that something should be done to save the jobs in danger. Amongst those who were inclined to do something, were the core members of DBTK. They decided to continue to look at alternatives and see what could actually be done. In communication with the bank, the club was advised to establish a separate limited company for its development efforts to be able to deduct VAT. Docksta Development Ltd was therefore founded, and through this enterprise the whole village was invited to take part in the development efforts: “Buy shares in DUAB!” The club itself invested SEK 25 000 in the enterprise to show confidence and commitment to the enterprise, and to the development efforts. Financed by DUAB, the shoe factory was back in operations again in 1991, which meant that 10–12 local jobs were saved.

The purchase of an apartment complex and an retirement home in the village

In the beginning of 2000 several flats in an apartment complex in the village were empty, and the municipality was offering to sell 60 flats on bid. Local people gathered in a meeting to discuss the situation. It resulted in a delegation approaching the club and wondered if it could step in as a buyer. The club accepted and, in 2001, turned out to be the owner of the apartment complex in question. When the club bought the apartment complex from the municipality the conditions were that they also could buy a retirement home to prevent it to close down. This was otherwise something that the municipality had considered to do. The club had financial resources to pay for some of the investments, but it also needed bank loans to finance the whole investment. The bank hesitated to give them this loan. The club management had a very good reputation, but the bank argued that there was no guarantee that the same management would remain in the club in the future. The bank declared to be willing to lend the money to the club, provided the club had a 5-year contract with the municipality as a base to finance the retirement home. After further negotiations with the municipality about such a contract, the club was eventually allowed a 5-year mortgage. So the club management said: “let’s do it!” and the club founded a separate enterprise for this and bought the premises, which they still owns.

The sports club takes over the school and the sports areas.

In 2005 the municipality planned to close down the school in the village of Docksta, and to bus the children to larger schools. “The number of children had made the school too expensive” said the municipality. The parents and school staff turned to DBTK and asked if the club could take over the operations of the school. Because the municipality had stated that they were willing to reconsider the close down decision if someone was interested in taking over the operations of the school. The sports club meant that: “if there are 50 children, then there are 100 parents. To say no to them is not so easy.” So after some negotiations, DBTK bought the school premises for SEK 400 000 and took over the operations – and the school was saved for time being. The club was allowed a 5-year mortgage by the municipality also in this case. This did not turn out to be a big financial burden to the club, because the mortgages were paid with the surplus received after the club had altered the school’s structure and adjusted to school premise accordingly. Part of the solution was that the club invested SEK 1000 000 in a change of the premises to be able to integrate the nursery school. This changes was made with a large share of voluntary work as well, with many Docksta villagers. Additionally, when the club took over the school, they also
took over the operations of the nearby sports arena, including the tennis court, the hockey rink,
the soccer arena and the dressing rooms at the sport arena.

**SUMMARY OF THE SPORTS CLUBS DEVELOPMENT IN TO A SOCIAL ENTREPRENEUR**

Much of the club's construction activities were made with a large proportion of voluntary work. A fundamental element of the construction activities from the start was that it all has been undertaken with a large share of voluntary work. To renovate and adjust the first clubhouses the club members met and worked together. This reliance on voluntary work, combined with the ability to actually motivate the club members to perform voluntary work, has continued to be key ingredient in the club's activities as a social entrepreneur too, and a prerequisite for its activities. The societal commitment that led to the club's social entrepreneurship commenced in the dressing room at the club. It was during these meetings the club members discussed common development issues related to developing welfare in the local society. Over the years the founders of the club grew older and their commitment to the development of the local society matured. Three of the founders of the sports club formed the very core of the club and it was those three that led the club during the years of its existence. At the same time it was also well known that those who were interested in the development of local society could use the club as a platform for development efforts. The base for all the activities was the voluntary resources and the earnings from the revenues from the property ownership. This was the very basis of dbtk's activities as a social entrepreneur. Over time, the club earned a reputation of being a "fixer" and a "doer". They showed the capability to organize and implement activities in the local society.

Despite that dbtk was very successful with most investments made – at least until the early 2000s, the success also led to problems especially because the club is a nonprofit organization that rest on the voluntary efforts. The club member explain: "Non-profit organizations that drive too much commercial activities fall into a gray area with the Revenue Commissioners who have been wondering what we really were doing? We have been very lucky because we have called them before they have reached us. When the commitments has grown so much, we called and ask them to help us to bring order to it. Then they said – you have to form a special risk company. All service has since then been added to Docksta dbtk Ltd which was established in 2002. But we have bought everything in the non-profit association, so the non-profit association owns all the properties, except for the school."

2.6 The sports club as a local society bricoleur

There are a number of prerequisites for dbtk's activities which may have contributed to their development as a social entrepreneur and giving it the specific character. First it is the social embedding that has given the club's credibility, second geographical proximity has made the club into a society bricoleur and hybrid, finally resource mobilization has been the key to the role of the social entrepreneur.

**THE SOCIAL EMBEDDING THAT HAS GIVEN THE CLUB'S CREDIBILITY**

dbtk's social embedding in the local community has been a prerequisite for club development to becoming a social entrepreneur ever since its inception. They formed an organization for sports
that brought together many young people in the locality and later evolved to include a variety of activities designed for different categories of community members – both old and young people and with different interests. This created the foundation for social entrepreneurship which then characterized the club. Thanks to the various contacts with the local population through all sporting activities, the club activities outside the sports arenas was not perceived as odd, even though it had a purpose other than sporting. Rather, the club has been seen as the natural agency capable of gathering local resources – labour and capital – to create positive development where society has failed. As the club also demonstrated an ability to organize, administer and carry out activities outside the purely sporting the role as a social entrepreneur strengthened.

Geographical proximity has made the club into a society bricoleur

The geographical proximity has been relevant to the range of activities that the club engaged in as a social entrepreneur. DBTK has focused on the uniqueness of the local prerequisites in Docksta and developed these conditions in a pragmatic way, rather than being focused on a specific kind of social problems. This approach has brought a great variety of activities, including the development of tourism activities (holiday cottages), the conditions for sports activities (tennis, climbing and downhill), the music festival, but also industrial activities and local social services. These activities have emerged in response to local needs. That is, the geographical proximity meant that the club has become a bricoleur (Zahra et al. 2009) as a response to the local community's multifaceted problems and needs.

Part of the image is also the club pragmatic mixed commercial objectives with social objectives. The club has not been dependent on funding from public funds, even if it funded a number of projects with EU’s regional development funds. As a matter of fact, the club has financed its operations with what the funds raised by the self-created commercial activity has generated. Because these activities have been conducted in a professional and efficient manner, the club has received financial ability to develop social activities. Overall, this has led to that the club's overall business has rested on a hybrid business model where commercial and social activities were mixed in a natural way.

Resource mobilization has been the key to the role of the social entrepreneur

A prerequisite for DBTK’s success as a social entrepreneur has been their ability to attract capital of various forms: not just financial capital, but also human and social capital (see Lundström et al., 2013)

Human capital is primarily comprised of the skills that existed in the Board of the club. Above all, there were three types of competencies on which the business was based. The first was the skills to be visionary and to recognize the value of networking with various financiers. One of the founders of the club has been able to make contacts with people in the county administration and the municipality to which the village of Docksta belongs – both have been key funders for several of the club's projects. The same person has had the ability to write grant applications, which led to the club received funding for development projects. The second competency consisted of the person in the club's leadership that had practical knowledge of property management. This expertise has been of great importance to that the club could be able to develop the property section. The section gave the club the financial possibilities for the projects. Without the income that the club received from their properties they had not been able to make the investments that have been central to the social entrepreneurial commitment. A third necessary

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competence has been in the club’s core group – the person who has had the central administrative role in management. He has kept up activities while he pushed the sporting business forward. The composition of competences can be seen as an exemplification of Adizes theory (1997) arguing that a single person can not be assumed to have all the skills necessary for a successful organizational operations, and that it is therefore necessary to have a management team with complementary properties, including practical/“producing” skills, entrepreneurial/innovative skills, and administrative/coordinating skills.

Financial capital is the backbone of DBTK’s social entrepreneurial activity. It is the ability to mobilize the financial capital necessary for various investments in order for the club to contribute to a relatively positive development in the local society during the half century that has passed since the club was founded. The cash flow that the club has received from their own properties and from the music festival has been the economic backbone of the club’s involvement in the development of society. DBTK’s management believes that, “When we ran everything ourselves, climbing, etc., we earned several hundred thousand a year in to the company. Then you dare to take risks, too. If you have losses, you are not as keen to start something new. But if we have financial capital then it is clear that we can support. DBTK have given bank guarantees for the school, so we’ve got to be a bit of the bank there too.” The funds that the club received from the municipality to operate the schools and the home for the elderly have been important sources of income. Moreover, EU funding has been an important source of financing. One of the members of DBTK’s board was a key figure in this context. He had excellent contacts with public administration, not only in the regional government, but also in the municipality and the county council. He also had the ability to write grant applications, which resulted in project funding. His whole network was used in order to contribute to fund projects aimed to solve problems in the community.

“When we had these EU projects, yes it was a period that we were making money. Our property section, we had leased industrial premises and the tenements were full and the festivals went well. So it was very good the 90s.” said of DBTK management.

Social capital is the network of relationships that DBTK has been embedded in. Crucial to this network has been the trust that the club have been able to work through the activities they pursued. The engine of the club’s development has been that they have been able to mobilize voluntary forces from club members. They have engaged the local community in building and renovate facilities and real estate. The club has always kept it’s promises which has meant that a trust grew over the time, not only internally in the club, but also in the local community as a whole. This included the local bank office, who put up with a loan to an “impossible” project because they relied on the club’s ability to do the right thing. The capital that has been mobilized by the club has been used as risk capital and the club invested their own funds in costly investments. Then others in the community followed – which ultimately led to that the club have been able to make investments that would otherwise have been unthinkable. The club management: “Why did it went so well for us? We were contractors and we were making money. If we were not able to earned that money so... We was a social enterprise, so with the money we earned we invested in new projects that were beneficial to the entire district. By doing do then you also have earned a huge credibility, people lined up then. Even when we saved the school it was like that. We got more members when we bought the retirement home, they said: ’Now it’s table tennis club that bought, so now we’re going to join.’” Central to the social capital that has been built up is that the club has been responsive to the needs existed in local society. “We would not buy any school or apartment building but it is public opinion that has come to the table tennis club based on how they did in the past when it was the churches that had big meetings.” The clubs management continue: “When the local community members asks: Can you go in and buy the
tenements else the community will come and tear the houses! Well, when the village turn to us it is not easy to say no. And about the school it was the parents and staff that came to DBTK and said now we want you to take over the school.”

The model described above over DBTK’s work as the local social entrepreneur is illustrated in Figure 2.1.

2.7 Conclusions

To meet up with the social changes in society that have negative affect on the economic development and population growth in many of Sweden’s sparsely populated and geographically peripheral and rural communities, volunteer and non-profit organizations take over previous fiscal activities. When population and tax revenue decreases and activities in the social welfare system become less competitive, local actors take on the role of becoming a social entrepreneur. To non-profit organizations and volunteers operating within education, health and care sectors commercial business models are becoming more common. In this paper it is shown that it is not entirely unproblematic when, as in this example, a sports club takes over the role as welfare developers. It means both financial and social risks and requires innovative solutions for resource mobilization. We show in this paper how social entrepreneurship in a local context with social and spatial embedding needs to attract more types of capital and resources to succeed. We underpin mainly three necessary flows of resources: people, money and social capital.

We also show that the social embeddedness in the local community as well as the geographical proximity is of great significance for local social entrepreneurship. The social embeddedness, the geographical proximity and the recruitment of various forms of capital to realize ideas for local development projects provide as outcomes unique forms of local social entrepreneurship. It is the interplay between these conditions that made DBTK able to succeed in their endeavour to create a positive local development. This is also the basis of a transferability of experience in DBTK’s case: Local social entrepreneurship may be different from case to case, depending on differences in local conditions and prerequisites, but there is reason to believe that the foundation of the different situations is general. Organizations and individuals who have an ambition to act as social entrepreneurs may take-off from on the conditions in the DBTK case as a base to analyze the conditions of their own social entrepreneurship.

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The Docksta case shows that the villagers rely on the collective way to solve emerging problems in society according to dbtk's motto: “Together we are strong.” dbtk's recent development and concerns are about the future also points to a further condition: For social entrepreneurship to be sustainable, it needs, in addition to financial resources that facilitate action, that this type of entrepreneurship is institutionalized in an organized manner so that the person dependency decreases. Otherwise there is the risk that the capital that business rests upon attenuates, which is now happening in the example of dbtk. For peripheral localities there is therefore a risk of falling into a negative development spiral with population decline and reduced local social services.

References


Societal Entrepreneurship – Model for Regional Renewal? ...


3 Social Entrepreneurship in the Early Modern Japan: Proposal of an Alternative View

Yasutaka Matsuo

3.1 Aim: from commonly-held view (CHV) to alternative view (AV)

Historical documents that exist until today are important materials for the reconstruction of the past. However, its majority is made and compiled through the governing machinery at that time. The limit of the governing system at that time couldn't respond to the real world completely. It could only control and grasp the society partially, which distorts the image of the real world. Only the distorted figure is transcended to people in later days (Figure 3.1).

The rural communities named Souson and the traditional country towns named Zaigoumachi/Zaimachi in medieval days had some merchants as well as artisans as their inhabitants and they did business at the periodical markets and travelled about selling. Souson and Zaigoumachi/Zaimachi had urban/commercial function. They were town-like villages (Figure 3.2).

However, their function is commonly thought to have been absorbed by the castle towns in late medieval days. The feudal lords built and developed them by compelling the warriors/samurais collectively live near the castle and urged the merchants and artisans migrate into it. Contrary to the development of the castle towns, the rural communities and traditional country towns lost their industrial and commercial attributes and changed to be more agriculturally self-sufficient and to be composed of farmhouses only (Figure 3.3).

In due course, in the middle of the Edo Era the commercial production triggered by the increased consumption in cities by means of the transactions controlled by the merchants in cities compelled the farmers involved in the commercial agriculture, which caused the disintegration.

Figure 3.1. Villages through historical documents.
of rural social cohesion. In late early modern days commercialization made the disparity between the rich and the poor and urged social upheaval. The action to destroy residences named *Uchikowashi* occurred as one of grass-roots movements. Rural communities were disintegrated and the capitalism made progress both in urban and rural areas. Landlords and tenant farmers separated out.

The Meiji government encouraged industry and nurtured capitalism. A part of merchants and landlords changed to be the industrial capitalists. Rural communities degenerated into the emigration base of the employees of industries in the cities.

CHV explains the transition from late medieval to early modern and modern days, but there are some doubts about CHV above mentioned. Alternative view (AV) should be proposed.

### 3.2 Alternative view: cities, towns and villages in the former early modern days

AV is comprised of the following elements and their complex: the development of cities and towns, the functional mechanism of rural families and communities, and the conversion of old social class order and the rising of the new value system.

Firstly, as to the development of cities and towns, the castle towns have been regarded important too much compared to the existing towns or other new towns. Since late 16th century to the beginning of 18th century, population in Japan increased more than twice (12 million to 26 million). The gross area of arable land increased 1.5 times larger (2.1 million ha to 3 million ha) and the land productivity rose much. So, the total amount of economy became greatly large, but CHV doesn’t take it into consideration. Farmers were allowed to sell surplus farm products at the markets and on the streets in the early modern days as well as in the medieval days.

All traditional country towns did not decline. All the towns around shrines and temples did not decline. Some of market towns lost their central and commercial function due to its re-installation in the castle town, but others continued and grew in the progress of high economic development from the medieval to the early modern days.

CHV forgets the important fact that the castle towns were established through the contract among samurais/warriors, artisans and merchants and temples and shrines. The vertical inte-
Figure 3.3. Villages and towns in early modern days (CHV).

Figure 3.4. Towns and villages with local industry and commerce (AV).
Figure 3.5. Change in market places: chv vs. av.

3.3 Alternative view: rural families and communities since late medieval days to early modern days

Uji, or a tribe/clan-based group and the growth of a nuclear family

Secondly, families in rural communities and rural communities themselves have established several kinds of institutions since late medieval days to early modern days. They enhanced their economic and social sustainability.

In the Age of Provincial Wars in 16th century, small feudal lords named Dogou or Gouzoku and their families and followers served stronger feudal lords. They were samurais/warriors during wartime, and were farmers during peacetime. However, as the battles became severer and
were prolonged, they were compelled to specialize in warriors in combat. As not a few small feudal lords and their families and followers were unwilling to spend their days combatting, they resigned from samurais/warriors and selected to be permanent farmers. Hideyoshi, the ruler of samurais/warriors strongly put into practice the policy to distinguish warriors from farmers since 1582. Those farmers who were once village lords and warriors were cultivated and literate, occupied the upper class and played leading roles for common farmers. Some of them were designated as Shoya or Nanushi that means the official head farmer of a rural community in the early modern days.

A socially tied mutual-aid organization/institution named Dozoku was thought out as a cultural wisdom among nuclear families to secure their own succession (Figure 3.7). Uji, or a tribe/clan-
based group in medieval days developed land and established agricultural estates where branch families were set up. The group kept social tie and strengthened regional management. However, until late medieval days the husband and the wife belonged to each Uji and they kept each property separately. The accumulation of the property into a nuclear family made progress in late medieval days. The policy to demarcate specific village boundary in the early modern days compelled each tribe/clan-based group strengthen their influence within the limited village boundary. Under low productive conditions the set-up of branch families was unstable in spite that each independent nuclear family wanted to pursue its own property and stability. It was the maximum priority for nuclear families to cherish and guard the family name, family property and family business.

Old chv regarded that Douzoku institution was a multifamily/an extended family system composed of blood-related members and originated in the days before the nuclear families emerged. However, av, that is, the current chv regards that Douzoku institution was thought out when the nuclear families were major. Aruga (1938) advanced old chv, but he accepted Oikawa’s critical research (1938) and changed his original thinking to the av/current chv in Aruga(1943). As Dozoku institution is generally based on the close relation among families, it is a kind of typical bonding social capital.

Local social tie such as Kougumi institution, was thought out too. It is the horizontal mutual tie organized by the families in the neighborhood community. "Kougumi" institution usually has little blood relation. As it is based on the neighborhood/spatial locality, it is also a type of bonding social capital. Age group network institution is another social tie that functions well in a certain community rituals and activities. Both Dozoku and Kougumi institutions form among families in a rural community.

ROLES AND CHARACTERISTICS OF THE RURAL COMMUNITY

Rural societies are composed of four-tier spatial orders: family, families’ unity or Koaza/the first social unit, rural community or Mura/the second social unit, and larger social unit such as modern administrative village/the third social unit. Relating to the second social unit, Suizu (1980) classified Japanese rural communities into three types. They were made through a long history and show clear areal differentiation from late medieval days or the early modern days to today. In the course of the dialectic responses to the administration/control by the government, families and rural communities thought out these institutions as cultural wisdoms and enhanced their sustainability by the former period of the early modern days.

The introduction of the Kokudaka and the Mura-uke systems symbolizes the dynamic shift of the rural community from vertical cohesion to horizontal cohesion. Kokudaka system means the tax payment system in the form of rice products as land rent. Until the end of the medieval days, Kandaka system was common. It was the system in the form of money rent. Though the village lord named Myoushu was the tax payer in the medieval days, the cultivating farmers themselves became the tax payers in the early modern days. Kokudaka system was fit for the cultivating farmers. Mura-uke system means the village/rural community is in charge of the tax payment. The rural community autonomously collects a certain amount of products from its cultivating farmers and pays the fixed amount as the tax to its feudal lord. These systems were partially introduced in the medieval days, but were systematically introduced all over Japan at the beginning of the early modern days.

The managerial positions in a rural community in the Edo Era are Shoya, Toshiyori and Hyakushodai. Toshiyori was the main representative(s) of a rural community in the late medieval days. At the beginning of the Edo Era, the feudal lord created the Shoya position in order to se-
cure the tax income and control the community. At that time Shoya was sometimes criticized by Toshiyori on the arbitrary/anti-cooperative behavior against the rural community. However, in 1640’s Toshiyori/Kumigashira changed its nature and became the supportive position of Shoya. Hyakushodai was established later in the Edo Era as the representative of the majority of the farmers in order to monitor the activities of Shoya and Toshiyori/Kumigashira.

Compared with the keen interest by the researchers to the rural community at the beginning of the early modern days, its interest in the middle and latter period of the early modern days is weak and negative. The rural community is usually regarded as the one disintegrated by the commercial powers from outside. chv is that commodity production and commodity economy permeate into agriculture and rural economy, and decline the social tie of the rural communities. In 18th century the commons of the rural community were often dismantled to private ownership of the cultivating farmers. Therefore, nuclear families depended less upon the rural communities. Other elements began to play more important role for the families. However, even so, the rural community is still necessary and supports its constituent families.

AV insists that the commodity production rather has a positive effect for the rural community to survive longer and to keep more active through partial restructuring. The elements that vitalize and strengthen social cohesion of the rural communities are multifarious. Communal forest, irrigation facilities and management, land reclamation as well as a sense of local value, shared historical-cultural background and the improvement of public literacy by means of “temple school”/local elementary school are among them.

The patterns of rural communities in Japan are classified into several models. As above mentioned, Suizu (1980) proposed a basic region model. It insists that rural communities in Japan are classified into three types; the standard type, the Kemuyama-mura type and the Sue-mura type. Its criteria are the size of population and the number of settlements in a rural community. Here, another model is induced through the discussion above. It classifies rural communities into eight types by using one spatial/territorial criterion and two social criteria; the degree of the exhaustiveness or the scatter of land parcels’ belonging to a demarcated community, the degree of Douzoku or Kougumi, and the degree of verticality/stratification or horizontality/flatness of the society (Table 3.1). A rural community composed of Douzoku institution under long history of Mura-uke system will belong to the type 1 or the type 2. A rural community with Kougumi institution under the long history of Mura-uke system will belong to the type 4. A rural community newly developed under the management of a head/Gouzoku or a samurai with followers with little history of Mura-uke system will belong to the type 5. A rural community newly developed under the joint management of several families with little history of Mura-uke system will belong to the type 8.

Table 3.1. Eight types of rural communities.

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<thead>
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<th>Exhaustiveness</th>
<th>Douzoku</th>
<th>Stratified</th>
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<td>1</td>
<td>Exhaustiveness</td>
<td>Douzoku</td>
<td>Stratified</td>
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<td>2</td>
<td>of land parcels</td>
<td>flat</td>
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<td>3</td>
<td>within the community</td>
<td>Kougumi</td>
<td>Stratified</td>
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<td>4</td>
<td>flat</td>
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<td>5</td>
<td>scatter of land parcels in and out of the community</td>
<td>Douzoku</td>
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<td>6</td>
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Yasutaka Matsuo
3.4 Alternative view: social change, the role of Gouzoku/“Gounou” and the propagation of knowledge and technology

Basic norms of social order and the position of Gouzoku/“Gounou” in a rural community

Thirdly, it estimates the Gouzoku-Hyakusho/“Gounou”/upper-class Hyakusho/gentleman farmer in the late medieval or the early modern days played significant roles in the social change from the medieval days to the early modern days, in the stable formation of articulated rural society and the conversion of old social class through the early modern days, and in the economic and social entrepreneurship to develop. There occurred significant upheavals in and transitional times of the early modern days, but the rural communities steadily responded to them in general by means of the competence of the upper-class Hyakusho for economy and intellectual and moral excellence. In this chapter the social change, the rising of new sense of values and the functions and roles of the upper-class Hyakusho are examined.

In a rural community, the seniority, the power and economy and the intellectual and moral excellence constituted the basic standards/norms of social order. The seniority means that the senior are esteemed and have the dignity. This value system was established in the Souson society period in late medieval days and kept in the early modern days. At the beginning of the early modern days the power and economy was introduced as a new standard/norm of social order into the rural society by the feudal government. The autonomous machinery of the Souson society regarded the seniority as the first priority, but the feudal government introduced the new position of Shoya or Namushi into the rural machinery and made it its first priority at the beginning of the early modern days. In many cases the upper-class Hyakusho was appointed as the Shoya or Namushi. The upper-class Hyakusho is often the descendant of the head of the samurai/warrior family with followers. It has the same root with the samurai/warrior of those days and is also endowed with the same culture, which enabled the separate management of the towns and villages by means of the document communication. The high rate of literacy in Japan was sustained by this structure.

In due course the priority of the upper-class Hyakusho became unstable because there was no guarantee of its successive hegemony as the village headman. It had to grope and establish the structure themselves in order to secure the stable economic and social status in the society. Therefore, they respected their intellectual and moral excellence themselves. This caused the foundation of the intellectual rural society, the involvement of ordinary rural people in it and the acquisition by the upper-class Hyakusho of the position as the intellectual and moral leader in the rural community.

3.5 Change in administrative system and the establishment of governance

As the central as well as local feudal governments in Japan didn’t have the system to become the politician through the higher civil service examinations, Hyakusho had no opportunity to change the social status outside the rural community. However, the Kyohou reform in 1720’s and the Kansei reform in 1790’s enabled the appointment of farmers and townspeople to the administrative positions once occupied by samurais/warriors only, which partially converted the old
social-class orders and established the new administrative system respondent to efficiently manage the urban and rural areas. Some talented became governmental officials, acquired *samurai* status and attained intermediate social position instead of lower-class *samurai*.

For ca. 80 years since 1720’s to 1810’s population and the area of arable land stagnated. Late marriage was under way and branch families decreased in number. Stagnation of rural villages in 18th century urged the government implement the reform and the range of the appointment spread wide in various fields in 19th century.

In 18th century and thereafter the feudal authorities positively introduced the *Ohjoya*, *Soudai-shoya* system or legislated the *Kunmiai-mura* in order to effectively manage rural communities. The *Ohjoya* and *Soudai-shoya* means the head *Hyakusho* who is appointed to manage the intermediate rural area between a rural community area and a county or wider area. The *Kunmiai-mura* means the zone of town and villages’ union. Each village is not economically so affordable that the administrative official is appointed responding to the zone of the union. Its spatial unit mostly corresponds to the economic zone at that time. The general village headman usually equal to *Gouzoku-Hyakusho*/*Gounou*/upper-class *Hyakusho* gentleman farmer was generally qualified to the *Ohjoya*. Some upper-class *Hyakusho* originate in the village lords in the late medieval or early modern days, that is, the *Gouzoku-Hyakusho*. As their administrative range and authority became wide in time, *Hyakusho* raised its importance and got qualified to take higher position for the civil services management as well as the governance of the rural communities. The changes above mentioned show that the upper-class *Hyakusho* has got qualified to take higher administrative position in the civil services of the government as well as in the range of rural communities since the middle of the Edo Era. They acquired higher administrative skill and they became indispensable to build the integrated civilized society.

Moreover, upper-class *Hyakusho* often became the boss of the *Zaigoumachi* local market town (country town) and promoted local industry and economy. This stimulated the formation of newly integrated and stratified regional markets (Table 3.1). On the one hand, he behaved well as a leader in a third social area and enhanced the economic, social and cultural standard of living. However, on the other hand, in 19th century some of upper-class *Hyakusho* exploited and accumulated agricultural land and wealth, which engendered *Uchikowashi*/the act of breaking by small and tenant farmers and day-workers.

The spread of the economic and social activities enforced the local authorities to cope with them. The adaptable administrative unit and reigning affordability was groped for and was provided by the feudal authorities in late early modern days. This unit also corresponded to the local community and to the base area of person of great renown in the modern days (Kurushima 2002).

### 3.6 Beyond the propagation of knowledge and technology

*Gounou/Gouzoku-Hyakusho/Upper-class Hyakusho* tried to found intellectual society and to be the leader of “intellectual and moral excellence” in a rural community. They advanced to manage “temple” elementary schools, collect books and cultivate wisdom, and let his son succeed to the high social position. At first their activities were within the vicinities. However, in late 18th and 19th century, some of them functioned as the node to propagate enlightenment thoughts and practical activities, which sometimes had the perspective to create the society beyond the existing feudal society.

As a landowner of a large field upper-class *Hyakusho* often lent money as a side business and committed to the production and distribution of the local special commodities. He put a pivot...
on the local/regional farming business. It usually had the spatial limitation within the region and prevented his take-off as a capitalist entrepreneur. The limitation sometimes caused the decline of his business.

Commercialized agriculture and industries were not so much developed or controlled by the merchants in cities. As local resources are so various, many are fit for local people to commercialize. Government of feudal domain occasionally introduced the monopoly on the sale of special goods by making economic contracts with the rural communities as well as the leading farmers. As the extensional expansion of the arable land was little possible to expect in 18th century, new kinds of development was groped for within and without the range of agriculture. Rural social cohesion was generally well maintained and tight until the end of Edo Era or until the Meiji Era.

In order to enhance the quality of life and satisfy curiosities, local people exchanged communication with one another. As the tool to experience the outer world, they organized a club named Kou. Since 17th to 20th century it has worked. Its purpose was not only eating and drinking, but also collecting, recording and examining worldly affairs. It originated with the intention to widen and enhance their reproduction measures. It spread widely in and after the time of the growth of small farmers.

Exchange with outside world and the communication network beyond a rural community made progress discursively. Especially, the enlightenment thoughts such as Shingaku, Koku-gaku, Fujikou, Doukyo and their practical activities such as Shingaku and Houtoku-shihou were introduced and managed since the end of 18th century by upper-class Hyakusho in a rural community and some local governments of the feudal domain. They prevailed in order to restore the rural vitality. These kinds of activities were continually set up in various regions until the middle of 20th century.

Figure 3.8. Growth of newly integrated and stratified regional market. Association/union village reformed by Kantou authorities in 19th century. Source: Kiyotaka Yamanaka, 1974.
Among them the *Houtoku-shihō* was most practically implemented. It was advocated by Sontoku/Takanori Ninomiya. He pursued the coincidence of the philosophy/theory and the practical activity. Its main principle is composed of the “Bundo”, that is, within the economic strength, and the “Suijo”, that is, hand over/devolve the surplus to others. One example of this philosophy in a practical situation is to implement a land reclamation and to use its income surplus to the social welfare. It also insisted the necessity of man's autonomous efforts to create a better condition. Work, economizing and altruistic mutual welfare were advocated and put into practice. He strongly required the governors to observe their execution. In the latter Edo Era, in the Meiji Era and in the Taisho Era his followers implemented.

The reason why it was adopted is that the long depression covered Japan in 18th century and more severe conditions were impending. Restoration policy was a pressing need, so the feudal government such as Odawara Domain invited Ninomiya expecting its effect in spite that the government tacitly recognized his philosophy was not so compatible with the feudal reigning ideology.

The enlightenment activities were also put into practice among the rural communities and voluntary groups too. Since the latter Meiji Era to the Taisho Era more than 1000 branch organizations of *Houtoku-sha* were established and active. After the World War II most of them dissolved. Until then it functioned as a supportive organization for many rural communities over Japan.

Examples of these practical activities suggest that in the latter half of the Edo Era the society was already so transformed and so easy to spread information that the samurai government as well as rural communities and common people had the flexibility/affordability to accept the new thoughts and practices from outside.

The actual example above mentioned suggests the existence of communication centers and network that enable quick diffusion of social thoughts. *Terakoya* and *Jyuku* are the main conveyers of outward information, culture and technology. They were established and spread all over Japan in 18th and 19th century. *Terakoya* is the primary school in Edo Era. It is inferred to have originated in the education at temples in the medieval days. It began to spread in rural areas since ca.1700 and rapidly increased in number in 19 century, when the literacy rate was estimated to be nearly 80% (male 90%, female 40%). Its attendance rate was about 90% in case of a village in Kinki District. *Jyuku* is composed of the official school named *Hankou* and the private school named *Shijyuku*. These functioned as the local/regional culture center for the young men and the base of information network. Keiojyuku University originated in middle 18th century as a *Shijyuku*.

In urban and rural areas in late 18th and 19th century, those persons were emerging who were substantially free from the community. For them at that time the family was the one base, and the *Jyuku* was the other base. They looked for a job where his talent would develop a new phase in a society. In rural communities, *Gounou* and temples directly contributed to the propagation of the elementary education even if *Terakoya* was formally established or not. They also contributed to the civilization of common farmers. *Gounou* owned various kinds of books. They were the conveyers of outward information, and as the entrepreneurs and practitioners they groped for the new business and society.

Another main method to spread information was the publishing. *Nousho*, a guide book of agriculture was written from the beginning of the early modern days to the modern days. Total number of published *Nousho* in the Edo Era probably reaches several hundred kinds. Yasusada Miyazaki (1623–1697) was a samurai and once served to the Fukuoka Domain, but resigned and worked on the land reclamation and collected many data on agriculture and guided agriculture to farmers. He wrote *Nougyo Zensho* (General Agriculture Guide) compiled as ten volumes.
Nagatsune Ohkura (1768–1861) was an artisan, but after experiencing the famine in 1780’s, he decided to be an agronomist. Collecting many data on agriculture especially in Kyushu, his native island, and moved to Osaka and wrote and published many guide books on agriculture. The most famous is *Koueki Kokusan Kou* (Cultivation of industrial crops). He was so much interested in industrial crops because the rural promotion by means of agriculture was his motive to be an agronomist. Nobuhiro Satou (1769–1850) was born in Tohoku district, but he moved about Japan in order to live a life as a philosopher/thinker. Sericulture and arboriculture were among his interests. Publishing companies were located in urban centers, but the writers and readers were more vastly distributed.

High literacy rate and information acquisition through the books and the frequent travels by means of *Kou* or another existed both in urban and rural areas. At first the information was practically used in a community, but after the end of 18th century, especially a part of upper-class *Hyakusho* and *samurai*s began to think of the future of their life and society without bearing on mind the scheme of feudal domains.

3.7 Conclusion

Dynamism existed in rural Japan as well as in urban Japan. The early modern days can be classified into three phases and each of them are characterized with different attributes and features. At the third phase both the governmental and public thoughts and practical activities had the scope beyond the feudal regime. As intellectual and moral excellence was founded as the basic norm of social order in a rural community in the early modern days, it developed the cultural and intellectual society, improved the *Hyakusho*'s social position, and opened the gate to the new days. The rural has been endowed with much opportunity of social entrepreneurship since the late medieval days to the early modern days and the modern days and up to 1950’s. Upper-class *Hyakusho* were the main members of the action groups in rural communities.

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Yasutaka Matsuo
4 Visualization of the Diversity of the Community Using Social Network Analysis in Iwamura and Yanagase

Kazumasa Iwamoto, Hirotaka Ishida, and Yoshifumi Demura

4.1 Introduction

Recently, some people feel that individual ties that have supported Japanese society are being lost. Even smaller cities that are said to have strong ‘traditional’ relationships are not exempt. This has been caused by changes in community associations as a result of municipal mergers, population decline, and suburbanization.

To carry out neighborhood development, neighborhood ties that have characterized smaller cities to date need to be strengthened. For this reason, neighborhoods have to cultivate a shared sense of community, rather than individual acts. This is a difficult challenge for current associations given the future outlook. There is a need for future associations to construct a new associational framework.

Among the many deteriorating local communities in Japan, the city of Gifu, and in particular the Yanagase shopping district is a typical case. The Yanagase shopping district was developed as a business center in Gifu after World War Two, but has now become something of a “shuttered street.” In response to the Large-Scale Retail Stores Law, enacted in 2000, large-scale shopping malls have been constructed in the suburbs, one after another; as a result, the Yanagase shopping district has suffered a gradual decline. However, recently, advertising, the establishment of new companies, and renovation of the existing buildings by new shop owners have begun in some parts of the Yanagase shopping district.

What type of community structure characterizes the Yanagase district? We aimed to visualize the social structure consisting of a variety of communities by social network analysis in Yanagase District, Gifu City, and then compared our findings with the results of a previous study in Iwamura (Demura, 2014). In this study, we sought to identify a method with which to distinguish the state of a vital society from that of a declining society.

4.2 Basic procedure for identifying the structure of communities using social network analysis

Social network analysis (SNA) is classified as a Methodological Individualism and Methodological Collectivism method (Kanamitsu, 2003). Many studies in sociology that focus on individual
social relations that are unrestrained by spatial factors are considered to be Methodological Individualism methods (Hiramatu, 2010).

Many economics studies that focus on individual relations within an affiliation are considered Methodological Collectivism method. For example, Ogasawara focused on the human resources of agricultural management, and attempted to assess unofficial network structures by sna (Ogasawara, 2009). Takahashi visualized networks shaped by the head of an affiliation and informal networks; the head of the affiliation was found by comparing the networks (Takahashi, 2009). Ueno focused on neighborhood communities and analyzed relationships among individual affiliations in the region (Ueno, 2009). These studies visualized the affiliations or the individuals. However, in this study, the affiliations, the individuals, and structures in the community were visualized; no such work has been reported previously.

In this study, we used the software “UCINET” to visualize the affiliation network within Yanagase District. UCINET contains NetDraw, which is capable of drawing networks. The procedure executed in this study consisted of two steps (Table 4.1). First, a sociomatrix (the table shown in Table 4.1) was created using information based on interviews. In the sociomatrix, for all items corresponding to nodes, the elements of the sociomatrix are given a value of 1 if there is a link between nodes, and 0 if not. Second, a sociomatrix of persons and associations was used to determine the network diagram, and the network was created using NetDraw. The network allows visualization of the structure.

4.3 Visualization of the affiliation network in Yanagase

Affiliation interviews in Yanagase

Existing affiliations in the Yanagase District consisted of the shopping street unions, comprising eight joint associations and four associations that work independently (Table 4.2). Also, individual activities were examined.

This study focused on four associations: Hinode Street, Renga Street, Ryushoren (Yanagase Shopping Street Union), and Hello Yanagase (new individual ties). Hello Yanagase was not an existing association in Yanagase District but it recognized the core, i.e., the informal association of new activity. Basic information for analyzing the structure of communities was obtained through direct interviews with 29 affiliation members in Yanagase District. The survey period was 3 months, and the survey included questions regarding the names of associations to which individuals belonged to. The results are shown in Table 4.3.
Table 4.1. Steps for visualization of affiliations.

<table>
<thead>
<tr>
<th>Pers.</th>
<th>Affiliation</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a, b</td>
<td>1 1 0 0 0 0</td>
</tr>
<tr>
<td>2</td>
<td>b, d</td>
<td>2 0 1 1 0 0</td>
</tr>
<tr>
<td>3</td>
<td>a, c</td>
<td>3 1 0 1 0 0</td>
</tr>
<tr>
<td>4</td>
<td>d</td>
<td>4 0 0 0 1 0</td>
</tr>
<tr>
<td>5</td>
<td>a, b, c</td>
<td>5 1 1 1 0 0</td>
</tr>
<tr>
<td>6</td>
<td>f</td>
<td>6 0 0 0 0 1</td>
</tr>
<tr>
<td>7</td>
<td>b, c</td>
<td>7 0 1 1 0 0</td>
</tr>
<tr>
<td>8</td>
<td>a, d</td>
<td>8 1 0 0 1 0</td>
</tr>
<tr>
<td>9</td>
<td>d, f</td>
<td>9 0 0 0 1 0</td>
</tr>
<tr>
<td>10</td>
<td>b, d</td>
<td>10 0 1 0 1 0</td>
</tr>
</tbody>
</table>

Visualization of the affiliation network

This analysis consisted of three steps. The first was to create a sociomatrix, based on the interview data (Figure 4.2). In Figure 4.2, squares represent affiliations, and circles represent individuals. The number of links represents affiliations that individuals belong to.

The second step was to show the concentrated point of links. Nodes that have more than 5 links were moved to the upper space regardless of the characteristic of the node (red area in Figure 4.5).

In the third step, other nodes which have links with those concentrated nodes were laid out so as to draw radial lines. We made sure that nodes were placed keeping enough distance between each other, and links were made less crossed. This process was to clarify the network structure of aggregation of links.

Results

In this condition, we considered the characteristics of visualized network in each four affiliation based on interviews. As a condition of the premise, individual ties were represented by whether one belonged to an association in this study. Some people only belonged to one affiliation (Figure 4.4). The characteristics of the associations, which were the focus of this study, were examined.

1. On Hinode Street, many people belonged to the Hinode Shopping Street Association, and a small number belonged to two or more other affiliations.

Kazumasa Iwamoto, Hirotaka Ishida, and Yoshifumi Demura
Figure 4.2. Visualization of the community using SNA in Yanagase District (step 1).

Figure 4.3. Visualization of the community using SNA in Yanagase District (step 2).
Table 4.3. Interview results.

<table>
<thead>
<tr>
<th>Person</th>
<th>Name of affiliation to which a person belonged</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hinode Shopping Street, Ryushoren, Hello Yanagase, Yanagase Meeting, Neighborhood Development Company1, Neighborhood Development Company2, Association Of the Frog, Jurassic Arcade, Gifu Re Recreation</td>
</tr>
<tr>
<td>2</td>
<td>Hinode Shopping Street, Ryushoren, Active Meeting, Night Sky Café, Masamura, Team Masamura</td>
</tr>
<tr>
<td>3</td>
<td>Hinode Shopping Street</td>
</tr>
<tr>
<td>4</td>
<td>Hinode Shopping Street</td>
</tr>
<tr>
<td>5</td>
<td>Hinode Shopping Street</td>
</tr>
<tr>
<td>6</td>
<td>Hinode Shopping Street</td>
</tr>
<tr>
<td>7</td>
<td>Hinode Shopping Street</td>
</tr>
<tr>
<td>8</td>
<td>Hinode Shopping Street, Night Sky Café</td>
</tr>
<tr>
<td>9</td>
<td>Hinode Shopping Street</td>
</tr>
<tr>
<td>10</td>
<td>Hello Yanagase, Bustling Corporation Of Gifu City, Neighborhood Development Company2, Gifu Recreation, Mitomo Shopping Street, Neighborhood Development Building</td>
</tr>
<tr>
<td>11</td>
<td>Hello Yanagase, Renga Shopping Street, Yanagase Warehouse, Alaska Stationer, Gifu Industrial High School Of Design Course, Linefolt Store, Little Creative Center</td>
</tr>
<tr>
<td>12</td>
<td>Hello Yanagase, Renga Shopping Street, Yanagase Warehouse, Alaska Stationer, Gifu Industrial High School Of Design Course, Linefolt Store, Little Creative Center</td>
</tr>
<tr>
<td>13</td>
<td>Hello Yanagase, Renga Shopping Street, Yanagase Warehouse, Alaska Stationer, Gifu Industrial High School Of Design Course, Jurassic Arcade, Linefolt Store, Little Creative Center</td>
</tr>
<tr>
<td>14</td>
<td>Hello Yanagase, Amu Magazine, Gifu Note Editorial Room, Small Dinner Party</td>
</tr>
<tr>
<td>15</td>
<td>Hello Yanagase, Antique Book Union, Antique Bookshop</td>
</tr>
<tr>
<td>16</td>
<td>Hello Yanagase, Organ, Small Dinner Party</td>
</tr>
<tr>
<td>17</td>
<td>Hello Yanagase, Renga Shopping Street, Suvenir</td>
</tr>
<tr>
<td>18</td>
<td>Hello Yanagase, Renga Shopping Street, Suvenir</td>
</tr>
<tr>
<td>19</td>
<td>Ryushoren, National Shopping Street Union, Jurassic Arcade, Haunted House, Hondori Shopping Street, Gifu Middle Festival</td>
</tr>
<tr>
<td>20</td>
<td>Ryushoren, Hondori Shopping Street, Yanagase Main Street 3 Shopping Street, Migration Committee In City Centers, Neighborhood Development Company1, Commercial Networking Event</td>
</tr>
<tr>
<td>21</td>
<td>Ryushoren, Yayoi Shopping Street, Yanagase Meeting, Yanagase Warehouse</td>
</tr>
<tr>
<td>22</td>
<td>Renga Shopping Street</td>
</tr>
<tr>
<td>23</td>
<td>Renga Shopping Street, Hinode Shopping Street</td>
</tr>
<tr>
<td>24</td>
<td>Renga Shopping Street, Theater In The North Shopping Street</td>
</tr>
<tr>
<td>25</td>
<td>Renga Shopping Street</td>
</tr>
<tr>
<td>26</td>
<td>None</td>
</tr>
<tr>
<td>27</td>
<td>Renga Shopping Street</td>
</tr>
<tr>
<td>28</td>
<td>Renga Shopping Street</td>
</tr>
<tr>
<td>29</td>
<td>Renga Shopping Street</td>
</tr>
</tbody>
</table>

2. On Renga Street, many people belonged to the Renga Shopping Street Association, and a small number belonged to other shopping street associations and Hello Yanagase.

3. In Ryushoren, many people belonged to several affiliations in addition to Ryushoren. Some people had multiple affiliations. Therefore, Ryushoren has a role that connects shopping street associations.

4. Although Hello Yanagase was not an existing association in Yanagase District, those who belonged to Hello Yanagase lived not only in Yanagase District, but also outside the district. In addition many people had several affiliations in addition to that with Hello Yanagase.

Kazumasa Iwamoto, Hirotaka Ishida, and Yoshifumi Demura
4.4 Transition Act and community in Yanagase district

**Community transition in Yanagase district**

In 1962, the Shopping District Promotion Association Act was enacted in Japan to support shopping streets. Many Shopping District Promotion Associations have been established in Yanagase District since 1975. As a consequence, individual stores located on each shopping street could work together and share information and human resources. People who belonged to the Hinode shopping street and Renga shopping street associations are shown in Figure 6. However, our survey showed that meetings of each shopping street association were held infrequently and only simple information was shared. Also, new tenants in Yanagase District tended not to participate in these meetings.

Part of Renga shopping street has a different community from the typical shopping street (green area in Figure 4.5). However, it is a community that was shaped by a business association, formed by new tenants; that is, it was a different association shaped by The Shopping District Promotion Association Act. Thus, many persons who belong to the Hinode shopping street and Renga shopping street associations are connected by the association.

The Ryushoren association was an established union, which consisted of 12 affiliated associations in 1977. Now, four have seceded from the Ryushoren because of “directional disagreement” (Table 4.2). Thus, people who belong to the Renga shopping street association have fewer ties those persons who belong to Ryushoren. Recently, Ryushoren invited people outside of Yanagase District and administrative individuals to meetings as observers, because the Ryushoren association seeks to promote a community not only inside Yanagase District but also outside of this area.

The new community association was established by volunteer staff through activities held by the Ryushoren association. It is visualized as affiliations that differ from the shopping street association in Figure 4.5 (orange area in).
Increases in new tenants and activity in Yanagase District

The survey showed an affiliation with a number of new tenants who belonged to Hello Yanagase and Yanagase Warehouse. First, Yanagase Warehouse was a general, multipurpose building that rents space to restaurants or snack bars. Currently, it is a place where new tenants have moved in after renovations. The survey showed that the renovations helped to establish individual ties among new tenants. The renovations resulted in activity on the neighboring shopping streets; for example, a neighborhood development building on Mitono shopping street. These are examples of existing resource utilization within Yanagase District.

Second, Hello Yanagase consists of persons with many ties within Yanagase District and the new tenants. The purpose of Hello Yanagase is to connect members to the next generation of human resources. The survey showed that even if people did not belong to Ryushoren, they often belonged to Hello Yanagase, providing individual ties within Yanagase District. Additionally, people who belonged to Hello Yanagase or Ryushoren shared many affiliations; that is, people who belonged to several affiliations had many contacts both within and outside of Yanagase District.

Characteristics of the community in the Yanagase District

In the Yanagase District, the shopping street unions, to which most individuals in the distinct belonged, and the association of these unions binding together stand out. It is noteworthy that the links were heavily intertwined around individuals belonging to this association. The data also showed new entrants developing new enterprises based on contacts with the existing community.

Kazumasa Iwamoto, Hirotaka Ishida, and Yoshifumi Demura
4.5 Comparison of community associations in Iwamura and Yanagase

A previous study focused on another association, "Iwamura-Chisin-no-kai" (Iwamura New Society, ick), positioned at the core of a current neighborhood development movement as an example (Demura, 2014). Basic information analyzing the structure of communities was obtained from direct interviews with 31 representatives of ick's member associations. The survey questions asked their ages and the names of associations to which the individuals belonged. The information on affiliations was visualized using the same technique as for the Yanagase District, and the structure of the network became apparent by manual arrangement of links radiating from nodes. As a result, the associations known as "Mujins", such as Classmate Mujin, Neighborhood Mujin, and Friend Mujin, showed synchronic individual ties, and the Fire Brigade ensured diachronic ties, making intergenerational contacts possible. The analysis indicated that Iwamura District was maintained as largely a 'traditional' society with territorial relationships.

In Yanagase District, Ryushoren and the Yanagase Warehouse play much the same role as the Iwamura communities. However, people who belonged to only one affiliation had few individual ties to vital activities. That is, the former was more person-centered and the latter was more affiliation-centered. Changing from affiliation-centered to person-centered is key for generation of vital communities. Outside ick, Mujins are likely to be considered affiliation-centered, but if individuals have ties to vital activities, then they can be person-centered. In Yanagase District, Ryushoren has connected existing and new human resources; that is, especially for the new tenants, it is person-centered (Figure 4.6).

4.6 Conclusions

In this study, we aimed to visualize a society structure consisting of various communities and associations by means of social network analysis in Yanagase District. In this method, an affiliation network was used for social network analysis, so a node could represent an individual or an affiliation. Information on affiliations was obtained from the persons involved, and was visualized by means of the links and nodes. The structure of the network became apparent by manually arranging links radiating from these nodes.

In Yanagase District, the shopping street unions were the associations to which most individuals belonged, and the association of these unions binding together stood out. It is noteworthy that the links were heavily intertwined around individuals belonging to this association. This showed that the new entrants were developing new enterprises based on the existing community.

The results obtained were compared between the two cases. Visualizing the networks can distinguish between a vital society and a declining society by evaluating whether the concentrated points of links represent associations or persons. The person-centered case showed individuals developing vital intermingling, while an affiliation-centered case showed them losing such intermingling.
Figure 4.6. Visualization of communities in ick.

Figure 4.7. Affiliation-centered (left) and person-centered (right).
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Hiramatsu, H., Ukai, K., Miyagaki, G., Hoshi, A. (2010), Research method of social network-the survey of “association”, minervashobo


Ueno, S. (2009), Social network structure of community and social capital, Kumamoto University vol. 116, Pp 299–323
5 Residents’ Cooperative Behavior in Neighborhood Associations

Sachiko Ohno and Akiyoshi Takagi

5.1 Introduction

In recent years, it has become possible to identify a significant shift in Japan’s regional development. We can clearly observe policies that focus on cooperation, co-production, collaboration, and partnership among various stakeholders. These ideas may be useful in certain regions and certain areas, because it is impossible for local municipalities in Japan to maintain all public goods in the current economy. Moreover, markets have not performed well based on the present scheme in some rural regions due to a lack of resources. Thus, the empowerment of diverse stakeholders in these regions is necessary.

In order to implement such cooperative programs, some of the most important stakeholders are the residents. They often play an active role in dealing with residential issues. Indeed, municipalities would like residents to engage in public service by working together with other residential stakeholders in public common areas.

Why do residents cooperate? What incentives are there to build partnerships between residents? Many researchers have considered these questions extensively. In this paper, the main focus is on understanding residents’ cooperative behavior in neighborhood associations.

This paper is organized as follows. Firstly, the concepts of cooperation are discussed in a review of the literature. Also, the neighborhood associations are explained. Secondly, the essential points of resident participation are analyzed empirically by conjoint analysis. Unique data from the city of Nakatsugawa are discussed using conjoint analysis. Finally, some essential points of cooperative ideas are discussed.

5.2 Cooperation in neighborhood associations

Cooperation

Cooperation, co-production, collaboration, and partnership among various stakeholders have penetrated regional development policies. Vincent Ostrom, whose studies of co-production are well known, considers that co-production is a way to improve productive behaviors among various stakeholders.¹

Habermas considers cooperation as the right of residents to live their own lives in their regions. Rhodes argues that the focus on cooperation constitutes a change from governmental structure to governance. Thus, the concept of cooperation has been used in diverse areas and at diverse levels. In practice, LEADER, one of the EU’s regional development policies, has been implemented since 1991. One of the important key characteristics of LEADER is that of partnerships between various stakeholders, including residents. In Japan, regional development policies intended to support residents’ cooperative behavior have been spreading, e.g., community funds, future center, and especially in relation to reconstruction following the Great East Japan earthquake. The empowerment of residents and the relationships between various stakeholders have been an official objective for four years.

What has been achieved by cooperative policies? What capital has been produced as a result of cooperation? In the ongoing cooperative program, we find that three targets have been achieved by cooperation: 1) capacity building; 2) creating new kinds of demand and supply; and 3) improving the efficiency of public service. Thus, cooperative behavior results in many things including physical products as well as psychological relationships.

On the other hand, residents’ behavior, in terms of their regional lives, changes if cooperative programs are implemented. In particular, the balance between supply and demand is altered as a result of cooperative behaviors. Following such changes, a new equilibrium comes to be established by interactions between residents and other stakeholders. Consequently, it can be said that cooperation changes the social systems that were established by present supply and demand systems. Thus, to understand the effects of cooperative programs, we must pay attention to such interactions. In neighborhood associations, generally speaking, residents tend to conform to others’ activities and normative regional habits.

Neighborhood associations
To understand the effects of the present regional social systems on residents’ behavior, certain systems of governance involving cooperation with residents have been identified. There are two types of residents’ cooperative behavior: 1) residents follow regional habits/routines, and 2) residents use their leisure time to support their region. This study focused on regional routines of the past, i.e., neighborhood associations.

Generally, neighborhood associations are organized and managed by residential neighborhoods. Their incentives to act in civic voluntary organizations are to maintain and improve the neighborhood quality of life and to protect economic and social interests.

Residents’ Cooperative Behavior in Neighborhood Associations

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6 Talcott Parsons: The Social System, Quid Pro, LLC, 2012.

Residents’ Cooperative Behavior in Neighborhood Associations
associations are considered voluntary community organizations.\textsuperscript{10, 13} Their principle of action is collective action to relieve individuals of burden of organizing.

Empirically, Florin and Abraham\textsuperscript{13} focused on the Neighborhoods Participation Project (NPP) in Nashville and the Block Booster Project in New York. They clarified the characteristics of such organizations using five factors that are geographically-based, voluntarily driven, locally institutions, human scales and problem solving. Ioannides tells us that local community control of public schools and the substantial power of local political organizations with the formation of community jurisdictions are among the key features characterizing the flexibility of US economic and social institutions.\textsuperscript{14} Mesh investigated the effectiveness of neighborhoods associations in the context of urban redevelopment. He noted that many neighborhoods have become proactive in attempts to protect and improve their environment through urban redevelopment, and he asked whether neighborhood action guarantees the ability to solve local problems.\textsuperscript{9} Koschmanna and Lasterb studied neighborhood associations, focusing on communication. They clarified the communicative tensions associated with community organizing within the context of a local neighborhood association and found that communicative tensions revolved around issues of prayer, diversity, gentrification, and neighborhood quality. Many researchers have considered these questions extensively. Neighborhood associations play important roles in civil society.

In Japan, neighborhood associations (called \textit{chounai-kai}) include voluntary community organizations, collective residential actions, and residential interactional actions. They are closely tied to local government, although they are independent from governmental sectors. According to Bestor, who studied Japanese neighborhood associations, focusing on institutional development, many scholars have debated Japanese neighborhood associations considering the formal structure of many neighborhoods. He mentioned the importance roles that \textit{chounai-kai} and related organizations play in local government and politics, particularly because of the notoriety these institutions acquired as instruments of government control during the Second World War. Additionally, \textit{chounai-kai} have received attention from scholars interested in contemporary Japanese politics and recent political history.\textsuperscript{15} Thus, Japanese neighborhood associations are considered semi-official local governmental agencies that provide services to residents both through local institutions and on behalf of the municipal authorities. Currently, many activities are implemented by neighborhood associations, such as maintaining neighborhood streetlights, environmental improvement, garbage collection, voluntary disaster-prevention activities, recreational activities, cooperation with various local associations, promotion of social welfare, distribution of the city bulletin, and park

In marginal areas, where public organizations are not effective because of the smaller population and larger area, the activity of neighborhood organizations in organizing and managing public areas is very important. Japanese neighborhood associations work closely with the public sector and civic societies.

Although it is generally thought that relationships among neighbors are weakening, neighborhood activities remain important parts of daily life in rural regions. In addition, this community help is useful not only in people’s daily lives but also during disasters. This paper focuses on neighborhood associations because 1) they are area-based community organizations, 2) their goal is to improve the efficiency of public service, and 3) they involve residential interactional and collective actions for improving people’s daily lives. Indeed, these findings will contribute to the creation of new cooperative programs involving residents’ participation.

5.3 Case study of Nakatsugawa

Overview of the city of Nakatsugawa (Figure 5.1). The surrounding towns and villages were incorporated into Nakatsugawa in 2005. At present, Nakatsugawa occupies 676.38 km², is divided into 13 areas, and has a population of 83,467. The land includes many areas of forest and villages, as well as mountainous areas. Given the local industrial structure, many residents are involved in agriculture or construction industries. In the past, this region had engaged in cooperative production practices. In recent years, some of the more remote areas

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16 Community Administration Subsection, Community Promotion Section, Community Development Program Department, Shinagawa City Office: The material for Working to Make Shinagawa a City where People Love to Live Longer: Let’s Join a Town Association or Neighborhood Association, http://www.city.shinagawa.tokyo.jp/ct/ct2_other/0088235000/tokuyupanf2.pdf (12/01/2015 access)
17 Kouchi Osada: Dual Structure of Japanese Local Community and Neighborhood Association (Chonaikai), Bulletin of the Graduate Division of Literature of Waseda University: Philosophy, history, pp 57–71, 1990.

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Activities of neighborhood associations

The role of neighborhood associations should be noted in understanding cooperative behavior in the city of Nakatsugawa. Figure 5.2 shows the structure of neighborhood associations, and Table 5.1 presents data on the number of neighborhood associations and association participants in the city of Nakatsugawa. A total of 82.3% of the population of Nakatsugawa participates in neighborhood associations, which is relatively high for Gifu Prefecture. According to the rules, leadership of the associations in cluster 3 rotates among members. On the other hand, the rules governing the leadership of the associations in cluster 1 differ by district. In some cases, the leader is elected by members; in others, leadership rotates among members as in cluster 3. Meetings are held once per month to exchange information on various topics. In one instance, a request from a resident in cluster 3 was passed along to cluster 2. Residents' requests are communicated to the appropriate regional municipal authorities, and information is exchanged between residents and municipalities. These exchanges sometimes occur at meetings, which are held to facilitate communication.

Communication proceeds in a reciprocal way, and issues are settled via compromises among stakeholders. Apart from actual meetings, municipal authorities and residents communicate whenever necessary. These communications sometimes involve discussions about the repair and improvement of roads and other infrastructure. In other words, residents have good relationships with municipal authorities. In the next section, we discuss why residents cooperate in neighborhood associations based on conjoint analysis.

5.4 Analysis of regional cooperative behavior

Conjoint analysis

To clarify the essential points of neighborhood organizational activities, this study used conjoint analysis. Conjoint analysis is a technique for measuring the trade-off when analyzing survey responses concerning preferences and intentions to buy. It employs a method for simulating how consumers might react to a change in current products or to new products introduced into an
Table 5.1. Numbers of neighborhood associations and participants.

<table>
<thead>
<tr>
<th>Cluster-1</th>
<th>Neighborhood ass.</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nakatsu</td>
<td>47</td>
<td>8,895</td>
</tr>
<tr>
<td>Naegi</td>
<td>18</td>
<td>1,766</td>
</tr>
<tr>
<td>Sakamoto</td>
<td>28</td>
<td>3,401</td>
</tr>
<tr>
<td>Ochiai</td>
<td>12</td>
<td>1,178</td>
</tr>
<tr>
<td>Agi</td>
<td>12</td>
<td>624</td>
</tr>
<tr>
<td>Misaka</td>
<td>5</td>
<td>231</td>
</tr>
<tr>
<td>Yamaguchi</td>
<td>7</td>
<td>579</td>
</tr>
<tr>
<td>Sakashita</td>
<td>10</td>
<td>1,567</td>
</tr>
<tr>
<td>Kawaue</td>
<td>4</td>
<td>304</td>
</tr>
<tr>
<td>Kashimo</td>
<td>10</td>
<td>983</td>
</tr>
<tr>
<td>Tsukechi</td>
<td>11</td>
<td>1,795</td>
</tr>
<tr>
<td>Fukuoka</td>
<td>4</td>
<td>1,781</td>
</tr>
<tr>
<td>Hirukawa</td>
<td>5</td>
<td>893</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>173</strong></td>
<td><strong>23,997</strong></td>
</tr>
</tbody>
</table>

existing competitive array. Conjoint analysis is mainly used for market analysis. Over 40 years, its scope has been expanded to including clarifying the essential points for improving hospital services and evaluating the performance of road facilities from the user’s perspective.

To use conjoint analysis, we first considered attributes with some levels. This study assumed that an individual’s choices are related not only to that individual’s preferences but also to neighborhood or social interactions among local societies (i.e., organizations) or “social interaction” (i.e., interpersonal interaction). We concluded that these factors explain individual choices based on an interview survey of the chairs of neighborhood associations.

Second, we prepared a questionnaire using prop cards. There are many types of questionnaire surveys, including rank-order or paired-comparison preference data. In this study, pairwise comparisons were used (see Table 5.2). Third, we presented the pairwise comparisons to participants and asked them to express a preference within each pair. In this way, participants chose which option they preferred for their leisure time. Finally, the data were analyzed using the maximum-likelihood method with the aim of understanding residents’ preferences for neighborhood activities. Table 5.3 shows the conjoint design. To compare neighborhood communities, we administered the questionnaire in three neighborhood organizations (Figure 5.3).

**RESULTS OF SURVEYS ON PARTICIPATION IN NEIGHBORHOOD ACTIVITIES**

To understand neighborhood activities, interview surveys were conducted with the chairs of the neighborhood associations. The characteristics of each neighborhood, based on regional

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Residents’ Cooperative Behavior in Neighborhood Associations
Table 5.2. Examples of conjoint analysis questions.

<table>
<thead>
<tr>
<th>Social interaction</th>
<th>Nature of the event</th>
<th>Festival</th>
<th>Cleanup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood interaction</td>
<td>Rate of neighborhood participation</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Individual preference</td>
<td>Activity time</td>
<td>3h</td>
<td>1h</td>
</tr>
</tbody>
</table>

Table 5.3. Conjoint design.

<table>
<thead>
<tr>
<th>Function</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual preference</td>
<td>Activity time</td>
<td>3h</td>
<td>1h</td>
</tr>
<tr>
<td>Neighborhood interaction</td>
<td>Neighborhood participation rate</td>
<td>100%</td>
<td>50%</td>
</tr>
<tr>
<td>Social interaction</td>
<td>Type of event</td>
<td>Festival</td>
<td>Cleanup</td>
</tr>
</tbody>
</table>

activities, are summarized in Table 5.3. According to the interview survey, it is understood that Nakatsugawa is composed of diverse regions. Figure 5.4 shows the participation rate in neighborhood activities in each region based on a questionnaire survey. According to the results, more than 70% of the residents participated in each neighborhood activity.

Table 5.4 summarizes the results of the surveys. Table 5.6–Table 5.8 show the results of the conjoint analysis. As you can see, each neighborhood has different characteristics, despite the fact that they are all part of the same city. This means that diverse factors influence each neighborhood. The essential points regarding resident participation are as follows.

Nakatsu is in the center of Nakatsugawa, where city hall is located. It has a population of 28,000, and the proportion of elderly residents is 25.2%. This figure is lower than that in any other region in Nakatsugawa.

Figure 5.3. The three surveyed regions: Hirukawa (top-left green), Agi (bottom-left green), and Nakatsu (right green).

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Figure 5.4. Participation rate in regional activities in each neighborhood.

Table 5.4. The characteristics of each region.

<table>
<thead>
<tr>
<th>Region</th>
<th>Pop. Number/year</th>
<th>Diversity</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nakatsu</td>
<td>28,280</td>
<td>6.8</td>
<td>Residents share the burden.</td>
</tr>
<tr>
<td>Agi</td>
<td>2,605</td>
<td>10.0</td>
<td>Residents who want to play a role in regional activities. Maintenance of region</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>and utilization of local resources constitute the role of residents. Promote</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cooperation with others.</td>
</tr>
<tr>
<td>Hirukawa</td>
<td>3,655</td>
<td>8.4</td>
<td>Everyone in the region is expected to participate actively in traditional</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>events. New activities are implemented by residents who want to take part.</td>
</tr>
</tbody>
</table>

According to an interview with the chair of the neighborhood association, the main characteristic of the region is that residents share the burden. They establish specific committees, and then they share the activities among local residents. As a result, certain residents have implemented particular activities for many years.

In this region, the activities for children are also proactive. In summer, parents routinely manage the community swimming pool for children. They distribute the work, such as rotating responsibility or jointly performing community work. Consequently, neighborhood activities are implemented in a functional manner.

According to the conjoint analysis, residents of Nakatsu emphasize the percentage of participation (Table 5.6) and only secondarily focus on the time spent in each activity. The better activities are those that everyone joins for 1 hour, as this allows everyone to share in managing their neighborhood activities. By sharing the burden, local residents can obtain the benefits from neighborhoods’ collective activities.

Agi became a part of Nakatsugawa as the result of a municipal merger in 1957. Agi is far from the city center, and it is not easy to access the city center from Agi. Consequently, local residents work on their own neighborhood activities rather than depending on the municipality. Agi’s population is 2,580, and it has a larger aging population than Nakatsu. Tourism, one of the prioritized regional development policies, is emphasized in neighborhood activities, with a focus on natural resources such as rivers.

There are three characteristics of the residents of Agi: 1) they assume a responsible role in regional activities; 2) they maintain the region and monitor the use of local resources; and 3) they promote cooperation with others. For example, they clean the park near the river every July because they obtain benefits from the river. To obtain these benefits, the residents understand that it is their responsibility to clean the park as a neighborhood activity. Additionally, they organize a fish festival in the park near the river every July, which promotes their neighborhood to outside regions.
The conjoint analysis indicated that residents of Agi emphasize the importance of the time spent in each activity (Table 5.7). Next most important is the type of event. They do not care about the percentage of participation because they understand that neighborhood activities should not be regarded as an obligation, as residents should enjoy their leisure time. They prefer 3-hour activities to shorter ones because they feel that 0.5- or 1-hour is insufficient time to manage neighborhood activities. In Agi, the neighborhood activities are organized and managed by the residents, who are motivated by regional development.

Hirukawa became a part of Nakatsugawa as the result of a municipal merger in 2005. However, because of its location, residents are more dependent on the city of Ena than on Nakatsugawa. As a result, residents work on neighborhood activities on their own rather than depending on the municipality. Hirukawa’s current population is 3,700, and this is expected to decrease by 20 residents per year, leading residents to be concerned about their daily lives and neighborhood activities. Currently, the neighborhood activities are managed by specific resident organizations. This organization manages relationships with those outside the region. Hirukawa has some unique traditional activities, such as a local festival. The residents of Hirukawa prefer their own traditional activities as a means of sustaining the neighborhood. These activities can be summarized by two principles: 1) everyone in the region is expected to participate actively in traditional events, and 2) new activities are implemented by residents or specific organizations that want to take part.

According to the conjoint analysis, the residents in Hirukawa consider the percentage participation to be the most important concern (Table 5.8). The next most important is the activity’s duration. In the better activities, more than half of the residents participate for 1 to 3 hours. We understand that traditional activities are preferred by residents, who act in accordance with past habits. Nevertheless, some residents seek relationships with others to develop their region. Regarding the local activities in Hirukawa, 1) everyone in the region is expected to participate actively in traditional events, and 2) new activities are implemented by residents who want to take part.

Using conjoint analysis, this paper found three essential points important to establishing cooperative behavior among residents. The three points are as in Table 5.5.

<table>
<thead>
<tr>
<th>Region</th>
<th>sample</th>
<th>Males</th>
<th>Mean Age</th>
<th>Occupation</th>
<th>Mean years in region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nakatsu</td>
<td>50</td>
<td>22.9%</td>
<td>60.1</td>
<td>No occupation 40.8%, self-owned business 18.4%, service job 8.3%</td>
<td>29.2</td>
</tr>
<tr>
<td>Agi</td>
<td>36</td>
<td>25.8%</td>
<td>61.1</td>
<td>Self-owned business 21.2%, no occupation 18.2%, farmers 15.1%</td>
<td>45.4</td>
</tr>
<tr>
<td>Hirukawa</td>
<td>48</td>
<td>20.8%</td>
<td>55.4</td>
<td>Self-owned business 21.3%, public official 14.9%, farmer 10.6%</td>
<td>35.6</td>
</tr>
</tbody>
</table>

- a) Residents know the workforce for establishing regional activities.
  Residents consider beforehand whether a local activity can be established only by certain people or whether the activities have to be implemented by all or most of the local residents. Also, they know the particular residents who tend to implement such activities. As a result, local activities have been implemented in a traditional manner.

- b) Residents understand the time required for implementing regional activities.
  In an economic sense, the free rider problem occurs if residents are required to provide their private resources for public goods. In this case, a balance between benefit and cost is a requirement in order to implement such local activities. However, this survey shows that resi-
Table 5.6. Conjoint analysis for Nakatsu.

<table>
<thead>
<tr>
<th>Criteria parameter</th>
<th>Activity time</th>
<th>Participation rate</th>
<th>Event contents</th>
<th>Likelyhood ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>action status</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>factor</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>parameter</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>t-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 5.7. Conjoint analysis for Agi.

<table>
<thead>
<tr>
<th>Criteria parameter</th>
<th>Activity time</th>
<th>Participation rate</th>
<th>Event contents</th>
<th>Likelyhood ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>action status</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>factor</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>parameter</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>t-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table 5.8. Conjoint analysis for Hirukawa.

<table>
<thead>
<tr>
<th>Criteria parameter</th>
<th>Activity time</th>
<th>Participation rate</th>
<th>Event contents</th>
<th>Likelyhood ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>action status</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>factor</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>parameter</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>t-value</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

dents understand regional activities in terms of the time required for implementing the activities rather than a comparison between the cost of the activities and their burden.

c) Residents recognize the activities that are directly linked to their livelihoods and regional lifestyle.

The residents who live in the surveyed regions tend to set up cleanups rather than festivals. The reason for this is that festivals provide a special diversion, a welcome distraction from daily life. In neighborhood activities, they follow their regional habits, preferring to use their leisure time for fun. In contrast, cleanups are related to residents' daily lives, being a typical daily activity. Therefore, the residents choose cleanups as a major regional collective activity.

As discussed above, it is understood that it is the preference of local residents to embrace their own regional activities, which differ according to region. There are some cases in which
community activities are implemented in accordance with the characteristics of local residents. On the other hand, in some cases, the quality and degree of cooperation on the part of local residents are determined by the regional activities that are necessary to maintain their daily lives. Furthermore, the local activities and the characteristics of local residents are interrelated. This means that the implementation of local activities has developed residents’ capacity for living in their region. Local activities have changed along with residents’ expectations and habits; they have also been maintained.

5.5 Essential points of cooperative behavior

Our findings show that in order to implement cooperative programs with neighborhood associations, and produce close relationships among local residents, it is necessary that residents understand the norms of the local activities that maintain their daily lives. The norms are also necessary to foster cooperation with various stakeholders. Residents work well together if they understand the norms of their roles in the cooperative programs.

Cooperative behavior means that local residents must behave in accordance with regional norms and expectations. Their behavior affects other stakeholders, such as municipalities, the private sector and so on. Also, their behavior has direct and indirect effects on their regional society, not only on the various stakeholders.

In the present schemes, they work in their daily lives with membership in close neighborhood associations as a norm. Cooperation means that residents participate in their regional societies as a normative part of life in their region. To facilitate functional regional societies, it is important to build close relationships with various stakeholders that are in accordance with residents’ norms of regional cooperative behavior.

5.6 Conclusion

This paper used an empirical approach to understand residents’ cooperative behavior. Through the conjoint analysis of local activities, this paper clarified that residents understand the norms of local activities that maintain their daily lives. In terms of social systems, cooperative behavior can build an open society with the possibility of building close relationships with various stakeholders.

This paper considered the residents’ cooperative behavior and discussed cooperation in the context of regional society using limited survey data. Theoretical analysis is needed in order to formulate good cooperative programs. For future research, it is important to analyze what cooperative programs have achieved and how regional society changes with increased cooperation.

Acknowledgements

We are grateful to Nakatsugawa for providing the information.

Sachiko Ohno and Akiyoshi Takagi
6 Junior Sports Club and Regional Social Capital in Japan

Kenji Tsutsumi

6.1 Aim and Scheme of the Study

The aim of this study is to examine a function of regional sport association on the perspective on regional social capital in Japan. As well known, Japan is highly aged society, facing to rapid aging of population and depopulation. In that situation population ratio of the younger generations are decreasing. Especially, in 2025, when the baby-boomers born after the W.W.ii will be older than 75 years old, the national structure of population will show a shape of hyper-aged society. Through the process the cohort population group of younger generation, exp. children, will add their importance more and further.

In the regional community generally the population ratio of children will also decay naturally, so sustaining the quality of bearing them is indispensable. It is said that children must be supported not only by their parents and family, but also by community and association. And sports can offer functions and activities for bearing children in a community. As Putnam (2000) suggested, sports and entertainments can strengthen social capital in a community; bowling had been one of the symbolic activities but nowadays almost in vain. By the way in Japan we will soon have the second Tokyo Olympics in 2020. On the way to the games, the National Government has decided that they will give some advantaged budget to the sports to bring up excellent athletes. In the regional level, there are many Junior Sports Clubs (jscs) all over in Japan, supporting breeding children in a region with care concerning with sports activity. jscs have made important role of children breeding almost for 50 years, but they are now facing with many critical problems; decrease of children, aging of instructors, budget problems and so on.

![Figure 6.1. A scheme of study of sports.](image)

Kenji Tsutsumi
In this paper the author shows the outline of JSC in an aged and depopulating society of Japan and examines them as associations of regional social capital which are taking part in children care. Because a scheme of the study contains of grand circumstances, institutions, people and networks (Figure 6.1), just related to sport activity, and the structure is similar to a structure of around social capital, so this study treats a history of JSC, a hierarchical system of institutions of JSC, membership of JSC (children, leader and instructor) and supporters (public administration and parents), and networks.

6.2 The Outline of Junior Sports Clubs in Japan

Japan Junior Sports Club Association (JSSA) has established in 1962 (July the 23rd), just two years before the first Tokyo Olympics 1964, by the Japan Amateur Sports Association (JASA). Also the Japan Olympic Committee (JOC) is just under the umbrella of the JASA. The JSSA is the Japan’s largest sports group for youth. It was established with the hope of "even just one more youth experiencing the joy of sports" and "an organization in society in which youth can cultivate their hearts, minds, and bodies through sports," and in 2012 there were 36,000 JSCs, 830,000 members (children) and 200,000 instructors in Japan (JASA Official Web Site).

The structure of JSC is hierarchical. JSCs are supported and controlled by the MEXT (the Ministry of Education, Culture, Sports, Science and Technology), several strata of boards of education and amateur sports associations (Figure 6.2).

The symbol mark of JSC was designed by a junior high school student, whose design included five lings similar to the symbol mark of the Olympics (Figure 6.3).

At that time Japan had experienced relatively longer high economic growth and very rapid social and regional changes. Huge amount of domestic migration made regional and traditional social ties broken, and did social and regional network of urban residents newly be constructed.

Each Junior Sports Club (JSC) has established for parenting of wholesome and healthy children in Japan at the era of competition and jungle method. It makes sport activity usually of one or more categories; baseball, football, basketball, tennis, skiing, skating, swimming, track and field, outdoor activity, Judo, Kendo, and so on. Plural JSCs of several kinds of sport make a unit on municipality, prefecture and national levels respectively.

Figure 6.2. The structure of JSCs.
jsc has an important role to rear and train children outside of family and school, through sport in a region. There children learn not only technical things of particular sport but also politeness, sportsmanship, leading, facilitating, team-work spirit. So, in another words, jsc can be a platform of social capital preparing for children in a region. We can see jsc in all over the Japan, in big cities, and also in rural regions. And several jscs make regional interchanges among them.

In 2020 we will have the second Tokyo Olympics. National consciousness of sports is becoming bigger, so the situation of jsc is to be made much of importance. But the rapid aging and natural depopulation let power of jscs be abolished; populations of jsc children members, leaders and instructors are declining. It means, in a sense, deprivation of regional social capital. But it would be a chance for revitalization of jsc. This presentation will show an outline of jsc, and think about it as a platform of regional social capital.
6.3 Actual Situation of Junior Sports Clubs: An Example at Toyonaka city, Osaka prefecture

Toyonaka city, located at the northern part of Osaka prefecture (Figure 6.4), is well known its activeness of JSCs. The city has a population of about 400,000 and is a residential city with some manufacturing and commercial areas. It also includes the Senri New Town, the first big and authorized new town in Japan. A famous animator, Osamu Tezuka, the creator of Astro Boy came from the city.

On July the 1st in 1963, the Toyonaka City JSC (TCJSC) has established and it was 22 days earlier than the establishment of the Osaka Prefecture JSC (OPJSC) (Toyonaka Junior Sports Club, forthcoming). At the beginning, the TCJSC included 9 JSCs; four YMCA JSCs, JSC of badminton, soft tennis, outdoor activity, track and field, and volleyball, respectively. In 2013 the TCJSC had the 50th anniversary of its foundation (Figure 6.5).

<table>
<thead>
<tr>
<th>JSC</th>
<th>Event of main sports activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Volley ball</td>
</tr>
<tr>
<td>2</td>
<td>Baseball</td>
</tr>
<tr>
<td>3</td>
<td>Shorinjikempo</td>
</tr>
<tr>
<td>4</td>
<td>Shorinjikempo</td>
</tr>
<tr>
<td>5</td>
<td>Karate</td>
</tr>
<tr>
<td>6</td>
<td>Shorinjikempo</td>
</tr>
<tr>
<td>7</td>
<td>Volley ball</td>
</tr>
<tr>
<td>8</td>
<td>Shorinjikempo</td>
</tr>
<tr>
<td>9</td>
<td>Volley ball</td>
</tr>
<tr>
<td>10</td>
<td>Track and field</td>
</tr>
</tbody>
</table>

Table 6.1. Ten JSCs in Toyonaka city. Shorinjikempo is one of the Japanese martial arts.

In 2014 there are only 10 JSCs in the TCJSC (Table 6.1). Each of them has their own sports activities and also has events of the TCJSC etc. All over in Japan, on average, there is one JSC per a population of about 3,540, so the figure 10 JSCs in Toyonaka city is very small than expected, but and because there we can see too intensive JSC activities in Toyonaka city (Table 6.2).
Table 6.2. Events in TCJSC. (Toyono district consists of Toyonaka city, Ikeda city, Minoh city, Nose town and Toyono town; municipalities located in the north-western part of Osaka prefecture.)

<table>
<thead>
<tr>
<th>Time/Season</th>
<th>Events of TCJSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>Mingling meeting: field athletics, camping, disc golf or sea experience etc.</td>
</tr>
<tr>
<td>Summer</td>
<td>Swimming meet.</td>
</tr>
<tr>
<td>August</td>
<td>Toyonaka Festival; selling drinks and shaved ice to get funds for activity by instructors and parents.</td>
</tr>
<tr>
<td>September</td>
<td>Physical fitness test; standing broad jump, sit-ups, push-ups, timed shuttle run, and 5-minutes distance run.</td>
</tr>
<tr>
<td>November</td>
<td>Mingling meeting: sports meeting with the other JSCs in Toyono district*.</td>
</tr>
<tr>
<td>Winter</td>
<td>Skiing or skating.</td>
</tr>
<tr>
<td>January</td>
<td>Ekiden.</td>
</tr>
<tr>
<td>March</td>
<td>Training session for instructors and parents in Toyono district.</td>
</tr>
</tbody>
</table>

Figure 6.6. Change of the number of JSCs in Toyonaka city.

Each JSC has their own regular and general training time once or twice in a week, and furthermore they would take part in the events of TCJSC. On the one side children can experience many kinds of sports activities and make fun, but on the other side frequent participation to events can be heavy burden for children members, instructors and parents, in the meanings of time, efforts and costs.

Here let us see about some statistics around the TCJSC. Figure 6.6 shows the change of number of JSCs in Toyonaka city. On the peak, in 1967 they had 17 JSCs but after that the number has changed within 7 through 13. In 2014 they have only 10 JSCs. Some groups had retired from JSC activities because of decline of the number of children members, and the other had done because of heavy burden.

We can see the change of the number of children member of JSCs in Toyonaka city with Figure 6.7. Since the former half of the 1970s the tendency of decrease of the number has been clear, although it shows some fluctuation. One thing on the background is depopulation of the youth and children. And in general the children members usually retired from JSCs taking the opportunity of entrance into junior high schools, when at the stage most of them would start to
go to private tutoring school after their public high school time. And also many of them enter into extracurricular clubs at their junior high school. In addition, in Toyonaka city, there are many several kinds of training and lesson opportunities and facilities, so even elementary school pupils and their parents will choose something other to activities of JSC; swimming schools, English schools, music schools and so on.

Figure 6.8 shows the change of the number of JSCs instructors in Toyonaka city. We can see violent fluctuations on it. But surely and steadily we can read rapid aging among the instructor. Then ability of one instructor becomes weaker and weaker, so they must compensate it for gaining supports by parents more and more.
6.4 Social Capital and Junior Sports Clubs

Generally speaking, the children members of JSCs have get and attain technical progress of sports, and also politeness, sportsmanship, leading (leadership), facilitating, followership, teamwork spirit. Sport itself has a nature to relate to communitarianism and gentlemanship (Jarvie 2003). JSCs can be platforms of social capital preparing and training for children in a region. Through the JSC activities, the children establish social ties in their JSC, between/among JSCs. Such social ties also can be made among instructors, between instructors and parents based on strong volunteerism (Harvey, Lévesque and Donnelly 2007). Concretely speaking, JSC is a resource of regional social capital consisting of technics, knowledge and healthy physical body. And as Putnam has suggested the work as social capital is somewhat complicated (Putnam 2000, 2002. Tsutsumi 2011, forthcoming).

6.5 Short Remarks: Problems around Junior Sports Clubs

JSC is indispensable for taking care of children in a community on behalf of school and family. As it were, JSC can be another cradle for children. But there are some problems which make sustainability of JSCs difficult; depopulation of the youth age, aging of instructors, burden of activities, decline of the budget from public sector, urban environment which is full of several kinds of sports-schools. And the clearest enemy against JSCs is entrance to a junior high school. Nowadays JSCs face to many severe situations. But there can be listed up some factors to activate JSCs; public support including budgets for JSCs, activating volunteer instructors, publicize the significance of JSCs more widely, although such means are neighboring with some difficulties. Anyway JSCs can make a tight social capital in a region certainly. It is similar to a local school for a center with social capital, as Hanifan (1916) has already shown.

References


Kenji Tsutsumi
Part II

Key Factors for Rural Development
7. The Value of Countryside

Lars Westin

7.1 Introduction

Regional development is creation of place related wealth. Countryside development may thus be defined as development of assets associated with a well-defined geographical part of the countryside. This definition lead us to three further tasks; a definition of "the countryside", a geographical demarcation of the specific territory of interest and finally a measurement of the assets associated with this territory. We will in this paper argue that those three questions are closely related – the countryside is a part of the territory with a specific range of assets. In this respect, the balance sheet of a piece of land labelled as "countryside" should have a very distinct character.

But in order to withhold its status as "countryside", a place has to maintain its attractiveness on the specific assets that give it this character. Otherwise it may be transformed into other forms of geographical space such as "city", village, "mine" or "forest". Identification and management of those specific "countryside assets" is an important input to decisions regarding investments in the further growth of the place, if it should maintain its status as "countryside". We will then also observe that a valuation of the assets of a place contains both insider and outsider values. Insiders and outsiders in their roles as property owners, sellers or buyers generally assign assets different values. Such differences and changes in those are of decisive importance for the further development of any place. It will also generally add to the fussy character of any attempt to identify a clear border between the countryside and remaining territories in the form of cities or nature.

The paper is structured as follows. Initially, alternative definitions of the "countryside" are discussed and criticized. The border towards the city is found to be inexact but the countryside should be defined by its assets and not as commonly is made in relation assets not available in the countryside as such. Then we discuss how the amount of assets in a place both reflects its historical growth and determines its future growth. The countryside has a relative shortage of human and social capital in relation to its natural capital. Asset mobilisation and transformation are two sides of a policy for growth. However, when relative shares of nature and human-social capital changes also the countryside changes. After a discussion of the complex relation between the countryside, the city and the forest we conclude the paper with some policy suggestions.

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1 This paper is the result of a longstanding and fruitful exchange between researchers from Japan and Sweden within the "Workshop on Social Capital and Development Trends in the Japanese and Swedish Countryside". Financial support over the years from municipalities, companies and various research bodies are hereby acknowledged.

2 This discussion was initiated in Westin, L. (2013).
7.2 Identifying the countryside

The notion "countryside" is a broad and rather diffuse concept and often associated with at least two types of geographical areas. The narrow notion is connected with an area dominated by agricultural activities, an open landscape for production of crops and perhaps some parcels of forest. Often this landscape is associated with some specific architectural manifestations and qualities in relation to its real estate and infrastructure.

The second definition is broader and a more general description of a territory "outside cities". It thus includes smaller settlements, mining sites, archipelagos as well as sparsely populated areas e.g. dominated by forest or natural reserves. This latter type of "countryside" to some extent includes the previous narrowly defined countryside and may be found at some distance from larger cities but may include smaller towns. In attractive parts of the archipelago and the mountain areas this "countryside" may be combined with substantial values in the form of real estate. There, "agricultural activities" may only be of historical, marginal or pure touristic interest.

In its definition of the countryside, the Swedish board of Agriculture applies a version of the second broader definition, based on a classification of each of the 290 municipalities in Sweden. Those are divided into 93 "urban" municipalities with more than 30,000 inhabitants and those smaller municipalities with a share of commuting to nearby larger municipalities above a given threshold value, 164 "countryside" municipalities and 33 municipalities defined as "sparse countryside". To be classified as a "countryside municipality", the population of the municipality thus has to be beyond 30,000 inhabitants while also commuting to nearby larger municipalities should be minor. Those criterions also hold for the "sparse countryside municipalities" but those municipalities should in addition to this not have more than five inhabitants per km². As a consequence, in the world of the Swedish board of Agriculture "the countryside" becomes a quite broad ensemble of places and territories with distance to agglomerations of people as one of their chief characteristics. Moreover, land use based on agricultural activities and related to an "open landscape" are in this definition not a specific marker. Hence, municipalities dominated by forestry, mines and a set of villages or small towns are all part of the countryside.

Statistics Sweden and the Swedish Association of Local Authorities and Regions both instead focuses more on the agricultural aspect of the countryside. Here countryside municipalities are defined as municipalities where first of all at least 6.4 percent of the employed "night population" is employed within the agricultural sector and where less than 70 percent of the households lives in densely built up areas. Secondly, such a municipality has to have a population density above 5 inhabitants per km² and at least 20,000 inhabitants. This quite strong definition thus excludes sparsely populated municipalities and areas where successful agriculture is combined with strong urban, if not metropolitan, qualities, i.e. of "garden city" character. This implies that only 30 municipalities are qualified as countryside municipalities. As we saw above, the Swedish board of Agriculture instead include 164 municipalities in their definition of countryside municipalities.

The common characteristic of those two definitions is that they are based on the municipality as an administrative statistic level. A municipality then becomes countryside or not countryside. Such definitions will most often be problematic if one want to identify the initially discussed narrow type of "countryside" with its characteristic landscape and architectural qualities. Today such areas may often be found near denser cities and within their commuting distances.

Other definitions not based on municipalities may although be found, e.g. based on characteristics of densely built up areas and the countryside areas outside those. But also here distance

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3 The night population is the number of people registered as living in the municipality, in contrast to the day population, the number of people working in the municipality. The difference between those values is commuters.
is an important property, since in those cases the “countryside” often is defined negatively as non-city or non-densely populated areas. This in contrast to the positively identified and defined countryside where the agricultural specialization of land use and other characteristic assets of the place is the basis for the definition.

To summarize, one may first observe that the currently dominating definitions of “countryside”, and especially that by the Swedish Board of Agriculture, are too wide to be of interest for statistical analysis or for a territorially focused regional policy. Those areas easily become mixes of quite different forms of land use; agriculture, forestry, mines, mountains, archipelagos, etc. This does not have to be a problem if the aim of the policy is not to maintain e.g. an agricultural type of countryside. If the aim instead is to increase population and density, the policy easily become one of traditional urban type with attractiveness on people in its core and a question of competition with other territories about this people.

We may thus also observe that the narrowly identified agriculturally dominated countryside “lives” on a quite narrow area in between the nature with its forest and dense clusters of people. Generally the countryside, both in a narrow and a broader definition, is at some distance from large bodies of human, cultural and social capital with their associated flows of information. Hence a program for place-based countryside development focused on an increase of inhabitants and commuting possibilities to agglomerations at some threshold will have the impact that this countryside itself may be transformed into city. If instead this place loses inhabitants, it may be transformed from an agriculturally based countryside into a territory dominated by forestry and other forms of nature.

### 7.3 The value of a place and its growth

Since place is a definite piece of land, the value of place is strongly related to land use. Land is generally considered as the most immobile of asset.⁴ In a country like Sweden with an average of 20 inhabitants per km² on an area of 450 000 km², most land is utilized for the development of natural capital. The rich availability of space implies that Swedes live in relatively large houses and that the metropolitan areas still are characterized by a relatively low density. In the definitions of “countryside” discussed above, availability of natural capital in the territory seemed to be an important and characteristic quality. What is then the share of the natural capital of the total value of assets in Sweden?

In a study by the World Bank at the turn of the last millennium, the bank tried to estimate the wealth of nations. The method of valuation used is a combined asset valuation and income approach. It is simple, but gives some measures and insights into the wealth of nations around the year 2000. Only market values could at that time be included for specific assets, hence the “inclusive” values of wider ecosystem services are not included in the estimations. The difference between the total value of the country, measured as the current value of the future incomes for consumption possibilities for inhabitants and the asset specific values, are in the study interpreted as the aggregated human, social and cultural capital of a country. In the case of Sweden, the resulting values of assets per capita are given in Table 7.1. The table gives a picture of the net balance sheet of Sweden in per capita terms.

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⁴ Mines are examples where values are created by making land movable. If such a removal of land implies that land or refined types of land, such as steel and cars, are moved out and hence exported from “the place”, is dependent on the defined limits of “the place”. It is well known that the narrower a place is defined, the larger may its shares of export and import be.
According to those first estimates by the World Bank, the natural capital of Sweden only constitutes to about 2 percent of the total value of assets in the country. Artefacts and real estate amount to 11 per cent. Most assets are thus associated with the Swedish population; its skills, knowledge and institutions for decision making and information handling. Sweden should in this respect rather be compared with a consultant company than with an industrial establishment or a farm.

The figures obviously has to be taken with care, they only give a first approximation and only represent a single year. Studies of the wealth and the balance sheet of nations on a more long term basis although recently has attracted substantial interest and debate, as exemplified by the study by Piketty (2014).


<table>
<thead>
<tr>
<th>Asset</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minerals</td>
<td>2,367</td>
</tr>
<tr>
<td>Forests</td>
<td>21,906</td>
</tr>
<tr>
<td>Recreation/Hunting</td>
<td>8,172</td>
</tr>
<tr>
<td>National Parks etc.</td>
<td>13,941</td>
</tr>
<tr>
<td>Vegetarian Resources</td>
<td>10,080</td>
</tr>
<tr>
<td>Animal Resources</td>
<td>15,084</td>
</tr>
<tr>
<td>Sum of Ecological Capital</td>
<td>71,550</td>
</tr>
<tr>
<td>Sum of Artefacts and Other Real Capital</td>
<td>524,979</td>
</tr>
<tr>
<td>Sum of Social, Knowledge and Human Capital</td>
<td>4,024,287</td>
</tr>
<tr>
<td>Total Assets per Capita (as the present value of future consumption possibilities)</td>
<td>4,620,816</td>
</tr>
</tbody>
</table>

In order to obtain some information regarding the long term development of the Swedish assets we may moreover compare the figures above with the interesting long term study of Swedish wealth presented in Figure 7.1. The study is made by economic historians Lindmark and Anderson. It should also be taken as a first attempt to generate new data over Swedish wealth. However, the pattern is interesting since it confirms a long term development of the Swedish economy observed in other statistics, e.g. employment figures over industrial sectors.

The industrialization of Sweden during the middle of the 19th century and hence the transformation of Sweden from a poor agricultural economy into a faster growing economy is clearly shown. In the end of the 19th century urbanization increases, investments are made in the Swedish railway system while education and health care are developed. In the beginning of the 20th century, the share of natural capital in the Swedish economy thus falls below 10 percent. The fall continues and in the beginning of the 21st century the share is around two per cent. It thus confirms the findings in the study by the World Bank.

Why is measures such as those of the value of places, in this case a country, important? During the 20th century, the balance sheet of countries, other regions and places often were disregarded in favour of national income statements with their measure of value added as the Gross Regional Product (GDP). Value added is of course important, but a region may for a period increase its GDP while during the same time important assets are reduced due to emigration, wastefulness or wear and tear. Assets are the factors of production that together with available techniques and institutions in the region determine the comparative and absolute advantage of a place.

While the balance sheet gives a picture of the amount of assets located within a place, a further identification of the ownership of assets by locals, i.e. people living, using or with other similar
interests in the place on one hand and non-locals on the other. This would give an *owner specific balance sheet for the place*.

Locals would be owners of land or property in the place but also people renting an apartment, visiting or working in the place could have an interest in its development. Obviously there is always a grey zone between locals and non-locals. However, from a development perspective there is a goal to attract interest and assets from as many non-locals as possible in order to make them locals in the meaning that they would develop assets in the place.

Given a well invented balance sheet with a clear ownership focus, the place is given a more solid ground to focus on its future income statements and investment possibilities. Investments are important for the maintenance of assets due to wear and tear but also for the future development of the total amount and relative proportions of the assets of the place.

The dynamics given by Figure 7.1 for Sweden thus shows how the nation managed to transform itself from an economy based on natural resources for its income generation into a knowledge based economy with associated efficient institutions. Through this change in the relative proportions of its assets also the basis for the Swedish countryside was influenced in a considerable way. Mechanisation of agriculture and urbanisation were the clearest evidences of this.

### 7.4 The balance sheet of the countryside

As we discussed initially, since in Sweden the countryside commonly is defined at the municipality level, it becomes a quite diffuse and mixed territory. A place dominated by agricultural activities may in this definition be within a municipality defined as a "countryside municipality" but it may also be part of a municipality defined as "urban". Hence, for the countryside place developer those definitions and eventual data connected with them will not help in the development of the balance sheet.

But some general considerations may although be made. So what is the situation for the Swedish countryside? As mentioned, common definitions of "the countryside" generally identifies countryside as geographical areas with relatively small shares of human capital or with low accessibility to such capital. As a consequence the share of natural resources in the countryside are higher than in urban areas. This implies that the shares of human, cultural and social capital...
are lower in the countryside than in the city. On the other hand, those shares are obviously higher in the countryside than in areas of pure nature. This illustrates the narrow space within which the countryside exists.

Since human capital is an important part of the knowledge society, the countryside compete with a relative set of asserts and a ratio of factors of production that in some aspects still represents a reminiscence of pre-industrial economies. But definitely not in all aspects. The industrialization of agriculture, forestry and mining in the middle of the 20th century and the competition from higher wages in the cities has resulted in a drastic change in the current production technology of the countryside. Demand for labour in natural resource intensive areas now drastically is reduced. As a consequence, the way back to the type of settlement structure existing before the time of urbanisation, currently is not open without a strong development of competitive non-natural resource based services, human capital development functions and smaller industries.

To be competitive within agriculture, the countryside is dependent on good land, accessibility to complementary labour markets, trade possibilities and the human capital and information flows available in cities. Agriculturally based land use in the countryside thus is dependent on accessibility to urban markets and thus on infrastructure. But such accessibility also opens for competition on land from artefact and real estate development. Hence, the traditional von Thünen model for land use (von Thünen, 1826) still is relevant for the understanding of countryside development.

Given this, our first conclusion is that a countryside based on vegetarian and animal resources heavily is dependent on cities within commuting distance. A consequence of this is that the “countryside” in its most narrow and agriculturally oriented definition is dependent on, and should be positive to urban development. This also give the agricultural land and its associated real estate a stronger value from the option of an alternative use by urban activities. On the other hand, increased penetration from urban activities may also destroy the prerequisites for further agricultural development. The sustainable agricultural countryside thus is dependent on a range of asset combinations that is quite narrow and always is challenged both from a too high and too low accessibility to urban areas.

A second conclusion is that in Sweden, with its current population to land area quota, the dominating option to land use in the non-urban countryside is for forestry and mineral resource development. In practice this also is the case. In a stochastically chosen 100 by 100 meter square of Swedish land, the probability to find either an artefact or a piece of real estate is very low. The non-urban “countryside” beyond commuting distance from large and medium sized cities always will be challenged by forest development and has to compete with labour saving natural resource based industries. Some places in the countryside although has developed assets, institutions and production facilities that give them possibilities to compete successfully both with forestry and with extended real estate development. In other places those competitive forces are too strong and much of the income statement of this countryside instead is based on public transfers to agriculture but also to human development facilities within health and care.

A third conclusion thus is that the non-urban countryside always has to reconsider its idea for asset development in a place and present competitive offers sensitive to preferences and incomes at the demand side. This may be seen as another too obvious statement to be stated, but it emphasizes the need for adjustment and deepening of the offer in a small economy, especially considering the fact that countryside actors often market their places as open minded, helpful and interactive but also as stable and non-changing contrasts to the high speed and continuous change in growing cities. Our conclusion is that the countryside, while keeping its characteristic attributes, at the same time also has to adapt and renew its institutions, technology and asset development faster that in competing urban areas.
This highlights the insider and outsider difference in the evaluation of the assets of a place. The insider of a place, for example the owner of land, the value represented by the marginal market prices, as given in Table 7.1, may underrepresent their reservation price for selling property or emigrate to another place. This difference is a consumer surplus that should be added to the asset value of a place from an insider perspective. For the outsider there may also be a potential positive consumer surplus after land has been bought but the actual selling price may be increased until this is zero. The value after an eventual transaction thus represent a negotiated price where the seller would like to be compensated for its valuation of the asset at stake including first of all its own consumer surplus but also the consumer surplus of the buyer if this is higher.

People with a future valuation of the place at or below the market price of immovable assets tend to sell or migrate. A common example is young girls in less accessible countryside places. People not migration or inhabitants not selling their properties may then be expected to have a positive consumer surplus in relation to the place.

Anyhow, place developers in the countryside has to focus hard on the financial flows through the place, i.e. the income statement but even more has to identify asset values and value creating processes in the place. It is also important to identify and challenge destructive processes and value reducing environments. In summary, it seems apparent that policies for countryside development has to be highly place dependent, policy makers have to audit place relevant assets carefully and pay attention to movements in the insider and outsider valuation of this stock. Hence, and this holds generally for urban and non-urban environments, there is not a single development policy available for "the countryside".

7.5 The countryside and the cities

Above, we emphasized the advantage of having accessibility to growing cities for the development of countryside assets. This may be seen as a strong statement when many countryside developers view the attractiveness of the nearest city as the main cause to their development problems. We have although already pointed at the development of labour saving technologies for resource intensive production as the main factor behind this process of urbanisation. Improved individual communication possibilities generated by cars and trucks could also be mentioned as forces adding to this concentration in space.

Growing cities should instead be seen as a potential for the countryside. Countryside developers should instead be critical to stagnating cities in their surrounding or in important parts of their external network. In order to support this argument with some empirical reasoning, the following table with the long term population development among municipalities in the county of Västerbotten may be considered.

At a first glance, the figures in Table 7.2 perhaps only confirm the picture of drastically reduced population numbers in Västerbotten outside the cities Umeå and Skellefteå after 1951.

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5 Insiders and outsiders on the asset market should not be confused with the earlier introduced local and non-local interests. In our perspective insiders may be both local and non-locals. On some markets, e.g. the real estate market, locals may also be outsiders.

6 We assume that the price of the property includes the cost of the transaction and the cost of migration.

7 As will be returned to, the most general policy in order to favour a dispersed settlement is a tax on population density in space. A property tax does this.

8 The growth of Umeå and Skellefteå is not shown in the table. But especially the growth of Umeå since the fifties outweighs the negative development in the rest of the county. The county of Västerbotten could witness a new population record in the year 2014.

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This has, as many politicians in the smaller municipalities often reminds about, also been the case. First as a result of the mechanization in the fifties and secondly the population decline in the beginning of the nineties after the collapse of the Soviet system (through the disarmament of the Swedish defence in North Sweden). Finally did around the year 1990 and the financial crisis, the expansion of the public sector as a major employer among smaller Swedish municipalities meet a coeval stop. This expansion of the public sector was based on international lending and a state-municipally based system of transfers of public resources to smaller municipalities. This came to be a substitute for the necessary creation of incomes and asset values in the countryside.

But in the table each municipality also has been associated with the river basin it belongs to. This reveals a stronger pattern in the data. The Ume River (u) basin has the fast growing city Umeå at the coast. A European road follows along the river that reaches into Norway and the Atlantic coast while passing the largest ski resort in the area. It also passes by Lycksele, the dominating municipality in the interior of Västerbotten. This seems to have been circumstances advantageous both for the municipalities around Umeå and those along the river.

Table 7.2. Population development in municipalities along four river basins outside Skellefteå and Umeå in the Swedish county Västerbotten during the two periods 1951–2012 and 1992–2012. The river basins are: the Ångerman River basin (a), the Ume River basin (u), the Vindel River basin (v), the Skellefte River basin (s). (Source: Data from Statistics Sweden, percent.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vännäs (u)</td>
<td>4.3</td>
<td>2.8</td>
</tr>
<tr>
<td>Lycksele (u)</td>
<td>-17.9</td>
<td>-12.8</td>
</tr>
<tr>
<td>Nordmaling (u)</td>
<td>-32.3</td>
<td>-14.1</td>
</tr>
<tr>
<td>Storuman (u)</td>
<td>-34.5</td>
<td>-14.3</td>
</tr>
<tr>
<td>Robertsfors (u)</td>
<td>-35.3</td>
<td>-16.5</td>
</tr>
<tr>
<td>Vihelmina (a)</td>
<td>-36.3</td>
<td>-17.4</td>
</tr>
<tr>
<td>Malå (s)</td>
<td>-39.2</td>
<td>-19.0</td>
</tr>
<tr>
<td>Norsjö (s)</td>
<td>-44.1</td>
<td>-21.5</td>
</tr>
<tr>
<td>Vindeln (v)</td>
<td>-46.8</td>
<td>-22.3</td>
</tr>
<tr>
<td>Dorotea (a)</td>
<td>-52.8</td>
<td>-22.5</td>
</tr>
<tr>
<td>Bjurholm (u)</td>
<td>-53.4</td>
<td>-23.5</td>
</tr>
<tr>
<td>Sorsele (v)</td>
<td>-56.4</td>
<td>-25.6</td>
</tr>
<tr>
<td>Åsele (a)</td>
<td>-61.4</td>
<td>-26.9</td>
</tr>
</tbody>
</table>

Instead Åsele and Dorotea along the Ångerman River (a) basin, with stagnating or declining cities at the coast to the south, and thus outside the county of Västerbotten, have faced a more problematic development. The same holds for the Malå and Norsjö municipalities with the stagnating city Skellefteå at their coast. Vindeln near Umeå but along the Vindel River (a tributary to the Ume River) and Sorsele along the same river also has had a more problematic development. The road along this river does not lead to Norway, to any larger ski resort in the mountain area or to other important goal points. Sorsele in the western inland also has more connections with the municipalities along the Skellefte River (s) and thus also follows their weaker development more closely.

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The Ångerman River meets the Gulf of Bothnia in the county Västernorrland to the south of Västerbotten. This county has lost population almost every year since the middle of the fifties.
Population development at the municipality level is a result of a broad set of forces. In total, the county of Västerbotten has an all-time high number of inhabitants, due to the growth of Umeå. The growth of Umeå has been in favour of the municipalities along the Ume River, although it has not been strong enough to make all of them a growth push back to the levels of 1951 and definitely not enough to give support to the municipalities along the other river basins. Umeå still is a small municipality with around 120,000 inhabitants and an average density of 50 inhabitants per km². Its growth has so far only had a strong influence on the most nearby municipality in Vännäs.

This example from Västerbotten anyhow gives an indication of the importance of growing cities for the development of the countryside. Still it is obvious that although being near a growing city, each place and each municipality has to focus on the development of its own attractiveness in order for its assets to grow.

What would then characterize a successful policy for a place on the countryside? We have argued that generally the countryside should favour growing cities and immigration to its surrounding region. If advocates of the countryside may prove that the urbanization process has created a too high density of people and activities in cities a tax on land values, and thus on density, would be a first best solution. This would give incitements for relocation of activities outside cities. Cities would be less dense, cover larger areas and raise land values in commuting areas, but the impact would probably not be so large in the currently least populated parts of the countryside.

For the agriculturally oriented countryside very near growing cities, a land tax or any other measure that increases sprawl and an extended urban land use may on the other hand obviously also result in a pressure for change of agricultural land into residential use. Given that urban land owners in this case may realize a price including the cost of relocation of their production, this may be an attractive alternative for land owners in the countryside – as long as the expected return from a continued management of the agricultural resources not is higher. This conclusion is based on the assumption that managers of land in the countryside are “local insiders” and thus own their land. Since people in the countryside too often not themselves owns the natural resources of the place they live in, they may not benefit from forces creating alternative use and values of assets in their neighbourhood.

For the countryside not specialized in agriculture a more general development of asset values becomes important. Especially in the case when ownership of surrounding profitable natural resources not is possible. But as has been illustrated, measures to increase immigration of human capital anyhow in this case have to be given first priority. We have in Westin and Edlund (2013) thus argued for the establishment of joint facilities and clubs for private management of various common resources. Hence, what could be the countryside analogue to the internationally existing more urban oriented Business improvement district (BID), the *Countryside improvement district (CID)* could be introduced. Such organizations has strong resemble with the in Sweden so common private road, water and drainage associations, where landowners in a well-defined area establish a development program and taxes them self in order to increase the value of their assets. This may be seen as formation of stable institutions from various loose networks based on the openness and interaction available in a place in the countryside.

Urgent tasks for a CID are often e. g. to increase the density of the housing area in a place by a move of remote houses into central locations or to buy land from absent non-local land owners and to sell it to local actors or immigrants with management ambitions. The land reform “Laga skifte” in Sweden during the late 19th century was important in order to increase the efficiency of agriculture, but the reform also transformed traditional more compact country villages into disperse line oriented settlements along country roads. The reform thus had a tendency to re-
duced local interaction within villages. Often this disperse line settlement structure still remains, although the relative importance of agriculture for wealth creation in the countryside villages often has decreased. Hence it is important to re-establish density, reduce costs of transaction for interaction and decision making by introduction of stable networks with formalised procedures in order to assimilate any, even small, benefits from agglomeration available.

A successful policy for the development of assets and values in the countryside without the ambition to preserve agricultural qualities may thus initiate a transformation of a place from “countryside” into “city”. This would then also imply that actors in the place even stronger has to put effort in the urban planning aspects of place development. A place moving towards “the city category” will even stronger meet competition from other cities and villages about human capital and related urban assets. The transformation of assets generated by the specialisation as countryside into assets with an attractiveness on urban inhabitants may need a careful attention. Elites and structures inside the place, currently gaining benefits from rents from the countryside specialization will not always favour such a change.

7.6 Conclusions

The Swedish countryside in its broadest sense, has experienced a long period of fundamental transformations of its asset structure. From being specialised in the basic asset for human living, the agricultural land, parts of the countryside now mainly is a deliverer of rather basic products from forests and minerals. The relative value of the countryside thus has decreased relative to urban areas specialized in human capital. The use of the land in the countryside for development of human capital and real estate based production thus always is under pressure, except for in specialized and concentrated places with specific asset combinations such as archipelagos, tourist areas and ski resorts. It is conspicuous that large areas of the countryside nowadays has an asset structure that is negative for the development and attractiveness of production in segments with a higher value added.

Places with a strong focus on tourism and secondary homes thus are exceptions. Here production of commodities associated with free time and outdoor living have found inspiration for product development, attracted entrepreneurs and access to markets. They have shown a willingness for transformation and may present strong benefits from agglomeration on a smaller scale than found in many larger cities. Those places and their processes of value creation may thus be nodes of development towards a more human capital intense production in the countryside.

A modernised agriculturally dominated countryside may still finds its niche in between the forest and the urban densities. Also this may sometimes be integrated with tourism and secondary homes into a broader value creation and asset development. This countryside although seems to be more dependent on interaction with urban areas than the advanced forest production.

We argued that negative definitions of “the countryside” based on assets not available in the place, such as its low accessibility to the human capital in cities not is advantageous as a basis for its development. The diverse structure of natural resource based assets outside cities should instead be the basis for classification and action. Policy then has to be based on assets available in a place, ideas of how to manage those more efficient and how to start a transformation of the asset structure in order to increase total value of the place. Especially, the creation of local markets and support to local market actors thru our suggested “Countryside improvement districts (CID)”
as an institution to strengthening existing social capital and make it a force for decision making and asset management seems important.

References

8 Measuring Regional Well-being – New “Affluence Indicators” in Hokkaido

Kazuo Machino

8.1 Introduction

This is my second paper in a series of the reports on developing indices that measure regional well-being. As described in my first paper (Machino 2014), many governments and international organizations have been trying to measure social well-being for more than a half century. Most of the past social indicators, such as United Nation’s “Human Development Index (HDI)” or OECD’s “Better Life Index (BLI),” focused on measuring social well-being of nations and comparing them. However, even within those indices, the lists of component indicators differ very much. For example, while HDI includes mainly indices for basic human life, e.g. “Life expectancy at birth,” BLI includes more indices for a variety of human needs, e.g. “Time devoted to leisure and personal care.” This is not surprising because the former is used for comparing nations in very different developing stages and the latter is used for comparing only industrialized countries. Theoretically, a social index includes all the factors that could affect human well-being. Practically, however, you can include limited number of factors. Therefore, if you make a social index only for regions with similar socioeconomic conditions, you can focus more detailed aspects by making light of the factors common to the regions. Therefore, developing social indicators for comparing regions inside one country or even one prefecture would give useful information to the regional policymakers. This was the original motivation for developing our local welfare indicators, “Affluence Indicators (Nishibe et al., 2013 and Machino, 2014),” in Hokkaido, the northern most island among Japanese four main islands. We chose the name, “Affluence Indicators”, to differentiate it from other indicators. The term “affluence” implies both material wealth and spiritual richness.

We were aware that the argument against using any composite indicator for social well-being was dominant in recent studies. However, our composite indicators share the same spirit with those who oppose the method in the following sense. We didn’t choose the components or their weights for the composition based on our normative judgment. Our affluence index in each region is composed of a unique combination of component indices for each region with weights. Both the selection of component indices and value of their weights are based on the importance of each component evaluated by opinion survey in each region.


2 We will discuss more on the weighting in section 4.
Our project was also motivated by the fact that people all over the world and especially Japanese people after the 2011 earthquake were more interested than ever in understanding what constitutes real happiness.

However, our first indicators had some problems. In this paper I first explain the problems in our old indicators, and propose our new improved method (in section 2). Using the new method, I then make new indicators for Hokkaido and conduct some comparative analyses using the indicators (in section 3). Finally, I discuss how we can use them as a policy tool (in section 4).

8.2 Review of the first “Affluence Indicators”

Method and process

When we developed first prototype indicators for the six different regions in Hokkaido (Nishibe et al., 2013 and Machino 2014), we used the survey data collected by Hokkaido government for the reference to their long-run policy planning (Hokkaido, 2006). Since each question was proposed by one of government branch, it may not have corresponded to what people really wanted or needed to have more “affluent” lives. Furthermore, since it was done in 2006 before the results of the happiness study were well known, it couldn’t have included any of the new kinds of questions from the study even if they had wanted to. Those questions are, for example, respondents’ health or their relationships with family members and friends. Therefore, in addition to the initial prototype indicators with the old data, we made some indicators with new data from our preliminary opinion survey which includes the new types of questions mentioned above.

Due to insufficient resources, however, the sample size of our new survey was small and the number of regions we covered were just two: Sapporo (and its suburbs) and Okhotsk. The survey was conducted between late February and early March in 2013. Since this survey was neither based on large sample nor random sampling, the results simply showed a possible direction for the next step in this research. That said, our results indicated that the previous survey questions might be missing some interesting information on perceptions of well-being in Hokkaido.

This preliminary survey had two types of new questions, compared with 2006 Hokkaido survey. The first type directly asks respondents about their current levels of subjective well-being and how they evaluate their lives. The levels of subjective well-being are based on “ladder-of-life” questionnaires asking respondents to rank their life on a scale between 0 (worst possible life) and 10 (best possible life). The average score for subjective well-being was very high: 7.27 in Sapporo and 7.24 in Okhotsk. In a similar survey by OECD (2011), Japan’s score was a little higher than 6.0, lower than OECD average of 6.7.

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3 In an opinion survey by a Japanese newspaper, Nihon Keizai Shinbun, in 2011, 60% people answered positively (40% negatively) on the necessity of the happiness measure, although 31% answered negatively on making the happiness measure a policy target, 1% more than positive answers. See (Komine and Uchida (2012) for more detail.
4 The most results in this section are revised version of those in Machino et al. (2014).
5 There are several ways to divide Hokkaido. We divide it into six areas, i.e., Central Area (Center), Southern Area (South), Northern Area (North), Okhotsk Area (Okhotsk), Tokachi Area (Tokachi), Kushiro-Nemuro Area (Kushiro-Nemuro Area).
6 See table A1 for the questions in this survey.
7 See table A2 for the questions in this survey.
8 We had two cooperative organizations for the sampling. A survey company (Interaction Research Institute, Co. Ltd.) and the Okhotsk General Sub-prefectural Bureau each selected 100 respondents for a total of 200 respondents, Sapporo and Okhotsk, respectively.
The second addition we made was including items like those mentioned above. They were, for example, “good relationships with colleagues in workplace,” “good work-life balance,” “enough time to spend with family members,” “good relationships with family members,” “good relationships with friends,” and “stable family income.” Most respondents chose some of these items.

Despite these improvements on the questionnaires of the survey, problems in the method of constructing indicators remained. For better understanding the problems, let me first summarize the process for making this first prototype of “Affluence Indicators.”

Step 1: Find what are important

Create questionnaires with questions that you think that people in Hokkaido would think important. For each region, the question items with ten highest average scores in “importance” are the component items in that region.

Step 2: Find statistics

For each question item chosen in Step 1, find one or more statistics that indicate the reality of the question item. If no suitable statistic is found, use the respondents’ average score of satisfaction as a proxy statistic.

Step 3: Normalize

For each statistic chosen in the previous step, compute the deviation value of every municipality in Hokkaido. As for the satisfaction scores, compute the deviation value of each question item among all the question items in each region.

Step 4: Make (composite) component indicators

Compute the weighted average of the each deviation value in each area (with their population shares as the weights). This value (or the deviation value of the satisfaction scores if no statistic was found in Step 2) is one of the component indices used for making ”Affluence Indicator” in that region.

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9 OECD (2011) “How’s Life: measuring well-being”, Chapter 12. The highest score is about 7.5 marked by Nordic countries.

10 See Tables A1 and A2 for the question items in 2006 Hokkaido Surveys and our surveys, respectively.

11 The number of items we choose can be more or less than ten. The more we include items, the more we can capture various aspects of respondents’ lives, but less impact the additional item has on the indicator. In our case, ten seemed an adequate number after some trials with different numbers. The degree of importance is computed as the average of scores (transformed from evaluation words the respondents chose) on each question item in the region. The scores 2, 1, 0, –1, and –2, are given to the responses, “important,” “relatively important,” “can’t say,” “relatively unimportant,” and “unimportant,” respectively.

12 The scores of the choices, “satisfied,” “somewhat satisfied,” “not sure,” “somewhat dissatisfied,” “dissatisfied,” are 2, 1, 0, –1, and –2, respectively.

13 The problem caused by different normalizations between satisfaction scores and other statistical data is discussed in later in this section and in the next section.

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Step 5: Make the final composite indicators

For each region, compute the weighted average of the ten component indices with their average degree of importance as the weight\(^{14}\). This weighted average is the "Affluence Indicator" for that region.

PROBLEMS

As explained in Machino (2014), we encountered several problems in developing the first Affluence Indicators. First, in the second step, we found only three appropriate statistics for the ten important question items in the survey\(^{15}\). Thus, we have to use the average scores of the respondents’ levels of satisfaction for the other seven question items. However, the satisfaction scores may not be an adequate measure because they are subjective. Fleurbaey (2009, p1056) summarized that “It is now more possible than ever to obtain rather consistent estimates subjective well-being.” However, the “two-facedness” of subjective well-being makes it a less than reliable measure of affluence. The “two-faces” of subjective well-being are cognitive evaluations (what people think of their life) and emotional states (how they feel in their life). On one hand, “Questions about satisfaction with life “as a whole” are disturbingly influenced by the mood of the day.” (ibid. p1057) On the other hand, “Subjective well-being seems relatively immune in the long run to many aspects of objective circumstances. People display a remarkable ability to adapt. After most important life events, satisfaction returns to its usual level.” (ibid. p1058)

The objective statistics are not perfect, though. They have different problems. For example, as shown in Machino (2014), the jobless rates in some towns are low because most of their young people left for big cities where they found jobs, not because new jobs were created in the town. Another example is the number of medical doctors per resident. Among the bottom-ten are both very rural towns as well as towns which neighbor large cities. People in the latter towns are likely satisfied with the medical service despite the low score on this particular statistic. Therefore, although we chose the two statistics to measure particular aspects of life, namely, “enough job opportunities” and “easy access to necessary medical treatment or examination,” respectively, the statistics were not necessarily proxies for them.

Our original plan for constructing our “Affluence Indicators” was using mainly objective statistics and using subjective data (satisfaction rates) only when we could not find appropriate objective data because, like most of economists, we thought subjective scores are neither stable nor accurate. However, the ratio of two kinds of data actually used for the indicator was the opposite, i.e. seven subjective data versus three objective data.

Second, the mixture of subjective and objective data caused two major problems. One problem was the ambiguity of the meaning of the final composite indicators, which were weighted average of normalized individual statistics or scores. If all the components of the index were objective statistics like per-capita income, what made the composite index high or low would be clear. If the selection of component statistics were adequate in the sense that each of them shows the welfare level of the concerned area, they would also be the right measures for evaluating effectiveness of the present policy or for setting policy targets although each statistics is usually show only one aspect of the concerned area. On the other hand, if all the components were subjective data like the respondents’ levels of satisfaction, resulting composite index could be interpreted as average level of life satisfaction in that region although we don’t know exactly what kind of factors make the residents satisfied with their lives\(^{16}\). In either case, despite their

\(^{14}\) The weights are normalized by making their sum one.

\(^{15}\) The three objective data are taxable income per taxpayer, jobless rates, and number of medical doctors per resident.

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respectively weaknesses, the meaning of the composite indicators would be clear. But, because our old indicators were made from both subjective and objective data, we could not explain exactly what they meant.

Which type of data we should use for measuring social well-being is one of the big issues in recent studies. Most studies advocate using objective data. For example, CAE/SVR-Report (2010) summarizes their recommendation as follows:

(1) We strongly advocate what we have termed a bottom-up approach. We could start our search for a better grasp of the state of non-material wellbeing from survey information on individual “happiness”, but fundamental questions of measurability and the risk that such inherently imperfectly defined measures of human satisfaction could too easily be manipulated into showing politically desirable results prevent us from embracing this approach. Instead, our advice would be to condense the ample information on diverse elements of non-material well-being as much as possible so as to make the information digestible by its recipients while simultaneously retaining as much of its complexity as necessary to reflect its variegated nature. (p. 20)

Although we agree with their argument, we didn’t have enough objective statistics for adopting “bottom-up approach.” However, our approaches had similar process. In the initial stage, we organized a lot of aspects of life into several dimensions, though our definition of “dimension” is a grouping of questions, not objective statistics. In the final stage, although we made the composite indicator for each region, the combination of the component indices and their weights were both derived from opinion survey in that region and unique to each region. The spirit behind this final stage is the same as that of the opponents of a composite indicator. That is, the component indices of social well-being have to be weighted by the residents, not by the producer of the indicators.

The other (related but more technical) problem was in the process of normalizing component statistics or scores. The sample population of objective statistics and that of subjective data were different. The former was all municipalities in Hokkaido and the latter was the respondents’ average scores of all the questions in each area. While each deviation value of an objective statistic in particular area indicates the area’s relative performance compared with other regions in Hokkaido, that of a satisfaction score indicates the relative degree of satisfaction on the question item compared with other question items in the same region. We had no other alternative way for normalizing the satisfaction data since no individual data of 2006 survey was available; we could not get municipality level scores of each question. Needless to say, since 2013 survey was conducted in only two regions, there was not enough number of regions to compare in the first place.

In order to deal with these two problems from the mixture of subjective and objective data, we decided to use only subjective data, i.e., the average scores of the respondents’ levels of satisfaction on various aspects of their lives. Then, the meaning of the index is clear. Furthermore, we don’t have to normalize the data since all the data have the same scale. The downside of this method is that, as already stated above, we don’t know what exactly made the respondents satisfied or unsatisfied with each item. We need additional research about the reasons for residents’ evaluation of each component items in their lives if we want to use this index as a policy tool. We will discuss this issue later in the final section.

16 Thus, we need one more step to use this index as a policy tool. Policymakers have to find how they can improve each component score. We will discuss this issue in Section 4.

17 I modified the expression in CAE/SVR-Report (2010), “The components of this comprehensive picture would have to be weighted by the recipients of the information, instead of by the researchers as its producers. (p. 64)”
8.3 New “Affluence Indicators”

NEW SURVEY

While tackling the problems caused by the mixture of two types of data, we conducted an additional preliminary opinion survey in Kamikawa and Sapporo. The survey was conducted between mid-December in 2013 and early January in 2014\(^1\). Like our previous surveys in Okhotsk and Sapporo, due to our limited resources, we had to use different sampling method in each region depending on whom we can ask for sampling.

For the survey in Okhotsk, we asked the Okhotsk General Sub-prefectural Bureau to distribute our survey questionnaires to municipalities in the regions\(^2\). The bureau, then, asked each municipality government to distribute the questionnaires to its residents. The number of questionnaires was roughly proportional to the share of municipality’s population in Okhotsk. Since the total number of questionnaires is only one hundred, the number of questionnaires each municipality received was small. Thus, for protecting personal information, we didn’t get whom each municipality sent out our questionnaires. However, we were told that, most of them, especially small municipalities, asked their acquaintances to answer or to ask someone to answer the questionnaires since the bureau specified some of respondents’ attributes to achieve the unbiased sample. Random sampling with controlling some attributes is technically possible. That was the method the Kamikawa General Sub-prefectural Bureau asked the municipalities to do in our 2014 Survey. 2014 Kamikawa Survey was the only survey we had random-sample data\(^2\).

The main reason we could not use random sampling was the high cost of sampling from Basic Resident Register Network. We have to pay fees for using the network, proportional to the sample size, to municipalities where we conduct the survey. However, that cost does not accrue if a municipality uses it for its own sake. In Kamikawa’s case, the bureau kindly considered our survey useful for them and did the sampling.

In 2013 Sapporo Survey, we distributed the questionnaires to a pool of monitors of the survey company. In 2014 Sapporo Survey, we asked two neighborhood associations to distribute our questionnaires. Many of the respondents to the former survey are active volunteer works or members of NPOS. Most respondents of the latter survey were active members of two neighborhood associations. Although we chose two associations from different part of Sapporo, most active members in both associations are senior citizens as in most of Japanese neighborhood associations. Because of this sampling bias, the composition rates of respondents in the two Sapporo surveys by age group were contrasting as Table 8.1 shows. The majority of respondents in the former group were in their 30s, 40s, or 50s, and most respondents from the latter group were older than or equal to age 60.

Our surveys other than 2014 Kamikawa Survey had biased sample. The respondents to 2013 Okhotsk Survey were mostly acquaintances of local administrators. They must be more sympathetic to their local policymakers than the average resident there. The respondents to the two Sapporo surveys were both active members of some social organizations. We expected their overall satisfaction scores would be higher than the average resident in each area. The result of 2013 and 2014 surveys, which we will discuss later in this section, were consistent with these expectations.

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18 For convenience, we call this survey “2014 Survey” and call the last survey “2013 Survey” in the remaining of this paper.
19 Hokkaido government has nine General Sub-prefectural Bureaus and five Sub-prefectural Bureaus. They are branch offices of Hokkaido government. Each jurisdiction includes five to twenty four towns or villages.
20 Of course, the data of 2006 Hokkaido Survey were randomly sampled.
We also had some changes in questionnaires. The question item regarded as the most important in all the six regions in 2006 Hokkaido survey was "financially secured post-retirement years by pension or other means." In 2013 Survey we included the item, "stable family finances" and used "taxable income per taxpayer" as a proxy, just as we used it for "financially secured post-retirement years by pension or other means." However, as explained in Machino (2014), current financial states ("stable family finances") and expectations of future financial states ("financially secured post-retirement years by pension or other means") seemed quite different in peoples' minds. This may be an indication peoples' distrust in the present social security system. Therefore, in 2014 surveys, we added an item "financially secured lives for senior citizens." At the same time, we eliminated the question, "many community events and activities," since we wanted to keep the number of questions as small as possible. The question was considered as one of the least important items, and also similar to one of the other questions.

Table 8.1. Response rates and ratios of respondents' sex and age groups in each survey. Unit %. (Sources: Our surveys (2013, 2014) and Hokkaido survey (2006).)

<table>
<thead>
<tr>
<th>Resp. %</th>
<th>sex</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
<td>female</td>
</tr>
<tr>
<td>2013 Okhotsk</td>
<td>83.0</td>
<td>33.8</td>
</tr>
<tr>
<td>2013 Sapporo</td>
<td>74.0</td>
<td>68.7</td>
</tr>
<tr>
<td>2014 Kamikawa</td>
<td>53.0</td>
<td>66.0</td>
</tr>
<tr>
<td>2014 Sapporo</td>
<td>66.0</td>
<td>47.0</td>
</tr>
<tr>
<td>2006 Hokkaido</td>
<td>53.9</td>
<td>44.1</td>
</tr>
</tbody>
</table>

New method versus old method

In order to understand the differences between our old and new "Affluence Indicators," let us first compare the two indicators in all regions in Hokkaido. Since we have only one unbiased new survey, this comparison is made based on 2006 Hokkaido Survey data, which is a random survey and covers all the Hokkaido regions. The figures in the second column of Table 8.2 are calculated by the new method, i.e., by replacing deviation values of the three objecti.e., statistics with deviation values of their corresponding satisfaction scores. The main reason for the overall decrease in the values of the indicators in the second column from those in the first column is that the satisfaction score on the question i.e., "financially secured post-retirement years by pension or other means," is very low in every region. Thus, its deviation value, which shows respondents' relations of satisfaction level on the question i.e., compared to those on other questions i.e., in that region, is also low in every region. However, the deviation value of taxable income per taxpayer, which indicates its relations to that region compared to those in other regions, cannot be low in every region. This difference in characteristic of the deviation values is one of the problems in our mi.e., use of subjecti.e., and objecti.e., data discussed in the last section although, theoretically, it may not be a problem in general.

21 This is the 4th least important item in both regions. Correlation coefficients of scores on this item and "People value local tradition and culture" were high, 0.82 in Okhotsk and 0.67 in Sapporo. The former is the highest and the latter is 5th highest among all the correlation coefficients in each region.

22 If we had the satisfaction score for all municipalities in Hokkaido, we could have the same type of deviations for both subjecti.e., and objecti.e., data.

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Because of this feature, i.e., possibility of similar relative evaluation, thus similar values of component index, among most regions, we should not have used them for the regional comparison.

Table 8.2. Indicators with 2006 data by three methods. Note: Figures in ( ) indicate ranking. (Source: Author’s calculation with data from Hokkaido (2006)).

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Old method with only satisfaction scores</th>
<th>New method with satisfaction scores</th>
<th>New Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>48.2 (5)</td>
<td>-0.44 (5)</td>
<td>3.90 (5)</td>
</tr>
<tr>
<td>South</td>
<td>46.7 (6)</td>
<td>-0.49 (6)</td>
<td>3.78 (6)</td>
</tr>
<tr>
<td>North</td>
<td>51.6 (1)</td>
<td>-0.29 (2)</td>
<td>4.28 (2)</td>
</tr>
<tr>
<td>Okhotsk</td>
<td>49.9 (3)</td>
<td>-0.40 (3)</td>
<td>3.99 (3)</td>
</tr>
<tr>
<td>Tokachi</td>
<td>51.5 (2)</td>
<td>-0.22 (1)</td>
<td>4.45 (1)</td>
</tr>
<tr>
<td>KonSen</td>
<td>49.8 (4)</td>
<td>-0.43 (4)</td>
<td>3.94 (4)</td>
</tr>
</tbody>
</table>

However, we can use absolute values of satisfaction scores for the comparison because they are different among all regions. Therefore, using them (in the third column) as our indicators instead of the deviation values (in the second column) is justified. The figures in the third column in Table 8.2 show the weighted average of satisfaction scores and their rankings among six regions in Hokkaido. Since the maximum and minimum scores in 2006 Hokkaido Survey were 2.0 and -2.0 respectively, we transformed the scores so as to be comparable to "ladder-of-life" answers whose maximum and minimum values are 10 and 0, respectively. The resulting values are shown in the fourth column in Table 8.2.

Although the difference in old and new methods made little changes in rankings between the second column (used deviation values) and the third or fourth column (used satisfaction scores) in Table 8.2, the difference in figures calculated by the two methods based on our 2014 Survey data is outstanding as shown in Table 8.3. The reason for this big difference is that since the respondents’ overall satisfaction scores in 2014 Sapporo Survey are so high, even high scores for other regions’ standards are not high enough to have high deviation value. You can see the very high overall average satisfaction scores in Sapporo (the third column of 2014 Survey in Table 8.3). We can infer that the many active seniors in 2014 Sapporo Survey were much more satisfied with their lives than respondents in other areas and times.

Table 8.3. Indicators with 2013 and 2014 Surveys by three methods. Note: Figures in ( ) indicate ranking. (Source: Author’s calculation with data from our two surveys (2013, 2014)).

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2013 Survey</th>
<th>2014 Survey</th>
<th>Average satisf. score for all questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old method with satisf. scores only</td>
<td>New method with satisf. scores only</td>
<td>Average satisf. score for all questions</td>
<td></td>
</tr>
<tr>
<td>Old method with satisf. scores only</td>
<td>New method with satisf. scores only</td>
<td>Average satisf. score for all questions</td>
<td></td>
</tr>
<tr>
<td>Sapporo</td>
<td>53.6 (2)</td>
<td>0.64 (1)</td>
<td>0.50 (1)</td>
</tr>
<tr>
<td>Kamikawa</td>
<td>54.3 (1)</td>
<td>0.63 (2)</td>
<td>0.43 (2)</td>
</tr>
<tr>
<td>Okhotsk</td>
<td>54.3 (1)</td>
<td>0.63 (2)</td>
<td>0.43 (2)</td>
</tr>
</tbody>
</table>

23 Of course, as mentioned above, if all components index were the satisfaction scores, there would be no need for normalization, i.e., using deviation values, from the start.
Finally, Table 8.4 shows our new “Affluence Indicators” based on our recent two surveys. In both 2013 and 2014 Surveys, the new “Affluence Indicators” in two regions (shown in the second column of each year in Table 8.4) have the same “rankings” as the respondents’ average answers to the direct question about their happiness levels (in the fourth column of each year). This isn’t the case when we use our old method as shown in the first column of each year in Table 8.4. Table 8.4 also shows weighted average of (not just highest ten but) all the 44 satisfaction scores (after transforming from “−2 to 2” scale to “0 to 10” scale) in each region. We are not sure how many question items are appropriate for constructing the “Affluence Indicator.” However, our indicators, each of which is made of ten (or more than ten if there are more than one items whose importance scores are the tenth highest) items, are closer to the happiness indices than the weighted average of all the 44 items. The new types of questions (whose numbers are in the broken-line boxes in Figure 8.1) also help to increase the value of the indicator. The new indicators seem better measures for comparative studies than the old ones.

Next, in order to explore how to use the new “Affluence Indicators,” we will conduct some regional and inter-temporal comparative analyses using the indicators. We will also look at some differences by gender and by age group. As mentioned above, since our surveys other than 2014 Kamikawa have biased samples, we use mainly the data of 2006 Hokkaido Survey and the data of 2014 Kamikawa Survey.

Table 8.4. New “Affluence Indicators” with 2013 and 2014 Surveys. Note: Figures in ( ) indicate ranking. (Source: Author’s calculation with data from our two surveys (2013, 2014)).

<table>
<thead>
<tr>
<th>Region</th>
<th>2013 Survey</th>
<th>2014 Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Old indicator</td>
<td>New Indicator</td>
</tr>
<tr>
<td>Sapporo</td>
<td>53.5 (2)</td>
<td>6.60 (1)</td>
</tr>
<tr>
<td>Kamikawa</td>
<td>51.4 (2)</td>
<td>6.18 (2)</td>
</tr>
<tr>
<td>Oshinok</td>
<td>54.7 (1)</td>
<td>6.58 (1)</td>
</tr>
</tbody>
</table>

**REGIONAL COMPARATIVE ANALYSES**

The most prominent result about our old “Affluence Indicators” was that Central Area ranked at the bottom. Central area also ranked the second from the bottom in our new “Affluence Indicators.” This region includes Sapporo, the only metropolis in Hokkaido. The residents in Sapporo get higher incomes, more variety of jobs, more entertainment spots, more medical care services, and etc. than other regions in Hokkaido. What I can think of as reasons for the low scores in Central Area are: 2461. Central Area is so big that its indicator reflects not only urban areas like Sapporo but also rural areas, 2462. easy-to-notice data like income and unemployment rate are not appropriate signals for people’s life satisfaction, and 2463. urban life has more demerits than merits. Let us examine each possibility.

1. Since 2006 Hokkaido Survey report has aggregate data on some big cities and 14 sub-prefectural regions, we can calculate the indicator of any of those cities or regions. Table 8.6 shows the indicators of Sapporo and Kamikawa along with those of all six regions.

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24 The fact that the new “Affluence Indicators” don’t include any objective data, the second reason isn’t relevant to the new indicator. However, it provides valuable information by comparing them with the indices with objective data, i.e. the old “Affluence Indicators.”

25 See Tables 10 for components items of the Affluence Indicator of Sapporo and their satisfaction scores.

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Figure 8.1. Satisfaction-importance diagram (Kamikawa 2014). Note: Figure in the box is the question number of the marker next to it. See Table 8.5 for the questions. The number in the broken-line box indicates the question was not in 2006 Hokkaido Survey. (Source: Author’s calculation with data from 2014 Kamikawa Survey.)

Table 8.5. Questions regarded important in 2014 Kamikawa Survey. Note: The maximum is 2.0 and the minimum is –2.0 in both satisfaction rates and importance levels. (Source: Author’s calculation with data from 2014 Kamikawa Survey.)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Q</th>
<th>Question Item</th>
<th>importance</th>
<th>satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24</td>
<td>Your health, and your family members’ health</td>
<td>1.72</td>
<td>1.08</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Relationship with your family</td>
<td>1.57</td>
<td>1.04</td>
</tr>
<tr>
<td>3</td>
<td>32</td>
<td>Enough job opportunities</td>
<td>1.57</td>
<td>–0.04</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Stable family finances</td>
<td>1.53</td>
<td>0.45</td>
</tr>
<tr>
<td>5</td>
<td>25</td>
<td>Easy access to necessary medical treatment or examination</td>
<td>1.51</td>
<td>0.25</td>
</tr>
<tr>
<td>6</td>
<td>27</td>
<td>Good emergency medical care system</td>
<td>1.47</td>
<td>–0.15</td>
</tr>
<tr>
<td>7</td>
<td>39</td>
<td>Safe neighborhood</td>
<td>1.40</td>
<td>0.94</td>
</tr>
<tr>
<td>8</td>
<td>20</td>
<td>Good environment for giving birth and raising children</td>
<td>1.36</td>
<td>0.43</td>
</tr>
<tr>
<td>9</td>
<td>40</td>
<td>Safety of food and everyday items</td>
<td>1.32</td>
<td>0.26</td>
</tr>
<tr>
<td>10</td>
<td>34</td>
<td>Good relationship with colleagues in workplace</td>
<td>1.30</td>
<td>0.70</td>
</tr>
<tr>
<td>10</td>
<td>38</td>
<td>Well-prepared plans for earthquakes, floods, heavy snowfall, and fires</td>
<td>1.30</td>
<td>0.13</td>
</tr>
</tbody>
</table>

indicator of Sapporo is higher than that of the third ranked Okhotsk, this explanation can be at least a part of reason for the low ranking of Central Area. Central Area’s population share in Hokkaido is 61% as shown in Table 8.6, we should divide this region into several sub-regions, for example, Sapporo and five sub-prefectural regions in future researches26.

2. As explained before, we found three statistics that were likely to measure the achieved levels of our three question items objectively. The three statistics were “taxable income per taxpayer,” “number of medical doctors per 10,000 residents,” and “unemployment rate.” The corresponding three question items were, “financially secured post-retirement years by pension or other means,” “easy access to necessary medical treatment or examination,” and

26 Central Area includes three General Sub-prefectural Bureaus, i.e., Iburi, Shiribeshi, Sorachi, and two Sub-prefectural Bureaus, i.e., Ishikari, and Hidaka. Their population shares in 2005 are 7.6%, 4.4%, 6.5%, 41.0% (33.4% Sapporo plus 7.6% other municipalities), and 1.4% respectively.
Table 8.6. Old and New “Affluence Indicators” with 2006 data. Note: Figures in ( ) indicate ranking. The Old and New Indicators of the all regions other than Sapporo and Kamikawa are same as those in the first and fourth columns of Table 8.2. (Source: Author's calculation with data from Hokkaido (2006) and Statistics Bureau, Ministry of Internal Affairs and Communications.)

<table>
<thead>
<tr>
<th></th>
<th>Old Indicators</th>
<th>New Indicators</th>
<th>Population share in Hokkaido 2005, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>48.2 (5)</td>
<td>3.90 (5)</td>
<td>61.0</td>
</tr>
<tr>
<td>Sapporo</td>
<td>4.06</td>
<td></td>
<td>33.4</td>
</tr>
<tr>
<td>South</td>
<td>46.7 (6)</td>
<td>3.78 (6)</td>
<td>8.8</td>
</tr>
<tr>
<td>North</td>
<td>51.6 (1)</td>
<td>4.28 (2)</td>
<td>12.0</td>
</tr>
<tr>
<td>Kamikawa</td>
<td>4.40</td>
<td></td>
<td>9.5</td>
</tr>
<tr>
<td>Okhotsk</td>
<td>49.9 (3)</td>
<td>3.99 (3)</td>
<td>5.8</td>
</tr>
<tr>
<td>Tokachi</td>
<td>51.5 (2)</td>
<td>4.45 (1)</td>
<td>6.3</td>
</tr>
<tr>
<td>KonSen</td>
<td>49.8 (4)</td>
<td>3.94 (4)</td>
<td>6.1</td>
</tr>
</tbody>
</table>

“enough job opportunities.” First, although the current financial states (“taxable income per taxpayer”) and expectations of future financial states (“financially secured post-retirement years by pension or other means”) seemed quite different in peoples’ minds as explained before, the rankings of both categories are similar as shown in Table 8.7. We can interpret that the more money you earn now, the less you concern about your after-retirement financial situation.

Second, “number of medical doctors per 10 000 residents” may seem a good proof for “easy access to necessary medical treatment or examination.” However, as shown in Table 8.8, Tokachi ranks first in the satisfaction scores despite its fourth rank in number of doctors per 10000 residents. The rankings of all other regions in the two measures are also different. So, seemingly appropriate statistics is not necessarily the one. But since residents (and policy-makers) in each area must have more detailed information on the medical services provided in their own regions, the satisfaction score seems better indicator. For example, accessibility to hospitals must be another important factor.

Finally, Table 8.9 shows that Tokachi ranks first in both “unemployment rate” and “enough job opportunities.” That seems to indicate the former is a good indicator for the latter. But, Central Area ranks fifth in “unemployment rate” but second in the satisfaction score for “enough job opportunities.” Sapporo’s figure in the latter is even better than the first ranked Tokachi’s figure despite its worst unemployment rate among all regions. From the common-sense viewpoint, however, a metropolis like Sapporo has a full of opportunities. Many graduates from high schools and colleges in Hokkaido get their jobs in Sapporo or other metropolitan areas outside Hokkaido. It is natural that people in Central Area, particularly in Sapporo, rates high on “enough job opportunities.”

These three analyses on the relationships between satisfaction scores and their seemingly good statistical proxies show that satisfaction scores are better suited for the overall evaluation than the objective statistics. Each objective statistics measures one part of the overall evaluation. But one statistics is not enough for explaining even one aspect of life. Easy-to-notice data are not necessarily appropriate signals for people’s life satisfaction.

3. One of the unique features of our “Affluence Indicators” is that the indicator in each region has different components (question items). We choose the components based on the respon-

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27 However, if we extract Sapporo from Central Area, it ranks first in both satisfaction score and number medical doctors. So, the latter is, of course, an important factor of the former.

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idents’ importance scores of each item in the region. If each region had completely different components in its indicator, it would be extremely complicated to understand the meaning of the difference in their scores. Fortunately, many of the components in each region are the same, though their rankings and weights for the composite indicator are different. “Affluence Indicators” in all the six regions share the seven same question items as shown in Table 8.10.

As analyzed above, Sapporo ranked first in the three items among the seven common items, i.e., income, access to medical service, and job opportunities. However, Sapporo's rankings are the worst or closed to the worst in the three items out of the remaining four. They are, “safe neighborhood,” “good snow-removal system,” and “free from air pollution, water contamination, and noise.” It is reasonable that satisfaction scores on “safe neighborhood” and “free from air pollution, water contamination, and noise” are lower in urban area than non-urban areas. As for the snow-removal system, Sapporo is located in a heavy snowfall area. Although Sapporo has very good snow-removal system, it is also true that removing heavy snow in dense-populated metropolitan area is more difficult than that in sparsely populated area.

Table 8.7. Satisfaction score and statistics by region: income. Note: Figures in ( ) indicate ranking. Source: Author’s calculation with data from Hokkaido Survey (2006) and from Ministry of Internal Affairs and Communications (2008 and 2009).

<table>
<thead>
<tr>
<th>Financially secured post-retirement years by pension or other means</th>
<th>Taxable income/taxpayer (2006, mil. yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center -1.17 (2)</td>
<td>304 (1)</td>
</tr>
<tr>
<td>[Sapporo] [-1.08]</td>
<td>[320]</td>
</tr>
<tr>
<td>South -1.27 (6)</td>
<td>278 (6)</td>
</tr>
<tr>
<td>North -1.19 (3)</td>
<td>284 (4)</td>
</tr>
<tr>
<td>[Kamikawa] [-1.17]</td>
<td>[281]</td>
</tr>
<tr>
<td>Okhotsk -1.19 (3)</td>
<td>288 (3)</td>
</tr>
<tr>
<td>Tokachi -1.11 (1)</td>
<td>292 (2)</td>
</tr>
<tr>
<td>KonSen -1.20 (5)</td>
<td>283 (5)</td>
</tr>
</tbody>
</table>

Based on our comparative analyses, we can now say that the Affluence Indicator of Central Area (or Sapporo) was low because the demerits of living in a big city and the inconvenience caused by the heavy snowfall had greater impact on peoples’ evaluation of their lives than better economic situation or better medical service. We can also say that one statistics is not enough for explaining even one aspect of life, and that some of the region-specific aspects of life, which we might miss if we only compare common statistics, can be important for life satisfaction.

**INTER-TEMPORAL COMPARATIVE ANALYSIS**

Although we use 2014 Kamikawa Survey, which is the only random-sampling survey among our four-region preliminary surveys, and Kamikawa part of 2006 Hokkaido Survey for the inter-temporal comparison, they are not exactly compatible since some of their important questions are different. That said, the following analysis gives some interesting insights.

As shown in Table 8.11, there are only three common question items ranked in ten most important items in both surveys. They are, "enough job opportunities," "easy access to necessary
Table 8.8. Satisfaction score and statistics by region: medical service. Note: Figures in ( ) indicate ranking. Source: Author's calculation with data from Hokkaido Survey (2006) and from Ministry of Internal Affairs and Communications (2008 and 2009).

<table>
<thead>
<tr>
<th>Region</th>
<th>Easy access to necessary medical treatment or examination</th>
<th>number of medical doctors/10000 (06, pop. 05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>0.15 (3)</td>
<td>23.94 (1)</td>
</tr>
<tr>
<td>[Sapporo]</td>
<td>[0.36]</td>
<td>[30.21]</td>
</tr>
<tr>
<td>South</td>
<td>0.26 (2)</td>
<td>20.10 (3)</td>
</tr>
<tr>
<td>North</td>
<td>0.05 (4)</td>
<td>23.53 (2)</td>
</tr>
<tr>
<td>[Kamikawa]</td>
<td>[0.26]</td>
<td>[26.59]</td>
</tr>
<tr>
<td>Okhotsk</td>
<td>−0.18 (6)</td>
<td>14.82 (5)</td>
</tr>
<tr>
<td>Tokachi</td>
<td>0.33 (1)</td>
<td>15.90 (4)</td>
</tr>
<tr>
<td>KonSen</td>
<td>−0.14 (5)</td>
<td>13.59 (6)</td>
</tr>
</tbody>
</table>

Table 8.9. Satisfaction score and statistics by region: jobs. Note: Figures in ( ) indicate ranking. Source: Author's calculation with data from Hokkaido Survey (2006) and from Ministry of Internal Affairs and Communications (2008 and 2009).

<table>
<thead>
<tr>
<th>Region</th>
<th>Enough job opportunities</th>
<th>Unempl. rate (2005, %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center</td>
<td>−0.63(2)</td>
<td>6.84 (5)</td>
</tr>
<tr>
<td>[Sapporo]</td>
<td>[−0.48]</td>
<td>[7.31]</td>
</tr>
<tr>
<td>South</td>
<td>−0.80 (4)</td>
<td>7.99 (6)</td>
</tr>
<tr>
<td>North</td>
<td>−0.67 (3)</td>
<td>5.84 (3)</td>
</tr>
<tr>
<td>[Kamikawa]</td>
<td>[−0.65]</td>
<td>[6.20]</td>
</tr>
<tr>
<td>Okhotsk</td>
<td>−0.80 (4)</td>
<td>4.94 (2)</td>
</tr>
<tr>
<td>Tokachi</td>
<td>−0.55 (1)</td>
<td>4.53 (1)</td>
</tr>
<tr>
<td>KonSen</td>
<td>−0.81 (6)</td>
<td>6.30 (4)</td>
</tr>
</tbody>
</table>

medical treatment or examination,” and “safe neighborhood.” The satisfaction scores on “easy access to necessary medical treatment or examination” are almost same in 2006 and in 2014. Table 8.12 shows that “number of medical doctors per 10 000,” which show one aspect of peoples’ satisfaction with medical service, have not changed from 2006 and 2010 both in absolute value and relative magnitude to other regions.

Table 8.10. Seven important items common to all regions and Sapporo’s ranks (2006 Hokkaido Survey). Note: Rank in each item indicate Sapporo’s relative satisfaction score among six regions in Hokkaido and Sapporo. Source: Author's calculation with data from Hokkaido (2006).

<table>
<thead>
<tr>
<th>Question items</th>
<th>Importance (Sapporo)</th>
<th>Satisfaction (Sapporo)</th>
<th>Rank in Hokkaido</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 Financially secured post-retirement years by pension etc.</td>
<td>27</td>
<td>−1.08</td>
<td>1</td>
</tr>
<tr>
<td>33 Safe neighborhood</td>
<td>1.17</td>
<td>−0.44</td>
<td>7</td>
</tr>
<tr>
<td>19 Easy access to necessary medical treatment or examination</td>
<td>27</td>
<td>0.36</td>
<td>1</td>
</tr>
<tr>
<td>21 Affordable medical care</td>
<td>−1.27</td>
<td>−0.70</td>
<td>2</td>
</tr>
<tr>
<td>7 Good snow-removal system</td>
<td>27</td>
<td>−0.70</td>
<td>7</td>
</tr>
<tr>
<td>29 Enough job opportunities</td>
<td>−1.19</td>
<td>−0.48</td>
<td>1</td>
</tr>
<tr>
<td>11 Free from air pollution, water contamination, and noise</td>
<td>27</td>
<td>0.03</td>
<td>5</td>
</tr>
</tbody>
</table>

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However, the scores on "enough job opportunities" and "safe neighborhood" were both improved great deal from 2006 to 2014. Although "unemployment rate," which probably shows one side of peoples’ satisfaction with their job opportunities, in 2005 and 2010 increased just a little, more recent (closer to the survey year) changes in ratio of job offers to job seekers in Table 8.13 shows that very rapid improvement in job market in Asahikawa, which is the center of Kamikawa region. The unemployment rate does not seem to reflect people’s perception about job market well, as examined in the above regional comparative analysis.

Table 8.11. Comparison of important factors in the two surveys (Kamikawa). Note 1: Figures in () indicate satisfaction rates and figures in [ ] indicate importance. The maximum is 2.0 and the minimum is –2.0 in the both scores. Note 2: Darkly shaded areas are the items that entered top 10 in both columns. Lighter shaded areas are new question items in the 2013 or 2014 survey. Source: Author’s calculation with data from Hokkaido (2006) and 2014 Kamikawa Survey.

<table>
<thead>
<tr>
<th>Rank by importance</th>
<th>2014 Kamikawa Survey</th>
<th>Rank by importance</th>
<th>2006 Hokkaido Survey (Kamikawa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 [1.72]</td>
<td>Your health, and your family members’ health (1.08)</td>
<td>1 [1.65]</td>
<td>Financially secured post-retirement years by pension or other means (–1.17)</td>
</tr>
<tr>
<td>2 [1.57]</td>
<td>Relationship with your family (1.04)</td>
<td>2 [1.65]</td>
<td>Easy access to necessary medical treatment or examination (0.26)</td>
</tr>
<tr>
<td>3 [1.57]</td>
<td>Enough job opportunities (–0.04)</td>
<td>3 [1.57]</td>
<td>Good snow-removal system (–0.13)</td>
</tr>
<tr>
<td>4 [1.53]</td>
<td>Stable family finances (0.45)</td>
<td>4 [1.56]</td>
<td>Safe neighborhood (–0.20)</td>
</tr>
<tr>
<td>5 [1.51]</td>
<td>Easy access to necessary medical treatment or examination (0.25)</td>
<td>5 [1.56]</td>
<td>Enough job opportunities (–0.65)</td>
</tr>
<tr>
<td>6 [1.47]</td>
<td>Good emergency medical care system (–0.15)</td>
<td>6 [1.50]</td>
<td>Affordable medical care (–0.68)</td>
</tr>
<tr>
<td>7 [1.40]</td>
<td>Safe neighborhood (0.94)</td>
<td>7 [1.44]</td>
<td>Free from air pollution, water contamination, and noise (0.20)</td>
</tr>
<tr>
<td>8 [1.36]</td>
<td>Good environment for giving birth and raising children (0.41)</td>
<td>8 [1.44]</td>
<td>Safe roads for children and the elderly (–0.25)</td>
</tr>
<tr>
<td>9 [1.32]</td>
<td>Safety of food and everyday items (0.26)</td>
<td>9 [1.42]</td>
<td>Reducing garbage and recycling resources (0.47)</td>
</tr>
<tr>
<td>10 [1.30]</td>
<td>Good relationship with colleagues in workplace (0.70)</td>
<td>10 [1.41]</td>
<td>The elderly and the disabled can receive nursing care at home (–0.15)</td>
</tr>
<tr>
<td>10 [1.30]</td>
<td>Well-prepared plans for earthquakes, floods, heavy snowfall, and fires (0.13)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As for "safe neighborhood", we could not find any statistics or qualitative evidences for the big increase in satisfaction score in Kamikawa region. One possible explanation is that the different characteristics of 2006 Hokkaido Survey and 2014 Kamikawa Survey caused the difference. Whereas the purpose of Hokkaido Survey was to know people’s needs in order for Hokkaido government to make their long-term policy plan and included questions directly related some public policies, the purpose of the 2014 Kamikawa survey was to make “Affluence Indicators” and includes several new questions about subjective evaluations like their happiness, relationships with family members or friends. The former type of survey is likely to have more strategic responses consciously or unconsciously. The responses to the latter type of survey may be influenced by respondents’ own evaluation of happiness, which we asked first and got relatively high scores. Although this is a very immature hypothesis, we have to continue to investigate this possibility in order to understand the reliability of our indicators.

<table>
<thead>
<tr>
<th>Region</th>
<th>Medical doctors per 10,000</th>
<th>Unemployment rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006/2005</td>
<td>2010</td>
</tr>
<tr>
<td>Center</td>
<td>23.94 (2)</td>
<td>24.86 (2)</td>
</tr>
<tr>
<td>Sapporo</td>
<td>30.21</td>
<td>31.41</td>
</tr>
<tr>
<td>South</td>
<td>20.10 (3)</td>
<td>21.16 (3)</td>
</tr>
<tr>
<td>North</td>
<td>23.53 (1)</td>
<td>25.29 (1)</td>
</tr>
<tr>
<td>Kamikawa</td>
<td>26.59</td>
<td>28.71</td>
</tr>
<tr>
<td>Okhotsk</td>
<td>14.62 (5)</td>
<td>14.81 (5)</td>
</tr>
<tr>
<td>Tokachi</td>
<td>15.90 (4)</td>
<td>16.67 (4)</td>
</tr>
<tr>
<td>KonSen</td>
<td>13.59 (6)</td>
<td>14.67 (6)</td>
</tr>
</tbody>
</table>

Table 8.13. Changes in ratios of job offers to job seekers in major cities in Hokkaido. Note: Dark shaded area in each city is the highest. Lighter shaded is the lowest in the city. Source: Made by author from Hokkaido Labor Department (2013) "Changes in Ratios of Job Offers to Job Seekers by Regional Job-Placement Offices."

<table>
<thead>
<tr>
<th>Region</th>
<th>City</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nationwide</td>
<td></td>
<td>1.02</td>
<td>0.97</td>
<td>0.73</td>
<td>0.42</td>
<td>0.51</td>
<td>0.62</td>
<td>0.74</td>
</tr>
<tr>
<td>Hokkaido</td>
<td></td>
<td>0.53</td>
<td>0.51</td>
<td>0.43</td>
<td>0.35</td>
<td>0.41</td>
<td>0.46</td>
<td>0.57</td>
</tr>
<tr>
<td>Center</td>
<td>Sapporo</td>
<td>0.67</td>
<td>0.53</td>
<td>0.44</td>
<td>0.34</td>
<td>0.36</td>
<td>0.43</td>
<td>0.58</td>
</tr>
<tr>
<td>South</td>
<td>Hakodate</td>
<td>0.54</td>
<td>0.53</td>
<td>0.43</td>
<td>0.33</td>
<td>0.40</td>
<td>0.47</td>
<td>0.57</td>
</tr>
<tr>
<td>North</td>
<td>Asahikawa</td>
<td>0.48</td>
<td>0.46</td>
<td>0.40</td>
<td>0.37</td>
<td>0.46</td>
<td>0.55</td>
<td>0.70</td>
</tr>
<tr>
<td>Okhotsk</td>
<td>Kitami</td>
<td>0.56</td>
<td>0.61</td>
<td>0.46</td>
<td>0.46</td>
<td>0.59</td>
<td>0.70</td>
<td>0.75</td>
</tr>
<tr>
<td>Tokachi</td>
<td>Obihiro</td>
<td>0.54</td>
<td>0.51</td>
<td>0.50</td>
<td>0.50</td>
<td>0.56</td>
<td>0.59</td>
<td>0.69</td>
</tr>
<tr>
<td>KonSen</td>
<td>Kushiro</td>
<td>0.42</td>
<td>0.45</td>
<td>0.39</td>
<td>0.32</td>
<td>0.38</td>
<td>0.49</td>
<td>0.62</td>
</tr>
</tbody>
</table>

Comparative analyses by gender and age

The difference in responses by gender in 2006 Hokkaido Survey was almost none but very big in 2014 Kamikawa Survey as shown in Table 8.14. The reasons for these contrasting results remain unclear. However, as discussed in the last sub-section, the different characteristics of 2006 Hokkaido Survey and 2014 Kamikawa Survey may have caused them. Whereas 2006 Hokkaido Survey was conducted by Hokkaido government to make their long-term policy plan and included questions directly related public policies, the purpose of the 2014 Kamikawa survey was to make “Affluence Indicators” and includes several new questions about subjective evaluations like their happiness, relationships with family members or friends. The former type of survey is likely to have more strategic responses consciously or unconsciously. The responses to the latter type of survey may be influenced by respondents’ own evaluation of happiness, which we asked first and got relatively high scores.

As shown in Table 8.14, there are several noticeable question items that are ranked in top ten important items but not ranked in the overall top ten list (see Table 8.5). They are Q18 Comfortable-looking townscape and landscape, Q6 Safe and good-quality houses, Q41 Neighbors are mingling and helping each other, Q5 Convenient for shopping, Q13 Easy access to sports and recreation facilities or clubs, and Q44 People value local tradition and culture. These items are all related to daily life in residential area. This result may suggest that if women are asked their happiness in life, their answers are likely to be based more on their residential lives rather
than on their working (or occupational) lives. Or, it may suggest that women in Kamikawa are likely to spend majority of their times in their residential area. More research is necessary to find whether any of these conjectures are true or not.

Table 8.14. Ten most important items by gender (2006 Hokkaido & 2014 Kamikawa). Note: For question items corresponding to question numbers in Hokkaido 2006, see Table 8.16. For question items corresponding to question numbers in Kamikawa 2014, see Table 8.17. Source: Author’s calculation with data from Hokkaido (2006) and our 2014 Survey.

<table>
<thead>
<tr>
<th>Rank by importance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hokkaido 2006</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Q number</td>
<td>27</td>
<td>19</td>
<td>21</td>
<td>33</td>
<td>29</td>
<td>7</td>
<td>11</td>
<td>32</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Female Q number</td>
<td>27</td>
<td>19</td>
<td>33</td>
<td>21</td>
<td>7</td>
<td>29</td>
<td>32</td>
<td>11</td>
<td>24</td>
<td>28</td>
</tr>
<tr>
<td>Male satisfaction</td>
<td>-1.13</td>
<td>0.24</td>
<td>-0.76</td>
<td>-0.82</td>
<td>-0.88</td>
<td>-0.49</td>
<td>0.03</td>
<td>-0.13</td>
<td>0.25</td>
<td>0.24</td>
</tr>
<tr>
<td>Female satisfaction</td>
<td>-1.22</td>
<td>0.02</td>
<td>-0.80</td>
<td>-0.80</td>
<td>-0.80</td>
<td>-0.64</td>
<td>-0.35</td>
<td>0.15</td>
<td>-0.35</td>
<td>-0.27</td>
</tr>
</tbody>
</table>

Table 8.15. Affluence Indicator and ten most important items in each age group (2006 Hokkaido Survey). Note 1: For question items corresponding to question numbers, see Table 8.16. Note 2: Figure in () in each row is the Affluence Indicator in each age group. Source: Author’s calculation with data from Hokkaido (2006).

<table>
<thead>
<tr>
<th>Age (index)</th>
<th>Rank by importance</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>20–29</td>
<td>Q number</td>
<td>19</td>
<td>7</td>
<td>27</td>
<td>29</td>
<td>33</td>
<td>21</td>
<td>11</td>
<td>2</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>(4.25)</td>
<td>satisfaction</td>
<td>0.15</td>
<td>-0.76</td>
<td>-1.23</td>
<td>-0.48</td>
<td>-0.41</td>
<td>-0.68</td>
<td>0.07</td>
<td>0.54</td>
<td>-0.21</td>
<td>0.03</td>
</tr>
<tr>
<td>30–39</td>
<td>Q number</td>
<td>27</td>
<td>33</td>
<td>29</td>
<td>19</td>
<td>21</td>
<td>23</td>
<td>5</td>
<td>7</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>(3.87)</td>
<td>satisfaction</td>
<td>-1.33</td>
<td>-0.46</td>
<td>-0.63</td>
<td>-0.25</td>
<td>-0.88</td>
<td>-0.47</td>
<td>0.17</td>
<td>-0.57</td>
<td>-0.04</td>
<td>0.03</td>
</tr>
<tr>
<td>40–49</td>
<td>Q number</td>
<td>27</td>
<td>29</td>
<td>33</td>
<td>19</td>
<td>21</td>
<td>7</td>
<td>33</td>
<td>11</td>
<td>34</td>
<td>2</td>
</tr>
<tr>
<td>(4.93)</td>
<td>satisfaction</td>
<td>-1.28</td>
<td>-0.63</td>
<td>-0.28</td>
<td>-0.11</td>
<td>-0.91</td>
<td>-0.51</td>
<td>-0.20</td>
<td>0.09</td>
<td>0.15</td>
<td>0.28</td>
</tr>
<tr>
<td>50–59</td>
<td>Q number</td>
<td>27</td>
<td>21</td>
<td>19</td>
<td>7</td>
<td>29</td>
<td>33</td>
<td>28</td>
<td>11</td>
<td>33</td>
<td>24</td>
</tr>
<tr>
<td>(3.11)</td>
<td>satisfaction</td>
<td>-1.35</td>
<td>-0.98</td>
<td>-0.01</td>
<td>-0.64</td>
<td>-0.70</td>
<td>-0.31</td>
<td>-0.88</td>
<td>-0.05</td>
<td>-0.35</td>
<td>-0.53</td>
</tr>
<tr>
<td>60–69</td>
<td>Q number</td>
<td>27</td>
<td>19</td>
<td>21</td>
<td>7</td>
<td>33</td>
<td>24</td>
<td>25</td>
<td>28</td>
<td>32</td>
<td>11</td>
</tr>
<tr>
<td>(4.19)</td>
<td>satisfaction</td>
<td>-1.13</td>
<td>0.30</td>
<td>-0.87</td>
<td>-0.54</td>
<td>-0.32</td>
<td>-0.48</td>
<td>-0.46</td>
<td>-0.61</td>
<td>-0.28</td>
<td>0.15</td>
</tr>
<tr>
<td>70–79</td>
<td>Q number</td>
<td>19</td>
<td>33</td>
<td>20</td>
<td>11</td>
<td>21</td>
<td>35</td>
<td>24</td>
<td>32</td>
<td>27</td>
<td>34</td>
</tr>
<tr>
<td>(3.13)</td>
<td>satisfaction</td>
<td>0.70</td>
<td>-0.25</td>
<td>0.60</td>
<td>0.37</td>
<td>-0.13</td>
<td>-0.24</td>
<td>-0.16</td>
<td>-0.12</td>
<td>-0.84</td>
<td>0.28</td>
</tr>
<tr>
<td>Hokkaido</td>
<td>Q number</td>
<td>27</td>
<td>19</td>
<td>31</td>
<td>31</td>
<td>7</td>
<td>28</td>
<td>31</td>
<td>33</td>
<td>28</td>
<td>34</td>
</tr>
<tr>
<td>(3.83)</td>
<td>satisfaction</td>
<td>-1.18</td>
<td>0.12</td>
<td>-0.33</td>
<td>-0.78</td>
<td>-0.86</td>
<td>-0.66</td>
<td>0.1</td>
<td>-0.35</td>
<td>-0.66</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Finally, Table 8.15 shows the Affluence Indicator and its component indices, i.e., top ten important items, in each age group. Since we only have age-group data for Hokkaido total, we cannot know how differently the same age-group evaluates various aspects of their lives in each region. Despite this limitation, we can get some useful insights for policy makers.

First, people in the oldest age group were the most “affluent” according to our Affluence Indicator. People in fifties were the least “affluent.” Second, as expected, people in each age group
had their own priority depending on their current life stages. For example, the most important item for the whole respondents, "Q27 Financially secured post-retirement years by pension or other means," ranked top in all age groups except for the oldest and youngest groups. People in the former group were no longer concerned about it and people in the latter were too young for thinking about very distant future. Another example for age dependent item is "Q23 Good environment for giving birth and raising children." This item ranked in top ten only the two youngest age groups where parents of young children were most likely to belong. "Q29 Enough job opportunities," and "Q3 Safe and good-quality houses" were also age dependent. On the other hand, items such as "Q19 Easy access to necessary medical treatment or examination," "Q21 Affordable medical care," "Q7 Good snow-removal system," "Q11 Free from air pollution, water contamination, and noise," and "Q33 Safe neighborhood" were not age dependent. Although these results do not seem surprising on the whole, this type of information could be very useful if we had age-group data in all regions. For example, policies for keeping young residents in a rural region and policies for attracting young people from cities may be different. Our age-group data in different regions could help policymakers to differentiate their policies targeting two same-age groups in two different regions. That is the kind of analysis I want to pursue.

The last three sub-sections illustrated examples for how we used "Affluence Indicators." From the examples we understand that we need additional quantitative and qualitative information for utilizing our Affluence Indicators and their component scores as policy tools. However, we also need the theoretical justification for using our indicators as policy tools. In the next and final section, I will show them and discuss about our next steps in this research.

8.4 Discussion

THEORETICAL INTERPRETATION OF THE INDICATOR

Our Affluence Indicator can be interpreted as a kind of utility function of the representative individual in the region with the satisfaction scores as its arguments. Alternatively, we can think of this function as a social welfare function. Although we know Arrow’s Impossibility Theorem that proved non-existence of the social welfare function that everyone in the society agree with, each democratic society must have, one way or another, its own way of coordinating their members opinions. Thus, let us assume that the coordinating mechanism here is expressed as the social welfare function or Affluence Indicator. We can write the function as follows.

Let us assume there are \( m \) components. Let \( x_i (i = 1, \ldots, m) \) be the score of \( i \)-th component and \( I(x) \) be the social welfare function. Let \( w_i (i = 1, \ldots, m) \) be the weight of \( i \)-th component and assume \( \sum w_i = 1 \). \( \sigma = (1 - \beta)^{-1} \) be the elasticity of substitution between two components\(^{28}\). Then, we can write a general form of social welfare function as follows\(^{29}\).

\[
I(x) = \left\{ \begin{array}{ll}
[w_1(x_1) + \cdots + w_m(x_m)]^{\frac{1}{\beta}}, & \text{for } \beta \neq 0 \\
\left( (x_1)^{w_1} (x_2)^{w_2} \cdots (x_m)^{w_m} \right)^{\frac{1}{\sigma}}, & \text{for } \beta = 0
\end{array} \right. \tag{8.1}
\]

If \( \beta \) goes to 1 (i.e., \( \sigma = \infty \)), \( I(x) \) is reduced to (8.2), a simple weighted average of components like our indicators.

\[
I(x) = w_1 x_1 + \cdots + w_m x_m \tag{8.2}
\]

\(^{28}\) We assume \( \beta \) be common to all components for simplifying our explanation.

\(^{29}\) Equations (1), (2), and (3) are simplified version of equations in Decancq and Lugo (2013).
Thus, for example, if $m = 2$ as in Figure 8.2, components 1 and 2 are perfect substitute for each other with fixed rate, $w_1/w_2$. This is, of course, unrealistic. More realistic shape of the function would be concave like the one in Figure 8.3 (i.e., $\beta < 1$ and $0 < \sigma < \infty$). However, in order to get the realistic function, we have to estimate (8.1), which is difficult due to the availability of data. Even if we could estimate (8.1), it would be too complicated for practical use as a policy tool. Since we don’t have the choice, anyway, we will use (8.2) as our (short-run) indicator form, keeping in mind that the real shape of (long-run) indicator is more complicated like (8.1). I will discuss the relationship between short-run and long-run indicators later.

Theoretically, we can use our indicators as a policy tool for comparing effects among different components. First, whichever shapes the indicator is (i.e., Figure 8.2 or Figure 8.3), we can increase $I(x)$ by increasing at least one component of indicator while not decreasing other components. We can find “the most efficient” component for increasing our Affluence Indicator (in certain region) by just comparing their weights because each of them indicates the amounts of increase in the indicator each component can achieve by increasing its own score by one point while keeping other components’ scores unchanged. However, since the component is the satisfaction score on the question item, in order to really find the most efficient component, we have to know the cost for increasing each satisfaction score by one point. In practice, as we will discuss later, that is very difficult since the cost includes various types of factors.

30 However, with some restrictive conditions, it is not so complicated. Human Development Index (by United Nations Development Programme) adopted a type of (8.1) with $\beta = 0$ (i.e., $\sigma = 1$) and $w_i = 1$ for all $i$. This is a geometric mean. It used be a type of (8.2) with $w_i = 1$ for all $i$ before 2010. That is an arithmetic mean. (See UNDP (2014))
The difference between shapes of the iso-welfare curves in Figure 8.2 and those of Figure 8.3 matters if we consider more dynamic situations. The difference between the two can be expressed mathematically by using Marginal Rate of Substitution (MRS). MRS between components \( j \) and \( k \), \( \text{MRS}_{j,k} \) in (8.1) is,

\[
\text{MRS}_{j,k} = \frac{\partial E(x)}{\partial x_j} \cdot \frac{\partial E(x)}{\partial x_k} = \frac{w_j}{w_k} \left[ \frac{x_k}{x_j} \right]^{1-\beta}.
\]  

(8.3)

\( \text{MRS}_{j,k} \) is the amount of \( k \) an individual is willing to give up for an extra unit of \( j \), while maintaining the same level of \( I(x) \). As you can see in (8.3), \( \text{MRS}_{j,k} \) consists of the ratio of the weights of two components, \( w_j/w_k \), and the ratio of the two components' sores to the power \( 1-\beta \). For \( \beta < 1 \) like Figure 8.3, the lower the satisfaction score on component \( j \), the greater the scores given up on component \( k \) to compensate for the extra score on component \( j \). This seems reasonable and corresponds to the standard microeconomics concept, "Law of diminishing marginal utility." In our case, if satisfactions score of a certain aspect of life (e.g., income) is very high while that of other aspect (e.g., environment) is very low, it is very natural to expect that overall "affluence" of the residents in this region increase more by increasing satisfaction score on the latter aspect than the former.

Since \( \beta = 1 \) in our indicator, the marginal rate of substitution between two components, \( j \) and \( k \), is fixed by the ratio of their weights, i.e., \( \text{MRS}_{j,k} = w_j/w_k \). However, if we conduct the opinion survey regularly, for example every two years, we get different weights, thus different \( \text{MRSs} \), in different years. We can think of our indicator as if it is a tangent at one point of one of the iso-welfare curves in Figure 8.3. \( \text{MRS}_{j,k} = w_j/w_k \) will be the slope of the tangent at that point. That means, we can also calculate, at least mathematically, the marginal rate of substitution. Then, when we got a pair of satisfaction scores and a pair of weights at period \( t \) (\( x_t \) in Figure 8.4) and another pairs at period \( t+1 \) (\( x_{t+1} \) in Figure 8.4), we can estimate the shape of the iso-welfare curve, for example \( I_{t+1}(x_{t+1}) \) or \( I'_{t+1}(x_{t+1}) \), in the neighborhood of \( x_{t+1} \).

Of course, since \( m > 2 \), we also have to consider the effects among all \( x_i \) (\( i = 1, \ldots, m \)) and complementary effects. If \( x_i \) and \( x_j \) are complementary, an effort to increase \( x_i \) also increases \( x_j \). That is, an increase in satisfaction score for one aspect of quality life will increase that in some other aspect, too. Therefore, in addition to find out how to increase each satisfaction level, policymakers also have to collect information and data about substitutive and complementary effects among policies.

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Finding the right weights

In any cases, the weights play important roles. In their extensive survey on weights in multidimensional indices of well-being, Decancq and Lugo (2013) classified the weights into three types, data-driven, normative, and hybrid. One important example in “data-driven” weights is principal component analysis (PCA). PCA was used, for example, in CAE/SVR-Report (2010) and Life Reform Index in Japan, though the purposes of them were different from finding the weights. Because PCA is a mechanical process, it is free from any particular value judgment, but the meanings of the weights derived from the PCA are ambiguous. The merit and demerit are reverse in the normative type of weighting. Researchers or policy makers decide to give more weight to dimensions that they believe more important. Hybrid approaches are both data-driven and depend on some form of value judgment. One example is “stated preference weights.” They are based directly on the opinions of individuals. But the opinions are collected from the society and condensed statistically. In that sense it is both normative and data-driven. Our method falls in this category. Since this method have merits of other two methods and since the recent studies shows robustness (in the sense that rankings of the dimensions by this weighting method are similar to those by other methods), Decancq and Lugo (2013) stated that, “as these data (i.e., information on the individual valuations of the dimensions) become more widely available, one can imagine that stated preference weights become a method of choice for many.”

One another example of hybrid approaches is “Hedonic Weights” (ibid. p26). The weights are derived from a regression of self-reported life satisfaction (like happiness index) on a set of variables representing the different dimensions of well-being. We conducted some regressions of the happiness index on a set of satisfaction scores, but we did not pursue the method further mainly because the negative coefficients (i.e., weights) were hard to interpret and because we could not get a good fit. Thus, we believe that our “stated preference weights” were appropriate.

Concluding remarks

Two features of our indicators, i.e., using only subjective data and making the composite indicator, are against the current trends. As for the former, it was inevitable since we could not find adequate objective data for local areas. It is also more desirable than mixing objective data with the subjective data since the mixing made the meaning of our indicator ambiguous like our old indicator did.

As for the latter feature, many recent social indicators have no integrated composite index because the importance of each component varies among individuals. Although each of our

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31 CAE/SVR-Report (2010) used PCA for condensing several data in each dimension of their dashboard of indicators into one composite indicator. The purpose of the LRI was the evaluation of the Structural Reform by the Koizumi administration first reported in 2002. The statistical validity of the nine aspects of the reform was evaluated by principal component analysis by the committee. (For more detail, see Machino (2014) or The Planning Committee of the Council of National Living (2002 in Japanese).)

32 Since the self-reported life satisfaction is ordinal number, using a multinomial model, instead of a standard linear model, is common in the literature. (Decancq and Lugo, 2013)

33 See table A3 for one of our regression results. Bond and Lang (2014) also showed that without strong auxiliary assumptions, it is impossible to rank groups by average happiness using survey data with a few potential responses.

34 However, we are aware that our survey was insufficient in number of data, in range of questions, and in statistical sophistication. Benjamin et al. (2012) showed the results similar to ours by using an opinion survey with a wide range of questions and more statistically sophisticated method. They estimated high relative marginal utilities for aspects related to family, health, security, values, and freedoms.
“Affluence indicators” is a composite index, it is composed of a unique combination of component indices. It is also a weighted average of component indices with also a unique combination of weights. Both the selection of component indices and evaluation of their weights are based on the importance (score) of each component derived from opinion survey in each region. We respect what aspects of lives people in each region regard important, just as opponents of the composite index respect people’s diverse priorities within the component indices. Since each of our regional indicators has a unique combination of component indices, having one composite indicator for each region is sometimes useful for comparative studies.

As explained above, using only subjective indicators are better than the mixture of both subjective and objective data. However, in order to utilize subjective indicators as actual policy tools, we have to clarify what exactly they mean. One natural way to reduce the ambiguity of the subjective data, which are derived from the satisfaction scores, is to find the factors that influence the score\(^3\). Another way is conducting more cross-group analyses such as gender-based and age-based comparisons demonstrated above. Such analyses are useful for understanding the different needs among different groups and decreasing the inequalities among them. Although our new survey data included information about some individual attributes of the respondents, the number of data was too small for those analyses\(^4\). We need larger sample in our future studies.

The recent progresses in behavioral economics and neuroscience are also assuring for the practical use of subjective data. It provides deeper knowledge for understanding the "two-facedness" of subjective data mentioned in section1. For example, Levinson (2013) discusses that projection bias (i.e., people’s miss-estimation about their future desires based on current circumstances) saves happiness economics (which studies subjective issues) from habituation (long-run stability), enabling its use in public policy.

Although we have seen much progress in utilizing subjective data, there is still a long way from becoming one of main policy tools. For example, we must figure out how to reduce strategic responses and/or by respondents of the opinion surveys. As our indicators become important, so as the strategic responses. We suspect that one of the reasons for the overall low satisfaction scores in 2006 Hokkaido Survey was the strategic response. People would express their complaints louder than usual if they knew that their responses would be used for policymaking.

Finally, the theoretical framework discussed in the last sub-section will also help us improve our way of thinking. Because when we think about a policy on one aspect of our lives, we now know that we have to consider the trade-off and/or complementary effects between many aspects of our lives. Especially, some aspects like "relationship with your family," and "good relationship with colleagues in workplace," which policymakers have not been taken into consideration in the past, should be now taken seriously. Those aspects have not been considered in Japanese vertically-segmented and vertically-integrated administrative structure. We hope that our “Affluence Indicators” become a useful tool for creating more coherent regional policies.

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\(^3\) Although cae/svr-Report (2010) are against the usage of subjective data as indicators for quality-of-life, they think that if they used them, “the top-down approach would then require the factors that influence swb to be identified and their effects quantified in a supplementary analytical step.” (p 62)

\(^4\) However, I conducted one regression of happiness index on a set of personal features based on 2014 Kamikawa Survey. Although I could not get a good fit, some individual attributes, like sex and place to live, showed relatively high influence on the index as shown in table A4.
Acknowledgements

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Appendix

Table 8.16. Question Items in 2006 Hokkaido Survey. Note: The questions in this table are shortened due to the space constraint. Source: Hokkaido (2006).

<table>
<thead>
<tr>
<th>Fields</th>
<th>Question items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily life</td>
<td>1 Stable consumer prices</td>
</tr>
<tr>
<td></td>
<td>2 Safe and good-quality houses</td>
</tr>
<tr>
<td></td>
<td>3 Consumption of local goods and resources</td>
</tr>
<tr>
<td></td>
<td>4 Enough parks, green space, and playgrounds</td>
</tr>
<tr>
<td></td>
<td>5 Easy access to sports and recreation facilities or clubs</td>
</tr>
<tr>
<td></td>
<td>6 Enough leisure time</td>
</tr>
<tr>
<td></td>
<td>7 Good snow-removal system</td>
</tr>
<tr>
<td></td>
<td>8 Easy access to legal advice and government services</td>
</tr>
<tr>
<td></td>
<td>9 Comfortable-looking townscape and landscape</td>
</tr>
<tr>
<td>Environment</td>
<td>10 Reducing garbage and recycling resources</td>
</tr>
<tr>
<td></td>
<td>11 Free from air pollution, water contamination, and noise</td>
</tr>
<tr>
<td></td>
<td>12 Active in prevention of global warming</td>
</tr>
<tr>
<td></td>
<td>13 Beautiful natural environment</td>
</tr>
<tr>
<td>Education &amp; culture</td>
<td>14 Good elementary, junior high and high schools.</td>
</tr>
<tr>
<td></td>
<td>15 Universities and other higher educational institutions</td>
</tr>
<tr>
<td></td>
<td>16 Easy access to lifelong education</td>
</tr>
<tr>
<td></td>
<td>17 Easy access to learn foreign languages</td>
</tr>
<tr>
<td></td>
<td>18 Easy access to arts and cultural activities</td>
</tr>
<tr>
<td>Medical services</td>
<td>19 Easy access to necessary medical treatment or examination</td>
</tr>
<tr>
<td></td>
<td>20 Easy access to preventive medical services and medical advices</td>
</tr>
<tr>
<td></td>
<td>21 Affordable medical care</td>
</tr>
<tr>
<td>Declining birthrate, aging population, welfare</td>
<td>22 Various services to support raising children such as nursery schools</td>
</tr>
<tr>
<td></td>
<td>23 Good environment for giving birth and raising children</td>
</tr>
<tr>
<td></td>
<td>24 Good welfare facilities for the elderly and the disabled</td>
</tr>
<tr>
<td></td>
<td>25 The elderly and the disabled can receive nursing care at home.</td>
</tr>
<tr>
<td></td>
<td>26 Favorable conditions for supporting the disabled to live purposeful life</td>
</tr>
<tr>
<td></td>
<td>27 Financially secured post-retirement years by pension or other means</td>
</tr>
<tr>
<td></td>
<td>28 Favorable conditions for supporting senior citizens to live purposeful life</td>
</tr>
<tr>
<td>Jobs</td>
<td>29 Enough job opportunities</td>
</tr>
<tr>
<td></td>
<td>30 Good job placement office and services</td>
</tr>
<tr>
<td></td>
<td>31 Small difference in pay and working conditions</td>
</tr>
<tr>
<td>Safety</td>
<td>32 Well-prepared plans for earthquakes, floods, and fires</td>
</tr>
<tr>
<td></td>
<td>33 Safe neighborhood</td>
</tr>
<tr>
<td></td>
<td>34 Safety of food and everyday items</td>
</tr>
<tr>
<td></td>
<td>35 Safe roads for children and the elderly</td>
</tr>
<tr>
<td>Transportation</td>
<td>36 Convenient for commuting to work and schools</td>
</tr>
<tr>
<td></td>
<td>37 Easy to go anywhere in Hokkaido</td>
</tr>
<tr>
<td></td>
<td>38 Easy to go anywhere outside Hokkaido</td>
</tr>
<tr>
<td></td>
<td>39 Easy to go abroad</td>
</tr>
<tr>
<td>Local community</td>
<td>40 Neighbors are helping each other.</td>
</tr>
<tr>
<td></td>
<td>41 Many community events and activities</td>
</tr>
<tr>
<td></td>
<td>42 People value local tradition and culture.</td>
</tr>
<tr>
<td></td>
<td>43 The municipal government listens and answers its citizen’s needs and requests.</td>
</tr>
<tr>
<td>Information</td>
<td>44 Easy access to various information sources.</td>
</tr>
<tr>
<td></td>
<td>45 Good protection of private information in the internet network.</td>
</tr>
</tbody>
</table>

Measuring Regional Well-being – New “Affluence Indicators” in Hokkaido
Table 8.17. Question Items in our preliminary survey (2014). Note: The questions in Tables are shortened due to the space constraint. Source: our 2014 survey.

<table>
<thead>
<tr>
<th>Fields</th>
<th>Question items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family &amp; friends</td>
<td>1. Enough time to spend with family</td>
</tr>
<tr>
<td></td>
<td>2. Good relationship with family</td>
</tr>
<tr>
<td></td>
<td>3. Good relationship with friends</td>
</tr>
<tr>
<td>Daily life</td>
<td>4. Stable family finance</td>
</tr>
<tr>
<td></td>
<td>5. Convenient for shopping</td>
</tr>
<tr>
<td>Living environment</td>
<td>6. Safe and good-quality houses</td>
</tr>
<tr>
<td></td>
<td>7. Enough parks, green space, and playgrounds</td>
</tr>
<tr>
<td></td>
<td>8. Good snow-removal system</td>
</tr>
<tr>
<td>Transportation</td>
<td>9. Convenient for commuting to work and schools, and going to hospital</td>
</tr>
<tr>
<td></td>
<td>10. Easy to go anywhere in Hokkaido</td>
</tr>
<tr>
<td></td>
<td>11. Easy to go anywhere outside Hokkaido</td>
</tr>
<tr>
<td>Leisure &amp; lifelong education</td>
<td>12. Enough leisure time</td>
</tr>
<tr>
<td></td>
<td>13. Easy access to sports and recreation facilities or clubs</td>
</tr>
<tr>
<td></td>
<td>14. Easy access to arts and cultural activities</td>
</tr>
<tr>
<td></td>
<td>15. Easy access to lifelong education</td>
</tr>
<tr>
<td>Environment</td>
<td>16. Reducing garbage and recycling resources</td>
</tr>
<tr>
<td></td>
<td>17. Free from air pollution, water contamination, and noise</td>
</tr>
<tr>
<td></td>
<td>18. Comfortable-looking townscape and landscape</td>
</tr>
<tr>
<td>Child rearing &amp; education</td>
<td>20. Good environment for giving birth and raising children</td>
</tr>
<tr>
<td></td>
<td>21. Various services to support raising children such as nursery schools</td>
</tr>
<tr>
<td></td>
<td>22. Good elementary, junior high and high schools</td>
</tr>
<tr>
<td></td>
<td>23. Universities, language schools and other higher educational institutions</td>
</tr>
<tr>
<td>Health &amp; medical service</td>
<td>24. Your and your family members’ health</td>
</tr>
<tr>
<td></td>
<td>25. Easy access to necessary medical treatment or examination</td>
</tr>
<tr>
<td></td>
<td>26. Affordable medical care</td>
</tr>
<tr>
<td></td>
<td>27. Good emergency care system</td>
</tr>
<tr>
<td>Senior life &amp; social welfare</td>
<td>28. Financially secured lives for senior citizens</td>
</tr>
<tr>
<td></td>
<td>29. The elderly and the disabled can receive nursing care at home.</td>
</tr>
<tr>
<td></td>
<td>30. Easy access to good welfare facilities for the elderly and the disabled</td>
</tr>
<tr>
<td></td>
<td>31. Favorable conditions for supporting the disabled to live purposeful life</td>
</tr>
<tr>
<td>Jobs</td>
<td>32. Enough job opportunities</td>
</tr>
<tr>
<td></td>
<td>33. Work gives a sense of self-fulfillment.</td>
</tr>
<tr>
<td></td>
<td>34. Good relationship with colleagues in workplace</td>
</tr>
<tr>
<td></td>
<td>35. Good work-life balance</td>
</tr>
<tr>
<td></td>
<td>36. Good job placement office and services</td>
</tr>
<tr>
<td></td>
<td>37. Small difference in pay and working conditions</td>
</tr>
<tr>
<td>Safety</td>
<td>38. Well-prepared plans for earthquakes, floods, heavy snowfall, and fires</td>
</tr>
<tr>
<td></td>
<td>39. Safe neighborhood</td>
</tr>
<tr>
<td></td>
<td>40. Safety of food and everyday items</td>
</tr>
<tr>
<td>Community &amp; volunteer activities</td>
<td>41. Neighbors are mingling and helping each other.</td>
</tr>
<tr>
<td></td>
<td>42. Enough opportunities to join community activities</td>
</tr>
<tr>
<td></td>
<td>43. Enough opportunities to join volunteer activities</td>
</tr>
<tr>
<td></td>
<td>44. People value local tradition and culture</td>
</tr>
</tbody>
</table>
Table 8.18. Regression of happiness index on a set of satisfaction scores. Software: EViews 6.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z–Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your health, and your family members’ health</td>
<td>0.186058</td>
<td>0.188550</td>
<td>0.986786</td>
<td>0.3237</td>
</tr>
<tr>
<td>Relationship with your family</td>
<td>0.499398</td>
<td>0.207863</td>
<td>2.402537</td>
<td>0.0163</td>
</tr>
<tr>
<td>Enough job opportunities</td>
<td>0.100981</td>
<td>0.172629</td>
<td>0.584962</td>
<td>0.5586</td>
</tr>
<tr>
<td>Stable family finances</td>
<td>0.181315</td>
<td>0.157483</td>
<td>1.151475</td>
<td>0.2495</td>
</tr>
<tr>
<td>Easy access to necessary medical treatment or examination</td>
<td>0.069219</td>
<td>0.213359</td>
<td>0.324424</td>
<td>0.7456</td>
</tr>
<tr>
<td>Good emergency medical care system</td>
<td>-0.003700</td>
<td>0.159340</td>
<td>-0.023222</td>
<td>0.9815</td>
</tr>
<tr>
<td>Safe neighborhood</td>
<td>0.117934</td>
<td>0.205454</td>
<td>0.574017</td>
<td>0.5660</td>
</tr>
<tr>
<td>Good environment for giving birth and raising children</td>
<td>0.258596</td>
<td>0.190764</td>
<td>1.355577</td>
<td>0.1752</td>
</tr>
<tr>
<td>Safety of food and everyday items</td>
<td>-0.337711</td>
<td>0.204862</td>
<td>-1.648481</td>
<td>0.0993</td>
</tr>
<tr>
<td>Good relationship with colleagues in workplace</td>
<td>0.236452</td>
<td>0.160155</td>
<td>1.476395</td>
<td>0.1398</td>
</tr>
<tr>
<td>Well–prepared plans for earthquakes, floods, heavy snowfall, and fires</td>
<td>-0.337411</td>
<td>0.134286</td>
<td>-2.512625</td>
<td>0.0120</td>
</tr>
</tbody>
</table>

Limit Points

<table>
<thead>
<tr>
<th>Limit Points</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z–Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIMIT_3:C(12)</td>
<td>0.891413</td>
<td>1.165883</td>
<td>0.764582</td>
<td>0.4445</td>
</tr>
<tr>
<td>LIMIT_4:C(13)</td>
<td>1.768339</td>
<td>1.118519</td>
<td>1.580965</td>
<td>0.1139</td>
</tr>
<tr>
<td>LIMIT_5:C(14)</td>
<td>1.935701</td>
<td>1.119739</td>
<td>1.728708</td>
<td>0.0839</td>
</tr>
<tr>
<td>LIMIT_6:C(15)</td>
<td>2.494187</td>
<td>1.127279</td>
<td>2.123572</td>
<td>0.0629</td>
</tr>
<tr>
<td>LIMIT_7:C(16)</td>
<td>3.215377</td>
<td>1.147125</td>
<td>2.809872</td>
<td>0.0051</td>
</tr>
<tr>
<td>LIMIT_8:C(17)</td>
<td>4.044162</td>
<td>1.181511</td>
<td>3.422874</td>
<td>0.0006</td>
</tr>
<tr>
<td>LIMIT_9:C(18)</td>
<td>4.747171</td>
<td>1.214850</td>
<td>3.907618</td>
<td>0.0001</td>
</tr>
<tr>
<td>LIMIT_10:C(19)</td>
<td>5.439509</td>
<td>1.241281</td>
<td>4.382174</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Pseudo R–squared | 0.139665   | Akaike info criterion | 4.097919  |
Schwarz criterion | 4.804250   | Log likelihood        | -89.59486 |
Hannan–Quinn criter. | 4.369540   | Restr. log likelihood | -104.1385 |
LR statistic      | 29.08925   | Avg. log likelihood   | -1.690469 |
Prob(LR statistic) | 0.002199   |                      |           |
Table 8.19. Regression of happiness index on a set of individual attributes. **5 and more than 5 are in the same group. Software: EViews 6.

<table>
<thead>
<tr>
<th>Variable (dummies*)</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z–Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male 1, Female 0</td>
<td>-0.096371</td>
<td>0.393930</td>
<td>-0.244640</td>
<td>0.8067</td>
</tr>
<tr>
<td>Age group 6, groups</td>
<td>-0.134743</td>
<td>0.141652</td>
<td>-0.951229</td>
<td>0.3415</td>
</tr>
<tr>
<td>Primary Industry*</td>
<td>0.862961</td>
<td>0.613180</td>
<td>1.407352</td>
<td>0.1593</td>
</tr>
<tr>
<td>Self Employed*</td>
<td>-0.213312</td>
<td>0.515783</td>
<td>-0.415180</td>
<td>0.6780</td>
</tr>
<tr>
<td>Housewife*</td>
<td>-0.587312</td>
<td>0.617577</td>
<td>-0.950994</td>
<td>0.3416</td>
</tr>
<tr>
<td>Student*</td>
<td>0.272131</td>
<td>0.538068</td>
<td>0.505756</td>
<td>0.6130</td>
</tr>
<tr>
<td>Number of family members (5 groups)**</td>
<td>0.179026</td>
<td>0.150135</td>
<td>1.192432</td>
<td>0.2331</td>
</tr>
<tr>
<td>With spouse'</td>
<td>0.362424</td>
<td>0.188857</td>
<td>1.919042</td>
<td>0.0550</td>
</tr>
<tr>
<td>With baby or infant*</td>
<td>0.464493</td>
<td>0.513087</td>
<td>0.905290</td>
<td>0.3653</td>
</tr>
<tr>
<td>With senior*</td>
<td>-0.868554</td>
<td>0.626557</td>
<td>-1.386233</td>
<td>0.1657</td>
</tr>
<tr>
<td>House owner*</td>
<td>0.814847</td>
<td>0.516064</td>
<td>1.578967</td>
<td>0.1143</td>
</tr>
<tr>
<td>Public apartment*</td>
<td>-0.085279</td>
<td>0.462350</td>
<td>-0.184448</td>
<td>0.8537</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limit Points</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LIMIT_3C(13)</td>
<td>-1.63780</td>
<td>0.742188</td>
<td>-2.206151</td>
<td>0.0274</td>
</tr>
<tr>
<td>LIMIT_4C(14)</td>
<td>-0.938408</td>
<td>0.715195</td>
<td>-1.312101</td>
<td>0.1895</td>
</tr>
<tr>
<td>LIMIT_5C(15)</td>
<td>-0.794926</td>
<td>0.715195</td>
<td>-1.07831</td>
<td>0.2879</td>
</tr>
<tr>
<td>LIMIT_6C(16)</td>
<td>-0.255692</td>
<td>0.722127</td>
<td>-0.354081</td>
<td>0.7233</td>
</tr>
<tr>
<td>LIMIT_7C(17)</td>
<td>0.405156</td>
<td>0.713325</td>
<td>0.567982</td>
<td>0.5700</td>
</tr>
<tr>
<td>LIMIT_8C(18)</td>
<td>1.081267</td>
<td>0.714335</td>
<td>1.516471</td>
<td>0.1294</td>
</tr>
<tr>
<td>LIMIT_9C(19)</td>
<td>1.677899</td>
<td>0.725214</td>
<td>2.316662</td>
<td>0.0207</td>
</tr>
<tr>
<td>LIMIT_10C(20)</td>
<td>2.313525</td>
<td>0.743507</td>
<td>3.111641</td>
<td>0.0019</td>
</tr>
</tbody>
</table>

| Pseudo R–squared    | 0.073915    | Akaike info criterion | 4.394038 |
| Schwarz criterion    | 5.137544    | Log likelihood        | -96.44201|
| Hannan–Quinn criter. | 4.679955    | Restr. log likelihood | -104.1195|
| LR statistic         | 15.3949     | Avg. log likelihood   | -1.319661|
| Prob(LR statistic)   | 0.229545    |                        |         |
9 Rural Resilience in the Post-industrial Society – an Empirical Case Study of a Northern Swedish Region

Wilhelm Skoglund and Olof Wahlberg

9.1 Introduction

Every society is in constant change. This includes the rural areas of Sweden. Many societies in rural Sweden are struggling with their vitality and survival at the moment. The Swedish northern interior is particularly challenged and economic survival is on top of the agenda of the communities and societies in this region. This struggle for survival has been going on for a long time, starting already in the end of the 19th century, when the region, with its one-sidedness of business (focused on natural resource extraction), great distances and sparse population, was discussed on national level. This was the origin of the discussion on rural dilemmas and challenges that still are continuing (Hallin & Lindström, 1998). The fundamental problems that rural areas are facing are made even more accentuated by the development of agriculture and forestry, which by tradition are the basis of the rural economy, also in these discussed societies and communities. Contemporary agriculture is nowadays a highly efficient economic activity with few employees, yet producing more than ever before. Likewise, forestry is highly mechanized with few employment opportunities, whilst the production is higher than ever before.

An ongoing rationalization of the industry sector has also challenged the industry in the rural areas. Adding to the challenges for rural places is that changes of the labor market have resulted in an increased demand for employees with higher education. This has attracted people to larger cities and regions with proximity to established universities. The downsizing of the public sector also gives a background to the decrease of employment opportunities in the interior of Northern Sweden. This has resulted in a steady outward migration from this region, a migration consisting of mostly young people and particularly women with high education (Skoglund, 2006).

The increasing migration to more populous and urban southern parts of Sweden, with more work opportunities, means decreasing population in rural areas and that those that stay are ageing. This adds to the negative development, since the tax basis is shrinking, and also the economic basis for various social services. The resulting decrease and thinning of social services is yet another force that motivates people to migrate to more urbanized societies.

The result is a very dark picture of the rural areas and their future. These societies are regarded as left in the wake of the economic development. People who choose to stay in such areas are to blame themselves. If they want a brighter future, with employment opportunities and social service, they are forced to migrate, because the society is, in fact, leaving them behind.

To be noted is that that the development described here is not unique to the interior of Northern Sweden, but takes place in many rural European regions, with increasing unemployment, leaving many rural villages on the verge of extinction.

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In this study, our aim is to challenge this one-eyed image, where all opportunities are in urban settings and rural regions are seen as burdens. When theoretically connected, the study will be a scientific contribution to the field of rural and regional development. At present, it shall be regarded as a first impression of an alternative image of living in rural areas. Focus is on how people living in rural societies perceive the services – in a wide meaning – that are offered in such societies.

Our aim is to provide answers to the following questions:

• How do people living in rural societies perceive the service offered in such societies
• How satisfied are they with the performance of the same services?
• What are the crucial services that need to be focused to improve living conditions in rural societies?

By answering these questions, the authors provide knowledge which has the capacity to challenge the reigning picture of rural regions.

9.2 Methodological approach

The data used to answer our research questions are survey data gathered by the County Board of Västernorrland in the autumn 2013. Data gathering was made with a mail survey administered to people living in rural societies in the Västernorrland region. The postal numbers were used for identifying these societies and the ambition was to make a representative sample based upon population figures for the rural municipalities belonging to the region. The respondents were between 19 and 89 years old. The resulting sample was 4922 individuals, and the response rate was 46%. Descriptive statistics were used by the authors of this article in order to analyze the data gathered.

9.3 Findings

**People in rural areas think that the society is abandoning them**

The municipal authorities are perceived to show little interest in the conditions in the small rural societies and social services in these are constantly thinning out, indicating a negative spirale of decline. As a result of this situation, many rural citizens have a pessimistic vision of the future. They complain about the out-migration from their communities and see no possibility or reason for this trend to halt. Notable is that citizens in societies with a higher societal cohesion, like Docksta in the county of Västernorrland, has a more positive image of the future, whilst other locations in Västernorrland, as illustrated by the figures below, have a more negative image. In general, though, people living in rural areas experience that the society and authorities have abandoned them. Both public services and commercial services are decreasing in or leaving these societies.

To improve the conditions, the rural citizens regard it to be essential that the municipal authorities demonstrate an evident interest in the development of the rural areas. There is also a need for improvements regarding commercial and public services. In addition, the young generation express that they want improved leisure activities. This must be considered crucial to the future of the rural societies, since the attitude of the young generation is important to the resilience of these societies.
Why do people choose to live in rural areas?

Provided the negative image of the rural areas, what are the reasons for living in such areas? It is evident that rural people have a rural lifestyle, meaning that they value aspects that can be considered part of the rural conditions (figure 1). Asked about the benefits of the places where they live, they first of all mention the nature and the tranquility. The possibilities of outdoor activities are also important. The social environment, with relatives and friends in the near distance adds to the positive life situation. Many respondents also mentioned that people are nice and friendly in their communities and societies – although there is a big minority with a negative perspective of the neighbours and the social control that often is a part of small societies.

9.4 Perceptions of services

Service problems

In general terms, the rural citizens see the school, the retailer, health care and the public transports as crucial to a positive development. However, when asked about the major problems they perceive themselves with the living situation in the rural areas, the respondents are referring to
the infrastructure as such a problem. In particular, the lack of public transport is a problem. This is particularly problematic for people with children at home and for the children themselves. It makes it cumbersome to take part in leisure activities and to visit friends, and it also makes traveling to and from schools a logistic problem.

The condition and maintenance of the roads is another infrastructure issue that is regarded as problematic. Since travelling is part of rural life, bad road conditions make life in a rural society troublesome. In a northern society like the one studied in Sweden, the winter conditions with snow and ice add to the infrastructure problems of rural living.

The thinning out of the supply of commercial and non-commercial services is also regarded as a major problem. The respondents have experienced that the services are leaving their societies, and that they must travel to larger societies to be provided with such services. There are three services in particular that are mentioned as problematic in the societies:

- The access to a local retailer (providing day-to-day consumables).
- The access to a petrol station.
- The access to a local school.

Worth noting is that healthcare and elder care is not perceived to be so problematic to most of the citizens in the rural areas. For evident reasons, the elder generation has a somewhat different image in this respect. To be noted is also that work opportunities are mentioned as a problem, but not as the most crucial problem. The thinning of services is considered more crucial.
Asked about how satisfied they are with the performance of services in their present situation, it is evident that what they are most dissatisfied about is the quality of public services in general and the quality of the roads.

**PERCEIVED SATISFACTION WITH SERVICES OFFERED**

Asked about how satisfied they were with different aspects of their life, the local retailer and the local school was perceived to be satisfactory to most of the rural people. The respondents can thus be described as satisfied with the existing retailers, as well as existing schools, but see decrease in offerings in these categories as main problematic issues. Worth noting is also that the survey was delivered to people living in societies with a shop. It is tempting to propose that the situation would have been another if people living in places a long way from a shop had answered the questionnaire.

**PERCEIVED IMPORTANCE OF SERVICES OFFERED**

Asked about the importance the respondents lay on the different services for a positive development of their societies, most respondents emphasized the access to a local retailer, the quality of roads the access to a petrol station and the mobile coverage.

**IMPORTANCE – SATISFACTION ANALYSIS**

If the perceived importance and the perceived satisfaction are combined into a diagramme, a graph with strategic implications a graph may be developed. Two lines representing the average value of perceived satisfaction and importance respectively are added to the diagramme as a guidance in the analysis. Focusing on the upper left square in the diagramme, it follows that the
quality of the roads, the public communication and the internet access appears to be crucial if the quality of life in rural areas is to be enhanced.
The centrality of the local retailer does not correspond to shopping behavior

When the respondents were asked about what they consider to be the most important services in the rural societies, a local retailer stood out as very important. This importance laid upon the local retailer can be seen in the light of the respondents shopping loyalty. It is clear that the majority of the residents choose to shop a great share of their total shopping elsewhere:

Table 9.1. How much do you shop in your local shop.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never shop in it</td>
<td>6</td>
</tr>
<tr>
<td>&lt; 20%</td>
<td>23</td>
</tr>
<tr>
<td>20–25%</td>
<td>16</td>
</tr>
<tr>
<td>26–50%</td>
<td>13</td>
</tr>
<tr>
<td>51–75%</td>
<td>14</td>
</tr>
<tr>
<td>&gt;76%</td>
<td>25</td>
</tr>
<tr>
<td>Do not know</td>
<td>3</td>
</tr>
</tbody>
</table>

The low shopping loyalty demonstrated is also in line with research on rural shopping (Strandberg, 1984); people in rural places are concluded to be loyal in words, but not so much in deeds. From the findings in this study, it appears that young people with a work in a neighbouring larger society in particular tend to cater for the lion share of their needs that society, and to use the local shop for complementary purchases only. Elder people are more loyal to their local store – for evident reasons.

Asked what is required for enhancing the local shopping, the price and the assortment stand out as crucial.

Table 9.2. What is necessary to enhance local shopping.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower prices</td>
<td>60</td>
</tr>
<tr>
<td>Better assortment</td>
<td>51</td>
</tr>
<tr>
<td>Higher quality</td>
<td>18</td>
</tr>
<tr>
<td>Loyalty card</td>
<td>11</td>
</tr>
<tr>
<td>Open hours</td>
<td>9</td>
</tr>
<tr>
<td>Better accessibility in shop</td>
<td>6</td>
</tr>
<tr>
<td>Better customer orientation</td>
<td>5</td>
</tr>
<tr>
<td>Possibility to pre-order commodities</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
<tr>
<td>Do not know</td>
<td>21</td>
</tr>
</tbody>
</table>

This points to a fundamental problem since a low shopping loyalty undermines the economic basis of a local shop, and makes relatively high prices and limited assortment unavoidable consequences.

Wilhelm Skoglund and Olof Wahlberg
9.5 Conclusions and suggestions for further studies

The contemporary image of the development of the rural areas is dark. It is held that these areas are left in the wake of the general economic and social development, and that this is more or less inevitable. People migrate from rural societies to find work elsewhere and also because they expect better service quality. The findings reported in this paper provide a more positive perspective on life in rural societies. The residents in rural societies value the nature and the tranquility of life in these societies. The social environment with family and friends on close distance is also valued. The valuation of these conditions can be regarded as crucial elements in a rural lifestyle as opposed to an urban lifestyle. This is the very reason for a rural resilience, and this provides new hope for a positive development.

The employment opportunities are perceived to be problematic to people living in rural societies, but not the main problem. This is rather the continuing thinning of the social and commercial service in these societies. Part of these services is the improving of public transports and roads. The access to efficient mobile and internet communication is also crucial to life in rural societies.

Furthermore, the existence of a local retailer is emphasized as a core service that is of crucial importance. It is evident, though, that the shopping loyalty is low, implying a dilemma for rural retailing. In particular young families with the parents working in neighboring larger societies use the local shop for complementary purchasing only. This can be proposed to undermine the economic basis of the local retailer. Lower prices and wider assortment is a reason for out shopping, but it is difficult to see how small retailers can offer as low prices and as diversified assortment as shops in larger urban societies can, which is a dilemma for rural retailing in a society where the automobile makes large shopping centres nodes in shopping patterns.

The authors claim that the improvement of services mentioned is possible if the political interest to do so exists. It is also concluded that the improvement of infrastructural issues like mobile coverage, high quality internet connection, good communication possibilities and a providing of proper health care are crucial to a strategy to facilitate rural living. Access to postal service also stands out as an issue that should be improved. Considering the growing share of e-commerce, this is evidently something that needs consideration.

Hence the resulting image is more positive than that presented in the general discussion of conditions in rural areas. Further studies need to be conducted considering how to improve the general service situation in these areas. Addressing the importance of work opportunities, the creative industries are held as one example with a possibility to offer such work opportunities in rural areas. (Skoglund & Jonsson, 2012) Further research need to be done in order to establish how these industries may be promoted and strengthened as part of a rural development scheme. Hence, this will also be the topic for the next article treating the rural situation form the perspectives performed in this article.
References


10 Demographic and Economic Trends in a Rural Europe

Mats Johansson, Pia Nilsson, and Hans Westlund

10.1 Introduction

The purpose of this paper is to analyze demographic- and economic structural changes across rural regions in Europe, as well as the connections between these two types of processes. This does however not exclude the relations to urban areas as population changes in rural areas cannot be analyzed without taking the urban population development into account. This is particularly important with regard to migratory movements where urban in-migration, in many cases, is dependent on rural out-migration. It has also been shown that rural areas have different migration patterns where many areas in the surroundings of big cities have experienced a positive population development as an effect of both natural population increase and net in-migration. The opposite is, however, the case in peripheral and remote rural areas where contrary development paths often seem to be the case. Moreover, out-migration also result in eroding reproduction potentials as out-migration of young women accentuate the effects of the drops in fertility. Natural population change has, thus, lost its primacy as the dominant factor behind regional population development both in positive and negative ways as the European regions – urban as well as rural – have been transformed from high fertility societies to low fertility ones. Instead, migration has become the main driver with regard to population development. These processes are all related to the economic-structural changes taking place in both urban and rural regions, which is the focus of this paper.

In order to describe and empirically address the differing demographic development paths and altered preconditions for transformation the paper applies typologies based on both economic and demographic structure and a cross regional regression model. In a first step, a typology based on demographic characteristics that classifies regions as either shrinking or expanding in terms of their population base is used in a descriptive analysis that illustrate sustainable and unsustainable population changes across rural Europe. The unit of analysis is the NUTS 3 regional level and the time dimension is 2001–2012. The economic-structural typology developed within the ESPON/EDORA-project is then used to expand the analysis in terms of economic-structural factors. The purpose is to examine how these two typologies relate to each other and how they can be used jointly in empirical analyses of the factors influencing population change across Europe. Hence, one of the central question addressed in this paper is whether the relative importance of key determinants of population change varies across regions defined as either shrinking or expanding. In order to answer this question we use the analyzed sample of NUTS 3 regions in a cross regional regression framework to estimate a growth equation that indicate...
The economic and statistical significance of the different underlying components that explain population change.

The paper is organized in the following way: Section 2 provides a background to the paper by analyzing demographic trends in Europe using both the demographic and the economic-structural typology. Section 3 summarizes some of the relevant literature and present the theoretical framework of the underlying factors presumed to influence regional population growth and shrinkage. Section 4 describes the data used in the empirical analysis followed by a description of empirical methodology and regression results. Section 5 discusses the role of social capital in shrinking regions and the limitations that arise when it comes to empirically address these issues. Finally, Section 6 concludes the paper and discusses the hypothesis posed in the paper.

10.2 Shrinking regions – a long term structural phenomenon?

When analysing shrinking regions in Europe it seems natural to focus on population change. Maps 1 and 2 show the general pattern of demographic change based on the demographic equation during the period 2001–2012 concerning growth as well as decline. Both the central European growth zones and the peripheral edge areas with declining population are clearly identifiable even at a first glance. A lot of studies have shown a polycentric development within the Pentagon, while there instead are indications of monocentric development with respect to demographic development in more sparsely populated peripheral areas. This phenomenon has been and still is especially strong in the northern and eastern parts of Europe where a redistribution of people contributes to a concentration process to the metropolitan or big city areas as well as to shrinkage and depopulating.

Growth zones are in general affected by net in-migration and this is valid for regions in Europe as well as in other parts of the world. Migration – internal as external – has a more dominant impact on regional population change today as a consequence of low fertility rates and top-heavy age structure in many regions. Once again, it must be kept in mind that there is a connection between migratory movements and natural population change. Population growth within the ESPON Space can often only be explained by migration – including immigration – because the balance of births and deaths is negative or negligible with regard to natural population change. This can be observed in Germany, in big city areas in the Scandinavian countries, in northern Italy and in southern England. In these areas the population dynamic is increasingly driven by migration and less by the surplus of births. Today, at regional and local levels migratory movements are, thus, the prime driver behind population change and they have also been of more importance at the national level in recent decades as a consequence of the increased inflow of refugees (Johansson 2009).

Some European peripheries experience population decline as a consequence of negative migratory balances and natural population decreases. In a lot of regions in Eastern Europe, especially in Bulgaria, Romania and the Baltic States, some regions in Hungary and the Eastern parts of Germany as well as in some areas in Greece these tendencies are obvious. Within the Eastern European countries the migratory movements and redistribution of people – especially young adults – is, however, of large importance to explain the regional population changes both in large urban agglomerations and in more peripheral areas.

TFR has declined in every part of Europe since the 1960s and is now below the reproduction rate in almost every country. Since the 1960s a drastic change in the position with regard to TFR-levels has occurred. Countries with traditionally high fertility rates became low-level countries
and vice versa. The countries with extremely low TFRs today are Spain, Italy, Bulgaria, Slovenia, Hungary, the Czech Republic, Estonia and Latvia. Within these countries wide ‘depopulation’ areas exist, and in some of them regional polarization seems to be on the increase, with declining and growing areas existing side by side.

Economic growth is often consequence of structural changes and this has a key place in the theory of economic growth. This means picking out that part of economic growth that has a connection with a transfer of the production factors – usually labour – from the less productive to the more productive parts of the economy. Of course growth effects of structural change do not have to be a consequence of transfer of labour in the literal sense but may equally well result from different parts of the economy, with different productivities, developing in dissimilar ways. The classical example is the transition from an agricultural society to an industrial society where the “transfer gains” explained much of the economic growth. This transformation process can even be applied to the development in Europe today and then also in disadvantaged or lagging regions. Here it must be kept in mind that most of the disadvantaged regions in Europe can be characterized as rural areas and many localized in the new member states.

Transfer of production factors – especially labour – from the primary sector to the secondary or tertiary sectors will, thus, stimulate the economic development in positive way with the restriction that the surplus of production factors can be absorbed in the industrial or tertiary sectors. The expanding sectors are usually localized in urban areas and the effect is a transfer of people from rural to urban areas and – in many cases – the gap between urban and peripheral rural areas will be diminished and perhaps also closed but at the ‘cost’ of redistribution of people from rural to urban areas.

The definitions of rural areas are manifolds and this results also in differing development paths concerning their localization and economic structure. Many rural areas have more in common with urban areas and the dividing line is more the population density than the employment structure. These regions that have taken advantage of the possibilities connected to the development towards the New Rural Economy (NRE) are often well-being regions characterized by gentrification and growth. Increasingly rural development policy thinking has been evolving according to far more complex notions of rural territories and rural economic life, taking into consideration the great variety of rural situations and contexts and the profound changes that have been taking place in rural Europe during the last decades. Many rural areas have also been shown to “out-perform” urban areas, many rural areas have been transforming in profound ways regarding socio-economic structure and economic base as well as regarding their regional contexts and roles and in many cases the very notion and concept of rurality as a territorial quality is challenged (SERA 2005, Johansson 2012, 2014).

Despite these tendencies, rural areas in peripheral areas in sparsely populated areas with a high share of the population dependent of the primary sector are in a quite another situation characterized by low incomes and lagging economic structure and small or none potentials to endogenous economic growth. Instead, rural exodus and depopulation have characterized these types of rural areas. The slow-down of the metropolitan population growth has not stimulated the development in these kinds of rural areas. The peri-urbanization process is quite another thing and seems more or less absent in these disadvantaged rural regions. The development of rural areas will thus be a central ingredient in this study as these areas are of great importance with regard potentials for as well as hampering factors concerning transformation and development in the disadvantaged areas. The effects of integration and globalization are then central ingredients in the story of “advantage of backwardness” as well as “missed opportunities” or “no” opportunities at all.

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A lesson to be learned from the narrative above is that when discussing shrinkage from a territorial point of view it is more or less necessary to use a long-term perspective and to differ between structural transformations and business cycles. This is perhaps more important when focus is on regional demographic development than other structural phenomena such as economic and social changes as demographic changes often also are a cohort phenomenon – large cohorts have quite other impact on regional development than small. In this way, regional shrinkage can in many ways sees as a cohort phenomenon especially with regard to the age group 18–30 when the migration intensities are as highest. The structural perspective is, thus, the primary reason for choosing a period as long as possible, in this paper the years 2001–2012 depending of the possibility/impossibility to construct continuously available data series and then to minimize the number missing data at NUTS3-level. A longer time perspective would of course be preferred but data problems stopped this.

The definition of shrinking regions that is used here is the annual changes from January 1 2001 to January 1 2013 – a twelve-year period. For simplicity’s sake the annual perceptual changes have been used as an indicator for shrinking or expanding regions – i.e. by the annual decline over the whole period (this is in line with other used definitions, see e.g. EC 2006, Ministry of Interior, Hungary 2011). This means that yearly fluctuations are hidden but the long-term development are highlighted. Series for the periods 2001–2008 and 2008–2013 are also constructed in order to investigate if there are a structural break 2008 or not but these series are not used here as a consequence the restricted number of pages to our disposal.

Some lessons can, thus, be learned from the historical transition with regard differing stages of growth concerning the leading and lagging from regions. This is valid from a historical point of view as well as cross-section comparisons of the situation today. Different regions in Europe are simultaneously in different development stages – some are still in more or less in some form of agricultural state while others are in the post-industrial phase. This is valid concerning comparisons between nations as well as within nations and this is valid especially for the disadvantaged regions in the European periphery compared to the more advantaged regions in Central and Northern parts of Europe. Without a long-term perspective the analysis of shrinking regions would be hampered and the effects of different economic stages would be hidden. A longer perspective would of course be a favor as there are time-lags in the transformation processes between differing parts of Europe between countries as well as within countries. It must be kept in mind that growing and shrinking regions have been natural ingredients in economic and regional transformation processes as a consequence of different growth preconditions and development stages. This is valid for relations between countries as well as within countries. A long-term perspective will then facilitate the analysis and detect the effects of time-lags in the transformation phases in a more comprehensive and analytical way.

In order to compare growing and shrinking regions the development paths concerning population sizes and the social-economic structures are used. The first typology is based on the demographic equation and the second typology is the EDORA economic-structural typology where the rural Europe is split in four different types with differing rural characteristics (for a more in-depth description see EDORA 2010, Copus and Johansson 2010).

**Sustainable and unsustainable population changes – A demographic typology**

In the ESPON 2006 project 1.1.4; “Spatial effects of demographic trends and migration”, a typology based on the demographic equation (i.e. regional population change = natural population change + net-migration) was produced. The six-fold typology comprised of combinations of the three

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demographic components. The result is a summary of the demographic situation in each region and the preconditions with regard to future population trends, shedding light on issues such as sustainability, population growth, depopulation and ageing. The typology was first presented in ESPON 1.1.4 and covered the period 1996–1999. It has since then been updated, developed and extended in relation to the period 2000–2005, in Copus et al. (2006), Johansson (2009) and in combination with the Edora Structural Typology in Copus and Johansson (2010). In this study the estimations have been developed to include almost every NUTS3-region (N=1294) within the "ESPON space". As "shrinkage topics" are a relatively new in regional science any explicit and straightforward common definition of "shrinkage" is not stated. Instead operational definitions are used as a consequence of the topic that are analyzed (for a discussion see e.g. Ubareviciene et al. 2014, Hoeckfeld 2012, Haase et. al. 2013). The demographic typology has been used here in order to identify growing and shrinking regions (types 1–3 and 4–6 respectively). This has also been done in some other studies concerning shrinking regions but without any explicit discussions like that in Table 10.1 with regard to demographic characteristics in the six types and then concerning the differing preconditions (European Parliament 2008, Ministry of Interior, Hungary 2011).

The estimations of natural population development are based on the number of births and deaths during the investigated period. Both total and natural population development include consequently the same number of years. The same will also be the case concerning the estimations of the migration balances. At regional level – in this case NUTS3 – it is, however, difficult to separate international migration from internal inter-regional migration as the migration variable is estimated as a residual. The six different types are presented in Table 10.1 where the types 4–6 consist of shrinking regions.

The Demographic typology and the distribution of the differing types are presented in Figure 10.1 and Table 10.2.

Some more or less tentative conclusions about the geographic development paths can be drawn from Figure 10.1. At a first glance the east-west dividing line is obvious with a growing west and shrinking east but even in the Northern periphery many regions can be characterized as shrinking. It is also indicated that the low fertility rates and natural population decline are hampering factors for a lot of European regions and especially then for the rural regions in Eastern Europe. The same is valid concerning migratory movements that reinforce the vicious circle in these regions. On the other hand migration is also the prime driver behind the overwhelming shares of the regions with a population growth. Migration has taken the dominant position in population development with respect to positive as well as negative population changes in most countries. The east-west divide is even more obvious in Figure 10.2 where only aggregate ‘growing’ and ‘shrinking’ regions are shown.

The result of the population development is, however, from a territorial cohesion point of view, not positive. As the population increase is concentrated to western and central parts of Europe and the population decrease to the peripheral parts there are tendencies to an unbalanced population development within the ESPON space and thus also an eroding territorial cohesion.

It must also be kept in mind that a large part of the migratory movements consists of international migration. In this paper it has not been possible to separate internal from external migration at regional level as migration is estimated as a residual in the demographic equation. Many studies have, however, shown that the international migration to Europe has increased during the past decades (see e.g. ESPON 1.1.4, 3.4.1, ESPON/DEMIFER 2010). The character of the

1 ESPON covers the EU27 plus “partner countries”, the principal ones being Norway, Switzerland, Lichtenstein, and Iceland but Croatia and Denmark are here excluded as a consequence of shortage of data.
Table 10.1. A schematic typology with regard to sustainable demographic development. PT is the total population change, PM the net-migration, PN the natural population change, and TFR the total Fertility Rate. Source: ESPON 1.1.4, Copus et al. 2006, Johansson 2009, Copus and Johansson 2010.

<table>
<thead>
<tr>
<th>Type</th>
<th>PT</th>
<th>PM</th>
<th>PN</th>
<th>Regional characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PT&gt;0</td>
<td>PM&gt;0</td>
<td>PN&gt;0</td>
<td>Double positive regions – In-migration and young population/‘high’ TFR. High sustainability both in short and long term. The most favorable case.</td>
</tr>
<tr>
<td>2</td>
<td>PT&gt;0</td>
<td>PM&gt;0</td>
<td>PN&lt;0</td>
<td>Growth regions with natural decrease – In-migration of people with low TFR. Natural population decrease because of top-heavy age structure and/or low TFR. Dependent on in-migration. No sustainability in long term – weak reproduction potential.</td>
</tr>
<tr>
<td>3</td>
<td>PT&gt;0</td>
<td>PM&lt;0</td>
<td>PN&gt;0</td>
<td>Growth regions with out-migration – Out-migration and young population/‘high’ TFR and natural population increase. Short term – sustainability. Long term – eroding sustainability because of top-heavy age structure (out-migration).</td>
</tr>
<tr>
<td>4</td>
<td>PT&lt;0</td>
<td>PM&lt;0</td>
<td>PN&lt;0</td>
<td>Declining regions with natural increase – Out-migration but still young population/‘high’ TFR. Traditionally high fertility regions. Falling TFR → low sustainability.</td>
</tr>
<tr>
<td>5</td>
<td>PT&lt;0</td>
<td>PM&lt;0</td>
<td>PN&lt;0</td>
<td>Declining regions with in-migration – In-migration and lop-sided age structure (old population)/low TFR. In-migration of elderly people and/or singles, low reproduction potential. Dependent on in-migration. Low sustainability both in short and long run.</td>
</tr>
<tr>
<td>6</td>
<td>PT&lt;0</td>
<td>PM&lt;0</td>
<td>PN&lt;0</td>
<td>Double negative regions – Out-migration and lop-sided age structure with old population/low TFR. No sustainability in short as well as long term. Depopulation. The worst case.</td>
</tr>
</tbody>
</table>

international migration has also shifted in character from labour to refugee immigration. This larger flow of foreign immigrants can also in many cases explain the increasing importance of migration in the population development and the concentration to the large urban agglomerations in the ‘old’ EU-member states.

In Table 10.2 the population size of the types are also estimated and related to the number of regions. From these figures it is also possible to see if large and small regions are over- or underrepresented within the six types. One way to analyze if various large regions are over- or underrepresented in the different types is to relate the relative distribution of the total population to the relative distribution of the number of regions. An index is then created by calculating the share of people in the relevant types in type divided with the share of total number of regions in type, and then multiply it with 100. If the result is over/under 100 the share of the population is higher/lower in the type compared to the distribution of the total number of regions and vice versa. The size index (si) can thus be written as:

\[
\text{si (Size Index)} = \frac{P_i}{R_i} \times 100
\]

\[P_i = \text{share of the total population in type } i \text{ (percent)}
\]

\[R_i = \text{share of all regions in type } i \text{ (percent)}
\]

(10.1)

The over- and underrepresentation with relation to population size is shown in Table 10.2.

From Table 10.2 it seems obvious that ‘Type 1’ is the most frequent, both with regard to number of regions and size of population. Growing regions take the lion’s share – 61.5 percent of the regions consisting of 72.1 percent of the population within the ESPON. This means that the size has some importance for growing or might be an effect of growth in the long-term. ‘Big is beautiful’ seems then to have some relevance even for growing.

Demographic and Economic Trends in a Rural Europe
Figure 10.1. The demographic typology for the period 2001–2012 (NUTS3, N=1294). Based on annual population change 2001–2012. Source: Estimations based on data from Eurostat.
Figure 10.2. Growing and shrinking regions within the ESPON Space. Based on annual population change 2001–2012. Source: Estimations based on data from Eurostat.
From the data used in these estimates it seems also obvious that Type 1 are frequent in the Pentagon, metropolitan areas in the Nordic countries and regions with good climate and amenities – e.g. the southern part of Spain. As was indicated above this type is, from a sustainable point of view, the most favorable, particularly in long-term. From other studies it has been shown that rural areas localized in those densely populated areas display the same preconditions for sustainable population development as the urban ones (ESPR 1.1.4 2005, Johansson and Kupiszewski 2009). This is also valid for Type 2 where small – often rural – regions are attractive from an in-migration point of view. From other studies it has been shown that both intermediate and predominantly rural areas are overrepresented in Type 2 (SERA 2005, Johansson and Kupiszewski 2009). This is also an indication that rural regions are automatically not synonymous with shrinking regions. Instead it is a hint about the importance of localization in differing macro regions – rural areas localized in well-being growing countries and macro regions will be growing and rural areas in problematic and declining countries and macro regions are more predestined to be a shrinking region.

This is also clearly illustrated by Type 6 that is the worst case from a sustainable point of view. Total population decrease in combination with natural population decrease and net out-migration is not a good starting point in order to create good possibilities for sustainable population development. As much as 24 percent of the regions with 17.5 of the inhabitants within the ESPON Space are in this situation, and the rural areas are overrepresented in comparison with the total figures. This is valid both for number of regions and population size. Many of these (rural) regions are located in the European periphery. Large parts of Sweden and Finland, the Baltic States, Hungary, Eastern Germany, parts of Poland, Spain and Portugal are to be found in this category. Many of these are also characterized as some form of rural areas. The common dominator with regard to these rural shrinking regions is sparse population and few inhabitants.

Table 10.2. The distribution among the types with regard to number of regions and population size. Note: Denmark and a few other NUTS 3 regions are not included due to missing data. Source: Estimations based on data from Eurostat.

<table>
<thead>
<tr>
<th></th>
<th>2001–2012</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
<th>Type 5</th>
<th>Type 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of regions (N=1294)</td>
<td>31.5</td>
<td>25.1</td>
<td>4.9</td>
<td>3.0</td>
<td>11.5</td>
<td>24.0</td>
<td></td>
</tr>
<tr>
<td>Population Size (N=1294)</td>
<td>42.7</td>
<td>20.4</td>
<td>9.0</td>
<td>3.4</td>
<td>7.0</td>
<td>17.5</td>
<td></td>
</tr>
<tr>
<td>Size/numbers</td>
<td>135.3</td>
<td>81.6</td>
<td>185.1</td>
<td>111.4</td>
<td>60.6</td>
<td>72.9</td>
<td></td>
</tr>
<tr>
<td>Index: neither/nor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rural Europe – an economic/structural typology

In the ESPON/EDORA-project an economic/structural typology with regard to the ESPON Space was clustered based on 18 economic and structural variables. For a more in-depth discussion about the variables and the clustering can be seen in EDORA 2010 and Cupus and Johansson 2010 (this paragraph is also based on EDORA 2010 and Cupus and Johansson 2010).

The principal findings with regard to the EDORA-types are (see also Maps 2):

Predominantly urban regions are primarily localized in Pentagon – the area that is delimited by London-Paris-Milan-Munich-Hamburg-London. Other predominantly urban regions are often to be found in capital regions and larger city regions as at the Spanish east coast (Barcelona and Valencia) or in the "old" British big city industrial districts (e.g. Liverpool, Manchester,
Newcastle and Birmingham) – cities and regions that are in huge transformations economically as well as socially.

_Agrarian regions_ are concentrated in a peripheral eastern and southern arc, stretching from the Baltic States, through Poland, Slovakia, Romania, Bulgaria and Greece, Southern Italy, southern France, southern and western Spain, and eastern Portugal (Alentejo).

The rest of the European space seems to be characterized by a patchwork of three types of rurality, _Consumption Countryside_, _Diversified (with Strong Secondary Sector)_ and _Diversified (with Strong Private Services Sector)_.

Of these the last seems to be to some extent associated with the most accessible areas and also the one that is most associated with the NRE.

_Consumption Countryside_ regions are often closely associated with _Agrarian_ ones but are also populated by people employed in the industrial and service sectors where a large share of the working people are dependent on wages and salaries. Indeed some Mediterranean regions, especially in Greece, meet according to the _EDORA_ estimations and rural delimitations the criteria for both types.

_Consumption Countryside_ regions cover much of Sweden and Finland, more accessible coastal areas of the Baltic States, parts of Slovenia, Austria, much of eastern and southern Germany, large parts of central and southern Italy, Corsica, southern and central France, eastern and northern Spain, the coastal regions of Portugal, and most of the less densely populated parts of the UK and Ireland.

The _Diversified (Strong Secondary Sector)_ regions are found in the Czech Republic, Slovenia, and Slovakia, northern and Eastern Germany, around Madrid, and in northern Spain, and the...
English Midlands. These regions can also be seen as industrial regions that in many cases are in a state of deindustrialization and transformation. Especially in the new member states they seem to be in a stagnating or retarding phase and lose people both as a consequence of natural population decrease and out-migration.

The last category – Diversified (Strong Market Services) is evident in northern and central France, northern Germany, southern Denmark, the Skåne region in the south of Sweden, parts of central England, southern Scotland, and in a few regions of Spain and Italy. In the New Member States this type of region is associated with regions close to national capitals (Budapest, Bucharest, Vilnius). As mentioned above this category is the one that is most associated with the NRE.

THE DEMOGRAPHIC AND THE EDORA ECONOMIC/STRUCTURAL TYPOLOGIES – DIFFERENT TYPES, DIFFERENT OUTCOMES

In this part of the study the Demographic types are cross-tabulated against the Structural types in order to investigate the differences between the five Structural types for sustainable population development and depopulation. Some conclusions can be drawn based on the tables below and consisting of almost all regions within the ESPON Space with the exception of Iceland. The number of regions and the size of the different Structural types are shown in Table 10.3 below.

Table 10.3. Size distributions of the five Structural types. Note: * Based on numbers of regions (nuts3) and population size (%). Size index (F1), over- or underrepresented with regard to size (index=100, neither nor).

<table>
<thead>
<tr>
<th>Structural Types, N=1294</th>
<th>% of N</th>
<th>% of size</th>
<th>Size index</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Predominantly Urban</td>
<td>31.2</td>
<td>42.6</td>
<td>136.4</td>
</tr>
<tr>
<td>1 Agrarian</td>
<td>16.3</td>
<td>14.0</td>
<td>85.8</td>
</tr>
<tr>
<td>2 Consumption Countryside</td>
<td>33.7</td>
<td>23.5</td>
<td>69.9</td>
</tr>
<tr>
<td>3 Diversified (strong secondary sector)</td>
<td>7.2</td>
<td>6.6</td>
<td>91.7</td>
</tr>
<tr>
<td>4 Diversified (strong market services)</td>
<td>11.5</td>
<td>13.2</td>
<td>114.8</td>
</tr>
</tbody>
</table>

Three Structural types are “overrepresented” in Type 1 – the most favorable type from a sustainable demographic point of view concerning the numbers of regions. These are the “Predominantly Urban” and the two “Diversified rural types”. All three have a higher share of regions in Type 1 compared to the total share of all ESPON regions (see Table 10.4). When the size aspects are taken on board in the analysis the Structural type 3 ”Diversified with strong secondary sector” is dropping off (Table 10.5).

The relatively good population development in the diversified countryside with a strong secondary sector is perhaps less expected. This type of region accounts for only 7.2 percent of the regions and 6.6 percent of the population within the ESPON Space, and are concentrated in the Czech Republic, Poland and Spain. The diversified countryside with a strong secondary sector has in many cases gone through a deindustrialization process with the result that these regions have experienced a vicious circle with regard to migration and natural population development. More than one third of these regions (34.4 percent) experienced net out-migration during the period 2001–2012 – perhaps a low figure for regions dependent on the declining manufacturing industries.
From Figure 10.4 it can be seen that the development in the diversified countryside with a strong secondary sector seems to show a polarized geographical localization. The expanding areas are to be found in the central or western parts of the Espon space while the retarding and declining ones are to be found in the old industrial districts in the new eastern member states but this structural type seems to be almost non-existent in these declining areas. This implies that the first category already had been reconstructed and changed the viscous circle to a virtuous one with population increase as one result. This seems, however, to have taken place during the deindustrialization period the decades before the new century. One explanation might be that the most unproductive units were closed down during the deindustrialization process and the most productive and knowledge-based survived even if employment decreased.

This indicates also that this was not the fact in the old state-owned factories in the former centrally planned economies in the East. Instead of renewal and reconstruction the development was in many cases characterized by rigidity and “lock-in” mechanisms that prolonged the negative development as one result. The ‘new rurality’ or the New Rural Economy seems neither to have been an alternative to the declining and stagnating economic development. These phenomena might be some of the reasons to the unstable and unsustainable demographic situation in some of these rural areas.

The diversified countryside with strong market services structural type accounts for 11.5 percent of the regions within the Espon Space and 13.2 percent of the population. This category shows good population development, as does the Consumption Countryside group which accounts for 33.7 percent of the regions and 23.5 percent of the population. The prime driver behind the good demographic development in these categories is – as usual – in-migration.

These high figures might be an effect of the ‘new rurality’ or the ‘New Rural Economy’ that has changed the performance of the countryside in many European countries and especially in densely populated rural areas in the surroundings of big urban agglomerations. The densely populated rural regions are in a more favorable position with regard to population change than other more peripheral rural regions. This is not especially surprising as densely populated rural regions have experienced a relatively positive population development during the past decades (Copus et al., 2006; Johansson & Kupiszewski 2009, Edora, Activity 2.11, Demography). Even if demographic development with regard to growth and decline is not a zero-sum game’ the contrary seems anyhow to be the case. Shrinking rural regions were – and still are – often remote and sparsely populated ones already from the beginning and then with bad preconditions for growth and development.

Despite the high in-migration figures in the categories “Consumption Countryside” and “Diversified (strong market services)” the effects of the natural population decrease hamper the positive population change. This seems to be a fact especially in Demographic Type 6 with both out-migration and natural population decrease (see Tables 4 and 6). It is not a qualified guess that many of these small regions might be sparsely populated and localized far away from the metropolitan areas. From Figure 10.2 and Figure 10.4 it seems obvious that it is the peripheral areas in the northern part of Europe that seems to be in the most troublesome situation but even central parts of Germany and some parts in the new member states are characterized by both natural population decrease and negative migratory balance. The regions in the eastern part of Europe show similarities with the agrarian regions in the same areas. This will result in a future precarious situation for these regions in general and for the rural ones especially.

This can be contrasted to the figures in the ‘diversified countryside with strong market services’ where only 8.8 percent of the regions with 5.5 percent of the population are in Demographic Type 6 (see Tables 4 and 6). In this category there were 45.3 percent of the regions with 63.4 percent of the population that was hurt by a negative natural population development in
Figure 10.4. The EDORA Structural Typology, 2011 version.
2001–2012. These rural areas are predominantly localized in the western part of Europe – and then especially in France – and it might also be in this kind of rural areas that the NRE has been established. It seems, however, also in this case to be small peripheral and sparsely populated rural regions that is hurt mostly by the demographic development with ageing and depopulation as one result (Johansson 2009, see also Figure 10.3 and Tables 4 and 5). The few blue spots are to be found predominantly in the eastern part of Europe.

The rural category with the most negative demographic development was the Agrarian. Only 35 percent of the regions with a population share of 33 percent showed population increase between the years 2001 and 2012. This negative development can also be illustrated by the fact that only 16 percent of the regions were to be found in Demographic Type 1 and as many as 44 percent of the regions and 49 percent of the agrarian population within the ESPON Space in Type 6. In other words, the Agrarian regions are in a very problematic situation from a sustainable demographic point of view. These regions are mainly found in Eastern Europe and parts of Spain and are associated with transformation problems. These regions are still waiting for the effects of the appearance of NRE and this situation is in many cases also reinforced by the economic transformation in other sectors that hamper the population development as a consequence of natural population decrease as well as net out-migration. In other words, these regions are not only in problematic situation created by the agrarian sector – instead the economy of the whole regions hamper population growth.

An indication of this is that even with regard to agrarian regions most of the rural regions in Eastern Europe are among the “degrading” ones. The overwhelming majority of these regions are in Bulgaria and Romania – countries that are characterized by a very deep and hard population crisis with population decline in both countries. The active component here is once again migration – internal as well as external – that is the prime driver in this downgrading process. Despite this precarious situation it seems that it is mainly the metropolitan areas that experience positive population development. In Bulgaria three NUTS3-regions had a positive population development and in Romania the corresponding figure was two for the period 2001–2012. The agrarian regions seem here – as in many other countries – thus to be involved in processes dominated by viscous circles and negative development spirals.

Table 10.4. The distribution of the Demographic types with regard to the five Structural types. Note: * Number of regions (%). Period 2001–2012. Combinations highlighted are those where the share (%) exceeds the average for all Structural types.

<table>
<thead>
<tr>
<th>Structural Types</th>
<th>% Demographic Types, N=1294</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 1</td>
</tr>
<tr>
<td>Total</td>
<td>31.5</td>
</tr>
<tr>
<td>0. Predominantly Urban</td>
<td>42.1</td>
</tr>
<tr>
<td>1. Agrarian</td>
<td>15.7</td>
</tr>
<tr>
<td>2. Consumption Countryside</td>
<td>27.0</td>
</tr>
<tr>
<td>3. Diversified (strong secondary sector)</td>
<td>37.6</td>
</tr>
<tr>
<td>4. Diversified (strong market services)</td>
<td>33.8</td>
</tr>
</tbody>
</table>

**LARGE REGIONS – BETTER PRECONDITIONS**

There are studies that have shown no correlations between growth and shrinkage on the one hand and on population density on the other. Instead the history can witness about both grow-
Table 10.5. The distribution of the Demographic types with regard to the five Structural types. Based on population size (%) 2001. Period 2001–2012. Note: * Size of regions (%). Period 2001-2012. Combinations highlighted are those where the share (%) exceeds the average for all Structural types.

<table>
<thead>
<tr>
<th>Structural Types</th>
<th>Size: % Structural and Demographic Types, N=1294, NUTS3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 1</td>
</tr>
<tr>
<td>Total</td>
<td>42.6</td>
</tr>
<tr>
<td>0. Predominantly Urban</td>
<td>52.2</td>
</tr>
<tr>
<td>1. Agrarian</td>
<td>17.2</td>
</tr>
<tr>
<td>2. Consumption Countryside</td>
<td>38.7</td>
</tr>
<tr>
<td>3. Diversified (strong secondary sector)</td>
<td>35.6</td>
</tr>
<tr>
<td>4. Diversified (strong market services)</td>
<td>47.7</td>
</tr>
</tbody>
</table>

and shrinking regions on densely populated areas as well the contrary – sparsely populated regions might experience "explosive" growth (European Parliament 2008 pp 34–35). This is, however, not the same as size has no importance for population growth and shrinkage. Already Ravenstein highlighted that – with references – to Newton – that the mass was pull and push factors depending on the size in in- and out-migration areas and, then consequently, also for demographic development (Ravenstein 1885, 1889).

In order to investigate the relation between population size and demographic development the size index (si) has been used here (Table 10.6) in order to investigate if the size has importance for the demographic development in the differing Structural types. si is identical as formula F1. By combining Tables 4 and 5 and the discussion above it seems obvious that large regions are in better positions concerning sustainable demographic development than small ones. As can be seen from Table 10.6 large regions are overrepresented in growing regions and underrepresented in shrinking ones. The overrepresentation in the growing Demographic types is valid for almost all Structural types except the diversified countryside with a strong secondary sector – in all other types are large regions overrepresented in the growing Demographic type 1 (Table 10.6).

It can also be noticed that large regions are overrepresented in Demographic Type 3. It must here be kept in mind that Type 3 is a small category. Among the rural regions the highest share is to be found in the category diversified countryside with strong market services with 9 percent of the regions and 14 percent of the population in this Structural category (see Tables 4 and 5). The total demographic distribution in relative terms is 5 and 9 percent respectively. This means also that small absolute changes may result in large relative effects with regard to the size index and the results ought to be interpreted with some care. One illustration of these shaky results is the large overrepresentation of almost all Structural types for the Demographic type 3. The same reasoning is also applicable with respect to Demographic type 4. This type shows, however, declining regions and this is also a hint that large regions have better demographic development preconditions than small ones. It is only the agrarian regions that are overrepresented in this type. As can be seen, large agrarian regions are overrepresented also in Demographic type 3. These large agrarian regions are thus characterized by a combination of out-migration and natural population increase. This is also an indication of the old truth that agrarian regions have higher fertility than the more urban ones were children is more alike a consumption product than a production factor (Becker 1993). This gap has, however, diminished as a consequence of the economic and social transformation, out-migration and “defamilization” even in peripheral agrarian areas (ESPON 1.1.4 2005, Johansson 2012).

Mats Johansson, Pia Nilsson, and Hans Westlund
Table 10.6. Over- and underrepresentation of the various demographic (ESPON) types with regard to population size 2001 in the differing Structural types. Period 2001–2012. Note: Over 100 = large regions overrepresented, under 100 = large regions underrepresented. Combinations highlighted are those where large regions are overrepresented.

<table>
<thead>
<tr>
<th>Structural Types</th>
<th>Size/numbers: Edora/Demographic Types, N=1294. NUTS3.</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
<th>Type 5</th>
<th>Type 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td>135.3</td>
<td>81.6</td>
<td>185.1</td>
<td>111.4</td>
<td>60.6</td>
<td>72.9</td>
</tr>
<tr>
<td>0. Predominantly Urban</td>
<td></td>
<td>123.9</td>
<td>73.4</td>
<td>191.2</td>
<td>148.6</td>
<td>51.8</td>
<td>67.5</td>
</tr>
<tr>
<td>1. Agrarian</td>
<td></td>
<td>109.4</td>
<td>53.4</td>
<td>149.5</td>
<td>127.7</td>
<td>65.8</td>
<td>111.3</td>
</tr>
<tr>
<td>2. Consumption Countryside</td>
<td></td>
<td>143.2</td>
<td>102.2</td>
<td>129.8</td>
<td>110.3</td>
<td>80.0</td>
<td>62.7</td>
</tr>
<tr>
<td>3. Diversified (strong secondary sector)</td>
<td></td>
<td>94.6</td>
<td>87.7</td>
<td>139.9</td>
<td>116.1</td>
<td>87.3</td>
<td>112.0</td>
</tr>
<tr>
<td>4. Diversified (strong market services)</td>
<td></td>
<td>141.2</td>
<td>75.4</td>
<td>161.5</td>
<td>56.8</td>
<td>43.1</td>
<td>62.7</td>
</tr>
</tbody>
</table>

10.3 Regional characteristics behind growth and shrinkage

Besides the demographic and economic-structural factors discussed above there are a number of additional regional characteristics that may influence regional population growth, and shrinkage, in regions classified as both urban and rural. It is for example well established that the level of human capital in a region is one significant factor that influence growth in income and population. In all its essence, people are a significant part of the wealth of regions in terms of what labor contributes to output. The productive capacity of the regional population is known to be larger than other forms of wealth taken together and a primary factor that influence regional growth patterns (Barro 1991; Rauch 1993). Moreover, many of the key factors that drive regional growth can be related to the existence of knowledge spillovers and supply of human capital (Becker, 1964; Asheim, 1999). Hence, as people invest in themselves by acquiring education and experience they augment not only their own productivity and income, but also the capacity of the region to grow. In the view that individuals drive regional growth, the overall level of human capital in a region becomes a central factor, in the perspective of population development, since differences across regions can influence regional growth patterns. However, human capital does not only produce externalities in terms of productivity but also in terms of consumption that are of importance in this perspective (Haveman and Wolfe 1984). Such consumption externalities capture a wide range of welfare effects in the social environment that benefit the majority of the regional population. Two such benefits are the democratic involvement and social cohesion, which are both functions of the education level and literacy rate (Blundell, et al. 1999).

As stated by the endogenous growth theory, a higher initial level of human capital can bring a one-time increase in the income level or increase the income growth rate (Romer, 1990). This implies that enhancements in human capital have both a level and/or a growth effect. What follows from this is that a region with a larger share of highly educated individuals will successively grow to be wealthier compared to regions that have lower shares (Becker 1964; Blundell et al. 1999; Funke and Strulik 2000). Besides level effects, regions that have a high overall level of human capital are also shown to experience a cumulative process of higher growth in the human capital level (Moretti 2004). However, the influence of human capital on growth does not only depend on individual characteristics but also on the presence of both demand and supply effects. These effects mainly appear in the form of educational infrastructure and the presence of knowledge intensive firms that influence the regional ability to produce human capital, to replace any that it might lose through migration and to prevent human capital from exiting the region (Rauch 1993). Hence, there are reasons to believe that the influence of human capital
on growth varies depending on regional characteristics with regards to industry structure and degree of urbanity.

The contrary to growth is shrinkage and what is said above is then also relevant for shrinking regions but in the opposite way. Shortage of human capital is often seen as a central factor behind shrinkage and stagnation. This kind of reasoning has much in common with the product-life cycle theory and development can be seen as a consequence of the spatial product-life cycles that transform the economic landscape and where the shrinking regions often are in the matured phases (Friedrich 1993). One effect is the increased polarization between growing and shrinking regions and ‘brain-drain’ to the expanding knowledge-based areas. This ‘cumulative causation’ process is often a central ingredient in differing kinds of transformation and polarization processes where the ‘backwash effects’ are larger than the ‘spread effects’ (Myrdal 1957, see also McCann 2001, pp. 197–200). History can also stand witness to this kind of processes with e.g. industrialization and de-industrialization as obvious and illustrative cases where differences and changes in human capital are both causes to and effects of growth and decline.

The size of human capital is also a function of the demographic structure in a region as human capital in many ways is a cohort phenomenon. Regions with young population differ from regions with an ageing population with regard to human capital. For our purpose it is then interesting to check if the age structure is of importance for regional growth and shrinkage. The problem here is – as in many other estimations – to isolate causes and effects. A changed age structure is often an effect of in- or out-migration but it has also impact on the preconditions for growth and the risk for shrinkage. It is also a well-known fact that various cohorts have differing migration patterns and this might also have impact on the level of human capital and the production factor of labor (ESPON 1.1.4, 2005). It shall also be kept in mind that different age groups have differing consumption patterns and demands with regards to different kinds of products seen from a local and regional point of view and then different impact on growth and decline. This means that the age structure has differing impact on population growth and decline on population changes and this is an argument for taking the age structure on board in the analysis.

The Total Fertility Rate (TFR) is of importance through its impact on natural population change and then also on total population change. It must, however, be kept in mind that migratory movements also have impact on natural development as it is predominantly the most active and fertile age groups that are on the move (ESPON 1.1.4 2005, DEMIFER 2010). During the past decades most of the countries in Europe have seen a decrease in TFR but with some time-lags between the dropping TFRs in the east and the higher and more stabilized in the west. Today there is an east-west divide with regard to TFR-levels and this accentuates the divergent population development between the ‘old’ and ‘new’ EU-members (Johansson 2014). This means also that the age structures in east and west will be more similar in the sense that the reproduction potentials in Eastern Europe will be eroded – a process that started some decades earlier in the southern and western parts of Europe. This is the primary argument for integrate TFR in the estimations about factors behind regional population growth and shrinkage.

The Gross Regional Product (GRP) is another factor that usually is suggested to be of importance both for migration and natural population changes. According to many migration models income differences are suggested to be of great importance as pull and push factors. The effects on natural population development might be more problematic to specify from a theoretical point of view as it is necessary to distinguish between levels and changes and incomes and prices. With regard to the two latter factors it can be problematic to separate the income effects from the price or substitution effects. It is also important to separate children’s function as production factor – as in the agricultural society – from children as consumption factor as
in the post-industrial society (see e.g. Becker 1993 about this discussion). As a consequence of data problems GRP is not integrated in the multivariate regressions but only in the bivariate ones (see the correlation matrices in Appendix A).

It is also of significance to separate the levels from changes in the GRPs. It has been shown that since the middle of the 90s and up to the middle of the 00s the income levels between the European countries have converged but diverged within the countries (Button and Pentecost 1999, Halmai and Vásáry 2010). This is, at least partially, a catching-up effect as the start in especially the countries in Eastern Europe stated from a low level – ‘starting from scratch phenomenon’ that resulted in a fast income growth.

As the development in Europe has been of quite different character dummies for the ‘old’ EU-member states and the ‘new’ ones have been integrated in the regressions. The effect of this can be seen as with regard to the other factors in the tables below (Table 10.10 and Table 10.10).

10.4 Data and empirical model

For the purpose of explaining the influence of key underlying demographic factors on population growth across Europe the paper applies a cross-regional regression model. The research unit is NUTS 3 regions and the dependent variable is the total change in population measured over the periods 2001–2012, 2001–2007 and 2007–2012. The degree to which demographic factors along with relevant control variables are observable at finer aggregation levels is limited and the variables that we use are attained from Eurostat at either NUTS 2 or NUTS 3 level. Variables are measured at the finest available aggregation level in Eurostat implying that all variables are measured at the NUTS 3 level except human capital and total fertility rate which are only attainable at the NUTS 2 level. There are several problems associated with the use of these data in empirical analysis of growth, particularly with regards to the high aggregation level. One such problem is that some NUTS regions correspond very closely to functionally defined regions whereas others are extensive and economically very heterogeneous. Some even contain one or more different types of metropolitan regions within them. In cases when regions correspond closely to their functional definition it is possible to obtain consistent estimates of factors that may influence regional population growth. However, in cases where regions are very heterogeneous it is difficult to define variables that consistently measure growth. Having this in mind, considerable care has been undertaken to define variables and model the underlying demographic processes. Variables used in the empirical analysis are obtained from Eurostat and defined in Table 10.7 and summary statistics are presented in Table 10.8.

EMPIRICAL MODEL AND ESTIMATIONS

The empirical approach in this paper is to estimate an equation to analyze the influence of key demographic factors along with control variables on population change across rural European regions. The main purpose of the analysis is to compare estimates across regions defined as shrinking or growing with regards to their population sizes. The results from running preliminary auxiliary regressions and using a White test indicate that we are able to reject the null hypothesis of homoscedasticity of the model and we therefore apply the generalized least squares (GLS) method to estimate the growth equation. In order to build an implementable version of GLS we apply the standard two stage procedure to obtain a Feasible Generalized Least Squares (FGLS) estimator (Kmenta, 1986). This implies using the residuals estimated by OLS to build a
Table 10.7. Variables and definitions. Source: Eurostat. Independent variables are retrieved for the base year 2001 alt. closest available year when values are missing.

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC 01–12</td>
<td>Population change measured as total annual change in population (exponential) by NUTS 3, 2001–2012.</td>
</tr>
<tr>
<td>PC change 01–07</td>
<td>Population change measured as total annual change in population (exponential) by NUTS 3, 2001–2007.</td>
</tr>
<tr>
<td>PC 07–12</td>
<td>Population change measured as total annual change in population (exponential) by NUTS 3, 2007–2012.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent variables</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Netmig 01–12</td>
<td>Total annual net migration by NUTS 3, 2001–2012.</td>
</tr>
<tr>
<td>Age +65</td>
<td></td>
</tr>
<tr>
<td>Age –15</td>
<td></td>
</tr>
<tr>
<td>TFR</td>
<td></td>
</tr>
<tr>
<td>HC</td>
<td>Human capital measured as share of population aged 25–64 with tertiary education by NUTS 2, 2001.</td>
</tr>
<tr>
<td>GRP</td>
<td>Per capita income measured by GRP/population by NUTS 3, 2001 (in € 2011).</td>
</tr>
<tr>
<td>Density</td>
<td>Population density measured as inhabitants per square kilometer by NUTS 3, 2001.</td>
</tr>
<tr>
<td>New MS</td>
<td>Dummy indicating countries Not included among the EU 15 member states.</td>
</tr>
</tbody>
</table>

Consistent estimator of the errors covariance matrix which is then used in the estimation. Hence, a growth model of the following form is estimated:

\[ PC_{t,i} = PC_{2001} + X'\beta + Y'\delta + Z'\gamma + \epsilon_i, \quad (10.2) \]

where \( PC \) denote the total annual change in population, \( t \) is either 2007 or 2012 and \( i \) denote the NUTS 3 regional level. Moreover, \( X \) denote the variables included to explain demographic factors (net migration, age structure and TFR), \( Y \) denote regional characteristics in terms of the initial levels of human capital, density and per capita income and \( Z \) denote variables that control for economic-structural factors using the edora typology.

Regression results are reported in Tables 10–11. In a first step, we estimate the model using the total sample of NUTS 3 regions and in two different specifications. The first specification includes the variables explaining demographic factors and the second specification adds the variables controlling for regional characteristics. In a second step, we estimate the model across the demographic typology to examine the relative importance of explanatory variables between regions that are either defined as growing or shrinking.

Before turning to the results, significant correlations among the regressors mainly arise between variables included in the demographic equation measuring the natural change in population (death minus births), net migration, age structure and fertility as indicated in the correlation matrix below:

Since the natural change in population (Nach 01–12) is a function of both age structure (Age 65+ and –15) and fertility (TFR) these parameters have to be estimated separately implying that natural change in population is excluded from the final model. Similarly, since per capita income is a function of both the size of regions in terms of their populations and the marginal productivity of labor, there is also significant correlations between the initial levels of per capita income, human capital and population density (correlation matrices are presented in Appendix A). It should be mentioned that per capital income is statistically significant at the one per-
Table 10.8. Summary statistics.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC 01–12</td>
<td>0.1033</td>
<td>0.730</td>
<td>-3.117</td>
<td>4.601</td>
</tr>
<tr>
<td>PC 01–07</td>
<td>0.195</td>
<td>0.770</td>
<td>-3.523</td>
<td>6.730</td>
</tr>
<tr>
<td>PC 07–12</td>
<td>-0.002</td>
<td>1.052</td>
<td>-7.189</td>
<td>3.680</td>
</tr>
<tr>
<td>Netmig 01–12</td>
<td>0.163</td>
<td>0.570</td>
<td>-2.952</td>
<td>5.827</td>
</tr>
<tr>
<td>Netmig 01–07</td>
<td>0.254</td>
<td>0.625</td>
<td>-3.460</td>
<td>3.744</td>
</tr>
<tr>
<td>Netmig 07–12</td>
<td>0.082</td>
<td>0.865</td>
<td>-6.886</td>
<td>5.827</td>
</tr>
<tr>
<td>Age +65</td>
<td>1</td>
<td>3.596</td>
<td>0.1</td>
<td>28.075</td>
</tr>
<tr>
<td>Age –15</td>
<td>1.863</td>
<td>2.610</td>
<td>0</td>
<td>28.075</td>
</tr>
<tr>
<td>TFR</td>
<td>1.553</td>
<td>0.263</td>
<td>1.07</td>
<td>2.27</td>
</tr>
<tr>
<td>HC</td>
<td>20.001</td>
<td>7.853</td>
<td>3.70</td>
<td>48.9</td>
</tr>
<tr>
<td>GRP</td>
<td>19250.31</td>
<td>11396.52</td>
<td>800</td>
<td>145700</td>
</tr>
<tr>
<td>Density</td>
<td>448.85</td>
<td>1037.135</td>
<td>1.1</td>
<td>20317.4</td>
</tr>
<tr>
<td>New MS</td>
<td>0.201</td>
<td>0.401</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**EDORA typology**

| Predominantly urban | 0.313 | 0.464 | 0 | 1 |
| Agrarian            | 0.161 | 0.368 | 0 | 1 |
| Consumption countryside | 0.337 | 0.472 | 0 | 1 |
| Diversified strong secondary sector | 0.072 | 0.259 | 0 | 1 |
| Diversified strong market services | 0.115 | 0.319 | 0 | 1 |

**Demographic typology**

| Growing regions    | 0.012 | 0.487 | 0 | 1 |
| Shrinking regions  | 0.379 | 0.485 | 0 | 1 |

Table 10.9. Correlations of key variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>PC 01–12</th>
<th>Netmig01–12</th>
<th>Natch 01–12</th>
<th>Age +65</th>
<th>Age –15</th>
<th>TFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC 01–12</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netmig 01–12</td>
<td>0.9101</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natch 01–12</td>
<td>0.6704</td>
<td>0.301</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age +65</td>
<td>0.297</td>
<td>0.028</td>
<td>-0.7356</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age –15</td>
<td>0.376</td>
<td>0.122</td>
<td>0.6455</td>
<td>-0.567</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>TFR</td>
<td>0.419</td>
<td>0.221</td>
<td>0.569</td>
<td>-0.307</td>
<td>0.618</td>
<td>1</td>
</tr>
</tbody>
</table>

2 Similarly, controlling for industry using share of employment in NUTS 3 regions within sectors defined according to the NACE rev. 2 classification add very little to the final model and is therefore excluded. Since the EDORA typology was formulated to reflect the most important differences in economic structure across European regions, controlling for the typology also implies that we indirectly control for industry structure.

3 If the condition number is less than 100, there is no serious problem with multicollinearity, while condition numbers

...
time periods allows us to examine if macroeconomic conditions have any influence on the results since these time periods include high growth periods (2001–2007) and periods in which most of the European countries have faced downturns in economic growth, predominantly due to the financial crisis of 2008.

**Regression results**

Table 10.10 presents the results from running the regression model in (10.2) including the independent variables defined in Table 10.8. In a first step, the model is estimated using the full sample of NUTS 3 regions, thereafter controlling for regional heterogeneity by adding regional characteristics and the EORA structural typology (Table 10.10). In a second step we examine the influence of the parameters using the demographic typology that divides NUTS 3 regions into shrinking and growing regions according to the discussion above, these results are presented in Table 10.11.

From Table 10.10 it can be seen that adding parameters to the model improves the explanatory power and the fit of the model, the Akaike criterion reduces from 7001 to 5623, comparing the first two specifications. Moreover, judging from the contextual variation, the adjusted R square for the two specifications across the three time periods range from 0.948 – 0.967, indicating that the parameters in our model are able to explain a significant part of the total variance in population change. The parameters of the demographic equation are shown to be significant and robust across the estimations, though the magnitude of the coefficient values is reduced when regional characteristics are controlled for.

In line with expectations, the estimated parameter of net migration ($\text{netmig}$) is associated with a positive and significant value, such that increases in net migration are positively related with population change. The relative magnitude of the estimate also indicates that net migration is an important source of growth over the studied time periods. These results are in line with the theoretical discussion where migration is seen as a key factor influencing population growth discussed above. The parameters reflecting age structure ($+65$ and $-15$) have the anticipated signs reflecting reproduction potential such that regional population growth is negatively related with a high initial share of senior individuals in the regional population base and positively related to a high share of young individuals. The parameter reflecting fertility rate also has the anticipated positive and significant effect on population growth and is shown to be robust across the estimations.

Turning to the variables indicating human capital and population density. Like many previous studies, we also find that human capital (measured by share of regional population that has tertiary education) is an important determinant of growth (Funke and Strulik, 2000; Badinger and Tondl, 2003; Cohen and Soto, 2007). The parameter reflecting human capital indicates a consistent positive and significant estimate across the two specifications and across the time periods. Although the parameter is shown to be significant in statistical terms its significance from an economic viewpoint is indicated to be relatively low. This suggests that the regional level of human capital does not have broader direct impacts on population change. Beeson et al. (2001) and Backman (2013) show that the measured effect of human capital is greatly reduced when measures of educational infrastructure (e.g. presence of universities) are added to the regression, suggesting that it is not just the stock of human capital that matters, but also the regions between 100 and 1000 reflects moderate to strong multicollinearity (Montgomery et al., 2001).

---

The multicollinearity indicated by bivariate correlations is low and the estimates are robust with regards to their signs and magnitude across the estimations.
ability to produce more human capital and to replace any that it might lose through migration. Furthermore, as we proxy education or the level effect of knowledge by share of population that have tertiary education in our empirical research this may lead to biased interpretations of impacts when general intellectual achievement of school graduates changes over time and perhaps in nonlinear ways (Beeson et al. 2001). As a result of the high level of aggregation used in this empirical study we are not able to control for all these demand and supply effects since they occur at a much more disaggregated level (Bjerke, 2012; Backman, 2013).

Turning to population density, which is included to control for the size of the initial population base reflecting urbanity and to some extent also agglomeration effects. The parameter is positive and significant indicating that the initial level of the type of externalities and advantages that arise as a result of urbanization (i.e. shared infrastructures, institutions and other benefits being associated with larger cities and densely populated urban regions) are positively associated with population growth (Essletzbichler 2013). However, the economic significance is indicate to be very low, similarly to what was found for human capital (0.00002 to 0.00004). In line with the previous discussion, the type of externalities that are associated with larger cities and densely populated urban regions may vary widely in their geographical reach (Van Oort 2007; Rosenthal and Strange 2008; Andersson, Klaesson and Larsson 2012). Hence, it is not realistic to believe that we are able to capture the actual influence of density with the type of data that we have access to with regards to aggregation level.

Table 10.10. Regression results, FGLS estimation. Note: **Significant at 1% level, * significant at 5% level, * significant at the 10% level. Dependent variable pc: (total annual population change). Predominantly urban is the omitted category.

### Table 10.10.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Spec 1: estimated growth equation</th>
<th>Spec 2: estimated growth equation with control variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net migration</td>
<td>1.12*** (0.007)</td>
<td>1.06*** (0.007)</td>
</tr>
<tr>
<td>Age 0–19</td>
<td>-0.04*** (0.006)</td>
<td>-0.04*** (0.006)</td>
</tr>
<tr>
<td>Age 20–64</td>
<td>0.01*** (0.005)</td>
<td>0.03*** (0.005)</td>
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<td>TSR</td>
<td>0.29*** (0.050)</td>
<td>0.31*** (0.050)</td>
</tr>
<tr>
<td>HIC</td>
<td>0.001* (0.0005)</td>
<td>0.001* (0.0005)</td>
</tr>
<tr>
<td>Density</td>
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<td>1.54–0.04 (5.13–00)</td>
</tr>
<tr>
<td>New MS</td>
<td>-0.33*** (0.013)</td>
<td>-0.38*** (0.014)</td>
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</table>

### EDORA typologies

<table>
<thead>
<tr>
<th>Agrarian</th>
<th>Consumption countryside</th>
<th>Diversified strong secondary sector</th>
<th>Diversified strong market services</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.04*** (0.013)</td>
<td>-0.04*** (0.015)</td>
<td>-0.04*** (0.015)</td>
<td>-0.04*** (0.015)</td>
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<tr>
<td>0.01* (0.017)</td>
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<td>0.001 (0.015)</td>
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### F value

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<th>5832.83</th>
<th>6547.87</th>
</tr>
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### Comparison between shrinking and growing regions

The discussion so far has been focused on the influence of key demographic factors on population growth in Europe. The central question addressed in this paper is whether the relative importance of key determinants of population change varies across regions defined as either shrinking or growing. In order to answer this question we divide our sample of European NUTS 3 regions into those defined as shrinking regions and those defined as growing with regards to...
the different underlying components that explain population development. These results are presented below.

Table 10.11. FGLS regression results across demographic typology. Dependent variable total population change 2001–2012. Note: ***Significant at 1% level, ** significant at 5% level, * significant at the 10% level.

<table>
<thead>
<tr>
<th>Typology</th>
<th>Growing regions (type 1, 2, 3)</th>
<th>Shrinking regions (type 4, 5, 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff. (Std.Err.)</td>
<td>Coeff. (Std.Err.)</td>
</tr>
<tr>
<td>Netmig</td>
<td>1.016*** (0.013)</td>
<td>1.00*** (0.014)</td>
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<tr>
<td>Age +65</td>
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<td>−0.078*** (0.001)</td>
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<td>Age −15</td>
<td>0.016*** (0.006)</td>
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<tr>
<td>TFR</td>
<td>0.160*** (0.036)</td>
<td>0.171*** (0.031)</td>
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<tr>
<td>HC</td>
<td>0.001** (0.0006)</td>
<td>−0.0002 (0.0007)</td>
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<td>Density</td>
<td>0.00002*** (5.72e−06)</td>
<td>0.00006 (0.00002)</td>
</tr>
<tr>
<td>New ms</td>
<td>−0.143*** (0.016)</td>
<td>−0.446*** (0.022)</td>
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<tr>
<td>Constant</td>
<td>0.591*** (0.102)</td>
<td>1.224*** (0.098)</td>
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</table>

Starting with regions classified as growing, the results are shown to be in line with the estimates presented above. All of the parameters included in the estimated growth equation are statistically significant and have their anticipated signs. This is also the case for parameters reflecting initial levels of human capital and density. However, the results for shrinking regions show some differences. The results indicate that none of the variables Age −15, HC and density are significant in explaining population growth in regions classified as shrinking. One possible explanation to the insignificance of Age −15 is that many shrinking regions tend to have a large share of children in their population base since the ones that migrate tend to be in the age group 20–30/35. By contrast the TFR tend to be low, although it has not reached its full effect yet.

An insignificant estimate for human capital is also reasonable considering that shrinking regions tend to have a lower education level in general. The ones that migrate from these regions are likely to search for higher wages and improved matching in terms of job opportunities and would naturally be drawn to regions that are growing. Furthermore, since educated individuals are more mobile than educational infrastructure (e.g. institutions for higher education), regions with permanent educational infrastructure that are capable of replacing erosion also have more significant growth advantages with regards to human capital. With some exceptions, educational infrastructure, especially those for higher education tend to be found in urban regions. This would suggest that shrinking (rural) regions do not have the necessary infrastructure to create neither level effects nor cumulative growth effects in human capital.

10.5 Excursus: Social capital in shrinking regions

Do shrinking regions in Europe share a similar social capital? Is the social capital of shrinking regions a function of their characteristic as shrinking? Or can the social capital of shrinking regions be or become a tool for new development and growth?

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The current data situation on social capital of European regions does not provide the necessary information to answer these questions. Social capital, i.e. social networks and the norms, values, etc. that are being distributed within them is best measured by interviews and questionnaires to individual actors. There are a very limited number of questionnaires that provide any potential measures of social capital of European regions. One of the few exceptions is the European Value Survey, which question on peoples’ opinion on whether most people can be trusted, often is used as a measure of the social capital of a region.

Other measures of regional social capital are sometimes collected from statistics of certain activities, e.g. turnouts in elections or the number of (registered) civil associations per capita.

As pointed out by Westlund and Adam (2010), the measures being used in available research on social capital above the individual actors’ level, are measures of social capital of the civil society. They claim that when it comes to issues such as economic growth or general development of regions, it is unlikely that it is civil society’s social capital that exerts the strongest influence. Instead, it should be the social capital of firms and other economy-related forms of social capital that should have the strongest impacts. However, for these types of social capital there are hardly any available data above the level of individuals firms.

Thus, with the current data situation at European level it is not possible to empirically investigate the composition of the social capital of shrinking regions, nor is it possible to investigate its possible impact on the development of these regions. We will here instead present and theoretically discuss some possible (and sometimes contradictory) hypotheses on the relationship between Europe’s shrinking regions and their social capital. The hypotheses should be empirically tested when possible measures of social capital are available for comparable analysis.

**Some possible and alternative hypotheses on the social capital of shrinking regions**

**H1: Shrinking regions are characterized by a more homogeneous social capital than growing regions**

This hypothesis is based on the assumption that the shrinkage process, foremost outmigration, makes the actor composition in the region more homogeneous – something that should be reflected in its social capital. The hypothesis can find support if outmigration is dominated by other groups (e.g. age groups) than the stayers and/or in-migration is dominated by similar groups as the stayers. As migration in Europe is dominated by the age group 18–30 years, the outmigration from the shrinking regions should contribute to an ageing population in these regions, which, *ceteris paribus*, should result in a more homogeneous social capital.

Other factors having an impact on the social capital might also be connected to age. It can e.g. be assumed that younger people have a more modern education and other working skills than the older ones, which, if the younger move away, contributes to a stronger regional homogeneity regarding human capital and skills. This will then also be replicated in a more homogeneous social capital.

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5 One national exception is the Swedish Federation of Enterprise’s yearly questionnaire to 200 companies in all Sweden’s 280 municipalities, in which the local “business climate” is investigated. Westlund et. al (2014) have used the replies on one of the questions on the companies’ opinion on local business climate as a measure of local “entrepreneurial social capital”, and found that it has a significant impact on start-up rates.
H2: Shrinking regions are characterized by a social capital with more conservative, backward-looking norms and values.

This hypothesis is based on similar assumptions as H1, i.e. that it is mainly the young people with a more modern education and skills that move. Further it is based on the assumption that younger people are more forward-looking, while older people are more backward-looking. If these assumptions hold, H2 might be relevant.

H3a: In the dichotomy of bonding and bridging social capital, shrinking regions are characterized by an overweight of bonding social capital.

H3b: In the dichotomy of bonding and bridging social capital, shrinking regions are characterized by an overweight of bridging social capital.

The division of social capital in “bonding” and “bridging” was originally done by Putnam (2000) and has generated a large literature. Bonding refers to a social network in which a) the dominating links are internal to the organizational or spatial unit in question (in this case the region) and b) the norms and values are preserving the existing norms, values and social networks. Bridging, on the other hand, refers to social networks in which influential links are connected to other organizational or spatial units, which facilitate for other norms and values than the dominating to establish and spread within the organization, place or region.

In line with the discussion on H1 and H2 it can be argued that shrinking regions, if they consist of an aging population with a more homogeneous social capital, also are regions characterized by an overweight of bonding social capital. This is, however, not always necessary. Regions with a large outmigration should also be regions with comprehensive links to the new regions of the former residents – i.e. bridging social capital. The characteristics of these bridging links and networks can vary from purely civil, leisure contents to more economic and growth oriented features. It can be assumed that the relative share of these features of a region's bonding social capital has an impact on the region's development potential.

H4a: Shrinking regions are characterized by a shortage of entrepreneurial social capital.

H4b: Shrinking regions compensate for lack of other development factors by developing entrepreneurial social capital.

The reasons that certain regions suffer from outmigration and decreasing population are mainly economic and connected to work and education opportunities and welfare. Depending on its characteristics and composition, social capital can either enhance or counteract the shrinking processes, by supporting new employment opportunities – or not. It might also be the case that the shrinking process eventually makes the local market for many activities and services so limited that that few firms can have any employees. These services and local products only need to be produced by self-employed actors. Under such conditions, shrinking regions can develop a stronger entrepreneurial social capital compared with regions with large, dominating employers.

The conclusion is that neither of the two alternative hypotheses can be supported on beforehand.

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H5a: The social capital of shrinking regions varies with the historical reasons of the shrinking process.

H5b: The social capital of shrinking regions has strong similarities across Europe.

Based on our discussion on H1 and H2 it can be argued that shrinking regions have in common not only that they are shrinking but also the reasons for the shrinkage (job losses due to structural change, growth and labor demand in other regions, etc.). This would then in the next step imply that also the social capital of the shrinking regions would be similar across Europe, which is in line with H5a. On the other hand, a shrink-promoting factor such as structural change can consist of very different processes. The chock that hit many rural regions in eastern and central Europe after the fall of communism was e.g. of a different and more severe nature than the deindustrialization that has hit many urban regions, as urban regions have a higher market potential for starting up new local companies. These example calls for a further differentiation of shrinking regions after the type of shrinkage process – and probably also after their types and compositions of their social capital.

10.6 Conclusions

From the analysis above following conclusions can be dawn:

• Migration is the prime driver both behind population growth and shrinkage.
• Migration will change the age structure and the reproduction potentials as it is the most active and fertile age-groups that dominate the migration flows.
• Large regions are in a better position with regard to population growth and experience less risk for shrinkage. This is valid for almost all economic-structural types (EDORA-types).
• This seems also to be valid for ‘density’ that show significant positive signs concerning its impact on growth and shrinkage.
• There is clear east-west divide concerning growth and shrinkage. This is primarily an effect of huge net out-migration from the east to the west but also population redistributions with the ‘new’ EU-member states in a monocentric direction.
• The ‘new’ EU-member states have also negative impact on the population changes.
• Growing regions are ‘young’ regions in the sense that the share of children and TFR are correlated in a positive way to population changes.
• Ageing regions are ‘old’ regions in the sense that the share of elderly people (65+) has negative influence on population changes.
• The east-west divide is also a consequence of, among other things, differing industrial structures different income levels where the declining agrarian regions still are more frequent in the Eastern part of Europe. This is also valid for the de-industrialization regions (Diversified regions with a strong secondary sector). The latter has no significant impact on population growth but this might be an effect of the divide between growing regions in the west and shrinking in the east within this EDORA-type.
• From bivariate correlations it can be shown that the variable GRP shows positive correlations with population growth and migration but also – not surprising – with human capital.
• The large and geographically widespread Consumption Countryside regions have significant impact on the population growth. These regions have a high share of wage-earners and employment in the public sectors an employment category that might have been hurt by the cut-drowns in the public sector during the first decade of the new century.

• From a social capital point of view some hypotheses can be stated such as that shrinking regions are characterized by a more homogeneous social capital than growing regions and that shrinking regions are characterized by a social capital with more conservative, backward-looking norms and values.

• Another hypothesis refer to the dichotomy of bonding and bridging social capital that implies that shrinking regions are characterized by an overweight of bonding social capital. There are, however, also signs that shrinking regions are characterized by an overweight of bridging social capital as a consequence of the links to the new regions of the former residents.

• Another hypothesis is that shrinking regions are characterized by a shortage of entrepreneurial social capital but, on the contrary, shrinking regions might compensate for lack of development factors by stimulating new entrepreneurial social capital.

• A fifth hypothesis is that the social capital of shrinking regions varies with the history of the shrinking process and/or the social capital of shrinking regions has strong similarities across Europe.

References


ESPRON/DEMIFER (2011) *Demographic and Migratory Flows affecting European Regions and Cities.* Available at: http://www.espon.eu


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Appendix: correlation matrices

Table 10.12. 2001–2012. Note: Correlations are significant at the five percent level at the maximum.

<table>
<thead>
<tr>
<th>Variables</th>
<th>pc 01–12</th>
<th>Netmig01–12</th>
<th>Age +65</th>
<th>Age –15</th>
<th>tfr</th>
<th>hc</th>
<th>grp</th>
<th>Density</th>
<th>New ms</th>
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11 The Influence of Related and Unrelated Variety on Firm Performance Across European Urban and Rural Regions

Pia Nilsson, Lucia Naldi, Hans Westlund, and Sofia Wixe

11.1 Introduction

The smart specialization logic is part of the new EU growth strategy (EU 2020) introduced as a response to the low growth rates of innovation, productivity and investments in R&D among EU regions. Among other things, the logic builds on the increasing awareness that one-size-fits-all regional policy models are to be regarded as inappropriate. Instead, growth policies should be designed to consider differences between regions in order to act on local competences and established regional advantages (Tödtling and Trippl 2005; Asheim, Boschma and Cooke 2011; Camagni and Cappello 2013). Thus, future policy targets at the EU level have been set in order to promote economic growth where knowledge and innovation are identified as the driving forces and where the concept of smart specialization provide the logic to obtain smart growth.

Although the concept of smart specialization is foremost a policy-oriented concept and though there is no clear definition, the concept is closely linked to the positive externalities that can be generated from innovation and knowledge spillovers (Foray and Hall 2011; Boschma 2014). Moreover, it follows the argumentation put forward in Nooteboom (2000), that diversity in related activities in terms of technology and knowledge base stimulates knowledge flows and thereby innovation and growth. McCann and Ortega-Argilés (2013; 2014) denote this as specialized diversification while Frenken, Van Oort and Verburg (2007) call it related variety. Regardless of the terminology, the underlying ideas are consistent and build on technological relatedness across and within industries. However, the concept should be understood and interpreted not simply as a strategy of industrial specialization, but as a strategy in which regions specialize in R&D and innovation based on the current structure of their economy.

This paper enters the debate on smart specialization and smart growth by analysing the influence of factors that are identified as the key underlying ideas of smart specialization on firm performance. In accordance with prior research the paper asserts that there are reasons to believe that indicators of smart specialization do not affect firm performance homogenously across regions. The lack of scale in terms of population and industrial base is likely to alter the importance of industry diversity, innovation and knowledge spillovers (Rodríguez-Pose 2001; Bilbao-Osorio and Rodríguez-Pose 2004; McCann and Ortega-Argilés 2013). For the stated purpose we use firm-level micro data across Europe that hold information on key firm characteristics which are used in a nested multilevel framework that combines measures of smart specialization at the firm, local (postcode) and regional level (Nuts 3). Being able to use firm-level micro
data have become increasingly important not only for analysis that captures heterogeneity across firms but also in order to conduct different and more detailed types of data aggregation (by geographical unit and industry structure). Moreover, firm performance is not only determined by the inherent quality characteristics of the firm, but also reflects interdependencies between local and regional factors, which is a dynamic process that results from the interactions of various factors. Some of these factors may act on a local scale and influence firms that are located in the immediate surroundings, whereas other factors may act on a more aggregated regional level. By applying a nested model we are able to mitigate unobserved heterogeneity at different levels in the geography and address these spatial dynamics. Hence, what the paper ultimately addresses is the degree to which different types of externalities related to smart specialization can influence firm performance and thereby create the preconditions for regional growth.

In order to address diverging patterns across the urban-rural range we utilize the edora structural typology which divides European Nuts 3 regions into five categories ranging from predominantly urban regions to agrarian regions. Since this typology is designed to account for patterns of rural differentiation across Europe and created using a large set of both macro and micro-scale economic indicators it is supportive of the place-based approaches put forward in the Barca Report (Barca 2009; Barca, McCann and Rodríguez-Pose 2012). Firm-level data are obtained from the orbis database and include firms across Europe (Austria, France, Italy and Sweden). The main conclusions that can be drawn from our analysis are that related variety have a positive influence on firm performance for those firms located in regions classified as high performers. Results are diverging in terms of the influence of unrelated variety depending on regional characteristics. The results are also in line with the theoretical discussion about the local nature of knowledge spillovers i.e. that these are likely to occur at the local, or even neighbourhood, level (Van Oort 2007; Rosenthal and Strange 2008; Baldwin et al. 2008; Andersson, Klaesson and Larsson 2012).

11.2 Theoretical framework

Some of the key ideas that form a link between the logic of smart specialization and established economic theories are the concepts of specialization and industrial diversity. A key question raised in the current literature is whether firm performance and regional growth are driven by specialization or by diversity (Glaeser et al. 1992; Feldman and Audretsch 1999; Frenken, Van Oort and Verburg 2007; Boschma, Eriksson and Lindgren 2013)? Besides, there is also the questions of the spatial extent of knowledge spillovers which may vary across different sectors and differ in their geographical reach (Van Oort 2007; Rosenthal and Strange 2008; Andersson, Klaesson and Larsson 2012).

Specialization and diversity

The literature proposes a number of explanations and distinguishes several alternative approaches for testing hypotheses concerning the influence of specialization and industry diversity on regional growth and the survival and performance of firms. Following the earlier line of research in Marshall (1920[1890]), Arrow (1962) and Romer (1986), spatial externalities are thought to arise from the co-location of firms within industries that have similar structure. This approach is based on the idea that comparable firms cluster in space in order to exploit advantages in terms of local access to consumers and specialized suppliers, a common labour market as well as knowledge spillovers (Rosenthal and Strange 2008; Frenken, Van Oort and Verburg 2007).
The interactions that arise when similar firms cluster in space imply that they can exploit the opportunities of being exposed to a variety of similar practices, which may induce them to generate new products, learn from new insights or to react when vital changes occur (Porter 1996; Malmberg 1997; Maskell and Malmberg, 1999). What follows from this line of research is that co-located firms are expected to perform better and survive longer than firms that are located outside clusters implying that a positive relationship is expected between firm performance and geographic distance to similar or related industries.

A second approach for the testing of the relative importance of specialization and industry diversity is associated with the type of externalities suggested by Porter (1996; 2008). Here it is argued that the clustering of firms and the high competition that it generates stimulates innovation and growth as firms are pushed to innovate in order to survive and develop. This is similar to what is suggested by Jacobs (1969), i.e. that competition promotes growth but that diversity also encourages growth as there exist knowledge spillovers across sectors. Hence, advantages are linked to the exchange of knowledge and information not only within but also across different sectors and local competition and innovativeness are generated by interactions between agents in different parts of the economy (Glaeser at al. 1992).

Since diversity in economic activities is generally present in cities and urban areas the type of externalities that are associated with Jacobs (1969) are similar to the type of externalities that are associated with urban size and density in general. What is aimed at here is the type of externalities and advantages that arise as a result of urbanisation i.e. shared infrastructures, institutions and other benefits being associated with larger cities and densely populated urban regions (Essletzbichler 2013).

Recent literature and empirical evidence from different industries indicate that the hypotheses outlined above has some limitations when it comes to being able to fully depict the complexity of regional growth (Boschma and Iammarino 2009; Wixe and Andersson, 2013). Frenken, Van Oort and Verburg (2007) address this and argue that industries that appear different can in fact share characteristics that makes them comparable in terms of knowledge base and technology. In line with Noteboom (2000) they argue that cognitive proximity and relatedness between firms is necessary to create growth and that one can distinguish between related and unrelated variety in terms of industrial composition. This implies that it is variety in related economic activities that create growth and not diversity or variety per se. Wixe and Andersson (2013), take this one step further and show that relatedness on the individual level e.g. in terms of education and occupation is at least as important as relatedness in terms of industry composition. Following from the outline above the concept of related variety and the related smart specialization both build upon technological relatedness across and within industries.

Smart specialization

Although the concept of smart specialization is not new, its interpretation and application in a regional context has been under debate (Rodríguez-Pose 2001; Bilbao-Osorio and Rodríguez-Pose 2004; McCann and Ortega-Argilés 2013). According to Foray, David and Hall (2011) the concept should be understood and interpreted not simply as a strategy of industrial specialisation of a particular region, but as a strategy in which regions specialize in r&d and innovation based on the current structure of their economy. This implies that regions should strive to improve efficiency and quality in the important and potentially strong sectors of their economies rather than developing state of the art general purpose technologies. This is similar to what was proposed in Bresnahan and Trajtenberg (1995), arguing that there are different logics of orders of innovation and many potentially beneficial activities besides the fundamental knowl-
edge needed to develop general technologies. Hence, what the concept implies is that there is a need to acknowledge not only variety in terms of regional innovation potential, but also that industries with different knowledge base innovate in different ways (Jensen et al. 2007; Asheim, Boschma and Cooke 2011). This describes another important element behind the smart specialization logic, namely the entrepreneurial discovery process that reveals what a region does best in terms of R&D and innovation. Thus, the concept of smart specialization involves the connection between knowledge, innovation and what appears to be the relatable specialization of the region. A combination of place-based and knowledge based policies highlighting the structure of regional economies (Barca, McCann and Rodriguez-Pose 2012).

DIVERGING PATTERNS ACROSS THE URBAN-RURAL RANGE

One important question in this context, which is also addressed empirically in this paper, is why one should expect the influence of specialization and diversity to vary across urban and rural regions? According to McCann and Ortega-Argilés (2013), who studied these issues in light of diverging regional patterns there are reasons to believe that many of the advantages that underlies the smart specialization logic are expected to vary across regions of different type. They argue that the logic is well suitable for intermediate regions which tend to have a large population and industrial base since they are likely to benefit from the size advantage and spillovers from nearby cities, without having to incur the higher costs of sustaining urban core areas (Dijkstra and Poleman 2008; Noseleit 2012). Being intermediate also implies enhanced connectivity and mobility which may facilitate inflow (and outflow) of knowledge and skills (McCann and Ortega-Argilés 2013). Hence, they argue that there are more possibilities to achieve specialized diversification across related technologies in intermediate rural regions compared to those that are more remote. Similar questions are addressed in Rodriguez-Pose (2001) and Bilbao-Osorio and Rodriguez-Pose (2004) i.e. weather research and development policies are able to target peripheral rural regions in Europe. The need to reach a minimum threshold of research and the existence of distance decay effects in the diffusion of technological spillovers are pointed out as some of the factors that may prevent peripheral rural regions to generate innovation and growth.

Hence, the logic that underlies the concept of smart specialization is argued to offer only limited possibilities for regions that are remote or very isolated, due to their lack of scale, distance decay effects as well as unavailability of necessary socio-economic conditions (Rodrigues-Pose 2001; Bilbao-Osorio and Rodriguez-Pose 2004). Furthermore, for very isolated and remote regions there are often signs of offshore operations and economic activities in mining, forestry and even tourism do not form the strong base for permanent settlements and built-up areas as they previously have done (Bryden and Bollman 2000). Although the numbers of very isolated regions are small, there are reasons to assume that the lack of scale problem also applies to a larger number of, if not very isolated, but still peripheral, rural regions in the EU, which cannot be considered as intermediate. A general characteristic of these peripheral regions is low accessibility to markets and services, negative migratory balance, low land values and low education levels. In total this means that these regions do not have much of a potential of their own for endogenous development (Bilbao-Osorio and Rodriguez-Pose 2004).
11.3 Data and empirical framework

In order to test hypotheses regarding the influence of measures of smart specialization on firm performance as outlined above, we use firm level data which are combined with measures of related and unrelated variety, knowledge and innovation. The dependent variable is turnover and is measured as the total turnover of 2011 at firm level, such that it is the performance of firms in a region that is presumed to create the preconditions for regional growth. Firm-level micro-data are obtained from the global database **orbis** of Bureau Van Dijck **(Bvdep)**, which contains financial and administrative information of firms. The database is mainly built up using balance sheet information, ownership, mergers and acquisitions data. The database is almost entirely dominated by private firms (99 percent) and around 45 percent of the total number of firms are European. Although the database has a broad cover containing over 45 million firms across the world and over 200 financial and administrative variables there might be some drawbacks using these data for empirical analyses. First of all, there is always the possibility that the quality of the data may be inferior relative to official survey or register data produced by National Statistical Offices (**NSOS**). This is because data collection systems adopted by NSOS, to a larger extent, are designed to minimise non-systematic errors in the variables, implying that quality controls are applied at different stages, which is not always the case with these type of administrative data (Ribeiro, Menghinello and De Backer 2010). Furthermore, since the orbis database is built up using balance-sheet information the database most likely suffers from some structural bias in its coverage relative to the statistical business register. In particular with respect to small and medium size firms, which are underrepresented in orbis. However, as argued by Ribeiro *et al.* (2010), business data and particularly firm balance-sheet information are usually of good quality and form an exception with respect to systematic errors since data quality can fairly easily be checked for consistency. Moreover, firm-level data are needed to capture and analyze the large heterogeneity at the firm level, which cannot be captured and measured using a more aggregated unit of analysis.

Turning to the description of the data used in this paper. Firm-level data was downloaded from orbis for the countries Sweden (**se**), France (**fr**), Italy (**it**) and Austria (**at**), which amounts to over 2.5 million firms for the year 2011. These data include information about key firm characteristics as well as geographic location in terms of postcodes. After removing firms with missing values on key variables (turnover and postcode) the sample reduces to 1.2 million observations. For the purpose of estimating an equation that explain the influence of different measures of industrial composition (related and unrelated) at both local and regional level we are also restricted to include only those firms that have a registered **NACE** code (the European standard for industrial classifications). Thus, the final sample to be estimated includes 740,194 firms which are then nested into 255 European Nuts 3 regions and 24,964 postcode areas. It should be noted already here that postcode areas and Nuts 3 regions are not administrative units and most likely do not represent perfect classifications of local and regional markets. This study is limited in this regard since orbis data are only measured or attainable at these administrative levels (or higher aggregates). Before turning to the description of the variables, the **EDORA** typology used to address regional diversity is outlined below.

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1 This geographical delimitation was chosen for mainly operational reasons. Although we would have preferred to include all European firms, downloading and handling a set of 14 million observations (total number of European firms currently in orbis) is out of the scope of this study.

2 **Nomenclature generale des Activites economiques dans les Communautes europeennes** (**NACE**) refers to the industrial classification as defined in Revision 2 used by Eurostat.

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*Pia Nilsson, Lucia Naldi, Hans Westlund, and Sofia Wixe*
The edora structural typology

Although the boundaries between the core and the periphery are not always easily defined and although they may become indistinct in some places, firm performance and regional growth patterns differ widely across the urban-rural range. Unlike the traditional core-periphery model which separates between regions with agglomeration advantages, and regions without such advantages, a wide range of factors may influence a regions position in the urban-rural space. There exist several regional typologies at the European level to form clusters of regions based on different sets of institutional and economic indicators. The urban-rural typology of Dijkstra Poleman (Dijkstra and Poleman 2008), for example, divides European Nuts 3 regions into five categories based on accessibility and rurality. To fit the framework of this paper, a classification based on the edora structural typology is applied. The edora structural typology is based on the findings of the edora project (Copus and Noguera 2010), which aim was to analyse the process of rural differentiation to better understand how European cohesion policy (EU 2020) can enable rural regions to build on their potentials. Hence, the typology is constructed to capture the most important differences in economic structure and considers four different regional categories: agrarian regions, consumption countryside regions, diversified regions with important secondary sector and diversified regions with important market service sector. The edora findings are supportive of the place-based approaches put forward in the Barca Report (Barca 2009), showing that rather than becoming more uniform in character, rural Europe is, in many ways, becoming increasingly diverse. Space do not permit a detailed description of the background of the typology, instead a brief summary of the characteristics of the five different groups is provided. The edora working papers (e.g. Copus and Noguera 2010) and the ESPON Scientific papers (e.g. Copus et al. 2011) provide a comprehensive background and motivation of the opportunities and constraints that characterize each regional type. According to the edora typology, European Nuts 3 regions can be grouped into the following:

- **Agrarian regions.** Agrarian regions are those in which the primary sector accounts for an above average share of gross value added and employment and in which the primary sector plays a large role in the local economy. These are mainly concentrated to the eastern and southern parts of the EU (Figure 11.1). These regional types have a tendency to be relatively low performers in terms of various performance indicators and showing many of the characteristics of socioeconomic depletion.

- **Consumption countryside regions.** Include regions in which the primary sector is less important, but countryside public goods forms the basis for a large part of the economy. This is reflected in indicators related to tourism, recreation activities and to the supply of natural assets as well as the role of small-scale diversified forms of farming. These regions are high performers and are likely to continue to accumulate in the immediate future.

- **Diversified regions with a strong secondary sector.** Include regions which does not fulfil the criteria for the first two types, and in which manufacturing accounts for a higher share of GVA than market services. Regions that belong to this category also tend to be low performers, possibly due to declining manufacturing industries.

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3 The outline of the edora typology in this section is largely based on the edora working papers, in particular the outline provided by Copus et al. (2011).

4 See Copus et al. (2011) for a complete outline of indicators.
Figure 11.1. The edora typology based on NUTS 3 regions (map by author).

- Diversified regions with a strong market service sector. Contain regions which did not fulfil the criteria for the first two categories, and in which market services accounts for a higher share of GVA than manufacturing. Alike consumption countryside these regions are high performers and likely to continue to accumulate in the immediate future.

The edora typology is illustrated in Figure 11.1.

Variables to measure the influence of knowledge, innovation and industrial composition

There are various approaches to measure the potential for knowledge and innovation at firm and regional levels. Among the proposed measures are access to highly educated individuals, access to employees in firms characterized as Knowledge Intensive Business Services (KIBS) (Jo-hansson et al. 2013), access to patents and trademarks (Acs, Anselin and Varga 2002; Mendonça, Pia Nilsson, Lucia Naldi, Hans Westlund, and Sofia Wixe

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Pereira and Godinho, 2004) and access to related and unrelated variety in terms of industrial composition (Frenken et al. 2007). Here, the variables included to control for the potential for knowledge and innovations are number of patents (No of patents), number of trademarks (No of trademarks) (measured at the firm level), unrelated Variety in industries and Related Variety in industries (measured at the postcode and Nuts 3 level). Unrelated variety measures diversity between industries and related variety measures diversity in sectors within industries. The data used is NACE rev 2 coding at the four digit level for employees. For industries, the 2-digit and the 4-digit NACE rev 2 codes are used where each 4-digit industry belong to a specific 2-digit industry. Let let $S_g$ denote the 2-digit sets where $g = 1, \ldots, G$. Moreover, $E_g$ denote the share of total employment in each postcode (local) and Nuts 3 region (regional). Let $E_{ig}$ denote the share of employees working in 4-digit industry $I$, where $i = 1, \ldots, I$, where $E_{ig}$ is measured as the share of employment in the respective 2-digit industry $g$. Hence, unrelated variety in industries measures the distribution of employees between 2-digit industries. Using the entropy approach, unrelated variety is calculated as follows at a local and regional level:

$$UV = - \sum_{g=1}^{G} E_g \ln E_g$$  \hspace{1cm} (11.1)

The range of unrelated variety is from 0 to $\ln G$ where zero variety is reached when all employees are working in the same 2-digit industry. In a similar way, the distribution of employees between 4-digit industries within each 2-digit industry is calculated as follows:

$$H_g = - \sum_{i=1}^{I} E_{ig} \ln E_{ig}$$  \hspace{1cm} (11.2)

The interpretation is identical to that for (11.1) besides the fact that variety is measured within each 2-digit industry instead of between the 2-digit industries. This implies that there is zero within variety when all employees in the 2-digit industry $g$ are working in the same 4-digit industry $i$. Similarly, maximum variety for industry $g$, i.e., $H_g$, is achieved when there is an equal distribution of employees over all 4-digit industries $i$. The information about the degree of within variety for each 2-digit industry $g$, i.e., $H_g$, is weighted by the relative size of industry $g$. Summing over all $g$ gives the entropy measure for related variety, regarding the local postcode area and the Nuts 3 region as a whole:

$$RV = \sum_{g=1}^{G} E_g H_g$$  \hspace{1cm} (11.3)

Thus, increases in the values obtained by (11.1) and (11.3) imply increases in unrelated and related variety.

Two additional variables are included to control for knowledge spillovers, knowledge absorption as well as knowledge diffusion at the regional Nuts 3 level. These are, human capital ($hc$) measured as share of total population in Nuts 3 region that has a higher education (tertiary)\(^5\) and Knowledge Intensive Business Services ($kibs$), measured as share of total number of employees in postcode code area in firms classified as knowledge intensive business sectors. According to the standardized Eurostat definition, $kibs$ firms are defined as NACE rev 2 codes 62, 63, 69, 70 and 71 to 73. Although prior studies are decisive concerning the positive influence of human capital on firm productivity and performance (e.g. Rauch 1993; Moretti 2004;\(^5\) Since share of population that have a higher education is not available on a finer level this is measured at the Nuts 3 level, although we believe that a disaggregated measure would be the most appropriate to control for knowledge spillovers and knowledge diffusion.

\(^5\) Since share of population that have a higher education is not available on a finer level this is measured at the Nuts 3 level, although we believe that a disaggregated measure would be the most appropriate to control for knowledge spillovers and knowledge diffusion.

The Influence of Related and Unrelated Variety on Firm Performance Across ...
Karlsson and Backman, 2011), they are far from conclusive regarding the characteristics of KIBS with regards to innovation. There are papers showing that KIBS are significant innovators (Hertog, 2000). There is also some evidence that the innovative activities that take place in KIBS are distinct from those that take place in high tech manufacturing firms (Müller and Zenker 2001; Simmies and Strambach 2006). In general, KIBS firms are argued to more intensively engaged in innovation and training activities than their manufacturing counterparts, but less likely to pool resources with international associates or perform internal R&D (Müller and Zenker 2001). In addition, KIBS innovativeness is strongly associated with highly qualified employees and intense collaboration with local customers and suppliers, as compared to manufacturing firms. Hence, the share of total number of employees in postcode area that work within sectors defined as high tech manufacturing industries (htmp) is also included to control for these diverging patterns.

Among the control variables are, competition (Competition), included to measure Porter externalities (Porter 1996) and measured as:

\[
\text{Competition} = \frac{F_{PC}}{E_{PC}},
\]

where \(F\) is the number of firms and \(E\) is the number of employees and \(pc\) stands for postcode. Population density is included to control for size and can be thought to reflect urbanization economies, measured as population per square kilometre. Since population is unavailable on postcode level size is measured at the Nuts 3 level. Other firm control variables are the number of employees in each firm (No of employees), return on equity (roe), tangible fixed assets (Tangible fixed assets), number of registered companies in corporate group (No of companies in corporate group) and number of subsidiaries (No of subsidiaries), measured at the firm level and following standard definitions (orbis, sbs). Variables and summary statistics are presented in Table 11.1.

**Empirical model**

As mentioned, firm performance is likely dependent on factors besides their inherent quality characteristics in terms of various interdependencies between local and regional factors. To address these interdependencies we apply a nested multilevel model to mitigate unobserved heterogeneity at different levels in the geography. Since firms in our sample are assigned both a postcode and a Nuts 3 code we utilize these and impose a hierarchical structure, such that firms are nested into their respective postcode area, which in turn is nested into the corresponding Nuts 3 region. Following the multilevel literature (Besag et al. 1991; Langford et al. 1999), the effects of unobserved heterogeneity are estimated using the following nested two level model:

\[
\ln Y_{i(zn)} = \beta_i + \sum_{z=1}^{r} \beta_z x_{zi(zn)} + \zeta_{z(zn)} + \zeta_n + \mu_i,
\]

where \(Y_{i(zn)}\) stands for the log of turnover of firm \(i\), nested in postcode area \(z\) and Nuts 3 region \(n\). Since the methodology allows the use of covariates at any level in the proposed hierarchy the \(r\) covariates contain the firm characteristics and \(\beta_i\) is the corresponding coefficient of each covariate. The random intercepts are measured at local (\(\zeta_{z(zn)}\)) and regional (\(\zeta_n\)) levels and captures unobserved heterogeneity at those levels. The random intercepts are assumed independent (given the covariates) and normally distributed with zero mean and constant variance.

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According to the standardized eurostat definition, high tech manufacturing firms are defined as nace rev 2 codes 3, 25, 38, 40 and 43.
Table 11.1. Summary statistics. Notes: *Financial variables are reported in thousand €, **Firms by typology, ***Firms by country.

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</tr>
<tr>
<td>HTMF</td>
<td>0</td>
<td>1</td>
<td>0.203</td>
<td>0.071</td>
</tr>
<tr>
<td><strong>Regional (Nuts3) level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RV</td>
<td>0.059</td>
<td>1.551</td>
<td>1.084</td>
<td>0.245</td>
</tr>
<tr>
<td>UV</td>
<td>0.352</td>
<td>3.664</td>
<td>3.341</td>
<td>0.316</td>
</tr>
<tr>
<td>Pop. Dens.</td>
<td>2</td>
<td>21467</td>
<td>843.47</td>
<td>2840.12</td>
</tr>
<tr>
<td>GRP</td>
<td>659</td>
<td>190908</td>
<td>49789.94</td>
<td>51476.728</td>
</tr>
<tr>
<td>HC</td>
<td>0</td>
<td>0.456</td>
<td>0.230</td>
<td>0.352</td>
</tr>
<tr>
<td><strong>Typology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDOA 1</td>
<td>0</td>
<td>1</td>
<td>.45</td>
<td>.498</td>
</tr>
<tr>
<td>EDOA 2</td>
<td>0</td>
<td>1</td>
<td>.03</td>
<td>.157</td>
</tr>
<tr>
<td>EDOA 3</td>
<td>0</td>
<td>1</td>
<td>.33</td>
<td>.470</td>
</tr>
<tr>
<td>EDOA 4</td>
<td>0</td>
<td>1</td>
<td>.01</td>
<td>.116</td>
</tr>
<tr>
<td>EDOA 5</td>
<td>0</td>
<td>1</td>
<td>.18</td>
<td>.364</td>
</tr>
<tr>
<td><strong>Country</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT</td>
<td>0</td>
<td>1</td>
<td>0.034</td>
<td>0.183</td>
</tr>
<tr>
<td>FR</td>
<td>0</td>
<td>1</td>
<td>0.214</td>
<td>0.423</td>
</tr>
<tr>
<td>IT</td>
<td>0</td>
<td>1</td>
<td>0.499</td>
<td>0.499</td>
</tr>
<tr>
<td>SE</td>
<td>0</td>
<td>1</td>
<td>0.231</td>
<td>0.422</td>
</tr>
</tbody>
</table>

Following Goldstein (2002), the error terms are assumed to be independent and can therefore be directly estimated.

By using a multilevel model the influence by each level can be controlled for and measured, which is particularly useful when dealing with a possible endogeneity bias (Skrondal and Rabe-Hesketh 2004) and potential spatial autocorrelation (Bhat 2000). Firm performance might for example be more correlated within a given postcode area or Nuts 3 region than across. Introducing varying intercepts induce dependence among firms and can be interpreted as unobserved heterogeneity at the different levels. Furthermore, as proposed by Mundlak (1978), possible endogeneity bias can be tested by the use of clustered sample means. Since the main interest lies
in the variables measuring related and unrelated variety, means of these variables are included at the postcode and Nuts 3 levels to address the identification problem.

11.4 Results

Before introducing the explanatory variables into the model, we consider the hierarchical structure of the data by estimating variances for the random intercepts at the two levels, excluding the regressors. This provides information on how the proposed hierarchical structure relates to firm performance and how much of the variance can be attributed to the two geographical levels. Hence, the following unconditional model is estimated in a first step:

$$\ln Y_{i(zn)} = b_0 + z_{i(zn)} + \zeta_n + \epsilon_i(zn);$$

where $Y_{i(zn)}$ is the log of turnover of firm $i$ in postcode area $z$ and Nuts 3 region $n$ and $b_0$ is the overall constant. The results of estimating the unconditional model in (11.6) show that the sample of 740,194 firms are nested into 2,496,4 postcode areas and 255 Nuts 3 regions. The average number of firms is 3218 for each postcode area and 33 for each Nuts 3 region. The between-level heterogeneity at a local and regional level is significant and positive implying that there is significant variance across and within the imposed hierarchy. This can be also be described by the intra-class correlation coefficient (icc). The ICC measures the degree of correlation among observations within a postcode area or a Nuts 3 region and is a useful tool to evaluate how much of the total variance in turnover that can be assigned to these two different geographical levels. The ICC coefficient ranges from 0 to 1, where a value 0 indicates that the grouping bear no information and 1 indicates that all units in the group are identical. The estimated ICC coefficients for the unconditional model are presented in Table 11.2 and indicate the direct effect of how these two geographical levels influence firm performance. Results show that the ICC is 0.0967 for Nuts 3 regions and 0.2164 for postcode areas nested in Nuts 3 regions. The low variance at the Nuts 3 level indicates that only a small part of the variance is explained by characteristics of Nuts 3 regions and most of the variance is explained by the postcode area (21%). This indicates that the main factors explaining firm performance are firm level and local level attributes, in relation to the more aggregated Nuts 3 level. However, the regional economic environment is still statistically significant which is indicated in Table 11.2 and add economic significance to the analysis in the analysis that follow.7

Table 11.2. Intraclass correlations.

<table>
<thead>
<tr>
<th>Level</th>
<th>ICC</th>
<th>Std. Err.</th>
<th>95% Conf. interv.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuts 3</td>
<td>0.0967</td>
<td>0.0082</td>
<td>0.0817 0.1141</td>
</tr>
<tr>
<td>Postcode</td>
<td>Nuts 3</td>
<td>0.2164</td>
<td>0.0073</td>
</tr>
</tbody>
</table>

7 For brevity, the full set of regression results from estimating the unconditional model are not presented but can be attained on request.

Pia Nilsson, Lucia Naldi, Hans Westlund, and Sofia Wixe
FIRM PERFORMANCE AND INDICATORS OF SMART SPECIALIZATION

Table 11.3 presents the results from running the regression model in (11.5) including the regressors and unmeasured heterogeneity is controlled for by allowing the results to vary by level. Since the variable measuring the number of patents is insignificant across the estimations it is excluded from the final model. This is likely a results of the variable being zero inflated and positively correlated with the number of trademarks. Hence, only the latter is considered in the estimated model. In a first step, the model is estimated using the full sample and thereafter addressing the influence of regional heterogeneity by imposing the edora structural typology.

Starting with the results in Table 11.3 and the contextual variation, the ICC for the postcode level is 0.314 and 0.088 for the Nuts 3 level. This indicate that the characteristics of the immediate surrounding area is able to explain a significant part of the total variance in turnover. This is in line with the theoretical discussion about knowledge spillovers and locally bounded effects. The results show that turnover is positively associated with related variety and significant when measured at the postcode level. However, there is no significant association between turnover and related variety when measured at the more aggregated Nuts 3 level. It seems like related industry diversity is a factor that influences firms in the immediate surrounding area. As is noticeable, there is also a difference between related and unrelated variety, the latter being negative and significant when measured at the local level. This suggest that while nearness to variety in related economic activities is positively associated with turnover, being located where activities are diverse and unrelated is negatively associated with turnover. These results are in line with prior findings, stating that it is proximity to firms with similar settings in terms of knowledge base and technology that is thought to be the main drivers of growth rather than diversity per se (Frenken et al., 2007; Boschma and Frenken, 2011). These results are also in line with research stressing the local nature of knowledge spillovers, i.e. that these are likely to occur at the local, or even neighbourhood, level, rather than at the regional level (Van Oort 2007; Rosenthal and Strange 2008; Baldwin et al. 2008; Andersson et al. 2012). Moreover, one could also argue that the diverging results of these measures of industry diversity also highlights the importance of dividing these measures apart in analyses of measures of industrial composition and their implications for economic growth.

Turning to local level predictors in terms of competition, share of employees in kibs and HTMF. In accordance with the theoretical discussion, competition is assumed to strengthen firm performance as firms are pushed to innovate and perform to survive as competition grows stronger (Jacobs 1969; Porter 1996). The results show that competition is significant and positive and thus supports this argument. The association between KIBS and firm performance is measured as share of total number of employees in postcode code area in firms classified as knowledge intensive business sectors. Although prior empirical studies are far from conclusive regarding the role and characteristics of KIBS, the expectation is a significant positive association with firm performance (Hertog 2000). The results show a negative and significant association with firm performance, which is likely explained by the fact that KIBS firms are in general small firms and specific in their knowledge base and key characteristics. Hence, measuring the influence of nearness to KIBS using industrial classifications (NACE coding) is likely not capturing the specifics of these firms. However, we do not have access to occupational classifications, which is probably a far better method to capture and measure the effects of KIBS for this analysis.

8 Similarly, grp is shown to be insignificant and thus removed from the final model.
9 The multicollinearity indicated by bivariate correlations are low and the estimates are robust with regards to their signs and magnitude across the estimations.
10 The correlation between these two measures is 0.32 and results are robust when omitting either of the measures and keeping the other.

The Influence of Related and Unrelated Variety on Firm Performance Across ...
Table 11.3. Results from mixed-effects ml regressions, total sample. Notes: Dependent variable lnturnover.

*The 95% confidence interval does not include zero.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Firm level predictors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of employees</td>
<td>7.86e-06* (1.65e-06)</td>
<td>7.91e-06* (1.65e-06)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.002* (1.82e-04)</td>
<td>0.002* (1.82e-04)</td>
</tr>
<tr>
<td>Tangible fixed assets</td>
<td>8.69e-08* (1.10e-08)</td>
<td>8.67e-08* (1.10e-08)</td>
</tr>
<tr>
<td>No of companies in corporate group</td>
<td>0.001* (1.31e-04)</td>
<td>0.001* (1.31e-04)</td>
</tr>
<tr>
<td>No of recorded subsidiaries</td>
<td>0.064* (0.0005)</td>
<td>0.063* (0.0005)</td>
</tr>
<tr>
<td>No of trademarks</td>
<td>0.034* (0.0001)</td>
<td>0.034* (0.0001)</td>
</tr>
<tr>
<td><strong>Local level predictors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Related variety</td>
<td>0.309* (0.022)</td>
<td>0.287* (0.022)</td>
</tr>
<tr>
<td>Unrelated variety</td>
<td>-0.277* (0.010)</td>
<td>-0.307* (0.010)</td>
</tr>
<tr>
<td>Competition</td>
<td>0.0004* (0.00002)</td>
<td>0.0004* (0.00002)</td>
</tr>
<tr>
<td>KIBS</td>
<td>-0.095* (0.032)</td>
<td>-0.105* (0.033)</td>
</tr>
<tr>
<td>HTMF</td>
<td>0.487* (0.076)</td>
<td>0.472* (0.075)</td>
</tr>
<tr>
<td><strong>Regional level predictors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Related variety</td>
<td>-0.001 (0.124)</td>
<td>-0.006 (0.123)</td>
</tr>
<tr>
<td>Unrelated variety</td>
<td>0.057 (0.083)</td>
<td>0.058 (0.083)</td>
</tr>
<tr>
<td>Pop.dens.</td>
<td>0.0004 (4.13e-4)</td>
<td>0.0004 (4.13e-4)</td>
</tr>
<tr>
<td>HC</td>
<td>0.006*** (0.0004)</td>
<td>0.007* (0.0004)</td>
</tr>
<tr>
<td>Industry dummies</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Country dummies</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Constant</td>
<td>6.162* (0.205)</td>
<td>6.169* (0.203)</td>
</tr>
<tr>
<td><strong>Random effects</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm</td>
<td>2.495*</td>
<td>2.496*</td>
</tr>
<tr>
<td>Postcode</td>
<td>0.314*</td>
<td>0.314*</td>
</tr>
<tr>
<td>Nuts 3</td>
<td>0.088*</td>
<td>0.085*</td>
</tr>
<tr>
<td>ICC: Nuts 3</td>
<td>0.030*</td>
<td>0.030*</td>
</tr>
<tr>
<td>ICC: postcode</td>
<td>Nuts 3</td>
<td>0.138*</td>
</tr>
<tr>
<td>Wald chi sq.</td>
<td>102599.95*</td>
<td>102656.31*</td>
</tr>
<tr>
<td>N</td>
<td>740194</td>
<td>740194</td>
</tr>
</tbody>
</table>

The influence of indicators of smart specialization across European urban and rural regions

The discussion so far has been focused on the influence of measures of industrial composition, innovation and knowledge on firm performance. Another central question addressed in this paper is whether the relative importance of these factors varies across urban and rural regions. In accordance with prior research the paper asserts that there are reasons to believe that indicators of smart specialization do not affect firm performance homogenously across the urban-rural range. Following the argumentation in McCann and Ortega-Argilés (2013) among others, lack of scale is likely to alter the importance of industry diversity and other measures of smart specialization. If this hypothesis holds, it has significant effects for policy as it indicate that regional policies should be composed of intraregional and interregional measures and that one-size fits-all-policies are not applicable. Hence, (11.5) is estimated by dividing the sample of firms into; predominantly urban regions, agrarian regions, consumption countryside regions, diversified...
regions with important secondary sector and diversified regions with important market service sector, in accordance with the EDORA structural typology. Results are presented in Table 11.4 and Table 11.5.

Table 11.4. Results from mixed-effects ML regression, by EDO A typology. Note: * The 95% confidence interval does not include zero. Dependent variable In turnover.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>EDO A type 1 (predominantly urban)</th>
<th>EDO A type 2 (agrarian)</th>
<th>EDO A type 3 (consumption countryside)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (Std.Err)</td>
<td>Coef. (Std.Err)</td>
<td>Coef. (Std.Err)</td>
</tr>
<tr>
<td>Firm level predictors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of employees</td>
<td>1.66e–04* (1.85e–06)</td>
<td>0.012* (2.9e–3)</td>
<td>1.41e–06 (4.01e–06)</td>
</tr>
<tr>
<td>Tangible fixed assets</td>
<td>8.94e–08* (1.35e–08)</td>
<td>1.61e–04* (1.61e–06)</td>
<td>1.87e–06 (8.09e–08)</td>
</tr>
<tr>
<td>No of companies in corp. group</td>
<td>0.001* (1.75e–04)</td>
<td>0.001* (0.0001)</td>
<td>0.001* (3.5e–04)</td>
</tr>
<tr>
<td>No of recorded subsidiaries</td>
<td>0.045* (6.06e–03)</td>
<td>0.175* (0.009)</td>
<td>0.220* (0.002)</td>
</tr>
<tr>
<td>No of trademarks</td>
<td>0.033* (0.0008)</td>
<td>0.115* (0.019)</td>
<td>0.018* (0.002)</td>
</tr>
<tr>
<td>Local level predictors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Related variety</td>
<td>0.428* (0.044)</td>
<td>0.113* (0.055)</td>
<td>0.221* (0.035)</td>
</tr>
<tr>
<td>Unrelated variety</td>
<td>-0.541* (0.022)</td>
<td>0.051 (0.036)</td>
<td>-0.270* (0.035)</td>
</tr>
<tr>
<td>Competition</td>
<td>0.0002* (2.28e–04)</td>
<td>-0.006 (0.001)</td>
<td>0.006* (5.31e–04)</td>
</tr>
<tr>
<td>KIBS</td>
<td>-0.082 (0.060)</td>
<td>0.038 (0.182)</td>
<td>-0.128* (0.049)</td>
</tr>
<tr>
<td>HMF</td>
<td>-0.016 (0.133)</td>
<td>0.060 (0.302)</td>
<td>0.643* (0.128)</td>
</tr>
<tr>
<td>Regional level predictors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RV</td>
<td>0.235 (0.231)</td>
<td>-0.496 (0.437)</td>
<td>-0.157 (0.187)</td>
</tr>
<tr>
<td>UV</td>
<td>-0.221 (0.166)</td>
<td>0.164 (0.335)</td>
<td>0.245 (0.308)</td>
</tr>
<tr>
<td>Pop.dens.</td>
<td>8.39e–06 (9.80e–06)</td>
<td>-0.008 (0.023)</td>
<td>0.006* (0.002)</td>
</tr>
<tr>
<td>HC</td>
<td>0.009* (0.0007)</td>
<td>0.003 (0.004)</td>
<td>0.004* (0.0005)</td>
</tr>
<tr>
<td>Industry dummies</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Country dummies</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Constant</td>
<td>7.262* (0.444)</td>
<td>5.608* (0.927)</td>
<td>5.511* (0.240)</td>
</tr>
<tr>
<td>Random effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm</td>
<td>2.619*</td>
<td>2.085*</td>
<td>2.308*</td>
</tr>
<tr>
<td>Postcode</td>
<td>0.365*</td>
<td>0.015*</td>
<td>0.356*</td>
</tr>
<tr>
<td>Nuts 3</td>
<td>0.062*</td>
<td>0.009*</td>
<td>0.054*</td>
</tr>
<tr>
<td>Wald chi sq.</td>
<td>47178.31*</td>
<td>6610.89*</td>
<td>40820.51*</td>
</tr>
<tr>
<td>N</td>
<td>353 508</td>
<td>20 034</td>
<td>222 589</td>
</tr>
</tbody>
</table>

The results show that firm level predictors are robust and in line with prior estimates (Table 11.3), in terms of their sign and significance level, they are all positively and significantly associated with turnover regardless of regional typology. The results also show that the measures of related and unrelated variety (at the postcode level) show consistent estimates across urban and rural regions with two exceptions, agrarian regions and diversified regions with a strong secondary sector. While related variety is shown to be significantly and positively related with firm performance in agrarian regions, none of the measures are significant in regions characterized by a strong and diversified industrial sector. Both of these regional types have a tendency to be relatively low performers in terms of economic performance and they show many of the characteristics of socioeconomic weakening (Copus et al. 2011). It seems like proximity to firms with similar settings in terms of knowledge base and technology is important for firms that are...
Table 11.5. Results from mixed-effects ML regression, by Edora typology. Note: * The 95% confidence interval does not include zero. Dependent variable lnturnover.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Edora type 4 (diversified strong secondary sector)</th>
<th>Edora type 5 (diversified strong market sector)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (Std.Err)</td>
<td>Coef. (Std.Err)</td>
</tr>
<tr>
<td>Firm level predictors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of employees</td>
<td>0.0002* (7.84e–04)</td>
<td>0.001* (0.00002)</td>
</tr>
<tr>
<td>ROE</td>
<td>0.002* (2.41e–03)</td>
<td>0.001* (4.21e–04)</td>
</tr>
<tr>
<td>Tangible fixed assets</td>
<td>1.40e–06* (6.92e–07)</td>
<td>1.10e–06* (1.30e–07)</td>
</tr>
<tr>
<td>No of companies in corp. group</td>
<td>0.0008* (0.0001)</td>
<td>0.001* (2.4e–04)</td>
</tr>
<tr>
<td>No of recorded subsidiaries</td>
<td>0.134* (0.008)</td>
<td>0.110* (0.002)</td>
</tr>
<tr>
<td>No of trademarks</td>
<td>0.075* (0.008)</td>
<td>0.053* (0.002)</td>
</tr>
<tr>
<td>Local level predictors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Related variety</td>
<td>0.133 (0.122)</td>
<td>0.169* (0.036)</td>
</tr>
<tr>
<td>Unrelated variety</td>
<td>0.112 (0.079)</td>
<td>–0.048* (0.018)</td>
</tr>
<tr>
<td>Competition</td>
<td>0.010* (0.001)</td>
<td>0.008* (0.0001)</td>
</tr>
<tr>
<td>KIBS</td>
<td>–0.104 (0.317)</td>
<td>–0.227 (0.062)</td>
</tr>
<tr>
<td>HTMF</td>
<td>–0.577 (0.634)</td>
<td>0.537* (0.117)</td>
</tr>
<tr>
<td>Regional level predictors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BV</td>
<td>0.134 (0.633)</td>
<td>–0.367 (0.233)</td>
</tr>
<tr>
<td>UV</td>
<td>–0.122 (0.712)</td>
<td>–0.044* (0.182)</td>
</tr>
<tr>
<td>Pop.dens.</td>
<td>–0.001 (0.001)</td>
<td>0.003* (0.003)</td>
</tr>
<tr>
<td>HC</td>
<td>0.006 (0.004)</td>
<td>0.016* (0.002)</td>
</tr>
<tr>
<td>Industry dummies</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Country dummies</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Constant</td>
<td>5.798* (1.566)</td>
<td>6.207* (0.443)</td>
</tr>
</tbody>
</table>

located in regions classified as high performers and less so in regions that are low performers and in which manufacturing accounts for a higher share of gross value added. The same applies for the measure of unrelated variety, which is also shown to be consistently negative and significant for all regional typologies except for agrarian regions and diversified regions with strong secondary sector (primarily dominated by manufacturing). This could reflect that firms are more sensitive to the influence of diversified economic activities in regions that are more urbanised compared to agrarian regions and regions primarily dominated by manufacturing. Competition has a significant positive impact on firm performance across all regional types except for agrarian regions dominated by primary production. This could be a results of the geographic scope of competition, lower threat of new entrants and substitute products or services as well as less intense local rivalry among existing competitors facing firms in agrarian regions (Porter, 1996; 2008). However, with the exception of firms located in agrarian regions, the results confirm the theory, stating that tougher competition will positively affect firm performance.
Turning to the variables measured at the more aggregated Nuts 3 level. The results show that firm performance is positively associated with related variety and significant when measured at the more disaggregated (postcode) level. However, there is no significant association when measured at the more aggregated (Nuts 3) level. As discussed, these results confirm the theoretical discussion about the local nature of knowledge spillovers (Van Oort 2007; Rosenthal and Strange 2008; Baldwin et al. 2008; Andersson et al. 2012). Human capital is positive and significant in all regional types except for Agrarian regions and diversified regions with a strong secondary sector. A positive association indicate that access to external knowledge is important and arises due to a good supply of highly educated individuals. These results support the findings in prior empirical studies on the influence of external knowledge (e.g. Rauch 1993; Acemoglu and Angrist 2004; Moretti 2004). Population density is shown to have a positive influence on firm performance in two out of the five regional types; consumption countryside and diverse regions with a strong service sector. This could indicate that it is not only diversity in related activities that has a positive influence on firm performance in these regional types, but also urbanization per se.

Unobserved heterogeneity and contextual variation

Turning to the contextual variation and unobserved heterogeneity, from the results it can be seen that even after introducing the covariates and estimating the model across the applied typology, a significant part of firm performance differentials are explained by unobserved heterogeneity at the firm, local and regional levels. The estimated variation of the random intercept at local level is significant across the estimations implying that there is local heterogeneity that explanatory variables are unable to fully account for. Similarly, the estimated variation of the random intercepts at regional level are significant across the estimations, implying that there is unobserved heterogeneity also at the regional level that the explanatory variables cannot fully explain. There is a restricted possibility to measure spatial dependencies at the firm level since the exact location of each firm is unknown. As shown by Bhat (2000), introducing a hierarchical structure with levels that correspond to different geographical aggregation levels reduces spatial heterogeneity and spatial autocorrelation. To get an indication of weather spatial autocorrelation is significant, firm variables have been aggregated to the local (postcode level) and tested using Moran’s I and (11.5), without the typology. Moran’s I is not significant (1.86, p-value 0.08) and the null hypothesis that there is zero spatial autocorrelation can thereby be accepted at the five percent level.

11.5 Conclusions

The concept of smart specialization is part of the new EU growth strategy, and has been introduced as a response to the low growth rates of innovation and productivity at the EU level. Over the last two decades, growth policies at the EU level have been formulated to encourage research and development, particularly as a strategy to obtain economic growth in the rural regions of Europe. This paper addresses some of the issues that relate to the concept of smart specialization and EU smart growth policy by analysing the influence of factors that measure smart specialization on firm performance across European firms. The purpose is to empirically address and bring together concepts that are central to the idea behind the smart specialisation logic and the framework builds on the theoretical argument that on-size-fits-all regional policy models are to give way for growth policies that are both knowledge-based and place-based (Rodríguez-Pose
The empirical approach is based on firm-level micro data and the combination of key characteristics at firm, local and regional levels. Our results confirm the idea that policies should be place-based and our results indicate that the spatial extent of spillover effects are indeed local in nature. We also find consistent support for the positive influence of related variety on firm performance across regions of different type, which is in line with theory stating that it is proximity to firms with similar settings in terms of knowledge base and technology that is thought to be the main driver of growth rather than diversity as such. The paper stresses the importance of applying spatial setting in the study of concepts that are related to smart specialization.

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Part III

Social Capital in Transition
12 A Study of Elderly Residents in a Small New Town – an Example of Tsurukabuto Kobe City

Kinuko Fujimori

12.1 Introduction

An overview of the development of New Towns

During air raids by the American army in WW11, many of the residential and industrial facilities in Japan's main big cities were severely damaged. In these big cities damaged by the war, there was a shortage of supplies directly after the war and surviving was the first priority, but afterwards the demand for housing increased. By the air raids during the war many of the buildings had been destroyed by fire or had become empty after evacuation, and there was a housing shortage due to the demolition of these houses. Furthermore, finding housing for the repatriates who returned from overseas after the war ended became an urgent task, and solving the housing shortage by increasing the number of houses became the biggest challenge.

The economy of Japan recovered to its prewar level after 1950, and entered into the age of high economic growth. Therefore, the concentration of the population in the cities became even more intense, and the postwar housing shortage in the main cities wasn't solved. Additionally, unregulated housing development progressed in many places, and a situation were low living quality housing was supplied occurred. Therefore, to solve the problem of housing shortage and to improve the housing quality, new large-scale housing projects appeared as a public works solution.

Large scale housing development, in other words Japan's 'New Towns', was first practiced in Senri New Town. With its development area of 1,160ha[3001?]planned inhabitants of 150,000 people, planned occupation of 37,000 households[3001?]developmental scale, and provided number of houses this was the largest housing complex of Japan. Moving in started in 1962, and was completed in 1970. After the development of Senri New Town, maintenance laws advanced, planning and construction techniques were passed down, and in various parts of Japan New Towns were developed.

Several problems occurring in New Towns

As explained above, the development of New Towns in Japan started with the construction of Senri New Town, and consists of a history of more than 50 years. However, in recent years several problems have appeared that were never considered during the planning and development stages. As main problems, I give the following three, namely the aging of the population, the decline in the population, and the aging of the buildings.
The first problem, the aging of its residents, is not limited to New Towns, but a contemporary problem of Japan as a super aging society, and it is thought that the aging of the population will only continue further. And as the ratio of the population living in the cities is high, we can assume that in the near future the increase in the elderly population will mainly occur in the big cities as well. In the case of New Towns, this tendency is even more remarkable. The reason for this is that the people who moved in to New Towns in the period of high economic growth were then homogenous, mainly relatively young, nuclear families, and this homogeneity means that they are now all at once becoming elderly.

The second problem of a decline in population is due to the New Town's position of being a starting point for the children's generation's move towards adulthood, such as further study, career or marriage. In other words, the children's generation are one after the other leaving home, and as result, while the number of households remains constant, the number of people of which a family consists decreases, and the frequency of families of elderly couples or singles increases. Moreover, the people that have become elderly and can't continue living in the New Town don't sell their lots, but leave them empty, vacancy increases, and as the number of new residents moving in decreases as well, we can see an emptying out of the city.

The third problem of aging buildings can be traced back to the building environment at the time. More than 40 years ago, every house had a modern arrangement of rooms, and the orderly lined up convex buildings were an attractive landscape. However, in recent times the narrowness of the area and the arrangement of rooms are not user-friendly any more. Furthermore, in many buildings at the time there was no elevator constructed, but for elderly people or people with disabilities, it is a hard burden to lead a life without an elevator by using the stairs.

The purpose of this study

The first object of this study is to gather basic data concerning the residence movements of the elderly residents of a New Town. To this end, I conducted interviews of elderly residents of a New Town. As specific study area I selected Tsurukabuto as an example, a small scale New Town in Kobe City.

The second object is to examine the main reasons behind the movements of the residents. By using the data obtained during interviews of their complete lifetime, I considered the decision-making and action process of the cause of a residence move in the progression of a life course, and thus make the reasons behind moving clear.

Thirdly, I analyzed the relationship of the elderly New Town residents with their children who moved out, with their surroundings, and their current situation.

12.2 An overview of the survey

The study area

Kobe City (Figure 12.1), the sample area of this study, is located about 25km west of Osaka City, the Tsurukabuto housing complex lies in the eastern part of Kobe, and is a New Town that was developed on ground that became fit for building by removing the Tsurukabuto mountain (height 327m), which was situated in the beginning of the Rokko mountain range (Figure 12.2).

When the planning and development of Senri New Town was decided on in the 50's, the city of Kobe also decided to develop a housing complex on the site of the demolished Mount
Figure 12.1. Map of Japan.

Figure 12.2. Map of Kobe City.
Tsurukabuto. The allotments of the first New Town Tsurukabuto were all sold by the Kobe City Housing Corporation.

In the 1970 census, conducted just after the moving in of residents had started, it was gathered that this was a region with a high homogeneity. For example, the population structure consisted of many occupants of working-age and children, the household structure was a high percentage of nuclear families with children, whereas the division of the population according to profession showed very little working women, and for the men there was a high rate of highly educated people, with jobs in specialist, technical and administrative sectors, and clerical workers.

The city of Kobe is a harbor town, pressed between the sea and mountains, and stretches out to the east and west with only small, long, town areas. City development was conducted here by creating building grounds by demolishing mountains, and using the earth that this created to make landfills in the sea, thus hitting two birds with one stone. The construction technique of the Tsurukabuto housing complex followed this, and the development of a large scale housing complex in the suburbs continued.

The Tsurukabuto housing complex is located in the severely damaged area of the Great Hanshin Awaji Earthquake that occurred on January 17th 1995, but there were no deadly victims and almost no property damage. You could say that the restoration of the lifelines after the earthquake took some time, but as to damage level it never surpassed minor damage.

**Method of this study**

This study was mainly conducted by interviews and by analysis of housing maps.

In the interview study I surveyed 22 people aged between 70 and 93, and asked them to tell me about their life with an emphasis on their residence movements (reminiscence method). Together with the passing of time, I used the idea of a "life course", as a bundle of different careers in a human life, to analyze the changes in their personal and household life course. In other words, the residence moving history is analyzed by using the individual as a unit, and the life course as constructed from the career history, family history, and so on.

During the housing maps survey, I used the housing maps compiled, printed and sold by the company Zenrin for my analysis. Housing maps are published for every district town and village every year in recent years, and are compiled of public information such as nameplates and plaques from around 80 points all over Japan by more than 1800 researchers. However, not limited to older versions, sometimes there are issues that are not kept at the publisher, local library or national Diet library, and some years are missing in my chronological study.

As supplementary data, I used the Tsurukabuto management archives, follow-up surveys of moved out residents, census data, and the Kobe City Archives.

**12.3 The reality of the residence moves of the elderly**

**Before moving into the New Town**

Before WWII intensified, we can see a residence move due to marriage, a career change of the father, death of the father or the adoption of an heir, but this was not very common. However, once WWII became intense, mainly in the cities evacuation to relatives living in the countryside and the evacuation of children started. In big cities and in cities with military bases, air raids became more frequent, and we can see frequent short-time moves.
Even after the war, we can see residence moves by repatriates returning from their evacuation places or from abroad, and together with the revival of the cities we can see an increase of residence moves towards the cities by men changing career or finding work and by women marrying. We can also see a move from inferior housing towards better housing after the rebuilding of the war damage. This way, during the war we can see many of my interviewees of different ages experiencing frequent short-term moves, and the frequency of residence moves before moving into the New Town is high.

**After moving into the New Town**

Even after moving into Tsurukabuto, bought as real estate lots, 8 of my 22 respondents still moved within the neighborhood. For the moves after moving in I found through my survey as main reasons 'changes in the family circle', 'unhappiness with living conditions', 'as a result of the Great Hanshin Awaji Earthquake', and 'changes in lifestyle by advancing age'. I will now give the life course of 4 people as concrete examples.

**The example of moving consequent with changes in the family circle – 90 years old single female**

1. 20 years old: She moves due to marriage. She is living together with her husband and mother in law. After the husband left for the front her eldest son is born.  
2. 24 years old: She has a bad experience with an air raid on Kobe. Fleeing over the mountains, she spends several days with her eldest son and mother in law in the country.  
3. 24 years old: She evacuates to the house of her parents. The war ends, and her husband returns home safely.  
4. 31 years old: She returns to a house in Kobe City, and rents from her sister in law.  
5. 32 years old: She moves with her family to a rented house.  
6. 48 years old: She moves to a rented house. They leave their previous house because it is being rebuilt.  
7. 48 years old: She moves into the Tsurukabuto housing complex  
8. 57 years old: She moves to live together with her oldest son. She sells her place in Tsurukabuto.  
9. 65 years old: She moves back to the Tsurukabuto housing complex. She buys a lot, and starts her single life.

**The example of moving due to unhappiness with living conditions – 86 years old female living with her husband**

1. 25 years old: She moves due to marriage. She rents from her sister in law.  
2. 26 years old: She moves to her husband's company housing.  
3. 33 years old: She moves to her husband's company housing. She, her husband and two sons move to more spacious company housing.  
4. 44 years old: She moves into the Tsurukabuto housing complex.  
5. 66 years old: She moves to a building with an elevator.

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Figure 12.3. The example of moving consequent with changes in the family circle.

Figure 12.4. The example of moving due to unhappiness with living conditions.

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Figure 12.5. The example of moving due to the Great Hanshin Awaji Earthquake.

The example of moving due to the Great Hanshin Awaji Earthquake – 70 years old male living with his wife

1. 18 years old: He moves due to him beginning university studies.
2. 22 years old: He moves into a rented house because he started working.
3. 25 years old: He moves into a better rented house.
4. 34 years old: He moves because he changes careers.
5. 36 years old: He moves because of his marriage.
6. 38 years old: He moves together with his wife and eldest daughter due to a career change.
7. 43 years old: He moves into the Tsurukabuto housing complex.
8. 55 years old: He moves to the 9th story of a 10 story earthquake proof building after the Great Hanshin Awaji earthquake.

An example of moving due to changes in life consequent with aging – 83 years old single female

1. 6 years old: She moves due to an enlargement of her father’s business.
2. 17 years old: She experiences two air raids over Osaka, and evacuates to the house of relatives in the northern region of Osaka.
3. 17 years old: It’s 1945 and the war is ending. To avoid the chaos after the war, she evacuates to a holiday home.
4. 18 years old: She moves to the house of her foster mother.
5. 19 years old: She moves in with her older brother and his wife.
6. 20 years old: Her father rebuilds his house, she moves in with him.
7. 23 years old: She moves because of her marriage.
8. 26 years old: She moves to a rental house with her husband and daughter.
9. 40 years old: She moves into the Tsurukabuto housing complex.

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10. 80 years old: She moves into a home for the elderly with her husband. Her husband dies two years later.

As basic data of the residence moves of the elderly, I could compile an individual chronology of what residence move they experienced at what age. Before moving into the New Town, the residence moves of the elderly respondents are higher than those of the typical Japanese person, due to evacuations for air raids during the war, and postwar housing problems. After moving into the New Town, we can see moves due to the following main reasons: ‘changes in family circle’, ‘unhappiness with the living conditions’, ‘as a result of the Great Hanshin Awaji earthquake’ and ‘changes in lifestyle due to aging’, of which I each gave an example.

12.4 Current state of the generation of the parents

Changes in the number of households changing residence

By using the housing maps to analyze residence moves in housing complexes, I could distinguish three periods. More specifically, 10 years after moving into Tsurukabuto there is a great move (the first period), in the period of the Great Hanshin Awaji earthquake from 1995 to 2000 there is as well (the second period), and the last one after 2005 (the third period).

The first period begins when the houses become sellable (the first five years selling wasn’t allowed), and the prices had become higher than they were when they were bought at first. At this time problems arose with living space due to children growing up, and to meet the changes in the family circle people moved mostly within the neighborhood or to New Towns in the suburbs, as my examination of the management archives and follow-up surveys shows.

The second period can be thought of as essential moving, due to the Great Hanshin Awaji earthquake. On the other hand, it is also possible that the earthquake was only the direct reason to leave, after the desire to move because of changes in the family circle, unhappiness with the living environment or aging had already grown strong.

The third period is the period when the residence moves by long time residents or the elderly become apparent, as I found by my study of the management archives and the follow-up studies.
of out-migrants. From the housing maps I could also see frequent changes from the rental listings. The third period moves are not many in numbers, but I could infer that the real numbers are higher. Since the number of empty houses (hard to see on the data) increased, and that the number was increasing even more I learned from the data of my interview survey.

**The actual living conditions of the elderly**

I will now look at the living conditions of the elderly residents of a New Town, by looking at it from the point of view of shopping for fresh food.

First, as to the place to shop, everyone does it at a store. They are using delivery services as an additional help, but since the forms to fill out the wanted goods are complicated, these services have the tendency to become harder to use as age advances. As another means of buying produce, there is a van coming to the Tsurukabuto housing complex three times a week, but not many people are making use of it.

As means of transport, most people go on foot to stores within the grounds. To go to stores outside of the grounds, there are many people who are making use of public transportation, but there are also some who go with their own car or motorbike. When you ride the public transportation (buses) for ten to fifteen minutes, you reach a train terminal. There are shops where offer goods of higher order than the daily goods, so this is good for shopping.

The person doing the actual shopping is mostly the elderly person, and men who have a spouse can be divided into two types, those who actively do shopping themselves, and those who fall into an auxiliary role. In any case, the act of shopping isn’t just with the aim of buying the produce they use every day, but has also important other reasons such as maintaining their health, and refreshing themselves.

As to the frequency of shopping, 80% of the respondents go shopping for fresh foods more than three times a week. Furthermore, when they go shopping outside of the housing complex, they also make use of facilities not present in the complex such as medical and lifestyle facilities, or to deepen friendship ties, and they usually stay out for a longer period of time. However, with increasing age, the resistance against distance becomes greater, and further shopping trips become little to almost none.

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12.5 Social capital and the elderly living in Japanese New Towns

The actual situation of the children’s generation

The family structure of the parent’s generation who has become elderly consists of 50% single households, if we add the people living together as a couple alone, this number rises to 82%. The remaining 18% is living together with their family, these are mostly households where the children are themselves around 60 years old, and will be in need of elderly care in the future themselves.

This way, the age of most of the children is also high, and as we can see in Figure 12.8, 79% of them are older than 40. Moreover, 48% of them have been living apart for more than 20 years, and we can surmise that they have made the foundation of their own life in their neighborhoods (Figure 12.9).

An attitude survey of caretakers

"If you would get ill or have an injury, who do you assume would take care of you, or who took care of you in such a case" the answers to this question we can see in Figure 12.10. As caretakers mostly spouses or women are named. What we can’t also see in Figure 12.10, is that as caretakers people are relying on family living nearby, and that there is no example of children living further away being named as caretakers. When nearby living family is asked to be a caretaker, this of
Next to their spouse, 26% of people name their neighbors. The respondents of this interview are all living an independent life in a New Town, and are therefore maintaining very good contacts with the neighborhood, which can explain why this is such a high number.

I could find an example of an elderly person who was taking care of people living in the neighborhood during my interview survey. To give concrete examples, they were helping with tasks such as helping with shopping or going to the hospital, helping with meals, and notifying relatives (mostly the children) living far away of the situation when they were suffering from their health. As a district welfare officer this 73 year old man was taking care of 22 elderly (aged between 70 and 92) living in the neighborhood. This way, there are also elderly who have the possibility and inclination to take care of their neighbors. Also, I could verify the names of elderly people who were key members of the management and organization of several activities to contribute to the New Town. I felt during the interviews that engaging in these neighborhood activities had become a purpose in life for the elderly.

This time I didn’t survey respondents who can’t live independently anymore, so this is no more than surmise, but to deal with real problems or make final decisions they seemed to think it would be the family, not depending on their living distance (in this case mostly direct blood relations). Only, I could feel a strong realization with the elderly that in that case it would be difficult to live with their children, depending on the living space, living circumstances, living schedules and differences in their outlook on life.

The changes and current situation of elderly welfare in Japan, which is currently still lagging behind, are the following. After the end of WWII and the reform of the current civil code, it is still a general practice in Japan for different generations to live together. It is also considered to be the duty of the family to take care of the elderly. For these reasons, the elderly welfare policies in Japan have only been aimed at the lowest-level incomes, and have been of a level to foresee accommodation protection and facilities of caring for the elderly. However, the elderly population is increasing, opportunities for the elderly to work are decreasing, and by changes in the family system, legislation was considered. In 1963 the elderly welfare act was established. Moreover, from the 1980’s on gradually home welfare measures started to be taken, such as short stays, day stays, and home help services. In 1989 the ‘10 year strategy for promoting elderly health and welfare’ (Gold Plan in short), in 1994 the ‘New Gold Plan’, and in 1999 the ‘Gold Plan 21’ was developed. Specifically, the above mentioned facility expansion of care houses, intensive care nursing homes and home welfare measures has advanced. However, it is difficult to say that this

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Figure 12.10. An attitude survey of caretakers (plural answers).
has been sufficiently implemented in many aspects, such as human resources, facilities, content and expenses.

Therefore, when it has become impossible for an elderly person to live independently, it is still very common for them to be taken care of by their family. It is also a reality that public and regional services have not yet caught up with the fast aging of the population.

**Participation in neighborhood activities**

86% of the elderly I interviewed participated in the activities of the neighborhood center. We can therefore conclude that the number of people actively engaging in these activities is high. Even if people are participating half-heartedly, they still have many friends and acquaintances raised in the area. In the interview survey I could confirm as well that people formed relationships through their children or from meetings in the neighborhood. I also noticed that many people felt the importance of neighborhood activities, after their social circle had diminished by a dispersion of children and a shrinking space of living and going out due to increasing age. Also, the participation in neighborhood activities was given as one of the main reasons to remain settled.

If we look in detail at the local activities the elderly are participating in, we can see that homogeneous groups are formed, and that there is an overlap within those groups. For example, many of the people belonging to the local elderly society, also participate in the activities of the neighborhood center, or participate in local volunteer activities and this way there are networks formed between the elderly. However, apart from the seasonal festivities, the cooperation with people from a different generation is equal to none. I believe that in the future, the relationship with people living in the neighborhood, and especially cooperation with people from a different generation, will be necessary.

We can regard the human relationships that form a purpose in life, strengthen the motivation to stay settled, and support the elderly that are easily isolated with their medical care, transportation and daily shopping, as capital, and the social networks that are formed by mutual support, cooperation and trust through meetings in the neighborhood and local activities, as social capital.

However, in my interview with the personnel of the neighborhood centre, they mentioned damage and weakening of the social capital and neighborhood activities, due to the increasing old age of the residents, and the great changes in the structure of the population due to people moving out. We can say that in the future it will be important to conduct promotion for regional activities to the residents, to organize activities that are easy to participate in, and to protect the volunteers who support the continued existence of regional activities.

12.6 Conclusion

In the third chapter I examined the status of the residence moves of the elderly. Before moving into the New Town, their frequent short-term residence moves reflect the air raids during the war, as well as the housing need after the war, and in the period of high economic growth residence moves increased due to frequent career changes. We can say that before moving into the New Town, the number of moves was high. After moving into the New Town, I showed that the main reasons behind residence moves were the following four: ‘changes in the family circle’ ‘unhappiness with the living conditions’ ‘the Great Hanshin Awaji earthquake as a trigger for moving’ and ‘changes in living conditions due to increasing age.’ If we summarize the main reasons behind moving residences, we can say that they are as follows: [24607] Changes in society.
and economy. The situation of the construction environment and the influence of special circumstances such as war or disasters and Changes in the family circle.

In the fourth chapter I examined the status of the generation of the parents. First, in the transition of resident's moves in the Tsurukabuto housing complex, I could confirm there were three distinct periods: the first period a great move 10 years after the first residents moved in, the second period a move after the Great Hanshin Awaji earthquake occurred in 1995 until 2000, and the third period after 2005. Of the residents who didn't move in one of these periods, I examined one part of their living conditions by looking at their shopping activities. I could conclude that my respondents do their shopping themselves, that they go shopping frequently, that they regularly use public transportation to go shopping, and that while they do this they also make use of medical, financial and lifestyle facilities that aren't present in the complex. However, with increasing age, their aversion to distance increases, and the frequency of further shopping trips diminishes to almost none.

In the fifth chapter I examined the social capital and the elderly in the New Town. I could surmise that their children's generation moved out and managed to build their life in their own regions, therefore the elderly parent's generation who can still live independently depend on spouses, family in neighbors as caretakers.

In this case 'family' consists also of non-directly related subsidiary family or non-blood relatives. The people that were traditionally considered to be 'family' in Japan diminished greatly after WWII by the development of the nuclear family and the move to the cities, and the proximity of residence has become an important factor. Under these circumstances, I could identify that the generation of their children who are directly blood related and were born and raised in the New Town but moved farther away for study, work or marriage, are often not being thought of as caretakers by the elderly any more. I believe that for contact and recognition as a relative, proximity of residence has become an important condition and the relationship with people that are not related but living in the neighborhood has become very important.

The parent's generation is mingling with the neighborhood, views the relationship with their neighborhood as important, and has an attitude of actively participating in activities. However, even though homogenous groups are formed, and we can see overlaps between those groups, networks between the elderly are present, there is almost no link with different generations. Also, by residential moves the composition of the population has changed, and due to the aging of the population the social capital, that exists through local activities, is getting damaged and starting to weaken.

In the future, in terms of strengthening the social capital, I believe it is necessary to build human relationships by making an environment where it is easy to be interested by and participate in local activities, regardless of your age. To ensure this, institutions such as the government or companies, need to plan a systematic implementation (such as the maintenance of a working environment and fostering local ties), and the continuation and expansion of the current local activities (re-building local networks) would be effective, and for Japan, who has entered into a super-aging society, I believe it is an urgent need.

I conducted an interview survey focused on the residence moves of the entire life course of elderly residents of a small-scale New Town, and analyzed the main reasons for moving, the living conditions of the elderly and the elderly living in Japanese New Towns and social capital. It is necessary to conduct empirical research to correctly grasp the living conditions of the elderly in the rapidly ageing society of Japan.
References


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13 Social Capital for Business Development –
Developing Relationships and Trust in
Development Programs for Women Entrepreneurs

Maria Bogren

13.1 Introduction

A high level of social capital in a region often correlates with a high level of entrepreneurship (Putnam, 1993; 1995), and according to Fukuyama (1995) social capital creates wealth in society. Therefore, several scholars see social capital as a key driver for entrepreneurship (for example Aldrich & Martinez, 2010; Thornton & Flynn, 2003), and a positive relationship has been shown between social capital and business performance (Schutjens & Völker, 2010; Westlund & Adam, 2010). Earlier studies have shown that women entrepreneurs struggle with their managerial performance in order to gain successful and profitable enterprises (Carter et al., 1997; Du Rietz & Henrekson, 2000), but the female underperformance hypothesis has later been challenged by other researchers (Robb & Watson, 2012; Marlow & McAdam, 2013; Zolin et al., 2013). Additionally, previous research shows that women entrepreneurs do not use their network contacts professionally (Ehrich, 1994; Sing, Kumra & Vinnicombe, 2002) and that they lack role models (Klyver & Grant, 2010). Other studies show that women use both their formal and informal networks when seeking financial capital (Gatewood et al., 2009) and that there are no major differences in women’s and men’s networks (Foss, 2010). However, there is a lack of research about organizational processes where social capital is created (Aaltio, 2008), and Paldam (2000) stresses that there is an imbalance where theory and speculation grossly outweigh actual measurement of social capital. Paldam (ibid) also puts forward that there is a need for measurements of social capital on micro level in order to be able to relate this to macro indicators. Could the level of social capital in a region be increased by stimulating business development? In both Sweden and Norway different initiatives, often called development programs or development projects, have been taken to stimulate and promote women’s entrepreneurship (Pettersen et al., 1999; Holmquist & Wennberg, 2010). Development programs, set up to stimulate and develop women entrepreneurs’ social capital further, might therefore be one context at micro level where the process of social capital development could be studied. Some researchers stress that education and training programs for entrepreneurs should focus on the development of managerial skills and patterns of behavior that could facilitate success and growth (Carter & Allen, 1997; Dafna, 2008). The question that arises is if development programs are organized and designed in a way that they facilitate the development of social capital.

At a national and regional level social capital is often measured by the relationships people have and the networks they belong to, as well as the trust they have in other people (Westlund...


13.2 Theoretical framework

Social capital – relationships and resources for societal development

The interaction between people in a region is crucial in building social capital (Putnam, 1993), and Coleman (1988; 1994) stresses that social capital provides access to resources. Both Lin (1999) and Nahapiet and Ghoshal (1998) highlight resources in their definitions of social capital. Nahapiet and Ghoshal (1998:243) define social capital as:

“the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network.”

In order to operationalize the elements of social capital, Lin proposes the definition of social capital as “investments in social relations by individuals through which they gain access to embedded resources to enhance expected returns of instrumental or expressive actions” (Lin, 1999:39). Both these definitions are in line with what Snijders (1999) and Paldam (2000) label network payoff, where a person's network gives benefits. Following the thoughts of these scholars, stimulating interaction between participants in development programs could be one way of building more social capital and by that, more available resources for the entrepreneurs.
In her study of social capital, Sappleton (2009) measured trust (trust in others), social networks (friends, family, and close acquaintances), social activity (the degree to which the individuals socialize with members of their networks), and social participation (the individual’s integration into the wider community). The measurement of social activity could be of interest in a development program, both from a participant’s perspective as well as from an organizer’s perspective. Would social activity within a network such as a development program lead to contacts and resources benefiting the entrepreneurs and how should an organizer facilitate fruitful social activity – relationship building – within a program?

Sappleton (2009) has studied men and women business owners and finds that women who operate enterprises in traditionally female sectors have the highest levels of social capital. Men and women who work in traditionally male sectors exhibit lower levels of social capital concerning trust, community engagement, and social networks. Westlund and Nilsson (2005) have developed measurements of social capital for business life and tested the internal and external social capital of enterprises. When examining external social capital they focused on production, environment, and market related relationships. The results from their pilot study showed that enterprises mainly build and maintain relationships with their customers and their labor force.

RELATIONSHIPS AND NETWORKS

Nahapiet and Ghoshal (1998) focus on the relational dimension of social capital, where assets are created and leveraged through relationships. They believe that the development of social capital is affected by factors that are important for the evolution of social relationships, such as time, interaction, interdependence, and closure. Both time and interaction might be valuable indicators when visualizing and measuring the development of social capital in development programs. Zhang and Hamilton (2010) stress the importance of time for participants to get to know each other. In order to capture interaction and development of relations between participants, the measurement of social activity used by Sappleton (2009), might also be a suitable measurement in development programs. Also Lin (1999) emphasizes the importance of social relationships and the active actions of the individuals themselves in order to get access to resources, as Lin (1999:30) stated: “investment in social relations with expected returns”. This idea about relationship building apparently goes both ways. Women entrepreneurs should be active in order to receive resources but they should also be prepared to support others with resources. As Paldam (2000) categorizes the definitions of trust, this is about trusting other people and also about trust payoff, when individuals benefit from their own goodwill.

In line with this discussion is the confidence a person has in another person. Baron and Markan (2000:106) propose that social skills play an important role and stated: “A high level of social capital, built on a favorable reputation, relevant previous experience, and direct personal contacts, often assists entrepreneurs in gaining access to venture capitalists, potential customers, and others”. Lin (1999) calls an individual’s own social capital their social credentials, which also becomes an important aspect for the individual’s accessibility to resources. Lin (1999:35) defines social capital as "resources embedded in social structure; accessibility to such social resources by individuals; and use or mobilization of such social resources by individuals in purposive actions". In this definition there is a focus on the individuals’ accessibility but also on their actions in order to mobilize resources. By that, women entrepreneurs need to take active action and be aware of their own social skills in order to gain access to resources.

Social relationships are strengthened through interaction, and social capital increases rather than decreases with use (Nahpiet & Ghoshal, 1998). Since the development of social capital is

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closely related to the development of relationships, and if social capital promotes more social capital, networking activities should be an important part of development programs. However, in Paldam’s (2000) division of definition families the definitions regarding cooperation and network are separated. Both of these definition families, however, consist of relationships and relationship building, which are crucial in development programs. Also Fukuyama (2001:7) stresses the importance of networking activities when he defines social capital as an “instantiated informal norm that promotes co-operation between two or more individuals”. Interaction in many ways might provide women entrepreneurs with greater access to social capital and would therefore be important to stimulate in development programs.

The more diverse a network of contacts an entrepreneur possesses, the greater the probability that she will find the resources she needs (Martinez & Aldrich, 2011). Entrepreneurs often develop their network and establish more professional relationships during the development and growth of their enterprises (Hill et al., 1999; Greve & Salaff, 2003). Initially family and friends act as a support and then professional contacts such as bankers and accountants become more significant. Martinez and Aldrich (2011) argue that entrepreneurs should balance cohesion and diversity in their networking strategies, but point out that diversity is more important later in a venture’s life. The development of network contacts over time might also be something to bear in mind when constructing a development program, as well as how the development of contacts could be facilitated.

Trust in participants and program organizers

The importance of trust in entrepreneurial programs is highly emphasized by several researchers (e.g., Farr-Wharton & Brunetto, 2007; Zhang & Hamilton, 2010; Gordon, Hamilton & Jack, 2012). Two important conditions for trust are that the entrepreneurs have uncompetitive businesses and common learning needs (Zhang & Hamilton, 2010). These researchers argue that there should be a certain level of convergence, where participants feel similarity with the others, and divergence which supports the exchange of new ideas. They stress that competitive relationships hinder the development of trustful relationships among participants. However, if there is a very high grade of homogeneity in a group, the possibility to learn from many different experiences, backgrounds, and perspectives is reduced (Leitch et al., 2009).

Important parts in building trust and social capital in development programs are the aspects of time, commitment, and social activity (Nahapiet & Ghoshal, 1998; Zhang & Hamilton, 2010; von Friedrichs Grängsjö & Gummesson, 2006; Neergaard & Ulhøi, 2006). Nahapiet and Ghoshal (1998) stress that it takes time to build trust and there is a need for stability and continuity of social structures. When a development program lasts over a long period the participants have time to get to know and understand one another (Zhang & Hamilton, 2010). In a study of competing hotel managers who had a common network for marketing purposes, issues of trust and commitment were central (von Friedrichs Grängsjö and Gummesson, 2006). It was important to trust one another, show commitment to the network, share information, and have discussions with people at the same organizational level (in this case, management). The physical meetings in this network led to the establishment of personal relationships and a high-trust culture in the group. Also Neergaard and Ulhøi (2006) highlight the importance of participants showing commitment to the group, by putting resources, time, and effort into the relationship. In Sappleton’s (2009) words this is about social activity, which she has measured using the degree to which the individuals socialize with members of their networks.

Farr-Wharton and Brunetto (2007) recommend that authorities that support women entrepreneurs with business networks focus early on trust building within these networks. From their
studies they revealed that women appreciated sharing problems and ideas and getting feedback from more experienced participants in the network, but they did not share important ideas about opportunities with competitors. Zhang and Hamilton (2010) highlight the importance of bonds and agreements for the participants in order to show commitment to a program. In the entrepreneurial program that Zhang and Hamilton refer to, the participants signed an agreement for long-term relationships and open communication among the members. This agreement also contained a financial bond if they did not participate in the program. Tynan et al. (2009) highlights the opportunities of informal networking offered by the development program as a positive outcome for the participants. The agreements and bonds could be seen as tools for trust building, but the informal networking opportunities could also be seen as an instrument for trust building among participants.

Zhang and Hamilton (2010) stress the importance of the active participation of program organizers in all training activities. Through active participation, the organizers contribute to a secure environment where the participants could be open. Zhang and Hamilton (ibid) recommend program organizers to adopt roles as listeners, observers, and facilitators, instead of leaders or experts. In order for the participants to get to know each other fast, Zhang and Hamilton suggest that programs should provide early overnight events and open ceremonies. They stress that it is important for participants to have confidence in the institutional arrangements, such as program design and organizers, but also to trust the other participants. Moreover, commenting on and improving the program design and implementation is mentioned by Zhang and Hamilton in order to provide trust in the programs process.

Close to the discussion about trusting organizers as well as participants there is a connection to the division made by Putnam about who makes the division between if a person trusts other specific people or if they have a general trust in others (Putnam, 1995). Another division is between interpersonal trust and institutional trust. The interpersonal trust is about trusting the people you are working together with (Fukuyama, 1995), and institutional trust is about having confidence in institutions such as, for example, the education system, the police, and the government (Paxton, 1999). Paldam (2000) discusses generalized trust, involving trust in people in general, and special trust involving trust in known people or specific institutions. He puts forward that with special trust a person can easily check others’ trustworthiness from friends. Special trust or institutional trust could label the trust that participants have for the program organizers and their organizations, which in this study mainly concerns universities. The participants need to trust each other but also the organizers of such programs in order to gain personal as well as business development.

However, there could be too much trust as well as too little trust within a group, both of which could be problematic. Fukuyama (2001) puts forward that strong moral bonds within a group can lead to their members not trusting or wanting to co-operate with outsiders. Such groups might therefore be too isolated. Paldam (2000) discusses the reasons members in a group have to cooperate with others; including for their own reasons, due to pressure within the group or that they are forced to cooperate. Another problem with group collaboration is the aspect of free riding which could be costly to the group and might require guarantees to each other (ibid). Portes (1998) highlights the dilemma of social control, with strong norms and rules, in groups. One positive outcome, however, of belonging to a well-respected group is that a member can gain a larger radius of trust, for example by being a member of a religious group whose members are seen to be honest and reliable then the individual member is also seen as being honest and reliable (Fukuyama, 2001). All these aspects are things to bear in mind when organizing development programs and putting participants together in groups.

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13.3 Method

SAMPLE – WOMEN ENTREPRENEURS AIMING FOR BUSINESS GROWTH

A qualitative approach was used to study a two-year Swedish–Norwegian development program named Kvinnor & Tillväxt (Women & Growth), that comprised twenty-four women entrepreneurs from both countries who explicitly expressed a willingness to expand their businesses. The research was conducted within an action research and development project, with researchers from Sweden and Norway, where the development program Women & Growth was one core activity. The author has been part of the academic staff of the project and has therefore had access to the development program for its entire running period.

The women entrepreneurs were recruited to participate in the program on the basis of their interest in business growth. The recruitment process included two questionnaires: the first with general questions about being a women entrepreneur, the second with more specific questions about why they wanted to attend Women & Growth (see Bogren et al. 2013 for a detailed description). To be considered for the Women & Growth program, the women entrepreneurs needed to have a business that was at least three years old, of which they owned at least 50 per cent, and from which they derived their main income, and they had to be interested in expanding the business. Besides the twenty-four women entrepreneurs, one male entrepreneur from each country was selected by program organizers based on their entrepreneurial experience. This was due to the requirements of one of the Norwegian funding organizations.

The participants in the program came from different sectors and had been active as entrepreneurs for varying lengths of time. Ten were in health care, three in the experience industry, ten in service industries, and three in manufacturing. Consideration was taken to select non-competing companies. The least experienced entrepreneurs had been in business for three years, and the most experienced for more than twenty years. The average age of the Norwegian women entrepreneurs was 39; the average age of the Swedish ones was 46. Seven of the Norwegian entrepreneurs and eight of the Swedish ones owned their company outright. The women entrepreneurs were well educated: all twelve Norwegians had studied at university for between three and five years, as had six of the Swedes. Four entrepreneurs (one in health care and three in services industries) quit the program during the first year: two had to leave for health reasons and lack of time; one moved to another country; and the last took a full-time job and was therefore no longer an entrepreneur.

STRUCTURE AND CONTENT OF THE DEVELOPMENT PROGRAM WOMEN & GROWTH

The development program Women & Growth consisted of five meetings held in a location close to the Swedish–Norwegian border. Each meeting lasted two full days and the content was planned together with the participants. The program combined theoretical content with practical applications and time to reflect, discuss, and exchange experiences with the other entrepreneurs. The theoretical sessions covered subjects such as marketing, financing, networking, and internationalization. One ongoing task was working with an expansion plan. This was a living document for the entrepreneurs during the program, and was also something substantial to discuss with the other participants. The expansion plans were also made available at an electronic platform that is discussed below. Presentations (for example about their expansion ideas) held by the entrepreneurs were filmed, and also made available on the electronic platform.

In addition to the main meetings attended by the whole group, the entrepreneurs had the chance to meet in smaller groups. Four smaller groups were established with participants from
both countries and from different industries in order to encourage international networking. These groups functioned as a forum for the exchange of experiences and the members functioned as mentors for each other. Some groups also visited each other’s businesses. Additional incentive to network within these smaller groups was provided by providing each group with 1,000 euro, with the aim of encouraging the development of the groups and by extension to stimulate business development. The groups invited, for example, guest consultants to join them for a meeting or meet at a hotel to work on one another’s expansion plans.

**Data collection and data analysis**

This study is both theoretically and empirically driven. It aims to focus on measurements of social capital, in the form of relationships and trust, at micro level and thereby contribute to the discussion on how social capital can be visualized and measured. Empirically, the study focuses on the development process of relationships and trust in one development program. Thereby, it answers the call for more research into the organizational processes where social capital is created (Aaltio, 2008). Aspects connected to how relationships and trust develop and can be stimulated are captured and discussed in the context of development programs for women entrepreneurs and in the light of relevant theories of social capital. The research process has been characterized by a hermeneutic comprehensive approach, where my understanding has deepened over time. New empirical knowledge has led to the need for greater theoretical understanding, and in-depth understanding of theories within social capital has led to new empirical discoveries in the material. I have fluctuated between theory and empirical evidence, as my understanding has expanded over time. My close access to the participants over the two-year period and their trust while sharing their experiences of the program has been valuable to this study. However, this closeness is also a challenge for a researcher. Therefore, I have been careful to be transparent in the reporting of empirical data, by showing several quotes and different interpretations.

Data was generated in three ways in conjunction with the five physical meetings held under the aegis of the program (in January, May, and November 2011, in May 2012, and in January 2013). Firstly, a short questionnaire was handed out in November 2011 and May 2012 in which the entrepreneurs were asked about the importance of network contacts within Women & Growth for the development of their businesses. Secondly, after each of the four initial meetings the entrepreneurs were asked to reflect in writing on their participation in the development program and in the mixed network groups (with participants from two countries and from different industries). At the fifth and last meeting this was only carried out orally. Thirdly, the participants were asked to complete a web-based evaluation survey after each of the five meetings.

The substances of network relationships as well as contacts generated within the development program were analysed, along with the way in which the program's networking process regarding trust developed over time. The questionnaires about networking contacts within Women & Growth were analysed according to who they had had contact with and the content of that contact. The relationships between the participants were illustrated visually, showing who gave and who received advice.

The participants’ own reflections provided answers concerning the networking process in the small, mixed network groups as well as in the overall development program. These reflections, together with the evaluation surveys, also shed light on the development program’s content, arrangement, and design. The reflections and surveys were analysed with the theoretical aspects of relationships and trust in focus, and with aspects concerning the program’s structure, content and activities. The themes that were visible in the empirical material were labelled, and patterns
and changes over time were looked for in order to follow the process of the development of relationships and trust among the participants.

13.4 Development of relationships with and trust in other participants

The ways in which the development of relationships with and trust in other participants emerged in the development program are presented and discussed under the following subheadings: Composition of participants, Commitment to the program, Development of relationships, and Exchange of experiences.

Composition of participants

When constructing the development program Women & Growth, great effort was gone to by the organizers to avoid grouping together competitive businesses. Since the participants came from two countries and also from different industries, it was possible to ensure that there was no competition between them. One of the Norwegian entrepreneurs expressed relief about this in May 2012: *To meet in an arena where you are not competitors is completely invaluable.*

The participants put forward in their reflections, already after the first meeting in January 2011, that they had similar business problems regardless of their business orientation:

- **Swedish entrepreneur:** *It is interesting how similar we all are and what similar difficulties we have although we have completely different business orientations.*
- **Norwegian entrepreneur:** *That many companies struggle with many of the same issues despite us all owning different businesses.*
- **Also in the surveys, after the first meeting, there were similar comments about meeting and discussing issues with like-minded people.*

That the entrepreneurs, at an early stage, realized that they had similar business problems probably also contributed to strengthening the importance of common learning needs. Regardless of business orientation they had similar problems; they had been in business for a while; wanted to develop themselves as business owners; and expressed a wish to grow their businesses. They expressed similar goals in attending the program, such as having the same interests and common goals. One of the Norwegian entrepreneurs said after the first meeting in January 2011: *I am so surprised that the experience of meeting and communicating with this group of people in the same boat gives me so much energy. This is something out of the ordinary.*

One serious problem though, that did not help bring together the participants, was that two male entrepreneurs were recruited to the program. They did not initially explicitly express a need to develop neither themselves nor their businesses, which separated them already at an early stage from the rest of the participants. They were men, they were recruited in a different way since they were asked to participate by the program organizers, and they did not directly express a willingness to develop their businesses. During the entire length of the program they showed a lower level of engagement than the women entrepreneurs.

Aspects of homogeneity and heterogeneity seem to be adequately catered for in the program. The men entrepreneurs were homogenic enough to feel trust in the group, but they were also heterogenic enough so that they could engage in valuable communication with the other participants (Zhang & Hamilton, 2010; Leitch et al., 2009). The participants’ learning needs seemed
to be more based on common factors among entrepreneurs that were in the same phase of business development and struggling with a variety of problems in running a business, than on having specific theoretical needs to learn about, for example, financing or leadership. Whether participants had generalized trust in other people (Putnam, 1995; Paldam, 2000), might also be an indicator of how the group works together at the early stages as well as for what reason the participants have joined the group (Paldam, 2000). A reflection here is that participants should all be recruited onto a development program of this kind in the same manner. Homogeneity, heterogeneity, learning needs in a broad sense, generalized trust, and motives to join the group could all be aspects suitable for measurement in order to estimate social capital in development programs.

Commitment to the program

When joining the Women & Growth program, the participants made a commitment to take part. However, there was no financial reprimand if a participant was absent from a meeting. It was seen more as a moral commitment to the program. Committing time to the program and to the small network groups as well as the importance of a confidentiality agreement were central when it came to showing commitment to the program.

Setting aside time for the program was definitely an issue for a number of participants, especially in the beginning of the process. This was highly visible in the entrepreneurs’ reflections. Difficulties in managing their own time were mentioned by eight of the entrepreneurs and problems in attending physical meetings in the network groups were mentioned by six entrepreneurs as an obstacle. Two entrepreneurs mentioned the distance between Norway and Sweden as a problem; two other entrepreneurs highlighted that it was fine to set aside time if the meetings were meaningful; two other entrepreneurs noted that it was hard to prioritize the development program when they were at home. When the program had been running for a while the entrepreneurs were more eager to set aside time for the program and for meetings and discussions with the other participants. One of the Norwegian entrepreneurs wrote in her reflection in May 2012:

*We have become more relaxed as a group as time has passed. We take the time to listen to each other and accept advice.*

Time was also an issue in the small network groups. The presence of time in the group at meetings and in discussions both during the meetings and between them was important for participants to trust each other. It seemed that they did not trust participants who were not active in their groups.

Although most entrepreneurs were positive to the small network groups, there were some who did not appreciate being assigned to these small groups. One of the entrepreneurs in particular did not think that she had much in common with the others in her group and was therefore not so enthusiastic about the collaboration. That group also had some difficulties in the beginning, but after receiving the group funding they got to know each other and found out that they could help each other a great deal.

The confidentiality agreement that was signed by everyone involved in the program became an important symbolic act and made it possible for the entrepreneurs to comfortably share their experiences. One of the Swedish entrepreneurs wrote in her reflection from May 2011 that she had previously had a bad experience with this when her business idea was stolen. She was appreciative of the confidentiality agreement:

*Now that we have signed the confidentiality agreement I feel secure in opening up to the women in this growth network.*

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This was notable regarding several of the women entrepreneurs. It became easier to communicate and to share experiences, including negative ones, after the agreement was signed.

The interpretation regarding the time aspect was that when the entrepreneurs took time and participated in the common meetings as well as in the network-group meetings this strengthened trust among them. By setting aside time for the program and for the meetings the entrepreneurs showed that they took the program seriously, which is put forward as important for trust building in contexts like this (Zhang & Hamilton, 2010; von Friedrichs & Gummesson, 2006; Neergaard & Ulhøi, 2006). Another aspect when looking at the small network groups is that the entrepreneurs’ own social capital, her social credentials (Lin, 1999), could play a role for trust in the group. If participants did not trust individuals, because of their lack of participation, this hindered group collaboration. The time aspect is therefore central when trying to capture commitment to a program, but maybe it could be measured in different ways: time set aside both in meetings and between meetings. Other aspects of commitment are the resources an entrepreneur makes available to others in a network, which will be discussed in the coming paragraphs.

Development of relationships

The development of relationships within the development program showed some visible patterns in terms of who communicated with whom and about what, and how this emerged over time. The questionnaires about networking contacts showed that the contacts generated within Women & Growth during the first six months were mostly about the program (and particularly participants’ growth plans) and the development of the participants’ own businesses. As the program progressed, participants exchanged more specific business advice and a number of business relationships were established both within and beyond the network groups.

The participants who started to bond with one another at a very early stage were the financial advisers and the health sector entrepreneurs, of whom three in the same network group (two from Norway, the third from Sweden) were very active in giving one another business advice, and were also the first to actually buy and sell goods and services to one another over the national border. The two financial advisers belonged to the same network group and almost immediately began to share experiences about their profession. They went on to collaborate on giving financial advice to clients doing business in the other country. Furthermore, both acquired new clients through Women & Growth, one from the same network group and the other from one of the other network groups. It seems that sector (such as health care or financial advice) trumped country when it came to building interpersonal relationships.

The sharing of business advice was not limited to immediate network groups. When mapping the relationships between the entrepreneurs to illustrate them visually, it was found that much of the advice was given to people in other network groups. One person, for example, had given advice to members of all four groups. Relationships were now developing that transcended the boundaries of group, sector, and country. It seems that the entrepreneurs’ starting point was affinity – they gravitated towards the people they liked to discuss and share experiences with, regardless of the industry they were in. At this point it was also shown that participants became more motivated and interested in meeting each other when they felt that they got something out of the meetings. Another interesting aspect to be noted was that participants with occupations involving a high grade of interpersonal contact were fast to build relationships with others in the program.

New ties were also made with people outside the network through contacts gained from the program. One example was the Swedish entrepreneur who connected two people outside...
Women & Growth, who then started a fruitful business relationship. This example highlights the fact that not all connections were made within the program. In this case, the Swedish entrepreneur had taken part in a meeting with the small network group, where they had hired a guest consultant to coach them. After this meeting, it occurred to the entrepreneur that she had a friend in another city who was unemployed but had a lot of coaching experience. She brought together her friend and the consultant, who hired the friend for an assignment. This was one example of how business contacts could emerge as a result of the new ties generated by the development program.

When following the process of relationship building in the program it was obvious that specific trust (Putnam, 1995; Paldam, 2000), in this case trusting people with similar occupational backgrounds, played a significant role at the beginning of the trust building process. However, after a while it seemed that it was the network payoff (Paldam, 2000) that was more important. If the participants received good advice it did not seem to matter who provided it. At this point the group members probably knew each other well, so it might be relevant to discuss specific trust in all group members in the development program. This is in line with what Zhang and Hamilton (2010) underpin regarding time taken for the participants to get to know each other. The small network groups did not seem to be too isolated, since everybody communicated frequently regardless of which group they belonged to. Both specific trust and network payoff could be relevant trust measurements to capture, as well as following the content of communications between participants. It might shift what it is about in the beginning of a program compared to in the end, as was also shown in Women & Growth with relatively neutral content in an early stage. Sappleton’s (2009) measurements of social activity and social participation might well be suited for these matters.

**Exchange of experiences**

Exchange of experiences is about giving and taking in a development program. Regarding the question about contributing knowledge and information into the program, this gave a variety of answers in the early reflections from January 2011. Contributing to discussions was mentioned by 18 of the entrepreneurs. They expressed it in form of being a speaking partner; discussing and exchanging experiences; asking questions and reflecting on their own businesses as well as those owned by others; and contributing with ideas and advice. Another theme brought up by 14 entrepreneurs was to contribute with their experience as an entrepreneur. This was mainly expressed as experience gained from running a business and going through its successes and failures over time. Eight entrepreneurs said that they could contribute with concrete professional experience and six said that they could contribute with their own personal experience. Only two entrepreneurs said at this early stage that they could contribute with their own network contacts. One interesting aspect here is that these two entrepreneurs were working in the cultural sector where they might be more used to sharing their contacts and using other people’s contacts as well.

It took some time before the entrepreneurs felt confident enough to share difficult problems in the groups, both in the small network groups and in the whole program group. As mentioned earlier the confidentiality agreement helped the entrepreneurs to be more open and trust the other participants. The reflections voiced at the end of the program, in May 2012, showed, however, that the entrepreneurs appreciated the exchange of experiences:

- **Norwegian entrepreneur:** An important experience is also to share with others, through it you get a kind of meta-perspective on yourself and your own business, and see its strengths and weaknesses more easily.

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• Norwegian entrepreneur: *It is good for us business owners to see that we are not perfect, not any of us. Everyone is struggling with something that prevents them from performing at 100%. And therefore is it so nice that we can share the ups and downs so we do not need to make the same mistakes.*

• Norwegian entrepreneur: *You become humble when you realise the great knowledge, wisdom, and honesty contained in the group. Everyone sharing their experiences with each other allows for tremendous learning about your own business as well.*

As Farr-Wharton and Brunetto (2007) revealed, participants like to share experiences but were cautious when it comes to competitors. The participants in Women & Growth seemed to be a little more cautious in the beginning of the program when they were asked what they could contribute to the program. The two entrepreneurs from the cultural sector were the only participants who immediately said that they could contribute with their own network contacts. Could it be that people with a high grade of generalized trust are more open to share their social capital? Another issue to discuss is expected returns (Lin, 1999), where entrepreneurs are ready to share experiences if they expect valuable returns (in the form of experiences from the others that can help them in their business life). How this measurement of give and take of experiences would be possible is not totally clear. You might be able to see what kind of information the entrepreneurs share, and set that in relation to the degree of trust they have in each other. Another idea could be the measurement of external social capital in form of production, environment, and market related relationships by Westlund and Nilsson (2005), in a modified form suitable to capture different kinds of relationships in a development program.

**Development of trust in program organizers**

How the development of trust in program organizers emerged in the development program is presented and discussed under the following sub-headings: Engagement and communication, Structure, Content and activities, and Dialogue and feedback.

**Engagement and communication**

Zhang and Hamilton (2010) as well as Farr-Wharton and Brunetto (2007) highlight the importance of the program organizers’ involvement in order to create trust. Regarding the participation of the program organizers in Women & Growth – this varied depending on the level of involvement in the research and development project. Some of the organizers were only given a limited amount of time to spend on the project while others had significantly more time. The program organizers also participated in the four network-groups, but participation varied due to the different amounts of time different program organizers had available for the project and for the development program. The two network groups that had program organizers with higher rates of participation were faster to set up meetings with their groups. One reason could be the involvement of program organizers, but another reason could be how driven the participants themselves were. The groups with entrepreneurs that were organized themselves set up meetings fast and communicated with each other between meetings. They did not need much involvement from the program organizers. One of the Norwegian entrepreneurs who belonged to one of the groups that was late in organizing a meeting said that she would have liked there to be more follow up actions from the program organizers:

* I would have appreciated some closer monitoring from the program organizers. The times when one of the program organizers has been involved other than at the collective meetings have been very good.
The amount of attention different participants received from the program organizers varied. In certain questions there were meetings with single program organizers, for example one of the participants had a mentoring session with one of the organizers and another participant had a meeting discussing business strategies with another of the organizers. Expectations regarding the role of the program organizers might also play a part here. Was it to be as an expert, a teacher, or a facilitator? However, at the end of the program the participants praised the organizers in the survey with comments such as: “they are so incredibly engaged and interested in each individual participant” and “the program organizers make a great team”.

One initial obstacle for some of the participants (and also for some of the program organizers) was the electronic platform that was used for the program, which was to be used as a communication channel. Participants from both countries initially needed help to grasp how the electronic platform worked. The program organizers instructed participants both at the meetings and at home in front of their computers. This electronic platform was used within the university but was not specifically adapted for the program. After a while most of the entrepreneurs were able to use the platform even though they were not comfortable with it. Due to this, communication within the network groups tended to be via e-mail and on facebook. This change of communication channel lead to less involvement of those who did not use facebook, but very active communication among those who did.

The active involvement of program organizers is strongly connected to which role they have, and also to the participants’ expectations of the organizers’ roles. Zhang and Hamilton (2010) propose roles as listeners, observers, and facilitators, instead of leaders or experts. Initially it seemed that the entrepreneurs expected the organizers to take on expert roles and they also expected more of a school setting instead of a process development in the program. When getting to know the program organizers better and understanding their roles it seemed that the entrepreneurs developed trust in the organizers. In this case we could talk about institutional trust (Paxton, 1999), having confidence in the academic organization providing the development program. Measuring the program organizers’ involvement in a program could be done by their level of activity, for example in groups and on communication channels, but that does not necessarily show if the participants trust them. One suggestion is that social credibility or competence could be possible measurements for the individual program organizers and affiliation for the program organization.

Structure, content and activities

One topic that was frequently discussed regarding the structure of the program was breaks, or mainly that the breaks were too few and too short. The participants reacted to this strongly both at the first meeting in January 2011 and then in their evaluations afterwards. They put forward that “the breaks are absolutely necessary” and that they wanted “more active breaks with the possibility of fresh air”. Interestingly, several of the women stated that “longer breaks could also give inspiration and motivation in conversation with others”, and “we talk a lot then and reflect together”. This indicates that right from the beginning the woman entrepreneurs had a relational approach to their participation. After adjusting the program for the following meetings to include more and longer breaks, the criticism lessened. In the evaluation after the second meeting 72 percent of participants said that the breaks were long enough, but there were some critical voices about keeping to time limits and keeping the breaks intact. One of the Norwegian entrepreneurs wrote:

_The breaks must be respected! It is unnecessarily heavy and tiring when the breaks are cut short, and the result is that you fail to follow through, and get headaches._

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The issue with breaks was closely related to the ambitious program. The program organizers wanted to fill the program with as much valuable content as possible.

The content and activities within Women & Growth was varied and included both theoretical content and practical sessions. In the participants’ evaluations after the second meeting in May 2011, they were satisfied with the theoretical content about networking (network theory and research results about networking). What was interesting was that they were even more satisfied with the practical activities at that meeting; group work with mapping of network contacts and a mingle activity. It seems that it was valuable for them to participate in something actively, and not just listen. In the evaluations after the fourth meeting in May 2012, the differences between theoretical (business models, financing/risk capital, bootstrapping) and practical content (writing a letter to yourself three years in advance, public support, workshop with focus on solutions) were not so obvious. The participants gave high scores to both the theoretical and practical contents at that time. One interpretation of this could be that the participants, after being involved for more than one year in the program, were now more open to theoretical input since they had realized that they could benefit from theories and models. At the beginning they were more restrictive and skeptical towards theoretical content.

Stimulating social activity (Sappleton, 2009) and interaction among participants (Nahapiet & Ghoshal, 1998) in order to develop more social capital definitely does not benefit from short breaks. Tynan et al. (2009) described the positive outcome of informal networking opportunities and the participants in Women & Growth were also eager to use that opportunity. Following Lin (1999), Snijders (1999), and Paldam’s (2000) thoughts about network payoffs it would be important to stimulate networking in a development program. Regarding the structure it should contain breaks that are long enough. When it comes to content and activities it is harder to say what will stimulate the development of social capital, and how this should be measured. One approach could be to study if content and activities with elements of social capital stimulate the development of more social capital.

Dialogue and feedback

When it comes to commenting on and improving program design and implementation (Zhang & Hamilton, 2010), the entrepreneurs have been encouraged to continuously comment on the program. This was also about being part of shaping the program by suggesting content. Already in the evaluation after the first meeting, one of the Swedish entrepreneurs expressed her confusion about this uncertainty:

I think the program organizers would have gained more by presenting the program more clearly. Now, there were many questions up in the air.

To communicate the design of the program in a clearer way might have been a good idea, since being part of the process in developing the content of the program seemed to be something that surprised the entrepreneurs. They were prepared to get everything served to them. As one of the Norwegian entrepreneurs stated:

For me it was easier to participate after the second meeting. Then I understood the premises for the program and knew the people a little more. The first meeting was very exciting, but also demanding.

One of the Swedish entrepreneurs expressed similar thoughts:

The meetings became better and better. The third one was a turning point that was more secure and structured. Before I experienced a certain hysteria and I felt uncomfortable in some ways.

The program’s loose structure and the possibility to make changes during the process was not suitable for everyone. But, the entrepreneurs seemed to feel more comfortable with this when they knew each other better and also became more confident in process work.
Regarding the program’s content some of the entrepreneurs would have liked more practical exercises and less theory and models. After the second meeting in May 2011 the entrepreneurs wrote in the evaluations that they wanted more group work, lectures about growth experiences, and exercises about personal development. Reflections, discussions, and theoretical content were judged to be at a suitable level. In the evaluation after the third meeting in November 2011 the participants wanted more exercises about personal development. At this time the scores for theoretical content showed a more diversified picture: some wanted less, others more, and some thought it was at a suitable level. The theoretical focus is probably something that the entrepreneurs can benefit from in the long run, but might not fully understand the meaning of during the actual program.

Commenting on and improving the program design and implementation is highly emphasized by Zhang and Hamilton (2010) in order to provide trust in the program’s process. In the case of Women & Growth the question is if the possibility of contributing to the program design provides trust or insecurity. My interpretation is that it created insecurity at the beginning when the participants expected a provided structure, but as time went by the amount of trust was increased. When they got to know the program organizers and understood the process of creating content and activities for the program in a dialog together, trust in the organizers seemed to increase. Trust in this case is not only in the program organizers, it is also in the flexible program. How to be involved in shaping the program could of course be at different levels, and maybe there needs to be different measurements to capture this difference.

13.5 Conclusions and implications

The threefold aim of this paper was to study 1) how relationships and trust develop between program participants, 2) how participants’ trust in program organizers develops, and 3) how different aspects of relationships and trust can be measured in development programs.

The results reveal that relationships among the participants were first developed among participants from the same industry, regardless of country, and those who worked in industries that depend a lot on social contact tended to develop more relationships with other participants. The content in their exchange of experiences was initially advice of general character but after time this developed into more specific business advice. Specific trust seemed therefore to be important initially while the network payoff became more important later. Aspects that contributed to trust development between the participants was a balance between homogeneity and heterogeneity in the group, so that they felt secure. Time devoted to the program showed commitment and also gave participants the chance to get to know each other over time. Participants that did not put time and effort into the program were regarded as non-reliable. Besides showing commitment to the program by putting in time, sharing advice and resources also benefitted the trust process. The confidential agreement that was signed was a symbolic act that facilitated openness between the participants and encouraged the exchange of experiences.

With regard to the participants’ trust in the program organizers, the time aspect was central. Once they got to know the program organizers and understand their roles and the design of the program, the participants’ trust seemed to increase. Initially the participants expected organizers to have a teaching role and that the program would be very structured. The flexible program and flexible organizers made the participants feel insecure in the beginning. However, the process showed that the participants had to take their own responsibility in order to build relationships and they could not fully count on the program organizers to facilitate this.

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This study shows that there are several possible ways to measure the development of relationships and trust in a development program, emerging both from theoretical and empirical content. Regarding relationships and trust between the participants, suitable background criteria could be motivation, learning needs, generalized trust, and homogenous and heterogeneous groups. For the process, potential measurement criteria could be specific and generalized trust, the individuals’ social credentials, social activity in the form of, for example, time devotion, confidentiality agreements, and the exchange of experiences. As outcomes, received resources and network payoff could be suitable measurements. Regarding the participants’ trust in program organizers, suitable background criteria could be institutional trust in the form of organizers’ affiliation and competence. This institutional trust might also be complemented by generalized trust. For the process, potential measurement criteria could be the role of organizers, social activity in form of time devotion, the program’s structure, content, and activities with for example concrete measurements about breaks and network opportunities. For outcomes, network payoffs could, here also, be valuable to measure.

One central implication from this study to program organizers is to value the time aspect. Both participants and program organizers need to invest time in a development program for increasing trust, and it takes time to get to know other participants and program organizers. But after a while the trust increases and the value of participating and network payoff also increase for the entrepreneurs. Another implication is that the structure of a program could stimulate more networking between participants, for example with longer breaks and working in smaller network groups, more networking is made possible. The importance of a confidentiality agreement was very obvious in this study, and could function as a symbolic document for greater exchange of experiences between participants. As the results from this study show, relationships between women entrepreneurs can be developed over borders, both industry and national, and as the entrepreneurs mature as business owners this leads to business development that ultimately also stimulates regional development. Development programs can therefore be a tool in this respect.

One limitation in this study is that the development of relationships between participants and program organizers is not fully captured. The networking possibilities between the women entrepreneurs in the program were very much in focus, and therefore there has been a smaller amount of data concerning the relationship building process between participants and program organizers. This is something for future studies to research in more depth. Another area for more research is how to separate the aspects of relationships with and trust in program organizers.

Other interesting areas for future studies include follow-up studies concerning the participants’ development of social capital, the importance of content, and activities in development programs for increased social capital, as well as if it matters who the organizers and their organizations are for increased trust among participants.

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Part IV

Smart Welfare in Society Renewal
14 “Ka-Ki-Ku-Ke-Ko” Businesses Will Save Local Regions

Kiyoshi Kobayashi

14.1 The shock of economic growth

Economic growth in Asian and African countries has been striking. If per capita income in Europe and North America continues to grow at an annual rate of 1.68%, as it has over the past 30 years, the GDP of countries in these regions will approximately double by 2050. However, if growth is sustained at the current annual rate of 2.47%, the per capita income of regions outside of Europe and North America will increase fivefold over the same period. By 2050, the European and North American share of the world economy will fall below 30%, a percentage on par with pre-1820 economic levels (Goldstone, 2010). Consequently, of 204 countries and regions, more than 185 will become middle-or-higher income countries. Many countries in Asia and Africa will develop into middle-or-higher income countries.

The number of developing countries remains steady at around 20; however, most are island states or small countries, and their population comprises only a small percentage of the world population. The world economy of the 20th century comprised two opposing developed and developing regimes. By contrast, the world economy of the 21st century comprises an overwhelmingly large number of middle-income countries, and these should be regarded as regimes competing to join the ranks of high-income countries.

These are the global economic scenarios presented in the so-called “Spence Report” (World Bank, 2008). Stimulated by this report, many magazines, such as Foreign Affairs and Future Policies, are debating over many economic and regional policy issues.

14.2 Concerns for the economies of developed countries

The Spence Report identifies several essential policy issues regarding the future of the economies of developed countries in the global context. In particular, the future of the underdeveloped areas of developed countries can be considered serious.

Amongst 20th century regimes, developed countries enjoyed comparative superiority with regard to knowledge, research, education, and other human capital-intensive activities. Developed countries led the way in scientific and technological innovation and in the production and fabrication sectors of the manufacturing industry, which use established technologies and processes. They set up bases in developing countries, where wage rates are lower, and established international specialization (division of labor) systems. As emerging countries continue to develop economically, a huge number of scientists and engineers who have received higher-level
education in developed countries are gradually returning to their home countries. The extraction of human resources from developed countries is accelerating, while the standard of higher education in emerging countries is rapidly improving. Furthermore, many international journals devoted to emerging countries have recently appeared. One might ask whether developed nations would enjoy a comparative superiority if there were no difference among countries’ quality of human capital and if all nations were able to provide the same added value, even to their remote regions. The market for high-level human capital has always been global. Although developed countries maintain their competitive advantage, the competition can be regarded as having already begun.

Due to advances in transportation and telecommunications technologies, multinational enterprises are choosing production bases from an international perspective. We theoretically demonstrated that continuous improvements in transportation and transaction costs contribute most significantly to the economic expansion of emerging countries but that developed countries also enjoy indirect benefits through reductions in product prices (Xu et al., 2010). This scenario rests on the premise that developed countries specialize in the development of knowledge and technology. However, if the disparities in human capital stock between developed and emerging countries diminish while the economic scale of emerging countries increases, what measures should developed economies employ to survive?

By the middle of the 21st century, most consumer durables such as cars and household appliances will be purchased by the middle classes of developing countries. The World Bank (World Bank, 2008) estimates that, by the year 2030, the size of the middle class in developing countries will grow by 200% over its 2005 size to reach 1.2 billion. This means that the middle class population of developing countries will be more than the population of the United States, Europe, and Japan combined. It has been argued that manufacturing can take one of two strategic stances to this massive consumer market. The first is a model in which multinational enterprises such as Apple and Google compete for a single international default standard (i.e., the one-size-fits-all standard). The second is a strategy of localizing products based on the local context, such as in the successful example of Maruti Suzuki India Limited in the Indian market. This involves the joint development of models for new, flexible standards that are suitable in each country (i.e., the one-finds-own-size-standard) based on alliances between countries. Willingly or not, Japanese enterprises will have to choose one of these business models; achieving both simultaneously is impossible.

Constructing flexible standardization models requires new business management techniques, business models, and systematic platforms that focus on the development of elemental technology and assembly technology—at which Japanese enterprises excel—and on-site application capabilities. Flexible standardization models are designed for transitioning from specification code standards to performance code standards; it is necessary to advocate specifically for international standard models related to new technology development/business management that are normative.

14.3 Commoditization and Japan’s Galápagos syndrome

Globalization presents Japanese enterprises with two difficult problems. First, they are concerned about the dramatic drop in product prices due to the rise of South Korean and Chinese enterprises. Basic research and technology investment require enormous amounts of funding, whereas copying leading technologies and developing differentiated technologies is far cheaper; follower companies are able to free ride on the technology investment expenditures of leader
companies. There are also limits to the protection of intellectual property rights provided by patents and other mechanisms. In such cases, technology prices that are normally high are lowered through the commoditization of cutting-edge technology. Pre-existing enterprises are unable to recoup the development costs of their upfront investments and are forced to withdraw from the market.

In addition, the international standardization of Japanese-manufactured products is lagging, and the Japanese market is becoming isolated from the rest of the world, as happened to the mobile telephone market, in a phenomenon known as the "Galápagos syndrome." In a world where one international standard model dominates the international market, the Galápagos syndrome leads to complete defeat. However, new flexible standard models that pursue localization strategies suited to each country aim to create Galápagos markets in every nation. To achieve this, it is strategically important for countries to undertake technological investments in order to create high domestic contexts with complex domestic content, meaning, and functions. However, it is not possible to bring the high-priced products of high domestic contexts into the middle-income markets of emerging countries; a localization that adapts to the local context is essential. To achieve the transplantation of context and localization, the creation of a high domestic context is necessary; no low context can exist without a high one.

Sharp Corporation’s Kameyama Plant was threatened with closure, an event symbolic of globalization. In developed countries, employment opportunities with manufacturers able to provide adequate income will surely decrease. However, if manufacturers move operations overseas, the spillover effect on R&D and product development will diminish, which would impair the world economy. In order to overcome this dilemma, domestic technology investment based on the creation of high contexts and the localization of overseas contexts must be achieved simultaneously. The Galápagos syndrome is not the problem; the problem is how to achieve localization of the Galápagos syndrome effect while at the same time preventing the commoditization of technology.

14.4 The silicon valley model cannot be imitated

Silicon Valley is a unique area. It has a diverse cultural background, with 36% of the population born overseas and many technology professionals speaking languages other than English at home. Of the top 25 graduate schools in the United States, eight are located in California, and 44% of technological workers have completed graduate school. Some 15,000 high-tech companies are located in Silicon Valley, and 450,000 of its working population of 1.7 million are employed in high-tech-related occupations. Although Silicon Valley’s population comprises 1% of the American population, Silicon Valley’s patent applications represent 12% of the total number submitted nationwide. Venture capital investment in Silicon Valley comprises 41% of the nation’s capital investment. In his book about the creative class, Richard Florida (Florida, 2002) points to the “three Ts” as the key factors in the economic growth of Silicon Valley: “technology”, “talent”, and “tolerance.” In The World is Flat (2005), Thomas Friedman points out that innovation occurs in every possible place in the computerized world, arguing that the concept of “place” is being diluted and that, despite advances in computerization in Florida, face-to-face communication remains important for the generation of high-context, progressive ideas. In particular, the creative class—which is engaged in progressive innovation—is a rare global resource. The more high-context and difficult the words used in this rare resource’s communications, the higher their spatial concentration becomes, producing a winner-takes-all situation.

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Figure 14.1. "Hospitality" Type Service (Japanese-style Inn): Service production based on dialogue between producers and consumers is the basis of Japanese-style creative services.

Figure 14.2. High-context Service: the Gion district of Kyoto has provided high-context services for around 280 years while at the same time evolving service content (Hassaku Day).

It is thus virtually impossible for Japanese cities and regions to compete with the Silicon Valley Model using the same logic; they must compete using a different creative model.
14.5 The Japanese-style creative service model

Japanese-style creative services are high-quality services influenced by Japanese nature, culture, history, and lifestyle. The functions (contents) of the services, the venues and opportunities for providing services, and a common knowledge (context) are shared implicitly by producers and consumers while providing a background for the creation of new value (Kobayashi 2012). For example, service value is created through the interaction between producers and consumers in such fields as Japanese-style inns, Sushi bars and Japanese-style restaurants, individual enrichment lessons, lifestyle, health services, community magazines, and Web networks. These services differ fundamentally from Silicon Valley-type services, in which producers unilaterally create services and provide them via markets. Japanese-style creative services are unique in being formulated and selected through relationships between the producer and consumers over a long period of time, resulting in highly structured high-context services. Japanese “hospitality,” “attentiveness,” and “long-term relationships of trust” are characteristics of these high-context services, which feature the mutual enhancement of evaluations between customers and providers, the generation of new knowledge through these evaluation and enhancement processes, and dynamic/symbiotic relationships (reflecting continuity within change and change within continuity). The author would point to “Ka (kanko, or “tourism”), Ki (kyoiku, or “education”), Ku (kurashi, or “lifestyle”), Ke (kenko, or “health”), Ko (komyunikeishon, or “communication)” businesses as a field expected to produce high-context services. These businesses are dependent on contexts rooted in their regions, making trade extremely difficult.

As high-context systems are generally difficult to imitate, their value cannot be easily compromised; therefore, they can be easily sustained once established. It has been pointed out, however, that, because contexts and values differ, high-context systems pose security for scalability disadvantages when used between different communities and regions, such as creating large-scale systems and globalization. However, in regions where cultural capital such as context and values are shared, differentiation can be easily achieved with even a small investment, and many menus can be offered.

As shown in Figure 14.3, the Silicon Valley Model is a business model that provides a small number of product menus with a massive investment. Economic growth under the Silicon Valley Model occurred through a spirit of tolerance for the emergence of talent that—to borrow the words of Richard Florida—“creates new technology.” This is a model that achieves success through a small number of elite entrepreneurs building upon the failures of innumerable nameless entrepreneurs.

By contrast, the Japanese-style Creative Service Model has a spirit of tolerance for copying contexts between innumerable small-scale entrepreneurs sharing cultural capital. Tolerating copying allows an extremely large number of menus because it minimizes fixed production costs (see Figure 14.3).

Furthermore, the joint creativity of producers and consumers accelerates the renewal of context and increases the accumulation of context, generating a high-context and deterring the imitation (i.e., copying) of other regions. For small cities and regional areas in Japan to survive amidst globalization, each region needs to fully utilize its cultural capital and instruments in order to nurture and develop high-context “Ka-Ki-Ku-Ke-Ko” businesses.

Kiyoshi Kobayashi
Market size
variety/diversity
The break-even point of Hollywood
The break-even point of Japanese Major Comics Magazine
The break-even point of self-published comic book

Positive/greatest profits are obtained from a success work. Therefore, intellectual property management is also important. -> Hollywood model do not have variety.

Figure 14.3. Silicon Valley Model and the Japanese-style Creative Service Model.

14.6 Integral services

The manufacturing world contains two types of product architecture, design ideas about how products, as systems, should be broken down into subsystems and how best to define the relationships (interfaces) between them. In modular architecture, "because each part—that is, module—has self-contained functions, even when parts that have been designed separately are afterwards gathered together and assembled into a product, overall the product will be excellent" (Fujimoto, 2004). By contrast, integral architecture is a way of thinking "that realizes products as total systems through a delicate balance between numerous parts resulting from the fine mutual adjustment of design parameters" (Fujimoto, 2004, p. 129). Japanese manufacturing used to dominate the world largely because of the Japanese-style comparing-and-adjusting techniques used in integral-type parts as well as in cars, motorbikes, and household appliances. Manufacturing industry markets are currently dominated by modular-type architecture. The achievement of modularization enabled, for example, Dell Computer Corp. and Apple, Inc. in the United States to focus on design (the assembly of modular parts) and enabled China to commercialize this design with its high-volume production capabilities. Consequently, market regimes competing for one-in-the-world (one-size-fits-all) standard models emerged.

Professor Maekawa of Kyoto University (Kobayashi, 2002) states that similar differences between business models exist in the entertainment world. For example, in the South Korean entertainment industry, members of groups such as Shojirojida and KARA who have extraordinary faces and great figures are brought together and are presented to audiences as a complete song-and-dance product; there is no schematic diagram of fans watching over the growth of their idols. Within these industries can be found the quintessential modular-type characteristics of "each part (face, figure, song, dance, etc.) having a self-contained function, and so even when parts are gathered together and assembled into a product, overall the product is excellent." By contrast, Japanese idols (such as pop stars) do not necessarily begin with exceptional beauty, figures, singing skills, or dancing ability. While each part is incomplete by itself, when assembled, the parts have a charming appeal. By interacting with fans, these idols aim for completion (perfection) as entertainers. The process is also a "commercial product," with idols moving forward from their incomplete state through shared creativity and evolution with their fans. This state
overlaps with the characteristics of the integral-type architecture through which Japan used to showcase its uniqueness in the manufacturing field.

Japanese-style high-context services continue to penetrate the international market in various forms (Figure 14.4). Even fields initially regarded as subcultures have the potential for unexpected developments, in many cases through localization via the international plantation of high-contexts. The Otaku (“geek”) world is an integral-type service with extremely high-level context. The Otaku market is an idiosyncratic high-context market, but the integration of international markets would allow for success as long as the fixed costs for entering markets were low. The development of Internet search functions is enabling the establishment of an international Otaku market. Such markets cannot grow to a size that would enable them to support the Japanese economy alone, but new creative services may be born from amongst the diverse range of high contexts. Furthermore, if we limit the discussion to regional economies, economies dependent on high contexts may be able to support a region.

14.7 Restoration of Japanese-style comparing-and-adjusting techniques

Will integral-type architecture reemerge as the leading actor in world markets? The author believes that, if a huge middle class were to emerge in developing countries and if the market for this group expanded on a large scale, this would likely happen through the localization of production based on local (overseas) contexts. Under a new flexible (one-finds-own-size) standard, models suitable to each country and joint development strategies based on alliances among countries are sure to be effective. For this to happen, it is important that local contexts be reflected in products and services. Japanese-style comparing-and-adjusting techniques—a specialty of Japanese enterprises—is required.

In Japanese-style creative services, service providers and users (i.e., customers) mutually compare and adjust their needs, creating value within these processes. As a condition for generating this mutual enhancement, it is essential that trust be built between service providers and users—a trust born from long-term relationships between the two parties.

In the past, Japanese enterprises have thoroughly demonstrated their comparing-and-adjusting techniques within Japan, creating integral-type products that were the pride of the nation. Moreover, the content of these products reflected the industriousness of the Japanese; this was an extremely high-context content that also invited high costs. Consequently, amidst competition over standardization through modularization and price competition, the firms’ market competitiveness deteriorated. Competition over standardization through modularization and trends in the commoditization of product technologies can be expected to continue, but flexible standard models—creating integral architecture based on local (overseas) contexts while also based on modules—seem to be the orthodox method.

14.8 Towards the global expansion of “Ka-Ki-Ku-Ke-Ko” business

As mentioned, if Asian and African countries maintain their current growth rates, virtually every nation in the world will become a middle-income country sometime during the first half of this century. Although there will be a remainder of around 20 developing countries, these are all small countries whose populations comprise only a small percentage of the global population.
The importance of aid to developing countries based on two-nation discussions (as traditionally conducted) is sure to decline significantly. Global poverty will continue but will transform from an international problem into a domestic one. Aid must target not countries but, rather, diverse agents multi-nationally and cross-nationally. How will the resolution of poverty contribute to markets? It goes without saying that social businesses in “Ka-Ki-Ku-Ke-Ko” fields play an important role in the resolution of such domestic poverty issues.

At the core of markets in emerging countries is the huge middle-income class that will be born in the near future. Furthermore, emerging countries face the question of how far their businesses will expand markets for the low-income class and how to involve the high-income class, which is supported by multinational enterprises. In addition, for middle-income countries to transform into developed countries, developing the human capital of the huge middle class is essential. Due to their close connection with local communities, infrastructure investment is essential for expanding and developing Ka (“tourism”), Ki (“education”), Ku (“lifestyle”), Ke (“health”), and Ko (“communication”). No country has ever achieved sustained high growth without maintaining a remarkable growth in public investment in these fields. Such public expenditure does not shut out private-sector investment but rather induces it. With the government setting the stage for the emergence of new industries, a supply of healthy and educated workers, travelable roads, and a reliable electricity supply, private companies capable of generating profits—whatever their field of business—can increase their earning rates (World Bank, 2008).

The GDP generated by developing countries will exceed 50% of the world’s total GDP within 10 years. Will sustainable growth in the world economy remain possible? One key to this depends on whether emerging countries have the capacity to manage success; another key is whether developed countries have the capabilities and resolve to respond to the expanding presence of emerging countries. The latter is a far more difficult task than the former. As with the recent debate over the Trans-Pacific Strategic Economic Partnership Agreement (TPP), the political tone of developed countries is becoming increasingly introverted, making it difficult for voices appealing for common international interests to garner sympathy. Because the impact of globalization in the short-term is so great, countries have adopted measures running counter to globalization, which has been successful in many ways. In developed economies, however, sec-
tors producing tradable products must gradually downsize. For non-tradable service sectors and tradable services, the weight of high-context sectors with significant human capital and geographical accessibility will increase. The weight of high-context Ka-Ki-Ku-Ke-Ko business sectors is also expected to increase.

The populations of intermountain regions continue to dwindle. The future for the underdeveloped areas of developed nations that have globalized is extremely uncertain. Conversely, however, although the populations of intermountain regions are decreasing, people also continue to live there.

How is it possible for people to continue to live in intermountain regions? Even with limited resources and an inconvenient living environment, residents continue to practice ways of life suited to their location, maintain traditions and lifestyles, continue local activities (and relationships), and create living environments that also provide a purpose for living. Residents share the context of identity. Identity is not something a person can create alone but is formed through the mutual recognition of local residents. What must be enhanced are local contexts that local residents can share; these are central to regional development, and the role played by Ka-Ki-Ku-Ke-Ko businesses in this process is significant.

References


15 What is Smart Rural Development?

Lucia Naldi, Pia Nilsson, Hans Westlund, and Sofia Wixe

15.1 Introduction

The goals of Smart, Sustainable and Inclusive Growth are central in the new EU growth strategy EU 2020. The strategy highlights these concepts as key objectives and as mutually reinforcing priorities to reach the stated policy targets (European Commission 2010a). The cohesion policies gathered under the umbrella of the Europe 2020 strategy are formulated, among other things, to reduce the existing gap between Europe and some of its key trading partners when it comes to productivity, spending on R&D and innovation. Policies are also formulated to meet regional disparities within Europe and the lack of convergence between core and peripheral regions. In view of this, the Europe 2020 strategy does not only point at the contribution to growth and regional convergence as reached by additively combining the goals achieved by focusing on these individual concepts, but also how interactions between them can create short and long term growth effects.

Although the concept of smart growth and how it relates to smart specialization and regional growth is not new, its interpretation and application in a regional context has been highlighted in several recently published papers (Rodríguez-Pose 2001; Bilbao-Osorio and Rodríguez-Pose 2004; Combes and Overman 2004; Barca, McCann and Rodríguez-Pose 2012; McCann and Ortega-Argilés 2013). Some of the issues discussed in this literature relate to the application of smart growth policies to the regional policy context, expected policy outcomes and regional disparities in such outcomes. Among other things, there is an increasing awareness that one-size-fits-all regional policy models should be reformulated into policies that are both place-based and knowledge based (Tödtling and Trippi 2005; Camagni and Cappello 2013; Boschma 2014). Following from this, future policy targets at the EU level should be reached by policy models that act on local competences, established regional advantages, knowledge and innovation. The concepts that underlie this growth strategy are foremost policy-oriented concepts and the discussion of how they should be applied and understood in a regional context is far from settled. There are still outstanding issues related to the different conceptual aspects of growth defining the Europe 2020 strategy, their mutual interactions in terms of policy objectives and how they can be applied and measured in a European regional context. Thus, in terms of the conceptual aspects and in terms of potential indicators and measures of smart growth and its determinants, there is a clear need for more studies.

The purpose of this present paper is twofold. On the one hand it is to conceptually discuss the question posed in the title of the paper: What is smart rural development? On the other hand it is to present indicators of smart rural development and analyse their relevance in further empirical studies of issues related to rural development and the concept of smart growth. In order to reach these goals we start by presenting an overview of the emergence of the concepts of smart growth.
and smart development from a European perspective. Here we discuss the related concepts of Smart, Sustainable and Inclusive growth, how they are mutually formulated to reach the stated policy goals and how each of these concepts defines growth differently. The paper continues with a comparison between Smart Development and the related term Sustainable Development. The fourth section explicitly turns to the issue of rural areas and what smart development implies for intermediate and rural peripheral regions, respectively. Section five discusses and presents indicators of smart rural development that are available in official statistics and the last section concludes the paper.

15.2 Smart growth and development – the emergence of the concepts

The terms smart growth and smart development form a central part of the new growth strategy Europe 2020 (European Commission 2010a). The strategy was launched partly as a response to the worldwide economic crisis that has more or less affected every economy in Europe, resulting in high unemployment rates and high government debts. However, Europe faces challenges besides the economic crisis, such as low growth rates, low levels of investment in R&D, which these policies are also attempted to meet. Although the concepts of smart, sustainable and inclusive growth are mutually formulated to reach the goals of the Europe 2020 cohesion policy, each of the concepts defines growth differently and touches upon different aspects of the economy. The mutually reinforcing priorities put forward in the growth strategy are defined as: i) Smart Growth, which implies developing an economy based on knowledge and innovation, ii) Sustainable Growth, which implies promoting a more resource efficient, greener and more competitive economy and iii) Inclusive Growth, which implies fostering a high-employment economy that can deliver social cohesion. Hence, smart growth, which is the focus of the current section, is only one part of the new growth strategy. In the next section we return to sustainable and inclusive growth and disentangle the differences between these related concepts.

As can be understood from the above, smart growth in the European context is about developing an economy based on education, knowledge, research and innovation. However, this is a very broad and general statement, which needs to be specified and divided into components in order to have any real impact on policy-making in European member states. In addition, the goals for smart growth need to be measurable and evaluated, which implies that numerical indicators are required. As a start, the European Commission proposed two broad targets for the EU as a whole, concerning innovation and education (European Commission 2010a):

1. 3 percent of the EU’s GDP should be invested in R&D. However, the focus should not only be on R&D input, but also on innovation intensity and the impact of innovation.
2. The share of early school leavers should be under 10 percent and at least 40 percent of the younger generation should have a tertiary degree.

In addition, the EU needs to improve the information- and communication technology (ICT), especially concerning high-speed internet in rural regions, and thereby creating a more digital society. These targets are set in order to promote an economy where knowledge and innovation are the driving forces behind growth. The indicators used to support the Europe 2020 strategy are clarified by Eurostat (Eurostat 2013). These indicators need to be transferred to national as

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1 There are five targets in total, but these two specifically relate to smart growth.
well as regional policies in order to gain effect. The Commission has taken three so called flag-
ship initiatives, which outlines what needs to be done at European and national level, denoted as **Innovation Union** focusing on R&D and innovation policies, **Youth on the move** focusing on enhancing the performance and international attractiveness of institutions for higher education in the EU, and **A digital agenda for Europe** focusing on generating benefits from a digital single market (European Commission 2010a outlines the specifics on these). Regarding innovation, a broad concept is applied, which implies that the term innovation includes new and improved services, new marketing, branding and design methods, and new forms of business organization and collaborative arrangements, as well as new and improved products.

Following the Europe 2020 strategy, the Horizon 2020 framework is the new European pro-
gram for research and development, which is set up specifically to implement the Innovation Union initiative (European Commission 2010b). In addition, the European Commission ac-
knowledges that regional policy is crucial for smart growth, especially for turning the EU into an Innovation Union. The EC states that all regions, advanced as well as lagging, are required to contribute in order to achieve smart growth. This is attained by bringing out the innovation potential of regions, taking into account their diversity in terms of economic conditions, knowl-
edge and innovation capacity, which in turn is highly dependent on business culture, workforce skills, education and training institutions, innovation support services, and R&D and ICT infras-
tructure (European Commission 2010c). The EC states that regions should develop so called smart specialization strategies, which implies a focus on a region’s most promising areas. How-
ever, the smart specialization logic should not be interpreted as regional strategies that aims to impose specialization by means of top-down regional or governmental planning processes, rather it is the entrepreneurial discovery process that underlies the logic. This implies that it is essentially the entrepreneurs who identify the relevant and potential specialization strategies e.g. by means of the bottom up planning process (Foray, David and Hall 2009; McCann and Ortega-Argilés 2013).

**Conceptual framework – smart specialization**

Thus, the way that the Europe 2020 strategy defines and measures the concept of Smart Growth implies that it can be related to established conceptual frameworks regarding the role of technological advances, human capital and knowledge spillovers for economic growth and regional convergence (Romer 1990; Rauch 1993; Jaffe 1986). Since the work of Romer (1990) and Gross-
man and Helpman (1994) among others, the role of innovation and technological advances as endogenous factors explaining economic growth and productivity is well established. In this framework, there exists increasing returns to investments due to technological improvements, which in turn may lead to divergence among regions. The model predicts that investments in core regions are more efficient when it comes to generating innovations, compared to invest-
ments in peripheral regions. Thus, it can be assumed that regions respond differently to invest-
ments in innovations depending on whether they are peripheral or non-peripheral regions. This outcome of the endogenous growth model suggests that policies to induce innovation are place specific which adds another perspective to the concept of Smart Growt. The extent to which in-
novation processes are place specific and why they are place specific has been the driving force of much research (Fagerberg and Verspagen 1996; Bilbao-Osorio and Rodrigues-Pose 2004). One outcome of this research is the argument that regions should identify the sectors, the technolog-
ical areas, or their main competitive advantage, and then to focus their regional policies so as to promote innovation in these fields. In order words, smart specialization.
McCann and Ortega-Argilès (2013) and Boschma (2014) have analyzed the concept of smart specialization, where it comes from and how it is applied in the EU context. To the current date, these are some of the few academic papers related to smart growth in the EU, probably due to the relatively new emergence of this concept in Europe. The theory of smart specialization was developed for the European Commission by a group of scholars, in order to provide policy makers with a logic for prioritizations in innovation policies (Foray, 2009 and Foray, David and Hall 2009). Smart specialization implies place-specific innovation policies that are based on the capabilities and potentials of different regions. This follows from the originally aspatial sectorial concept, which emphasizes a focus on specific sectors. Combining this with theories from economic geography leads to the current interpretation of smart specialization. Following the economic geography track McCann and Ortega-Argilès (2013) connect smart specialization to the issues of embeddedness, relatedness and connectivity. In addition, translating the sectorial concept to a regional approach involves treating regions as the domain at which entrepreneurial activities and innovations take place, and thus specifying the domain in geographical terms.

Embeddedness implies strong regional or local connections to certain industries, in terms of e.g. input-output linkages and the labor force. This is especially the case for non-urban regions since these do not have a large enough market to sustain a diversified industrial structure. Urban regions have naturally more potential to diversify its activities. However, diversity and specialization are not mutually exclusive since diversity in high-density regions can imply many different specializations. This raises the question of the definition of the place in place-specific policies. In more rural regions the relevant place might be the region while in urban areas there might be more relevant to talk about smaller geographical units, such as districts or even neighborhoods.

Relatedness is very much connected to knowledge spillovers. Nooteboom (2000) argues that “…information is useless if it is not new, but it is also useless if it is so new that it cannot be understood”. This gives a theory of ‘optimal cognitive proximity’. The implication is that diversity in related areas, i.e. cognitively not too far apart, stimulates knowledge flows and thus innovation and growth. McCann and Ortega-Argilès (2013) denote this as specialized diversification while Frenken et al. (2007) call it related variety. No matter the terminology, in all essence the underlying ideas are consistent and build upon technological relatedness across industries. It is evident that the smart specialization concept has a strong focus on industrial structure. However, regarding knowledge spillover, several papers criticize the use of industrial classifications to approximate relatedness, such as Brachert et al. (2011), Desrochers and Leppälä (2011), and Wixe and Andersson (2013). The latter argue theoretically and show empirically that relatedness on the individual level, e.g. in terms of education and occupation, is at least as important as relatedness in terms of industries. In addition, the issue of the relevant place raised above can be addressed also in connection to knowledge spillovers. Recent research show that knowledge spillovers are bounded in space (Baldwin et al. 2008; Rosenthal and Strange 2008; Andersson et al. 2012), which implies that they take place at the local, or even neighborhood, level, rather than at the regional level.

Lastly, connectivity stresses the importance of being connected, in terms of e.g. networks, face-to-face contacts and mobility of human capital (McCann and Ortega-Argilès 2013). Infrastructure, both traditional transports and ICT are crucial in order to achieve this. The EC flagship initiative A digital agenda for Europe, mentioned above follows naturally from this line of research.
15.3 Smart vs. sustainable (and inclusive) growth and development

The concepts of smart, sustainable and inclusive growth are formulated to mutually reach the goals of the Europe 2020 Cohesion Policy. The concepts relate to different aspects of the economy and have different implications when it comes to policy objectives and expected outcomes. Following the typology outlined in the strategy, policy objectives related to Smart Growth can be connected to the conceptual frameworks of innovation (Romer, 1990; Grossman and Helpman, 1994), knowledge and human capital (Rauch 1993; Jaffe 1986), and competitive advantages (Porter 1996; 2008). Thus, some of the main challenges in terms of policy objectives and outcomes in the view of Smart Growth relates to the identification of advantages at the regional level and the formation of place specific policies that can match regional endowments with relevant policy options (see Section 2.2). As an example of how this is put into practice is the importance of carrying out a needs assessment analysis in the implementation of the new rural development program 2014–2020, in terms of regional swot analyses, action plans and selection criteria at the regional level.

The policy objectives and outcomes that are gathered in the concept of Sustainable Growth are different compared to above. Here, ideas connected to green growth (Aghion et al. 2009a; 2009b), green innovations (Acemoglu et al. 2009), and climate change mitigation (Nordhaus and Boyer 2000) are at the center. As agreed at the fifth Ministerial Conference on Environment and Development in Asia and the Pacific, a strategy for achieving sustainable development should be focused on intervening in the economy in a way that creates synergies between economic growth and environmental protection. In this way, countries can build a green economy in which investments in resource savings as well as sustainable management of natural capital are drivers of growth. The central idea being that economies that rely more on sustainable development objectives provides opportunities for using financial resources better to meet development needs and reducing the vulnerability of socioeconomic systems to environmental change and resource constraints (Stern 2007).

Following from this, some of the main challenges in terms of policy objectives and outcomes in the view of Sustainable Growth relates to the question of how governments should tackle climate change while maintaining reasonable growth (Acemoglu et al. 2009). This challenge has become even greater than before considering that the crisis has made growth and jobs a higher priority, emphasizing the trade-off between immediate costs and long-term benefits associated with green growth (Stern 2007; European Commission 2010a).

Finally, the idea of Inclusive Growth is a concept that in terms of Europe 2020 terminology relate to the creation of employment and social cohesion in rural areas. The concept of sustainable development is closely related to the above mentioned concept of Smart Growth, however to what extent it is possible to actually separate them in terms of their meaning or significance is difficult. Although the concept of sustainable growth has long been viewed as the symbolic dimension of the EUs, a commitment it holds alongside a strong loyalty to the promotion of economic growth.

DIFFERENCES AND MUTUAL INTERACTIONS BETWEEN SMART AND SUSTAINABLE GROWTH

One difference between the concepts of Smart and Sustainable Growth lies in the spatial perspective. For the concept of Smart Growth, structural differences and comparative advantages are mostly relevant when measured at the regional level. As discussed, structural differences in terms of social, political and economic facts are crucial for determining the capacity of R&D
investments to translate into innovation and economic growth (Duranton and Puga 2004; Johansson, Karlsson, and Stough 2010). Although, green growth also offers a spatial perspective, following from the competitive advantages obtained by those countries that commit to green innovations. However, these are processes that largely operates at the global level (Bosetti et al. 2009). Even so, the global market for green goods and services is vast and growing fast, offering countries the dual benefit of prosperity and job creation (Helm and Hepburn 2009).

There are several important mutual interactions between the concepts of Smart and Sustainable Growth. One such interaction concerns the innovation factor e.g. the relation between investments spent in r&d, innovations and (green) growth (Acemoglu et al. 2009). In their Policy Brief, Aghion, Hemous and Veugelers, (2009) argue that current approaches to green growth are oversimplified and largely disregard the innovation factor, despite its relevance. Others have reached the same conclusion and highlighted the need for a larger emphasis on innovations as a crucial determinant of green growth (Bosetti et al. 2009).

15.4 What is smart development in rural contexts?

The EU policy on smart growth, based on knowledge and innovation has obvious spatial implications. As suggested by the theory of agglomeration economies, metropolitan regions offer firms accessibility to local and regional knowledge sources as well as greater opportunities to access global knowledge sources, than is the case for more rural, sparse and peripheral regions. Thus, innovation should be positively related to agglomeration, which would mean that rural regions would be disfavored.

Figure 15.1 and Figure 15.2 shows two examples of typologies of regions in Europe. These classifications and all other typologies of similar types show that Europe is predominantly rural. Does this mean that the EU’s growth policy is turning its back to the countryside? According to McCann and Ortega-Argilés (2013) this does not necessarily have to be the case if Smart Specialization is given priority in the EU regional policy. Their argumentation is that smart specialization is less relevant in large and highly diversified urban centers and leading knowledge regions as their diversity makes specialization less necessary. However, smart specialization is a policy alternative that is well suited for intermediate regions with both urban and rural areas if they have a sufficiently large population base. For very isolated regions, however, the smart specialization argument appears to offer only very limited possibilities, because the lack of scale is likely to reduce the effectiveness of the policy approach” (McCann and Ortega-Argilés 2013, p. 8).

If Smart Development is Sustainable Development that is achieved by increased use of R&D, innovation, knowledge and learning, promoting smart rural development shall entail policies which facilitate innovation, knowledge and learning in rural contexts. Yet, translating the concept of smart development into rural contexts might be more complicated than this. As implied by McCann and Ortega-Argilés (2013), smart development is not a one-size fit it all concept and its application in rural context needs to be combined with a place-based approach which tailors interventions and policies to the specific of rural contexts and to their special linkages. Further, it requires embedding the various initiatives in the broader multi-level governance of each rural context (Vanthillo & Verhetsel 2013).

Thus, depending on how “intermediate” and “isolated” regions are defined – and whether there are any categories between these two types not discussed by McCann and Ortega-Argilés (2013) – it is still unclear whether smart specialization is an appropriate policy for many regions.
In the following we will discuss the potential for Smart Development in the two types of rural regions somewhat vaguely defined above, city-close and peripheral rural areas, respectively.

**Rural areas located close to the cities and integrated with the metropolitan systems**

Scholars and policy makers are showing increased interests in the so-called periurban or intermediate places in the rural-urban continuum (Renski 2012). According to the United Nations (2002) World Urbanization Prospects, a considerable amount of the world’s population lives in rural areas located close to cities. In addition, city-close areas can play an important role for the development of the surrounding regions, functioning as liaison to national and international markets (Satterthwaite and Tacoli 2003). Most importantly, periurban areas are growing (Léon 2005). This is particularly true for Europe (see Figure 15.1), where areas close to a city are predominant. Yet, despite the fact that boundaries between the urban world and countryside are becoming indistinct in some places, recent studies show that entrepreneurship and growth patterns in the intermediate places are very different from those of urban core areas. In a study of new firm entry, survival and growth in the US, (Renski, 2012) shows that rural areas located close to city tend to score high on measures of entrepreneurial performance. In particular, the study shows that in comparison to urban core areas and remote rural areas “rural portions of metropolitan areas have the highest concentration of entrants and the lower failure rates in the high-tech manufacturing. (p. 71).

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Thus, as said above, the smart specialization logic and the concepts of embeddeness, relatedness and connectivity well suit intermediate places in the rural-urban continuum, which tend to have a large population base and industrial production zones (McCann and Ortega-Argilés 2013). In terms of embeddeness, relatedness, and connectivity, there are a number of possibilities for fostering specialized diversification across related technologies in rural areas close to cities. These areas can benefit from the size advantage and spillover advantages of nearby cities, without incurring the higher costs of urban core areas (Renski, 2012). Thus, policies can aim at attracting entrepreneurs and businesses from the close urban areas. These exogenous actors have already developed the necessary competencies and networks to allow them to gain access to core markets and technologies. Further, attracting external knowledge and competences facilitates inter-regional learning and enhances the entrepreneurial search process. Particular attention needs to be given to the specific place attributes which are valued by entrepreneurs (Renski 2012). Indeed, policies aiming at attracting urban-core entrepreneurs and businesses are unlikely to be successful unless they are combined with improvements in the physical and social infrastructure to provide a milieu which is valued by entrepreneurs (North and Smallbone 2013). This also requires special attention to encouraging collaboration and networking, especially in terms of R&D, as well as enhanced connectivity and mobility. Although scholars warn against the risks of enhanced networking and mobility i.e. networking may promote outflows of knowledge and skills (McCann and Ortega-Argilés 2013), ICT systems can bring more competition, these risks do not seem to apply to all rural areas equally. Rather, in the case of rural areas close to cities, research shows that connectivity may support entrepreneurial learning processes, including the identification of new needs, new creative applications and diversification of established technologies (Satterthwaite and Tacoli 2003).
Peripheral rural areas with much weaker demand from the cities

As shown by Johansson (2012), 34.8 percent of the EU’s 1243 NUTS3-regions were losing population during the period 2000–2005. 25.8 percent of the EU population was living in these declining regions. All these declining regions were not peripheral ones and all peripheral regions did not show population decrease. However, even if we yet cannot define peripheral rural areas in an exact way, there should be no doubts of that they represent a substantial number of regions and inhabitants in the EU. As noted above, McCann and Ortega-Argilés (2013) argued that smart specialization offered only very limited possibilities for “very isolated” regions, due to their lack of scale. This is probably a correct assumption. For very isolated and remote regions there are already signs of offshore operations, i.e. fly-in, fly-out labor. Economic activities in mining, forestry and even tourism do not form the strong base for permanent settlements and built-up areas as they previously have been.

Although the numbers of very isolated regions are small, there are good reasons to assume that the lack of scale problem also applies to a larger number of, if not very isolated, but still peripheral, rural regions in the EU, which cannot be considered as intermediate. A general characteristic of these peripheral regions is of course low accessibility to markets and services. Other characteristics of many peripheral regions are (in relation to the national averages) sparseness, negative migratory balance or natural population balance or both, aging, low land values, and low education levels. In total this means that these regions do not have much of a potential of their own for endogenous development. However, as pointed out by Johansson and Quigley (2003) specialized networks across space can compensate for the proximity and high accessibility that characterize dense, metropolitan regions. Thus, the only alternative for smart specialization that exists for most peripheral regions is to focus on building specialized links to urban supply and demand and before these links are initiated, the regions must have a strategy for what kind of in- and outflows these links will distribute.

What does this mean for the regional policies that are supposed to support these regions? A reasonable starting point would be that these policies must be composed of intraregional measures and interregional measures. A cornerstone in the former group of measures should be place-based policies (McCann and Ortega-Argilés 2013). These can be formulated and implemented in a number of different ways. Specialized regional innovation systems, specialized cluster building, specialized local/regional public-private partnerships, focused on various sectors or niches, are some possible examples of implementation of intraregional place-based policies with the aim of developing demand of the specialized inflows and supply of the specialized outflows. In a network perspective, this means building new internal links between old and new actors in the region and its places. The latter group of measures should be the development of specialized external links to, on the one hand “providers” of innovation, education, knowledge, management, financial capital and other input, and on the other hand, customers of the specialized products/outflows of the peripheral regions.

Regarding regional renewal in Europe, Rodríguez-Pose (1999, p. 100) pointed out that “Local social structures seem to play a significant role in the openness of any region to innovation...” and that social conditions “…seem to repel the absorption of innovation fundamentally in industrial declining and peripheral regions.” From this follows that policies for smart specialization not only need to be adapted to the available local resources and potentials, but also need to focus on changing the local social capital and its external connections (Westlund et al. 2014). Such a policy also means that certain local/regional actors need to step back in order to let new actors in new sectors develop – and that policy need to make these priorities.

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15.5 Indicators and determinants of smart development

As discussed above, the EU 2020 strategy puts forth three priorities in order to make Europe smart, sustainable and inclusive. Smart growth is to be achieved through the development of an economy based on knowledge, research and education. Sustainable growth implies more resource efficient, greener and competitive markets while inclusive growth is to be reached by policies fostering job creation and reduction of poverty. At the EU level, five headline targets, with in total seven numerical indicators, are set up in order to concretize the focus of EU member states.

Regarding smart growth, the two headline targets concern innovation and education. These relate very much to the original indicators as suggested by the EC, discussed above. The indicator concerning innovation states that 3 percent of GDP is to be invested in the R&D sector. Regarding education, the indicator includes that the rate of early school leavers is to be reduced to below 10 percent and at least 40 percent of 30 to 34 year olds are to have completed tertiary or equivalent education. In order to reach the goal of a more sustainable economy the headline target concerns climate change and energy. This target includes three indicators: greenhouse gas emissions are to be reduced by 20 percent compared to 1990 levels, the share of renewables in final energy consumption is to be increased to 20 percent, and energy efficiency is to be increased by 20 percent. The two targets for inclusive growth relate to poverty and employment rates. Regarding poverty, the indicator states that poverty is to be reduced by lifting at least 20 million people out of the risk of poverty or social exclusion. Regarding employment, the indicator is that 75 percent of men and women aged 20 to 64 years are to be employed. The headline targets are very much interlinked, which implies that smart, sustainable and inclusive growth are mutually reinforcing (Eurostat 2013).

The headline targets are set for the EU as a whole. In addition, these are brought down to the national level and transferred to national targets and indicators for each member state. Due to different situations in the member states with nation-specific conditions playing a large role for the possibilities of reaching the targets, the indicators are set differently across the EU. Countries with more favorable economic conditions have national targets of e.g. employment rates set higher than the 75 percent target for EU as a whole (e.g. Sweden and the Netherlands), while countries with less favorable circumstances have national targets of less than 75 percent (e.g. Italy and Romania).

The adjustment of the indicators to national levels acknowledges the high degree of heterogeneity between the EU member states. However, this does not take into account the heterogeneity within the member states and neither does it acknowledge differences between different types of regions. Hence, as an additional step there is a need to bring down the national indicators to the regional level, taking into account the different potential of different regions, within each country. All regions have the potential to contribute to reach the national targets but more rural regions have probably less possibilities to do so, maybe especially regarding the indicators relating to smart growth, e.g. R&D investments and maintaining a high share of highly educated individuals. This implies that only a smaller share of rural regions can be expected to add as much to smart development as can be expected of urban and peri-urban areas. This relates back to the concept of smart specialization, that each region should focus on and develop its strongest areas, i.e. areas where the region has some type of advantage. However, for certain (rural) regions this might not be so straightforward.

Smart growth is, according to the EC, achieved through the development of an economy based on knowledge, research and innovation. The proposed indicators are more or less good proxies of these three concepts. In particular, while R&D investment is a direct measure of re-
search effort (or innovation input) it is a less obvious measure of actual innovation (or innovation output), since the link between R&D investments and innovation is far from linear. We therefore propose that more direct measures of innovation should be used, such as patent data or indicators based on survey data, e.g. the Community Innovation Survey (CIS). Innovation output is potentially more related to growth and development than innovation input, as it has greater potential to result in productivity growth as well as employment growth. The use of survey data, such as the CIS, may also be especially applicable for rural regions. This is due to that R&D intensive firms in general belong to high-tech industries, which have a tendency to locate in more urban regions. The same goes for patents and patent applications, which are very askew distributed towards the most urban regions. Hence, conventional technology-based measures of innovation may not be as applicable for rural regions.

Further, as said above, the concept of innovation used by the EC is broader than technological innovation or improvements in technology (Dinis 2006), which can be measured in terms of R&D spending or patents. Innovation also encompasses new and improved services, new marketing, branding and design methods as well as new forms of business organizations (European Commission 2010c). These dimensions of innovations, which better reflect the innovation efforts of firms located in rural regions, can be captured by specific survey instruments, such as the questions and multiple item scales included in CIS and other surveys.

According to this enlarged perspective of innovation also entrepreneurship that is, the start-up and growth of new local businesses is another important dimension of innovation and a key indicator of smart growth, especially in rural contexts. The fact that these regions are less attractive for non-local enterprises makes the emergence and success of local new firms a key aspect of smart rural development.

Regarding knowledge, during the last decade academic research has highlighted individual skills and abilities beyond measures of education. Florida (2002) introduced the creative class, Autor et al. (2003) focus on routine and non-routine tasks, and Bacolod et al. (2009) distinguish between cognitive skills, people skills and motor skills. The common denominator is that these measures of skills are based on occupational, rather than educational, classifications. This aspect is not covered by the indicator for education, as proposed by the EC. We therefore suggest that an occupation-based measure of knowledge is introduced as a complement to the EC indicator. Regarding rural areas this may be a more relevant measure of the knowledge base, or the human capital, of the regions. In these regions human capital is not captured by formal education due to the lack of access to institutions for higher education and due to the migration of highly educated to areas with more job opportunities. For individuals in rural regions, to acquire a higher education they need to move to more urbanized regions, where they have a tendency to stay (Bjerke 2012). Knowledge in rural regions may instead be acquired through experience and learning-by-doing. This implies that measures of work experience and skills acquired through occupation may be more relevant measures of human capital in rural regions. Table 15.1 provides an overview of the presented indicators for smart growth.

The empirical applicability of the proposed measures is unclear, since data availability differs widely between the EU member states. In countries such as Sweden, Denmark and the Netherlands, there are possibilities to work with micro data, but this might not be an option for the majority of the other countries. This renders difficulties for conducting analyses regarding the EU as a whole, no matter whether the level of analysis is countries or regions.
Table 15.1. Indicators for smart growth.

<table>
<thead>
<tr>
<th>Innovation</th>
<th>Knowledge</th>
</tr>
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<tbody>
<tr>
<td>R&amp;D investment</td>
<td>Rate of early school leavers (inverse)</td>
</tr>
<tr>
<td>Share of highly educated</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional indicators</th>
<th>Additional indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents and patent applications</td>
<td>Years of work experience</td>
</tr>
<tr>
<td>cis (product-, process-, organizational-, and marketing innovation)</td>
<td>Share of cognitive skill workers</td>
</tr>
<tr>
<td>Firm start-ups and survival</td>
<td>Share of workers with a high share of non-routine tasks</td>
</tr>
<tr>
<td></td>
<td>Share of creative class workers</td>
</tr>
</tbody>
</table>

Determinants of smart growth

The indicators for smart growth, described above, are identified as key areas in order to reach smart growth, which implies a development based on knowledge, research and innovation. Smart growth per se is thus not specifically defined, with the consequence that it cannot be directly measured. However, the underlying assumption is that if the headline targets are met the EU will be on a growth path towards a ‘smart’ economy. This implies that the determinants for smart growth can be indirectly found by identifying the determinants for the degree of R&D investments, and the share of highly educated individuals, as well as innovation output and occupation-based measures of knowledge. Due to a high degree of regional heterogeneity it is necessary to take an empirical analysis down to the regional level. This allows for the identification of main determinants for smart rural development, which is of particular interest considering the topic of the present paper.

It has been shown both theoretically and empirically that macro variables such as innovation, productivity, growth and development are greater in more densely populated areas. This is commonly denoted as agglomeration economies, which dates back to Marshall 1890, who argues that firms benefit from being located geographically close to other firms within the same industry due to three reasons. First, cities benefit from co-localized specialization since it reduces transport costs. If all the firms within an industry locate close to the input sources, the transportation costs are minimized. Second, firms that localize close to similar firms benefit from access to already trained employees. Third, the concentration of one industry in a city promotes knowledge spillovers within that industry that increase growth in both the industry and the city as a whole. In Marshall’s view these benefits arise due to industrial specialization.

Duranton and Puga (2004) distinguish between three types of mechanisms behind agglomeration economies; sharing of e.g. fixed costs and risk, matching on the labor market, and learning due to knowledge spillovers and human capital accumulation (Natham and Overman 2013). They also emphasize that heterogeneity of workers and firms is the foundation for these effects to materialize. This is in line with the theory of Jacobs (1969), that diversity is the motor behind innovation and growth. Firms benefit from being located in diverse environments due to the creation of new ideas that spill over between people, firms and industries, which spur the innovative and imitative potential of firms. Benefits from diversity are hence commonly denoted as Jacobs externalities. On the other hand, benefits from specialization are commonly referred to as Marshall–Arrow–Romer (MAR) externalities (after Glaeser et al. (1992)), or localization economies.

Benefits from concentration of economic activity per se, no matter its composition, are denoted as urbanization economies. Empirically, Ciccone and Hall (1996) and Ciccone (2000)
find a significant relationship between average labour productivity and employment density for
the USA and five European countries, respectively. This result has been confirmed in several
studies and the so called urban productivity premium is now well established. Within the fields
of urban economics, economic geography and regional science, there has been a long-standing
debate on the effects of agglomeration economies on growth. Much work in this strand of re-
search focuses on the question whether industry specialization or diversity is more important
in promoting growth (Boschma and Iammarino 2009). Glaeser et al. (1992) and Henderson et
al. (1995) led the way and many researchers have followed in similar tracks. Despite the vast
amount of research it is still difficult to draw any major conclusions. As discussed by Beaudry
and Schiffauerova (2009), among others, this is mainly due to differences in methodological
approaches.

It may seem as if the theories on agglomeration economies are only relevant for urban re-
geons. However, these are as valid for rural regions, albeit on a different scale. On the one hand
there are dependencies between rural and urban regions where the theories of agglomeration
economies clearly favour the latter. On the other hand there are dependencies both between and
within rural regions. This implies that also for rural regions it is relevant to discuss benefits of
agglomeration economies since within these regions there are areas which are relatively more
urbanized than others. Hence, there are rural regions and areas within rural regions with rel-
atively more potential for matching, sharing and learning processes to take place. In addition,
individuals in rural regions may have more to gain from increases in agglomeration. In other
words, when starting from a very small scale, the marginal effect from increased agglomeration
may be larger than for already urbanized cities.

Frenken et al. (2007) took the question of regional diversity, or variety, one step further. Fol-
lowing Nooteboom (2000), they argue that for knowledge spillovers to enhance growth, there
needs to be some sort of cognitive proximity or relatedness between firms. A distinction was
thus made between related and unrelated variety where related variety is defined as within-
industry diversity and unrelated variety as between-industry diversity. Frenken et al. (2007) is
one of the first studies to provide systematic evidence of that it is not variety in general, but
variety in related industries that promotes regional employment growth. This finding has been
confirmed in several studies using data from different countries and time periods (Boschma
and Iammarino 2009; Boschma et al. 2012; Hartog et al. 2012). The notion of related variety can
be seen as a middle way in the debate on mar versus Jacobs externalities. The concepts of re-
latedness, related variety and the closely related smart specialization are even more relevant
for rural regions than for urban regions. Regarding urban areas a broad diversification can imply
many different specializations. This may not be possible for rural regions due to a lack of enough
market potential, both on the demand side and the supply side. Hence, there is an even greater
need to identify and focus on the specific strength/s of the region.

As already mentioned there has been some critique against the measurement of relatedness
based on industry codes. Wixe and Andersson (2013) provide a conceptual discussion on relat-
edness and why it should be measured based on the knowledge base of individuals, e.g. in terms
of educational background and current occupation, rather than industry belonging. Knowledge
is spread between employees, rather than firms per se, which implies that the perspective of in-
dividuals is at least as important as the perspective of firms. Wixe and Andersson (2013) find
empirically that occupational and educational related variety matter over and above industry
relatedness in explaining regional productivity growth.

There is a large, mostly theoretical, literature on the importance of external knowledge, inter-
actions, networks and other R&D collaborations for successful innovation (see e.g. Håkansson

Luca Naldi, Pia Nilsson, Hans Westlund, and Sofia Wixe
and Cooke and Morgan (1998). Cohen and Levinthal (1990) argue that the ability to exploit external knowledge is a crucial innovative capability of firms. In addition, Chesbrough (2003), with his model of open innovation, stresses the importance of external knowledge in successful innovation. The importance of external knowledge for innovative performance has been shown to hold also empirically, by Feldman (1994), Caloghirou et al. (2004), Laursen and Salter (2006), among others. Hence, access to external knowledge seems to be an important aspect to take into account when explaining research and innovation. There are various approaches to measure the regional knowledge potential, such as access to highly educated individuals, access to employees in Knowledge Intensive Business Services (KIBS) firms (Johansson et al. 2013), access to institutions for higher education, and access to employees in cognitive occupations (Bacolod et al. 2009) or creative occupations (Florida 2002). Regarding rural regions the possibilities for accessing external knowledge is more limited than for urban regions, due to geographic distance and less agglomerations, both in terms of firms and individuals. This implies that improved ICT infrastructure, such as high-speed internet, is a crucial factor for rural regions to access external knowledge. The importance of ICT for rural regions has also been identified by the ECF.

Besides the factors mentioned above, the spatial distribution of amenities is an important determinant of development patterns and plays a major role in shaping the urban and rural spatial structure. Since the work of Schuler (1974), Yang and Fujita (1983) and Brueckner et al. (1999), there has emerged a growing literature on amenities and their relation with growth and development patterns. There is a large literature that emphasise the role of amenities as an important factor influencing the growth potential for rural regions, in terms of attracting highly educated individuals, firms and economic activity in general. Yang and Fujita (1983) extended the urban land-use theory by Alonso, (1964), Muth (1969) and Mills, (1972) to include amenity services and considered the influence of amenity services on location decisions of different income groups. Building on this work, recent studies finds that the spatial distribution of amenities and the interactions between natural amenities and agglomeration forces are significant in explaining urban development patterns and intra-urban location (Wu and Plantinga, 2003; Wu and Gopinath, 2008; Wang and Wu, 2011; Nilsson, 2013).

As noted by many, rural areas that are endowed with natural amenities tend to have a better growth potential compared to other areas, which is connected to the occurrence of compensating differentials across space and the role of natural amenities in attracting residents (Rappaport 2009). One example is Westlund et al. (2014), that show that beside municipalities in the metropolitan regions, it is the municipalities with a large employment in tourism activities that have the highest rates of start-ups of new firms in Sweden. There are also other studies confirming that natural amenity services are connected to growth advantages and that these have larger implications for job growth in rural regions, compared to urban regions. Chi and Marcouiller (2012) for example, examined spatial heterogeneity of amenity services on migration using a spatial regime model. They find that none of the tested natural amenities where significant in attracting migrants into urban regions. However, they found a significant impact in rural and rural adjacent areas. Hence, these amenity services form important assets for rural and peripheral regions since these tend to be more endowed with natural resources and have less economic variety (Isserman et al., 2009).

Table 15.2 provides an overview of the proposed determinants of smart growth and how they can be measured.

What is Smart Rural Development?
Table 15.2. Overview of the determinants of smart growth.

<table>
<thead>
<tr>
<th>Determinant</th>
<th>Measure</th>
</tr>
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<tbody>
<tr>
<td>Urbanization economies</td>
<td>Population density</td>
</tr>
<tr>
<td>Industrial specialization</td>
<td>Location quotient</td>
</tr>
<tr>
<td>Diversity/unrelated variety</td>
<td>Entropy (or Shannon index) at e.g. 2-digit level.</td>
</tr>
<tr>
<td>Related variety</td>
<td>Entropy (or Shannon index) at e.g. 5-digit level based on industry codes, educational codes and occupational codes</td>
</tr>
<tr>
<td>External knowledge</td>
<td>Access to highly educated individuals</td>
</tr>
<tr>
<td></td>
<td>Access to e.g. KIBS employees, cognitive skill workers and creative class workers</td>
</tr>
<tr>
<td></td>
<td>Access to ICT, e.g. high-speed internet</td>
</tr>
<tr>
<td>Amenity services</td>
<td>Access to open space and diversified landscapes</td>
</tr>
<tr>
<td></td>
<td>Access to natural amenities (lakes, coast, ski-resorts, wildlife habitats etc.)</td>
</tr>
<tr>
<td></td>
<td>Climate conditions</td>
</tr>
</tbody>
</table>

15.6 Concluding remarks

Based on the European interpretation of the concept of smart growth, this paper has discussed the content of the concept of smart rural development; its indicators, determinants and measures. The EU 2020 strategy for smart growth is focusing on innovation (e.g. by R&D investment, start-ups, etc.) and education. In general, there are both theoretical arguments and empirical evidence for that such strategies should be more successful in urban areas than in rural ones.

However, rural areas are not uniform. City-close rural areas, being more or less integrated with the cities and intermediate regions with both urban and rural areas often show a positive development. From a policy perspective, smart specialization, combined with place-based approaches could be a successful strategy. The more peripheral rural regions are in a worse position. Some of them might have a potential to achieve smart specialization through exploiting local amenities and other resources and based on them build specialized links to urban supply and demand.

We present a number of potential indicators and measures of smart growth and its determinants. The availability of these indicators and measures at regional level vary strongly between European countries. Studies of prerequisites and potentials for smart rural development across European regions will therefore necessarily have to be built on proxies and available measures that theoretically can be connected with, and that empirically correlate with the more detailed measures of smart growth and its determinants.

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What is Smart Rural Development?


16 A New Vision for a Traditional Manufacturing Village in Mino

Yoshifumi Demura and Kemmei Hayashi

16.1 Introduction

In Japan, the ability of several traditional manufacturing industries to survive is threatened by reduced demand related to changes in lifestyle and the depopulation of rural areas, the sites of manufacturing. This situation also threatens the survival of the rural cultural landscape, which has long served as the location of many of these manufacturing industries. The traditional washi (Japanese paper) industry in Mino City is currently facing this problem.

Cultural preservation involves the maintenance and improvement of important practices and objects, including historical ruins. The concept of a cultural landscape has been recently introduced, primarily by the World Heritage Center of UNESCO, and several sites in Japan have already been designated as cultural landscapes, which involves preserving human lives and industries. The need for such efforts is understandable in the context of the tremendous effort required to maintain and improve other kinds of cultural masterpieces. However, no program exists to help the last vestiges of industries survive when these are threatened with total destruction.

There are no permanent industries in the usual sense of “permanent”. However, although an industry may become extinct at some point, the city in which it is located may be able to exist permanently or survive beyond the disappearance of its major industry. Thus, the survival of an industrial ruin requires more than the continued operation of the city in which it is housed. Based on this idea, this paper demonstrates that the urban policy of Mino City, as well as the logic on which it is based, was derived from discussions about the decline of traditional industries.

A brief history of Mino

Mino City, a small city of 22,500 people on 12,000 ha, is located in a mountainous region about 40 km north of Nagoya, a large city with more than 2 million people. It has been the site of the paper industry for 1,300 years. Makidani Valley has been a core manufacturing area, and Kozuchi has been the urban base of merchants.

The town of Kozuchi, which contains a castle and is located on a hill adjacent to the Nagara River, was founded in 1606, when residents of a riverfront area had to relocate after a huge flood. The new Kozuchi was designed by Kanamori Nagachika, a feudal lord in this region, with a framework of streets similar to that of the Chinese character for “eye” (目), just below the castle mount. He organized periodic markets (six times per month) in the town, making a
Figure 16.1. Location of Mino City.

Figure 16.2. Town of Kozuchi and its Landscape. Left: Pictorial map written in 1792 displaying “eye” streets in the middle. Right: Recent townscape of Kozuchi (Mino City) shot on the street in “eye” character.

A New Vision for a Traditional Manufacturing Village in Mino
connection to a trade distribution port on the Nagara River, which he also constructed. He noticed that Kozuchi was an important nodal point in the distribution network, especially for the northern mountainous area. Although Kanamori’s occupation ended with the death of his son in 1611 and the town became Shogunate Territory, the town and its market maintained their role as a distribution base. For example, according to a document listing the occupations of residents in 1871, there were 33 different types of small manufacturers (lanterns, baskets, farming implements, rainwear, castings, carpentry materials, tofu, miso, etc.) in this town. This document made no mention of paper making or paper trading, because paper was manufactured outside the town, in the Makidani Valley, and this industry was restricted and ruled by the Tokugawa Shogunate and merchants from Edo (Tokyo).

During the Meiji period, traditional paper became a popular product in the context of a free economy. The numbers of paper merchants in Kozuchi and paper makers in Makidani grew rapidly. The merchants reformed the process of production and the logistics of shipment by efficiently constructing a new railway. The town of Kozuchi became wealthier and the production activities in Makidani increased until globalization of the economy led to the arrival of competitors with inexpensive products, which changed the general Japanese lifestyle such that traditional paper lost its previous role.

Efforts to preserve and utilize the old townscapes containing the sites at which traditional paper was manufactured and traded were initiated only recently. Specifically, regulations for The Preservation of the Traditional Townhouses were enacted in 1999, the Landscape Plan was developed in 2009, and the Plan for the Maintenance and Improvement of Historic Landscapes was enacted in 2012. [Warning: Draw object ignored]

The regulations governing The Preservation of the Traditional Townhouses were based on the Act on the Protection of Cultural Properties, which was drafted by the Agency for Cultural Affairs. This regulation covers “preservation” in the literal sense of the term. The Landscape Plan was based on the Landscapes Act, which was drafted by the Ministry of Land, Infrastructure, Transport and Tourism in 2004 and was intended to preserve towns as well. After the old buildings in Kozuchi were refurbished as a result of the aforementioned measures, rows of traditional wooden buildings were restored. The style of traditional buildings in Kozuchi is unique in that each building includes firewalls, known as udatsu, on their front. (According to a Japanese expression, a person who cannot raise his/her udatsu is a person who has difficulty achieving

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economic or professional success.) The modern paper merchants in Kozuchi were so successful that they constructed extravagant *udatsu* structures on their buildings. In brief, Mino City and its inhabitants, who were primarily merchants, shared a sense of values; their buildings hold special meaning as cultural resources.

According to the *Landscape Plan*, the traditional industrial landscape of Makidani Valley was also considered an important source of Mino's identity. This arrangement included a system of roles and subsidies that followed guidelines issued by the *Ministry of Land, Infrastructure, Transport and Tourism*, which are summarized in Table 16.1.

<table>
<thead>
<tr>
<th>Concept/Plan</th>
<th>Project</th>
</tr>
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<tbody>
<tr>
<td>Private sector</td>
<td>Sharing the value (evaluation and choice of sites) Preservation and creation of value (community development activities)</td>
</tr>
<tr>
<td>Municipality</td>
<td>Support for the private sector</td>
</tr>
<tr>
<td>Public works</td>
<td>Pursuit of esthetics, process of landscape assessment</td>
</tr>
</tbody>
</table>

This plan relied most heavily on the municipal infrastructure. For this reason, the main actors involved in maintenance received only limited subsidies. However, the major problem was not the limited budget; rather, it was how to meet to goal of creating "attractive" landscapes. In this context, area residents tended to believe that the creation of an esthetically appealing environment should be the responsibility of the municipality. In contrast, the ideal residents of such areas are conceptualized as responsible citizens who pursue their professions according to their shared values. According to this perspective, the cultural landscape emerges naturally or inevitably from such pursuits. As described later, this logic played an important part in the next step, which is the focus of this report.

The *Plan for the Maintenance and Improvement of Historic Landscapes* (2012) was based on the Law on the Maintenance and Improvement of Historic Landscapes in a Community issued by the *Agency for Cultural Affairs of the Ministry of Education, Culture, Sports, Science and Technology*. This expanded the area to be preserved to include the surroundings of historical town-houses. Makidani Valley, the locus of the manufacture of traditional paper (Figure 16.4), was also included. That is, the sites of all aspects of the paper industry were treated as visual representatives of the culture of Mino or Japan and were viewed as ways to educate people about traditional practices. Improvement efforts were organized around four goals: 1) To manage and maintain the paper-manufacturing facility as a form of historically significant scenic beauty. 2) To improve the road connecting the facility and the historic settlements. 3) To preserve and pass along the related intangible cultural heritage, festivals, events, and so on. 4) To improve the environment, which contributes to the maintenance of the historically significant scenic beauty. However, the paper industry itself is now facing extinction. The merchants in Kozuchi have reduced the volume of paper trading, which now operates as a commission-only business. Despite efforts to actively utilize the sites of cultural significance in Kozuchi, the old buildings surrounding these facilities have been neglected or demolished in the service of building new structures that suit the lifestyles of their owners. These issues relate to economic difficulties, as the
Figure 16.4. Process of paper making and landscape of the site. a. Exposing the skin (bark?) of the plant to groundwater, b. boiling the material, c. removing dust through groundwater flow, d. paper making, and e. drying products under the sun. Source: “Plan for the Maintenance and Improvement of Historic Landscape” (2012).

subsidies were limited, and the owners may not be able to afford to maintain the buildings even if they agree with the value of preserving the traditional townscape.

Additionally, the traditional industrial area, Makidani Valley, has also been neglected. In 2013, the Committee to Plan for the Development of the Mino Washi Paper Village was finally organized under the aegis of the Mino City Municipal Office to discuss the next steps in this process.

16.2 From Tourism to Industry

The Committee to Plan for Development of Mino Washi Paper Village

This Committee, which was created pursuant to the Plan for the Maintenance and Improvement of Historic Landscapes, was established by the tourism division of Mino City to preserve the historic features of the town that may attract tourism. The first stage of this project proceeded from the assumption Mino’s industrial heritage would attract tourists who would want to visit historic buildings that have been renovated. This project was initiated at the same time as the traditional washi paper of Mino was undergoing evaluation by UNESCO for status as an example of “Intangible Cultural Heritage.”

The Committee consisted of members from seven groups of stakeholders: two from the Mino municipal government, three from the paper-manufacturing industry, two from residents’ associations, one from the commercial and industrial association, one from the tourism association, seven from other associations or residents of Mino, and two with academic affiliations, including the Chairman (the Chairman and Executive Secretary are the authors of this paper).
The Committee met on three occasions to discuss controversial issues, and residents’ workshops were held before each of these meetings. The meetings focused on the development of a plan, which, following the example of the gentrification of industrial facilities in Manchester, was intended to generate tourism based on industrial ruins (Table 16.2).

Although the initial Committee discussions deviated slightly from the agenda, these changes were welcomed by the municipal representatives and authors (Chairman and Executive Secretary), as they emerged as reactions to the explanations provided by participants associated with the paper industry about their actual circumstances.

Reactions to 1–3) and 2–1) and 2) in Table 16.2 were the focus of especially animated discussions. In reality, the owners could not afford to maintain their facilities, as the majority were retired and receiving pensions. In other words, their industry faced extinction in the absence of anyone to succeed them. The owners asked the city to create jobs in the paper industry to attract young successors. Although this situation could be viewed as a harbinger of Mino’s transition to a town that has been rendered useless due to its reliance on government subsidies, at least it meant that the industry was still alive! Indeed, this conversation directed discussion away from the past glories that had been diverting people’s attention from the future. Our first thoughts had to be of future local industries.

However, plans for the future should not rely on new ways to obtain subsidies. Mino municipal representatives and the authors believed they had to directly address the reality of the declining local industry. After this discussion, the primary goal was to incentivize their industries to provide jobs, and the secondary purpose was to promote tourism.

Table 16.2. First plan for the mino washi paper village.

| 1. Kozuchi | 1) Townscape regulations |
|            | Regulations to ensure that new buildings are consistent with historical buildings |
|            | Organize the placement of roadside signs |
|            | 2) Plan for the Waterfront Park of the Riverside Port |
|            | Arrange footpaths and landscaping for the waterfront near the route between Makidani and Kozuchi |
|            | 3) Plan for the maintenance and improvement of Old Suda Mannemon House |
|            | 4) Plan for the maintenance and improvement of Old Mino Station of Trum |
|            | 5) Plan for the renovation of the Mino City Station of the Nagaragawa train |
| 2. Makidani| 1) Environmental plans |
|            | Organize the placement of signs to guide tourists through the washi site |
|            | 2) Maintain and improve paper production facilities |
|            | Method for preserving typical historical buildings |
|            | 3) Plan to renovated the Mino Washi Museum |
|            | Convert the building to introduce the history of washi paper and its products in Mino, sell paper products, and present a paper-making workshop |
| 3. Round trip| 1) Identify round-trip routes for tourists |
|            | 2) Organize the placement of signs along the routes |

**Summary of the proposal from the committee**

The plan focused on three areas in Mino that have played important roles in the paper production industry. The first is the Kozuchi district, which may be the most famous settlement
and would serve as a symbol of recent prosperity. The second is Makidani Valley, which had been the site of intensive manufacturing and would be a symbol of past prosperity. The third is the area around the Mino Washi Museum, which is also in Makidani Valley and which was constructed in 1994 with a subsidy from the Ministry of Economy, Trade, and Industry. It would serve as a symbol of efforts toward future progress (Figure 16.5). Following the consensus about the priority of re-energizing industry, both the content and the order of the items in Table 16.2 reflect aspects of the new paper-production, tourism, and trading industries.

During the first discussion, the Committee identified trading as focus of their efforts. Accordingly, the shops in Kozuchi would continue their efforts, some of which had already been successful, to promote paper products to tourists. One traditional producer of Mino washi paper created new products employing paper-making techniques. For example, washi cloth, a new product made from the fiber of traditional paper, was used to produce socks with remarkable elasticity and breathability. However, this innovation had not yet spawned a huge industry. Yet, it is important to provide opportunities to generate continuing innovation, and the Committee’s goal is to incorporate such opportunities in the Mino Washi Museum.

As noted above, the Mino Washi Museum was constructed in 1994 with a subsidy from the Ministry of Economy, Trade, and Industry to serve as the guiding spirit of efforts to preserve the traditional art of making paper by hand and to revitalize the area. Its main attraction is a workshop in which visitors can make paper. However, the number of visitors to this museum has decreased over time, from 71,000 at its peak in 1995 to 39,000 in 2012. Thus, drastic measures were necessary to enable this “museum” to be used to its full potential.

The renewal plan for the museum also prioritized the organization of a new trading venue, a regularly scheduled market focused on paper distribution where merchants from all over Japan and the world could bring their products to trade with one another. It was believed that this market would also lead to the development of related trading ventures, as the main site would encourage the emergence of other small markets. It was also thought that the home of the manufacturing of genuine traditional paper would be the most appropriate place to hold the market. Figure 16.6 presents the organizational plan, which places the marketing function at the center of the museum’s activities.

The structure that was designated to serve as the museum initially presented logistical problems. First, all of the facilities were confined to one building, which would have excluded individuals who did not pay an admission fee, including those who wanted to visit only the souvenir shop. That is, people could not even look inside without paying for admission. This restriction also minimized the ability to take full advantage of the surrounding spaces, such as the square or riverfront, because the main entrance had to been situated on the first floor, immediately in front of the parking lot, to ensure that all who entered would pay the admission fee.

The renovation was designed to overcome these limitations. First, the admission fee would be reduced or waived. Second, the main entrance would be moved to the ground floor so that visitors could approach through the grass-covered square, allowing direct access to the market place and use of the lawn and the market on sunny days. One reason for the original, confined configuration concerned funding. As a general rule, it is thought that even public institutions should be funded by their own profits. Although this museum did not operate independently, the admission fee was its only source of income and profit, excluding the public funds raised by municipal taxes. Instituting a policy of free admission would require addressing positions favoring self-sufficiency using arguments based on sound management principles and compelling logic. The market function was developed in response to this situation.

The trading in the market place itself was expected not only to earn money from sales but also to encourage the development of related industries. In addition to its direct and short-term
Figure 16.5. Logistics of the Mino Washi Paper Industry.

- **Collection & storage function**: Collect and store information and research regarding paper.
- **Laboratory Function**: Research and development regarding new paper products. Provide a place for producers to share prototypes of new products.
- **Experiential learning function**: Workshop for teaching traditional paper-making techniques. Workshop for teaching professionals about creativity.
- **Exhibition function**: Attract exhibitions of paper artwork. Exhibit new products.
- **Market Function**: Trade paper and its products. Sell newly developed products.
- **Interaction function**: Facilitate mutual interactions. Stimulate regional development.
- **Information-transmission function**: Manage multiple information media. Provide information about Mino’s washi paper products.

Figure 16.6. Functional Organization of the Renovated MinoWashi Museum.
effects on income, the market was also intended to be the site of innovative activities. Indeed, the establishment of a special market place for paper using the existing building may be a feasible, albeit challenging, undertaking.

16.3 Logic of the new vision

Crucial role of the market place

The aforementioned plan above was based on an optimistic vision of the industrial landscape as a tourist attraction. In reality, however, the landscape reflected a local example of the global decline of traditional manufacturing industries. In 2000, Charles Landry proposed that the preservation of cultural resources required a new form of collaboration between consultants and local teams with diverse backgrounds. Indeed, we are suggesting the application of a special kind of urban “creativity” in this regard. Landry described the manner in which urban creativity is generated as “urbanity itself—critical mass, diversity and interaction—pushed forward [to form] a certain type of creativity characterized by specialisms and niches as well as hybrid ideas.” He offered many actual examples of “creative cities” or “urbanity” from all over the world, including small cities. Thus, if the diversity and cooperation associated with urban settings is not exclusive to large cities, what kind of diversity can be expected in small cities?

In 1984, Jane Jacobs was already describing the process by which cities generate creativity, following her earlier work (Jacobs, 1969). Jacobs explained “creativity” as “innovation and improvisation” or “import-replacing” (Jacobs, 1985). She used the idea of import-replacing to un-
Figure 16.8. Present Plan (top) and Renovated Plan (bottom) of Museum Area.
Hypothesized stages of urban growth:

1. Establishment of site for trade.
2. Emergence of an import-replacing economy.
3. Geometrically expanding chain reaction.


derscore the fundamental economic uniqueness of cities, juxtaposing it to the national economy in terms of cities’ ability to shape and reshape the economies of other settlements, thereby countering the “delusion” that nations should be the basic and most salient units of economic life. According to Jacobs, “Economic life develops by grace of innovating; it expands by grace of import-replacing.” According to this logic, import-replacement becomes a reason for the emergence of cities. We model her concept as the Jacobite Model in Figure 16.9.

According to this model, cities emerge from a site of trade as their origin, creating their own productivity and arranging their imports (import-replacing). She also opposed the “dogma” that held that cities were formed from agricultural surplus, as agriculture was also viewed as a result of import-replacing. In this perspective, import-replacement does not entail the transplanting of industry, as is frequently misinterpreted by local governments, because merely transplanting technology and capital from outside the city does not lead to new industrial jobs. Instead, import-replacing involves new local technology that has resulted from innovations and improvements that combine new ideas or processes with local traditions.

As a result, cities begin to expand explosively at a geometric rate, because import-replacing generates the following powerful economic forces: markets, jobs, technology, transplanted works, and capital. These forces emerge simultaneously in an import-replacing city, but only the city’s immediate surroundings experience their full impact, with each of the forces roughly proportional to the others.

When the impact of these forces extend beyond a city’s metropolitan area, they become unbalanced. Supply regions are examples of such “economic grotesques”. Once urban demand meets the products of a supply region, they cause specialized industry to gain much ephemeral wealth. They become able to purchase anything they need from other cities. The fatal shortcomings of situations are described below.

…the inherently crippled economic situation of supply regions that remain supply regions, that do not create import-replacing cities. The reason such regions are specialized and narrow is that, in the first place, their production for others so overwhelmingly outweighs production for themselves. That unbalance is exaggerated even further because of two peculiarities of the distant city markets on which supply regions depend […]. First, the distant markets were highly selective about what they wanted from […] (a supply region). Second, although the distant markets were composed of the markets of different cities and city regions, they were so much in agreement as to what they
wanted from […] (a supply region) that in effect they acted as one. This concerted selectivity is an enormously powerful force. When it comes to bear upon a region as a single force, unmediated by other city forces, it is irresistible as a shaper of narrow economic specialization. (Jacobs, 1985)

In this model, the site used for trading is always situated in the middle of the city. As the site of trading is the origin of import-replacing, the process of import-replacement also reinforces the urban market. Indeed, markets that produce a variety of products from the areas around the city benefit from the emerging economic forces, whereas industries in supply regions are too specialized and narrowly focused to possess their own markets and therefore depend on distant markets. The crucial component in this regard is the existence of a local market.

**Historical Circumstance of Mino**

This section discusses the history of Mino City from the perspective of the Jacobite Model. In about the 15th century, the Oyada district was home to a periodic market in handmade paper. Located on highways, the Oyada market attracted paper products from supply regions such as the Mutedani and Makidani valleys and involved trading with merchants from distant cities such as Kyoto (Figure 16.10-1).

In the 17th century, Kanamori Nagachika, a feudal lord in this region who constructed a castle and its surrounding town, Kozuchi, revived the periodic market, moving it to Kozuchi and constructing a trade distribution port on the Nagara River. This river allowed products to reach other cities such as Gifu, Kuwana, Ogaki, and Nagoya, each of which possessed a large port that could distribute them to other Japanese cities. The main exports included not only paper but also raw silk, tea leaves, and silver. Some paper manufactures operated under the Tokugawa Shogunate, the ruler of Japan, which led to the sale of top-quality products (Figure 16.10-2).

At about the end of the 19th century and the beginning of the 20th century, the paper industry in Mino paper was booming. Merchants in Kozuchi and Gifu were able to successfully distribute their products as railways were developed. As a result of the mass demand from Japan as a whole, paper became a huge industry and maintained its traditional approach to manufacturing, which preserved its quality. Merchants in Kozuchi became brokers of the paper products from Makidani. This was the golden era in Kozuchi during which magnificent townhouses were constructed based on the traditional frameworks of the historic castle town (Figure 16.10-3).

It is at this point in our discussion that the question of whether Mino City became a supply region in modern times (the early 20th century) arises. In the modern era, powerful merchants in the town of Kozuchi constructed railways primarily to transport paper products produced in the Makidani Valley. These merchants seemed to achieve economic success as a result of an aggressive, independent approach based on using intensive and efficient systems that transformed a home-based industry relying on manual labor to a manufacturing industry. For example, in 1925, 1,396 households in this region (Mugi County), more than 53% of all households \(N = 2,613\), were engaged in paper production. Although these figures represent the success of the paper industry, they also reflect excessive concentration on a single industry. Indeed, phenomena such as import-replacement were rare in this epoch because products could be purchased from other cities and delivered via rail. According to the Jacobite Model, the decline of this region may have started during this modern era, in which Mino became a supply region.

**The Proposal**

If Mino City has become a supply region, we must ameliorate this problem by dealing with its source. Thus, our proposal addresses how the establishment of a new paper market can adjust the trajectory of Mino so it can develop as a thriving city region.
Figure 16.10. Historical Transition of Mino City according to the Jacobite Model.

First, the renovation of the Mino Washi Museum by the municipality and the organization of a periodic market specializing in washi paper should catalyze positive economic chain reactions. The planners of such a unique market would need to centralize information about paper and create special networks to prepare for paper trading, steps that would encourage merchants from all over the nation or the world to visit Mino. After opening, the market would attract papers of various qualities, which would increase tourism by offering visitors the opportunity to choose from many types of paper. In this way, a trip to Kozuchi would be tantamount to import-replacement as people would no longer have to travel abroad to have an “experience”. This convergence of circumstances should lead to the next link in the chain reaction. Indeed, research into high-quality foreign paper should lead to new formulae for local production, which could start immediately in Makidani. Additionally, Kozuchi residents could identify new uses for paper in the context of the abundant resources that would then be available. It is not difficult for towns with a variety of shops to add an innovative product to their inventory or to produce it themselves. A critical mass of people serves as fertile ground for innovation, which leads to the retention of current residents and the recruitment of new ones from distant cities. Citizens in Kozuchi must engage in import-replacing while the rich resources are available. Without this effort, any success would be transient.

According to this model, Kozuchi would become the commercial center of a city region in which the next new markets would emerge. As mentioned earlier, the downtown area of Kozuchi contains old townhouses characterized by udatsu structures. History has shown that these traditional structures are flexible, and their interiors are easy to remodel according to current trends. Young residents have recently attempted to capitalize on these attractive townhouses, but the diversity of employment opportunities remains limited. Because such diversity is the source of innovation, Kozuchi should shift its industrial focus from wholesaling paper to new opportunities that maintain its traditions but do not involve specialization in paper. Kozuchi residents must continue producing innovations to become a regional center.

Based on the foregoing, it is clear that Kozuchi, which has the potential to become an import-replacing city in the next generation, should be the focus of efforts to achieve economic revital-
Current Situation

After improvement

Decline of washi market

Mino: city region

Makidani washi-supply settlement

Kozuchi

New washi market

1) Municipality establishes new market specializing in washi paper. (It is a new export related to tourism.)

2) Citizens must engage in import-replacement to increase the number and kind of jobs.

3) New markets should emerge as a result of innovation, promoting trading with neighboring cities.

New markets

Figure 16.11. Diagram of improved new market.

ization. In this sense, Makidani, where the traditional art of paper making has been maintained in an environment replete with spring water, is an appropriate locus for a craft settlement in close proximity to an import-replacing city. However, Makidani cannot become an active urban center in which trading occurs on a daily basis. The renovation of the museum building should provide a locus for only a restricted amount of trading, because the chain reaction around Kozuchi caused by import-replacement will include this market place as a part of Mino’s industries rather than as a site for trading. Thus, the use of this facility should be altered in accord with changes in the structure of the industry as a whole. At that time, it is possible that at least some part of the paper-making industry may survive in another form. Indeed, it is too early to give up on the industrial sites by maintaining them only for their nostalgia value.

16.4 Conclusion

Mino City has been the site of efforts to preserve and improve historical structures, including buildings related to the traditional paper-making industry. These historical artifacts were recognized by the tourism division of Mino as potential tourist attractions. Although the Committee to Plan the Development of the Mino Washi Paper Village initially concentrated on tourism, it eventually produced a broader vision. It tried to answer questions about how to generate employment opportunities and revitalize industries. In this context, Mino faced depopulation, the aging of its remaining population, and the lack of new labor sources. The Committee proposed that the area be developed as a locus for trading as a way to address these issues.

The renovation of the Mino Washi Museum was identified as the centerpiece of this solution. The Committee proposed that the municipality hold periodic markets specializing in washi paper on the assumption that this would catalyze a series of salutary economic chain reactions. This plan was designed by the authors based on the logic of Jane Jacobs, which we model as the Jacobite Model. According to this logic, cities emerge from import-replacement and then start expanding geometrically because import-replacing generates powerful economic forces. How-
ever, supply regions are too specialized and narrow to create import-replacing cities. As sites of trading, markets are the seeds of import-replacing, which also contributes to the success of city markets.

According to this model, the locus of trading should be the middle of a city; Kozuchi, which has the potential to be an import-replacing city in the next generation, should be at the forefront of economic revitalization efforts. Makidani, the site of the traditional art of paper making, is an appropriate craft settlement located in close proximity to the vigorous urban center. Indeed, Kozuchi and Makidani should be recognized as a metropolitan region that generates diversity.

References

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17 Social Ties and Temporal Migrant Workers in Rural Areas

Gunawan Prayitno, Kakuya Matsushima, and Kiyoshi Kobayashi

17.1 Introduction

Migration decision is commonly agreed influence not only by economic aspect but also by social aspect of home countries as well as host one. The factors driving migration decision are widely explored in the literature. In the economic perspective, there are two types of factors that have an impact on migration decision. Micro level or individual base is the first factor affects it, such as expected income, job and educational opportunities, health quality and/or better provision of social benefits Gibson & McKenzie (2011) and Kennan & Walker (2011), among others). The second type is attributed to the macro level, political and economic conditions of a country, such as war and revolution, taxation policy, quality of governance, and public goods provision (Alesina & Zhuravskaya (2011), Greenwood (1997), and among others).

The lower cost to migrate due to advances in transportation improvement and technology information, traditional barriers to migration are dramatically reduced and hence the true underlying preferences for international movement can be revealed. In the face of lowered barriers, international movement might not be primarily economically motivated (Massey et al., 1999, and Borjas, 1994) but rather be an expression of social motive. There is a growing body of literature concerning social motive and migration, especially in developing countries. One important question concerns the extent to which the influence of social networks is significant on top of the role of the traditional factors (such as the wage differential between the origin and the destination country, the bilateral distance between the two countries, etc.).

At the microeconomic level, it is important to understand the exact role of social networks in the migration decision. As noted by Dolfin and Genicot (2010), migrant networks can facilitate migration in three different ways: through providing information about the migration process itself; through providing information about jobs at the destination and aiding integration after arrival; and through helping to finance the costs of migration. Recent work provides support for the role of networks in finding jobs at migrants’ destinations. Using Mexican rainfall as an instrument for the size of migrants’ US networks, Munshi (2003) finds that larger networks substantially improve Mexican immigrants’ likelihood of US employment. The role of networks in alleviating migration costs has been investigated by McKenzie and Rapoport (2007, 2010), who find evidence suggesting that community networks tend to lower costs, especially for the less educated. Orrenius and Zavodny (2005) find that having a father or brother who has migrated to the US increases the likelihood of migration for males.

Giulietti et al. (2014) tries to analysis internal migration in China (rural-urban migration) and analysis using the concept of strong and weak ties. They found that on the results indicate
that both weak and strong ties matter in the migration decision process, although the impact of weak ties is higher than that of strong ties. They also show that one underestimates the effect of social networks on migration by not taking into account the strong ties in the mobility process, and finally found that weak and strong ties act as complements in the migration decision, which indicates that the interactive effect between weak and strong ties is particularly strong above a certain threshold of the size of weak ties.

This paper tries to measure the relation between social capital and migration using the concept of social ties or social network. It is a concept that explained by different factors, some of which are observable, while others are unobservable to the researcher. Examples of observable factors are data from the survey related to the individual characteristic (education, age, the family members, etc.), while for unobservable factors one may consider the relation between people in the hamlet’s level, in neighbor’s level and how they’re feeling to the place.

We develop two hypotheses to measure the relation between social capital and migration. Our first hypothesis is that communities and households with higher social capital tend to send their family members as migration workers. The second hypothesis is communities and households with higher social capital will not send their family members as migrant workers. Our earlier finding (Gunawan et al. 2014) indicates that households with higher social capital tend to send migrant workers abroad. We want to proof, between hypothesis one and two, which is suitable for this research.

Our aim in this study is to investigate the relation between social capital and migration in rural areas. In detail, Section 2 reviews the basic concept on social capital, ties to community, ties to neighbors and sense of. Section 3 presents the results of survey analysis on the characteristics of households (migrant and non migrant). Section 4 discusses the model development of this research, and Section 5 is the validity of covariance structure model.

17.2 Literature review

Basic idea

The migration literature, unsurprisingly, indicates that relationships between migration and rural development are complex and context-specific. Macro level studies suggest there is some consensus that migrants tend to help to increase welfare: migrants often contribute much to economy of the host society, and have high rates of labor force participation (de Haan and Rogaly, 2002). Migrants make use of social resources and networks – who they know – to access or avoid particular types of work and/or migration destinations. Collective identities contribute to the meanings of migration for individual migrants – as Rogaly et al. suggest, they may be deployed positively to decrease the loss of dignity in hiring out for wage work in “foreign” place.

The issue of migration is particularly important to Indonesia, a country with a long tradition of population mobility and high rates of rural–urban and rural-abroad migration. Moving to towns or abroad has been an important part of the farm households’ livelihood strategies for many years. In Indonesia, as developing countries, migratory movements have multiplied greatly in volume in recent years, as transport and communications have improved (Hugo, 1995). Prospective migrants are using their relation with relatives and friends in making decision to migrate.
Social capital and migration

Within a decade, a number of citations in the Web of Science in social capital increased dramatically from 2 in 1991 to 220 in 2001 (Elinor Ostrom and X. Ahn, 2003). Topics of social capital have a very wide range, covered in the social sciences as a whole, from economics, organizational sociology to political science. As a result, varied definition has been given to draw the notion of social capital. Regarding our research objective, in this paper, we describe the concept of social capital as "ties" based on argument of the scholars as follows: (1) Ostrom and Ahn (2003) that argue social capital as "all forms of capital involved in forming assets by allocating resources which may be used in direct consumption, as to create assets which generate benefit potential flow to some sets of individuals during future sky time" (2) Putnam (2000) formulated definition of social capital relies on social networks: "connections among individuals-social networks and the norms of reciprocity and trustworthiness that arise from them" (3) Lin (2001) defined social capital as to be measured, not troubled by effect, and explicitly based on theories of social networks: "resources embedded in social networks that can be mobilized when an actor wishes to increase the likelihood of success in a purposive action".

Scholarly recognition of fact that migrants use social networks is not new. In early 20th century, Gamio (1930) documented the use of interpersonal networks in realm of immigrants from Poland and Mexico (although they did not certainly lead to social capital). Gamio described social ties between relatives and friends who had migrated before them, even prospective workers of migrants got access to knowledge, help, and other resources facilitating them to do international movement. Massey and colleagues in 1987, firstly use concept of social capital in migration, stating that peasant in Mexico "may be poor in financial resources, but they are wealthy in social capital, which they can readily convert into jobs and earnings in the United States".

So, that ties of kinship and friendship, to and from themselves, gave benefits to them, where, when an individual migrated, interpersonal networks and social relationship could change into resources which might be used by friends and relatives to get access to work in host country. Migrants maintain strong ties with their families and return periodically to their home areas. Excepting for a strong relationship to the family, the prospective migrants have a strong relationship with prior migrants. Palloni et al. (2001) explains about the relation of migration and family network where the family with higher level of social capital (network ties) among siblings tends to send the members of family as migrant workers. This concept is known as "strong ties or bonding ties" in concept of social capital, where relationship occurring is only to close relatives and friends (Palloni et al., 2001 and Fussel and Massey, 2004).

The second concept of social capital is ties outside of friends and relatives for prospective migrant. Liu in 2011 tries to analyze how ties with non friends and family known as "weak ties or bridging ties" effect to the decision to migrate. The results indicated that personal migrant networks outside close family increased potential possibility of migrants to work in the host country.

Moreover, Woolcock and Sweetser (2002), - bonding social capital refers to connections to people like you [family, relatives, kinship]... bridging social capital refers to connections to people who are not like you in some demographic sense. Bonding social capital is the relationship within a homogeneous group and bridging social capital tends to bring together people across diverse social divisions. Bonding and bridging social capital have resonance with Granovetter’s ideas of ‘strong ties’ and ‘weak ties’ respectively (Krishna, 2008)

In this research, we define two ties, first is ties with kinships and friendships as ties to neighbors or strong ties and ties outside of friends and kinship as ties to community or weak ties. To measure social capital in the research area, we combine both concepts of ties with the concept of place. Research has focused on the explanation that the social network holds resources embed-
ded in the location of residence thereby creating an attachment to that location (Vidal and Kley, 2010). So, in the social network theory, we consider not only relation or ties between persons but also need to consider the relation persons to the place.

17.3 Survey design and implementation

**Survey method**

To illustrate the model in an applied setting, we used data from the field survey which was conducted in November 2012 and February 2013. Through systematic sampling, 250 households living at Arjowilangun village, Kalipare district, Malang regency, East Java Province Indonesia, are selected as the respondents for the study in the first survey and 250 households respondents in second survey. Five hamlets are selected covering Pangganglele, Lodalem, Lotekol, Duren and Barisan.

Face-to-face interviews have been conducted effectively within seven days by 10 surveyors. Interviews were scheduled between 07:00 a.m. and 09:00 p.m. depending on the respondent's convenience and readiness. Respondents in this research are households: (i) households with one or more migrant workers in the family members, (ii) household with non migrant workers. We preferred interviews directly with the head of the household; the second option is where the head household was not accessible at the time of the interview, a representative of the family (husband/wife, mother, father, grandfather, grandmother, children, brother or sister) can substitute him/her depending upon their willingness.

In this study we assume that individual respondent preference on choice to migrate might seen as a household's decision since once he or she decided to migrate or not, it becomes the choice of each representative household. Then, we may also use term of ‘respondent’ and ‘household’ interchangeably.

**Sample selection**

There are no rules for sample size in qualitative inquiry (Paton, 1990). Israel (1992) provides a table of recommended sample sizes for +7% precision level where confidence level is 95% and \( p = 0.5 \). According to the table, and for purposes of this study, the researcher used an estimated population size \( N = 3,470 \) (between 3,000 and 4,000) and thus a sample size goal of \( n = 194 \). We added 56 respondents to seek a large numbers of participants so the total migrant respondents are 250. Patten (2005) suggests that, a researcher should first consider obtaining an unbiased sample and then seek a relatively large number of participants. As a comparison we also interviews 250 respondents who do not migrate.

**General description of research area**

In general, the total area of Arjowilangun village (Figure 17.1) covers 1,598.01 Ha, whereby the land use is dominated by: (i) paddy and dry field (80.09% or 1,279.95 Ha), (ii) government plantation and forest (4.69% or 75.02 Ha), open space (1.50% or 23.98 Ha); and (iii) residential (13.70% or 219.07 Ha). This village lies at 293 m above sea level, at a distance of 22.5 km to the capital city (Malang Regency) and about 6 km to the district centre (Kalipare district).
Figure 17.1. Land use map of Argowilangun village.
Demographic attributes

The respondents of this study are households that have one or more migrant workers and household without migrant workers. We were design two types of questions, for households with migrant worker and households without migrant workers. Question for migrant households asked about income now, income the head of household, income migrant (before and after migration), family members, sex, age, education, types of migration and duration of work. We use the same question for non migrant households, but without question of income before and after migrate.

Demographic attributes

In the questionnaire survey, the migrant respondents were asked to reveal their household monthly income, divided into seven categories. The minimum wage in Malang Regency (UMR), as decided by the government in 2013, is IDR 1,343,700 or JPY 13,437. If we exclude income migrant members in the family, the income of 40 respondents or of 16% of the population of the village is below the regional minimum wages or UMR (upah minimum regional), that of 55 respondents or 22% is in the range of regional minimum wages, and 155 respondents or 62% had income above the regional minimum wages (Figure 17.2a). This income is quite the same with non migrant households in Figure 17.2b. If we include the income of migrant members in the total household income, we can see the difference. Households with migrant had higher income comparing with non migrant households. Only 35% of migrant household respondents had income less or the same with minimum regional wages, comparing with 60% for non migrant households.

Indonesian elementary level has six years of education; then it continues with three years of education in middle school and also in high school. According to education statistics (source: www.Nation Master.com), average years schooling of adults in Indonesia is 5 years. In the survey, we asked respondent about their education background within 4 categories as follows. First option is elementary school which covering the head of household who has background of education at lower or equal to 6-year school period. Second option is middle school expressing the head of household who studied in the junior school whether they completed the school period by three years or just drop out from it. Third option is high school with similar circumstances with the middle school. Forth option is university level – it reflects the head of household who graduated from bachelor degree, master degree and the like. Moreover, if the respondent did not finish the university level or drop out in the mid-term, we may also categorize the education background of the respondent as the university level.
Figure 17.3. Household income with migrant income (a), migrant households (b), non migrant households.

Figure 17.4. Household education background: (a) migrant households and (b) non migrant households.

The largest number of migrant household respondents had high school level education (105 respondents or 42%) (Figure 17.3a). Those with junior high school level education had 90 respondents or constituted 36% of population; those with elementary school education or even lower constituted 21.6%, and at the level of university just one respondent (0.4%). This study suggests that respondents in the study area have been higher level of education than the national average. For non migrant households, education background in elementary school or lower is 54%. From this information, we conclude that it respondents in the study area have a lower level of education than the national average.

Referring Figure 17.5, the most common size of family for migrant household is families with 3 inhabitants live in the same one unit single house consist of parents (father and mother) plus one member. Another seven types of family size for migrant household are (i) family with 4 members (69 total households), (ii) family with 5 members (41 households), (iii) family with 2 members (36 households), (iv) family with 6 members (6 households), (v) family with 1 member (5 households), (vi) family with 7 members (2 households), and (vi) family with 8 members (1 households). For the six and seven members, the family consists of parents, two children or one child and grandfather and grandmother.

The most common size of family for non migrant household is families with four inhabitants live in the same one unit single house consist of parents (father and mother) plus two members (child or relative). The second size is family with three members, and other types of family members are almost the same between non migrant and migrant households.
Explanatory variables

In the household questionnaire survey, we investigated 8 demographic attributes for each household consist of age, gender, family members, household income, migrant income, education, occupation and working place. Divided into migrant households and non-migrant households, Table 17.1 depicts the best result of chi-square test for each demographic attribute in dummy variable. In general, for the sample size of 500 respondents we may conclude that only one attribute: education which the derive value does exceed the tabled critical value of chi-square equal to 3.84 at $p<0.05$ with $df=1$ (Coolidge, 2006). Thus, we may consider household attribute of education as explanatory variables in the estimation model.

Table 17.1. The chi-square test for demographic attribute in dummy variable.

<table>
<thead>
<tr>
<th>Education</th>
<th>Income</th>
<th>Family Members</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;$ES$</td>
<td>$&gt;ES$</td>
</tr>
<tr>
<td>Migrant</td>
<td>54</td>
<td>196</td>
</tr>
<tr>
<td>Non Migrant</td>
<td>136</td>
<td>114</td>
</tr>
<tr>
<td>Dummy</td>
<td>$&lt;ES = 1$</td>
<td>$&lt;1.5$ Million = 1</td>
</tr>
<tr>
<td>$p$</td>
<td>0.0</td>
<td>0.928</td>
</tr>
<tr>
<td>$X^2$</td>
<td>57.8</td>
<td>0.08</td>
</tr>
</tbody>
</table>

In migrant respondent there are only 54 respondents who have education background of elementary school or even did not did not finish the school year at elementary level (21.6%). But for non migrant households the number is 136 respondents or 54.4 percent. Since almost less than half of the respondents have level of education at lower or equal to elementary school for migrant households, so that we propose dummy variable for respondent with level of education lower than or equal to elementary school as 1, and 0 otherwise. The critical value of level of education of the respondents show at 57.8 is exceeding the critical value. It indicates that education
background and choice to migrate are dependent. In other words, we may argue that respondents with education level at lower than or equal to elementary school have higher tendency not to migrate as reflected in Table 17.1.

In the questionnaire survey, the respondents were asked to reveal their household monthly income, divided into seven categories. The minimum wage in Malang Regency (UMR), as decided by the government in 2013, is IDR 1,343,700 or JPY 13,437. Based on this, we propose dummy variable for respondent with level of income lower than IDR 1,500,000 as 1 and 0 otherwise. The critical value of level of income respondents’ show at 0.08.8 is not exceeding the critical value. So, income is independent to decision to migrate or not.

We divided family members in the research as: (i) family with 1 member, (ii) family with 2 members, (iii) family with 3 members, (iv) family with 4 members, (v) family with 5 members, (vi) family with 6 members (vii) family with 7 members and (viii) family with 8 members. Average number of family in the household is 4 members. The derive value of \( x^2 = 3.367 \) does not exceed the tabled critical value of chi-square. Similar to income, it is indicated that family size and choice to migrate are independent.

17.4 Model development

We develop general methodology to integrate of observed exogenous variable, latent variables and discrete choice of migration. The resulting methodology is an integration of latent variables model, to operationalise and quantify unobservable concepts with discrete choice methods. The methodology incorporated indicators of observe variables (attribute data from income, education etc) and latent variables provided by responses to survey questions to aid in estimating the model. For the calculation we use AMOS program.

Notation

We start by introducing main assumptions in the model and notation that will be use for the paper. The following notation, corresponding to the choice model notation, is used:

- \( X_n \) observed variables (characteristics of household \( n \).)
- \( X^*_n \) latent (un observable) variables.
- \( I_n \) indicator of \( X^*_n \). (For example, responses to survey questions.)
- \( U_{in} \) utility of alternative \( i \) for household \( n \).
- \( U_n \) vector of utilities.
- \( y_{in} \) choice of indicator; equal to 1 if alternative \( i \) is chosen by household \( n \) and 0 otherwise.
- \( y_n \) vector of choice indicator.
- \( \alpha, \beta, \gamma \) unknown parameters.
- \( \omega, \varepsilon, \nu \) random disturbance terms.
- \( \Sigma, \sigma \) covariance of random disturbance terms.
- \( D \) distribution function.

Framework and definition

The integrated modeling framework, shown in Figure 17.6, consists of two components, a choice model and latent variables model.
As with any random utility choice model (RUT) (McFadden 1974; McFadden 2001; Temme et al. 2008), decision maker utility $U_n$ for each alternative is assumed to be a latent variable, and observable choices $y_n$ are manifestations of the underlying utility. Observable variables that manifestation of latent constructs are called indicators. We use a dashed arrow to representing a measurement equation links the unobservable $U_n$ to its observable indicator $y_n$. Structural equation (i.e., the cause-and-effect relationships that govern the decision making process) link the observable and latent variables ($X_n, X^*_n$) to the utility $U_n$ represented by solid arrow.

The latent variables that influence the choice process is integrated choice and latent variable model. We use structural equation modeling to related the observed exogenous (the explanatory) variables $X_n$ to the unobserved latent variables $X^*_n$. While the latent variables are not observed, we could calculate using indicators that observed. The indicators allow identification of the latent construct using a responses to survey questions related to place attachment, ties to region and ties to community.

**General specification of the model**

The integrated model is composed of two parts: a discrete choice model and latent variable model. Each part consists of one or more structural equations and one or more measurement equations.

**Structural equation**

For latent variables model, we need the distribution of the latent variables given the observed variables $f_1(X^*_n | X_n; \gamma)$. For example:

$$X^*_n = h(X_n; \gamma) + \omega_n \sim D(0; \Sigma_{\omega}) .$$

(17.1)

This result in one equation for each latent variable. For the choice model, we need the distribution of utilities, $f_2(U_n | X_n, X^*_n; \beta, \Sigma_e)$. For example:

$$U_n = V(X_n, X^*_n; \beta) + \epsilon_n \sim D(0, \Sigma_e) .$$

(17.2)
These variables represent either (latent) characteristics of decision maker ($X_{m}$, $X_{m}'$) or latent attribute of alternative ($X_{m|n}$, $X_{m|n}'$). The importance of the explanatory variables on the utility of the options is reflected in vector $\beta$.

Measurement equations

For the latent variable model, we need the distribution of the indicators conditional on the values of the latent variables, $f_{3}(I_{n}|X_{n},X_{n}';\alpha,\Sigma_{\alpha})$. For example:

$$I_{n} = m(X_{n},X_{n}';\alpha ) + u_{n} \sim D(0,\Sigma_{\nu})$$

(17.3)

This results in one equation for each indicator (i.e., each survey question). These measurement equations usually contain only the latent variables on the right-hand-side. However, they may also contain individual characteristics or any other variable determined within the model system such as the choice indicator. In principle, such parameterizations can be allowed to capture systematic response biases when the individual is providing indicators. For example, in a brand choice model with latent product quality ($Z_{n}$), one may include the indicator $y_{in}$ for the chosen brand, for example, $I_{m} = \alpha_{1}Z_{in} + \alpha_{2}y_{in} + u_{m}$, where $I_{m}$ is an indicator of the perceived quality of alternative i. This would capture any exaggerated responses in reporting the perceived quality of the chosen brand, perhaps caused by justification bias.

For the choice model, we need to express the choice as a function of the utilities. For example, assuming utility maximization:

$$y_{in} = \begin{cases} 1, & \text{if } U_{in} = \max_{j} f_{u} \in \{j\} \\ 0, & \text{otherwise} \end{cases}$$

(17.4)

Note that $h(\cdot)$, $V(\cdot)$, and $m(\cdot)$ are functions, which are currently not defined. Typically, the functions are specified to be linear in the parameters, but this is not necessary. Also note that the distribution of the error terms must be specified, leading to additional unknown parameters (the covariances, $\Sigma$). The covariances often include numerous restrictions and normalizations for model simplification and identification.

Integrated model

In this section, the integrated model consists of Equations (17.1) to (17.4). Equations (17.1) and (17.3) comprise the latent variable model, and Equations (17.2) and (17.4) comprise the choice model. From Equations (17.2) and (17.4) and an assumption about the distribution of the disturbance, $\epsilon$, we derive $P(y_{n}|X_{n},X_{n}';\beta,\Sigma_{\epsilon})$, the choice probability conditional on both observable indicators and observe exogenous variables.

Likelihood function

Maximum likelihood techniques are more preferred to estimate the unknown parameters. Intuitively we can create the likelihood function to the integrated model, started with the likelihood of a choice model without latent variables:

$$P(y_{n}|X_{n};\beta,\Sigma_{\epsilon})$$

(17.5)

The choice model in likelihood function could be any number of forms, for example, logit, nested logit, probit, ordinal probit, logit kernel, etc., and can include the combination of different choice indicators such as stated and revealed preferences.
The next we add the latent variables to the choice model. Once we hypothesize an unknown latent construct, $X^*_n$ its associated distribution, and independent error components $(\omega_n, \epsilon_n)$, the likelihood function is then the integral of the choice model over the distribution of the latent constructs:

$$P(y_n|X_n; \beta, \gamma, \Sigma_\omega, \Sigma_\epsilon) = \int_{X_n} P(y_n|X_n; \beta, \Sigma_\epsilon) f_1(X^*_n|X_n; \gamma, \Sigma_\omega) dX^*_n \quad (17.6)$$

To improve the accuracy of estimates of the structural parameters as well as to allow for their identification, we introduce indicators to both equations. Assuming that the random error components $(\omega_n, \epsilon_n, u_n)$ are independent, the joint probability of the observable variables $y_n$ and $I_n$, conditional on the exogenous variables $X_n$, is:

$$f_4(y_n, I_n|X_n; \alpha, \beta, \gamma, \Sigma_\epsilon, \Sigma_\omega, \Sigma_\alpha) = \int_{X_n} P(y_n|X_n, X^*_n; \beta, \Sigma_\epsilon) f_3(I_n|X_n, X^*_n; \alpha, \Sigma_\alpha) f_1(X^*_n|X_n; \gamma, \Sigma_\omega) dX^*_n \quad (17.7)$$

Note that the first term of the integrand corresponds to the choice model, the second term corresponds to the measurement equation from the latent variable model, and the third term corresponds to the structural equation from the latent variable model. The latent variable is only known to its distribution, and so the joint probability of $y_n$, $I_n$, and $X^*_n$ is integrated over the vector of latent constructs $X^*_n$.

17.5 Results

Principal Component Analysis

To construct uncorrelated factors of social capital a principal component analysis with varimax rotation was performed. PCA is a method of data reduction wherein the process it groups correlated variables into uncorrelated variable factors (Fabrigar et al., 1999). In the questionnaire survey, there are 12 questions to describe respondent's opinion about their values and belief about their environment using 5 scales where 5 means very much (extremely yes) until 1 means least meaning (extremely no), as follows:

We use PCA in four-factor restriction. Factor 1 is related to variables $y_5$, $y_6$, $y_8$ and $y_9$, Factor 2 to $y_1$, $y_2$ and $y_{12}$, Factor 3 to variables $y_{10}$ and $y_{11}$ and Factor 4 to variables $y_3$ and $y_7$. The first factor accounts for 39.2% of variance. Variables loaded on this factor mostly refer to "ties to community". The second factor accounts for 9.8% of variance and describes relation to place, being a symbol of "place attachment". The third factor accounting for 8.8% of variance refers to "ties to neighbors", and the last, the fourth factor, accounts for 7.4% of variance as "collective efficacy/empowerment". We exclude Factor 4, because we only use Eigen value more than one ($\lambda>1$) for this research.

Integrated choice and latent variable analysis

Based on the results from the survey and discussion in Chapter 3, we have observed variables as demographic attributes, characteristic of migrant, values and belief towards village and identified latent variables in this study as sense of place, ties to communities, and ties to neighbors.

This study proposes more than one latent variable (i.e., sense of place, ties to communities, and ties to neighbor) that explains the causal relationship among observed variables based on
Table 17.2. Rotated Factors Loadings. *Note:* The question related to the variable to measure social capital adopted from Jeong *et al.* (2011).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factors Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>v1 Place attachment to your village as your hometown</td>
<td>0.123 0.738 0.215 0.107</td>
</tr>
<tr>
<td>v2 Nature and landscape of your village are nice</td>
<td>0.164 0.714 0.070 0.289</td>
</tr>
<tr>
<td>v3 Foodstuff of your village is nice</td>
<td>0.065 0.426 0.121 0.602</td>
</tr>
<tr>
<td>v4 Important to involve in community events activities</td>
<td>0.423 0.506 -0.034 0.290</td>
</tr>
<tr>
<td>v5 Important to consult people who are in trouble</td>
<td>0.626 0.348 0.313 0.065</td>
</tr>
<tr>
<td>v6 Important to keep daily communication with neighbors</td>
<td>0.833 0.173 0.198 0.166</td>
</tr>
<tr>
<td>v7 Important to respect ancestors and manage community grave</td>
<td>0.242 0.000 0.105 0.786</td>
</tr>
<tr>
<td>v8 Important to communicate with relatives living in the village</td>
<td>0.639 0.137 0.037 0.421</td>
</tr>
<tr>
<td>v9 Neighbors are very important for me</td>
<td>0.833 0.202 0.178 0.067</td>
</tr>
<tr>
<td>v10 Neighbors will take care of my children and my parent when I am going abroad</td>
<td>0.266 0.220 0.772 0.014</td>
</tr>
<tr>
<td>v11 Neighbors will help me and my family when we have some economic trouble</td>
<td>0.123 0.046 0.858 0.171</td>
</tr>
<tr>
<td>v12 Want to continue living in this village</td>
<td>0.276 0.724 0.081 -0.112</td>
</tr>
<tr>
<td>Eigen value</td>
<td>4.710 1.178 1.056 0.892</td>
</tr>
<tr>
<td>Contribution ratio (%)</td>
<td>39.252 9.815 8.801 7.457</td>
</tr>
<tr>
<td>Cumulative contribution ratio (%)</td>
<td>39.252 49.067 57.869 65.306</td>
</tr>
</tbody>
</table>

Estimation of the model

This study configures the path, relationship between latent variables and observed variables based on principal component analysis. First, before conducting principal component analysis on values of ties to community (Y), we have performed proximity interpretation of each variable. For interpretation, it may be possible to classify Y into three groups as follows: v1, v2, and v12 focus on “sense of place”, v6, v7, v8, v9 as “ties to community”, and v10, v11 focus on “ties to neighbors”.

Next, we conduct an SEM analysis on the correlation between independent variables and to understand the indirect effects. SEM is multivariate regression in which the response variable in the regression equation may become predictor in another equation. These allow us to account for correlation and distinguish direct and indirect effects of our exogenous and latent variables on sense of community. For estimation we use the general least square (GLS) method. In general, this method is preferable to Maximum Likelihood (ML) estimation when the data is severely normally distributed and includes ordinal data (Schumacker and Lomax, 2010).

We use the factors constructed by the above PCA analysis as a basis for determining exogenous latent variables for SEM analysis. We have investigated several model structures and find that the model presented in Figure 17.7 provides the best model fit. The model fit can be considered “good” in terms of goodness of fit (CMIN/DF = 2.55, GFI = 0.954, AGFI = 0.928 and RMSE 0.056).

Further there are significant paths to migration decision from the latent variable ties to communities and observe variable education. Ties to community are constructed by the four variables suggested by the PCA which all are found significant though the importance of the exogenous variables vary. Income and family members are giving impact on sense of place and giving

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Figure 17.7. Framework for integrated choice and latent variable model.

Table 17.3. Rotated factors loadings.

<table>
<thead>
<tr>
<th>Latent Constructs</th>
<th>Path</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ties to place</td>
<td>Income</td>
<td>0.038</td>
<td>0.014</td>
<td>2.759</td>
<td>0.006</td>
<td>par_13</td>
</tr>
<tr>
<td>Ties to place</td>
<td>Family members</td>
<td>0.245</td>
<td>0.080</td>
<td>3.060</td>
<td>0.002</td>
<td>par_15</td>
</tr>
<tr>
<td>Ties to neighbors</td>
<td>Ties to place</td>
<td>0.705</td>
<td>0.089</td>
<td>7.910</td>
<td>***</td>
<td>par_7</td>
</tr>
<tr>
<td>Ties to community</td>
<td>Ties to neighbors</td>
<td>0.299</td>
<td>0.058</td>
<td>5.143</td>
<td>***</td>
<td>par_8</td>
</tr>
<tr>
<td>Ties to community</td>
<td>Ties to place</td>
<td>0.544</td>
<td>0.080</td>
<td>6.811</td>
<td>***</td>
<td>par_9</td>
</tr>
<tr>
<td>Migrate or not</td>
<td>Ties to community</td>
<td>0.131</td>
<td>0.035</td>
<td>3.760</td>
<td>***</td>
<td>par_10</td>
</tr>
<tr>
<td>Migrate or not</td>
<td>Education</td>
<td>0.278</td>
<td>0.042</td>
<td>6.626</td>
<td>***</td>
<td>par_17</td>
</tr>
</tbody>
</table>

17.6 Conclusion

In this paper, we measure the relationship between social capital and migration in rural area development. We use the concept of ties to community, ties to neighbors and sense of place to
measure the relationship of social capital and migration. The analysis is based on a survey of community activities in Arjowilangun village which is typical of migrant rural area in Indonesia. From the structure of the model, we could estimate the relation between social capital and migration.

Our study shows that ties to community positively has a significant impact to the decision of respondents (migrate or not). We have confirmed our first hypothesis that households with higher social capital send their family members as migrant workers. Our current model so far could explain the relation between social capital and migration.

References


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