

1 Introduction: Socio-spatial change in Lithuania. Depopulation and increasing spatial inequalities

Perhaps what first strikes you when you travel into Central and Eastern Europe is the incredible mélange of practices, rhythms, and identities that flow through particular places; past and present landscapes seem literally to tumble over each other suggesting that something new is underway, something old is being sustained, and something that combines the two is emerging. State socialist and market economies are articulating and re-articulating with one another in a heady mix of creative destruction and social transformation. (Pickles and Smith, 2007, p. 152)

§ 1.1 Introduction

The fall of the Berlin Wall in 1989 signalled a major change for Europe, especially for Central and Eastern European (CEE) countries¹ (Gentile, Tammaru, & van Kempen, 2012; Kornai, 2006; Kovács, 1999; Shleifer & Treisman, 2014). From a Soviet-type communism² with centrally planned economies, CEE countries suddenly shifted to a capitalist system with market-led economies. Almost overnight the political and economic systems completely changed. This shift had a major effect on population developments in these countries. All of them experienced a drop in fertility rates, mass emigration and an increase in regional inequalities. Of all the post-socialist countries, it is Lithuania that stands out the most, experiencing an extreme drop in population (Eurostat, 2017;

1 The term Central and Eastern Europe (CEE) in this thesis is used for countries that were part of the Soviet communist block from 1945/1950 to 1989/1991, and are now EU Member States: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia and the former East Germany.

2 We use the terms 'socialist' and 'communist' as synonyms in this paper, although communism is an extreme form of socialism. Communism is a political system, while socialism is primarily an economic system which can exist under various political systems ('Diften', 2017).

United Nations, 2015).³ Since the 1990s, Lithuania has lost more than 20 percent of its population, which makes it one of the world's fastest shrinking countries.

From a historical point of view, an extreme population decline seems contradictory in Lithuania. For several decades the citizens of Lithuania had passionately sought a new sovereignty that would bring independent and democratic development to the country. This goal was finally achieved in 1990. In general, independence was a success and an accomplishment that led to a new economic and constitutional order (Burneika, 2012; Kornai, 2006; Leyk, 2016; Stanilov, 2007). However, the opening of the borders to the West and the free flow of capital and labour (especially after integration into the EU), meant that many people decided to leave Lithuania to look for better opportunities (mostly economic) abroad (Klūsener, Stankūnienė, Grigoriev, & Jasilionis, 2015; Sipavičienė & Stankūnienė, 2011; *The Economist*, 2017). Many of them thought to be leaving temporarily, but stayed and never returned. The reasons behind the choice to emigrate are quite obvious: although GDP per capita levels are similar among CEE countries (The World Bank, 2017b), Lithuania is distinguished in having one of the lowest wages, pensions and social spending rates, as well as a high degree of social inequality (Aidukaitė, 2011, 2014). Furthermore, population decline is accelerating even though the economy of the country is growing and standards of living are improving.

While the processes taking place on the national level are quite well recognised in Lithuania, little is known about how macro-level changes are affecting different spaces and groups in society. Sharp population decline has been accompanied by an increase in regional inequalities and levels of segregation. These processes are strongly linked with Soviet spatial planning principles (see e.g. Clayton & Richardson, 1989; Demko & Regulška, 1987) that were more extensively adopted in Lithuania than in other CEE countries. For several decades, planning policy in Lithuania favoured the organised distribution of the population and economic activities (Šešelgis, 1996; Vanagas, Krišjane, Noorkoiv, & Staniūnas, 2002). As a result, a quite uniform – spatially and socially – society was created.

In 1990, the moment market forces came into play, major changes in the socio-spatial fabric began to occur and the distribution of the population started to change, having major spatial and social consequences. For example, economic restructuring led to a spatial mismatch between the distribution of labour and available jobs; although residential patterns started to change, the network of public amenities remained almost

3

To be more accurate, similar drop in a population can also be found in Latvia, however population is declining more rapidly in Lithuania since 2006.

unaffected (until now). The general feature of this process was that, economically and demographically, socio-spatial disparities started to increase within the country, with the larger urban regions becoming the 'winners' and the peripheral rural regions the 'losers' in this transformation process. Vilnius, whose development was suppressed in Soviet times, began growing extensively after 1990 through the process of suburbanisation. The process was similar to but much quicker than what had occurred in Western countries two decades earlier (from the 1970s onwards). In Lithuania, this led to increasing regional inequalities, which was inhibited to some degree by the socialist system, but now, the market-led system left regions much more exposed.

Despite the fact that these recent socio-spatial changes continue to take place at an unusually high speed, these processes have received very little scientific attention. *The aim of this thesis is to gain more insight into these socio-spatial transformation processes and their consequences in Lithuania. The thesis investigates the main features and drivers of socio-spatial change in post-socialist Lithuania.* The results of the research will provide a better understanding of the development processes and will reveal how the Soviet-designed socio-spatial structures adapted to a market economy environment. The results of this thesis will also show why we should be concerned, despite the growing economy and improvements in the standard of living, as Lithuania is facing major challenges related to extreme population decline and increasing socio-spatial inequality. Until recently, doing socio-spatial research on Lithuania was a major challenge due to very limited data availability. One of the achievements of this thesis was to gain access to more detailed statistical data. As a result, this thesis is the first research project to use individual-level geo-coded Lithuanian census data for the whole population.

The rest of this introductory chapter is structured as follows. Section 1.2 provides the background, presenting a historical overview and explaining the specific setting of Lithuania, also offering information about the general macro-level changes that took place in the socialist and post-socialist periods. This background information is crucial to an understanding of the more recent socio-spatial changes and processes behind them. Section 1.3 offers a more focused discussion of the literature on population decline, migration, suburbanisation, segregation and increasing regional inequalities. It provides a literature review concerning the processes that are both typical to Lithuania but also shared with many other countries. This section aims to demonstrate that the Soviet legacy formed specific conditions for rapid and profound socio-spatial change in Lithuania. In Section 1.4, the gaps in current knowledge are identified, and the aim and research questions of the thesis are presented. Finally, Section 1.5 outlines the data that were used in the empirical chapters. Apart from this introduction, the thesis consists of five empirical chapters and a conclusion.

§ 1.2 Historical background of Lithuania

Over the course of recent centuries, Lithuania has been an independent country for only a short period of time, with Russian governance having the greatest influence on its development. From the end of the eighteenth century until the First World War, Lithuania was under the rule of the Russian Empire. Later, from 1918 to 1940, it was an independent state with a very strong national identity. However, the capital city of Vilnius and its surrounding region was disputed territory, with Lithuania, Russia and Poland all commanding it in different periods. Eventually this region was taken by the Polish administration. The period of Polish governance in the Vilnius region lasted from 1920 to 1939. This period showed a strong growth in the Polish population as well as a strengthening of the Polish identity of local residents throughout the Vilnius region (Stanaitis & Česnavičius, 2010). Today, inhabitants who identify as Polish are highly concentrated in the region surrounding Vilnius city and constitute the largest ethnic minority group in Lithuania (6.6% in 2011) (Statistics Lithuania, 2013).

In 1940, Lithuania was incorporated into the Soviet Union. The country lost its autonomy and Moscow became the most important decision-making centre, with the country only regaining its independence five decades later, in 1990, soon after the fall of the Berlin Wall. Interestingly, the percentage of Russian inhabitants remained relatively low in Lithuania during the Soviet period. The Russian minority accounted for 9.4 percent of the population in 1989 and 5.8 percent in 2011 (Statistical Office of Estonia, Central Statistical Bureau of Latvia, & Statistics Lithuania, 2015). By comparison, in Estonia and Latvia the share of Russians was above 30 percent in 1989 and still above 25 percent in 2011 (ibid.). This thesis will analyse population developments in the post-Soviet period.

The Soviet Union is sometimes referred to as 'the Great (unsuccessful) socialist experiment' (Nambodiripad, 1991). The collapse of the Soviet Union⁴ is identified as one of the life-transforming moments in world history (Smith & Timár, 2010), while the radical reforms in post-communist countries that followed this collapse have been called 'shock therapy' (Leyk, 2016). The consequences of the breakdown of communism were especially significant for the Baltic States of Lithuania, Latvia and Estonia. Unlike other CEE countries, the Baltic States were Republics of the Soviet

4

The official dissolution of the Soviet Union was on 26 December 1991. However, all of the countries declared their independence before this day, with Lithuania being the first Soviet Republic to break away from the Soviet Union.

Union⁵ in a 'self-enclosing' communist system. In this system, political, economic and social relations with other European countries (even socialist) were virtually non-existent, while, at the same time, there were no internal borders (either political or economic) between the Soviet Republics. Later, the Baltic States all successfully joined one of the most liberal and open economies in the world – the European Union.⁶

This shift had a major effect on the political and economic systems, as well as on the urban and regional planning systems and economic restructuring. It also meant that the Baltic States completely changed their status: from a relatively affluent and prosperous region in the Soviet Union they became the relatively poor periphery of a borderless European Union. In parallel, from being the receivers of large inflows of immigrants from the other Soviet Republics, they started to lose their populations, due to large-scale out-migration to Western countries (Klüsener et al., 2015). Nearly 30 years have passed since the political reforms, which makes it timely to reflect on the dramatic set of political-economic and socio-spatial transformations that occurred, and to consider the social and economic consequences of these transformations (Smith & Timár, 2010).

§ 1.2.1 Political and economic system change

For five decades, Lithuania and other CEE countries lived under a communist regime subject to a command (planned) economy model, which was based on the principles of central planning (Borén & Gentile, 2007; Sjöberg, 1999). The countries were isolated from the rest of Europe, with the Iron Curtain the symbol of the ideological conflict between communism and capitalism. The differences between these ideologies are more than obvious, covering many political, economic and social aspects (Brada, 1994; Gentile et al., 2012; Kornai, 2000). The key elements of the communist system are centralised government, a command economy and collective, in fact, state ownership. In contrast, the key elements of a capitalist system are limited government intervention in economics, a market-based economy, competition and private ownership.

5 Lithuania, Latvia and Estonia were involuntary incorporated into the Soviet Union under the Molotov-Ribbentrop pact in 1939; Lithuania declared independence in 1990 and Latvia and Estonia in 1991.

6 All three countries have been members of the European Union as well as NATO since 2004.

The traditional Soviet system had a vast, complex and highly hierarchical political-administrative structure (Ericson, 1991). This was needed to implement the centrally planned economy, where all the decisions were taken by the government in a top-down approach. The central government controlled the allocation of resources and the distribution of products and services. Virtually all property (except personal belongings such as cars and single-family dwellings) and the means of production were owned by the State; including the assets in the industrial, energy, financial and public sectors (Fischer & Gelb, 1991). Although there was a small legal private-production sector (e.g. small-scale agriculture, arts and crafts), it was also subject to substantial control by the State's political and economic apparatus (Ericson, 1991). There was also a shadow economy, but it is difficult to estimate its size. In addition, the absence of a land market (land officially had no price) prevented its optimum economic use, especially in the centrally located urban zones where an excessive share of industrial land was located (Bertaud & Renaud, 1997).

When the Soviet Union collapsed, CEE countries shifted their economies away from central planning and adopted market economy principles (Smith & Rochovská, 2006). State intervention in the economy was reduced and the markets liberalised. According to neo-liberalist thought, free markets lead to the most effective and balanced organisation of economic and social life (Harvey, 2007). Given the nature of the communist regime (e.g. the absence of a land market, competition and private property) and the principles of central planning (with priority given to industrial and agricultural development, controlling the size and hierarchy of cities, restricting suburban growth, etc.), it is no surprise that the transition brought radical economic and social change to CEE countries. This is sometimes referred to as the 'return to Europe' process (Leyk, 2016; Pickles & Smith, 2007). In addition, the rapid technological, economic and social progress that accompanied the processes of urbanisation, globalisation and regionalisation further reinforced ongoing transformation in post-communist countries (Kornai, 2006). All of these developments contributed to significant economic restructuring, with the main changes related to a switch from collective (state) to private ownership and from the dominance of the primary and secondary sectors to the dominance of the tertiary sector. As a result, while systematic political and economic changes led to growing economic diversity and land use efficiency, there was an increase in unemployment and growing regional and social inequality, which will be discussed in the following sections.

It is now almost three decades since CEE countries embarked on paths of development similar to their Western counterparts. The borders between European countries are open and the movement of capital and labour is free. A lot of money is invested in EU regional cohesion policy, which aims to reduce disparities between EU countries and regions (Bachtler, Berkowitz, Hardy, & Muravska, 2017; Cotella, Adams, & Nunes, 2012). However, the contrast between Eastern and Western Europe persists (Börzel &

Schimmelfennig, 2017; Hudson, 2005). Although the economies of CEE countries have been growing considerably faster than those of Western EU countries over recent decades, CEE countries still have much lower levels of GDP per capita (The World Bank, 2017b).

Currently, the major differences between Eastern and Western Europe are reflected in demographic trends. CEE countries are characterised by significant population decline, emigration and an emerging shortage of labour. Although it can be argued that there were differences between Eastern and Western Europe even before the Second World War, the influence of the communist period on the long-lasting and ongoing socio-spatial processes is undeniable. In Lithuania, this influence is manifest in rapidly changing residential patterns, the shrinkage of both urban and rural areas, intense suburbanisation of major cities, and increasing social and regional inequalities, as well as other socio-spatial processes, all of which will be discussed in this dissertation.

§ 1.2.2 Urban and regional planning policy change

The centrally planned economy was tightly intertwined with regional planning policies (Stanilov, 2007). The main function of regional planning was to facilitate economic growth throughout the countries. At the same time, the aim of the communist doctrine was socio-spatial equality, and an evenly spread population was one of the prerequisites for such equality. One of the ways to achieve this was through the spatial distribution of human and economic resources (Bertaud & Renaud, 1997). According to Gentile and colleagues (2012, p. 292), there was an intention to ‘annihilate social, economic and regional differences and inequalities, effectively pushing for complete social, economic and spatial homogenisation over time’. Population movement was prohibited between the communist states, as well as within the national borders, sometimes even within municipalities (Clayton & Richardson, 1989; Klüsener et al., 2015).

While the general principles of the political and economic system were common to all post-socialist countries, regional planning policies varied from country to country. The main reason for this was that concrete planning decisions could be taken by local planners. Nevertheless, the general principles of communist ideology still had to be followed. Furthermore, at any moment, Moscow could demand that the decisions taken locally be changed. Although there were variations between countries in terms of the adaptation of planning principles, the communist period had a strong impact on the socio-spatial organisation of CEE countries and resulted in different development paths compared to Western European countries (Bertaud & Renaud, 1997; Fenger, 2007; Sailer-Fliege, 1999; Tammaru, Marcińczak, van Ham, & Musterd, 2016).

What makes Lithuania unique is that Soviet spatial planning ideology was introduced more consistently here. Regional planning was based on a strategy to decentralise the population and industry, distributing them throughout the country (Vanagas et al., 2002). This meant that part of the potential growth of the few largest cities was distributed to medium and small-sized cities. Thus, the dominance of the largest cities was reduced and the development of regional centres enhanced. This was done through housing and employment policy (Bater, 1980; Šešelgis, 1996; Sýkora & Čermák, 1998). As a result, and in addition to some other historical and geographical circumstances,⁷ by the end of the socialist period, the urban system was more balanced in Lithuania than in any other CEE country (Aberg, 2005). Vilnius accounted for 15.7 percent and Kaunas (the second largest city) 11.4 percent of the total population in 1989 (Statistics Lithuania, 2003).

A different planning approach was applied in Latvia and Estonia, which resulted in highly monocentric urban systems in these countries, with the capital cities accounting for more than 30 percent of their total populations in 1989 (Statistical Office of Estonia, Central Statistical Bureau of Latvia, & Statistics Lithuania, 2003). Under the communist regime, the Soviet-designed territorial organisation of Lithuania performed relatively well and was perceived as an achievement by Soviet urban planners (Vanagas et al., 2002). Such regional policy was only possible in a society without market competition and private property.

Since the 1990s, residential mobility has no longer been centrally regulated in Lithuania. Moreover, market economy forces, along with personal and economic motives of individuals, began to play key roles in the socio-spatial development of the country. A strengthening of domestic and international competition, processes of globalisation, and other effects, resulted in a new stage of social and economic development, also triggering spatial transformations. Due to the different locational priorities of the new economic sectors, as well as increased mobility opportunities for residents, the socio-spatial organisation of the country started to change. Economic activities and population started to concentrate in the major-city regions, especially in Vilnius. For example, 40 percent of the economic entities of Lithuania were concentrated in the Vilnius city region in 2016 (Statistics Lithuania, 2017). Moreover, one third of all births occurred there in 2016 (ibid.).

7

Vilnius is located on the edge of the country, close to the Belarus border. Kaunas (the second largest city) was the temporary capital city of Lithuania in the interwar period. Klaipėda (the third largest city) is the main seaport of Lithuania.

At the same time, many regions whose growth had been stimulated during the Soviet period became unable to provide sufficient levels of employment and standards of living under the new competitive economic conditions. This meant uneven spatial development, with clearly visible trends of metropolisation and peripheralisation, as well as increasing social inequalities (Cirtautas, 2013; Krupickaitė, 2003; Vanagas et al., 2002). While similar patterns of change can be found in all CEE countries in the post-Soviet period (Borén & Gentile, 2007; Lang, Henn, Sgibnev, & Ehrlich, 2015; Schmidt, Fina, & Siedentop, 2015), more profound changes can be anticipated in Lithuania, because the territorial organisation of Lithuania was affected to a greater extent in the communist period.

§ 1.2.3 Economic restructuring⁸

The centrally planned organisation and regulation of economic activity was an essential part of the communist regime in the Soviet Union. It is often believed that it was the command (planned) economy model and its inefficiency that led to the collapse of the Soviet Union (Harrison, 2001, 2002). In this system, the central government played the major role in directing the structure of the economy, as well as investment in and allocation of production (Samonis, 1995). Moreover, as the owner of all assets, the government controlled supply and predicted demand (often incorrectly), as well as set the prices of all goods and services. This resulted in massive shortages of various products and 'empty shelves' (Leyk, 2016). The economy of the Soviet Union was also isolated – there were very few trade relations with external parties (natural resources needed for industry were the exception). In a system where it was almost impossible to draw a line between politics and economics, there was no need to avoid monopolies, prevent corruption, efficiently allocate skills and talents of people and to maintain a balance between quality and price (Nove, 1986).

Nevertheless, it should be mentioned that there were periods when the economy of the Soviet Union grew rapidly and even raised interest in capitalist countries. For example, some economists have even suggested that the 'Soviet-style economies were superior to capitalist ones in terms of economic growth, providing full employment and price stability' (Acemoglu & Robinson, 2012, p. 127). However, it has generally been acknowledged that its economic success was, according to Ericson (1991, p. 11),

8

This section is based on the paper: Ubarevičienė, R. & Burneika, D. (2015). Spatial transformation of the economy in the post-communist period: The case of the Vilnius urban region. *Geographia Polonica*, 1(88), 143–157.

'largely a statistical illusion, fostered by mismeasurement, faulty methodology, systemic incentives for exaggeration, and ideologically and politically motivated distortion'. Although it was true that the socialist state provided all citizens with a job and a salary, the outcome was that individuals did not need to make much effort to hold on to them. Accordingly, 'there was no space for individual responsibility, initiative, ambition and autonomy' (Leyk, 2016, p. 647).

A few specific aspects of the structure of the economy may explain why the Soviet Union collapsed. Industry, with priority given to heavy industry, including the military, was the main sector of the economy. Although it was the most important sector, it did not develop a strong technological base and thus used outdated and resource-wasting technologies which were behind world standards (Samonis, 1995). An important role was also played by the agricultural sector, especially in the Baltic countries. The Baltic States had a major role as suppliers of agricultural production to the Soviet Union (Lerman, Kislev, Biton, & Kriss, 2003; Viira, Pöder, & Värnik, 2009). Their residents were encouraged to live and work in rural settlements, where they were provided with housing and income, often at a higher standard than in the cities (Tammaru, 2001). As a result, in the Baltic States, employment in agriculture (% of total employment) was more than 20 percent at the end of the Soviet period (The World Bank, 2017a). In comparison, it was less than 5 percent in many advanced capitalist countries. Other 'unproductive' sectors, such as housing construction, the service sector and infrastructure, were underfunded in CEE countries (Sailer-Fliege, 1999). As Ericson (1991, p. 11) noted, '[i]t is increasingly apparent that the traditional Soviet-type command economy is a catastrophic failure' and '[s]ignificant economic reform is now generally accepted as an imperative'.

After the demise of the Soviet Union, many impulses propelled economic development in CEE countries. Economic reforms included privatisation, liberalisation, marketisation, technological progress and integration with the world economy (Brada, 1994; Fischer & Gelb, 1991; Frenkel, 1994). Many inefficient industries were closed and the agricultural sector modernised, thus reducing employment in these sectors (Hamilton, Andrews, & Pichler-Milanovic, 2005; Leetmaa & Tammaru, 2007; Tammaru, 2001). In Lithuania, this meant 40 percent of jobs were lost between 1989 and 2001, mainly in industry, construction and agriculture (Statistics Lithuania, 2017). The unemployment rate was as high as 20 percent in some CEE countries at the beginning of the 1990s (a drastic change from a system in which everyone was entitled to have a job) (Hamilton, Andrews, & Pichler-Milanovic, 2005; Kornai, 2006). Thus, it is no surprise that people found it difficult to adapt to the new economic structure, as well as the rules of the capitalist economy (Leyk, 2016). From a system in which 'everything' was given to people, they now had a system in which they had to compete for 'survival'. The consequences of the reforms were not the same for different groups of the population. Those who

benefited were mostly well-educated, younger, entrepreneurial individuals. The most disadvantaged were industrial and agricultural workers, those less educated and the elderly. There were significant changes in the social class structure, with the Soviet-era privileged working class hit the hardest (Gerber & Hout, 2004).

Shortly after the reforms, new economic sectors (above all, business services) started to develop, bringing down the level of unemployment and accelerating economic growth in CEE countries. In order to achieve this, the CEE countries had to completely rebuild their economies and divert the trade flows from east to west (Leetmaa, Tammaru, & Anniste, 2009). They had to find ways to enter global markets without having the experience, technology or proper institutional settings. Moreover, their economies had to develop at an accelerated speed in order to catch up with Western countries (Kornai, 2006). The initial advantage of CEE countries in relation to global competition was their relatively cheap labour force. While this helped to withstand the economic shock by attracting foreign investment, at the same time, it laid the foundations for the wage gap, which persists today. Substantial improvements in transportation and connectivity also contributed to economic restructuring. The most important economic factors became efficiency and profitability, which were almost non-existent criteria in the Soviet period.

Economic restructuring was more challenging for the Baltic States due to their greater involvement in the Soviet economic system (through capital, trade and labour flows), less developed relationships with other European countries, and also because of their peripheral location with respect to their new trading partners in Western Europe.

Increasing role of the capital city regions

Numerous studies have shown that post-socialist economic development in CEE countries favoured their capital city regions (Borén & Gentile, 2007; Grigorescu et al., 2012; Jacobs, 2013; Smith & Timár, 2010; Sýkora & Ouředníček, 2007). The capital cities, which served as the main gateways to CEE countries, had a higher potential to attract investment and to develop high value-added economic sectors. They became the headquarters of international and national companies. In many countries, the capital regions now account for disproportionately large shares of their respective countries' economic development.

The increasing role of the Vilnius urban region and the processes of metropolisation in Lithuania resemble the experiences of other post-socialist countries (Ubarevičienė, Burneika, & Kriaučiūnas, 2011). Since the 1990s, spatial, economic and social development has been much more intense in the Vilnius urban region than in the rest

of Lithuania. For example, foreign investment has constantly increased in Vilnius, and in 2015 it received 71 percent of the total foreign investment in Lithuania (Statistics Lithuania, 2017). In the same year, although the Vilnius region accounted for 27 percent of the population, it created 40 percent of the country's GDP and accounted for 45 percent of income tax (ibid). Vilnius has thus become the core of the country's development.

The post-socialist economic development of the Vilnius urban region may be characterised as a process of transformation (conversion) of the old urban structure and the spatial expansion of the urban economy through suburbanisation. In Vilnius, like other post-socialist countries since the 1990s, industrial areas in the inner city have shrunk, while the service sector has grown. The spatial network of many enterprises has become much denser, expanding along with urban sprawl. For example, the number of restaurants, fuel stations, accountancy and auditing firms increased drastically between 1994 and 2011 (Burneika & Ubarevičienė, 2011). Moreover, the outward expansion of the city transformed rural agricultural areas into urban zones and introduced 'urban economies' into the surrounding Vilnius region. While the suburban zone accounts for a relatively small portion of the total urban population, socioeconomically it is an important and integral part of the Vilnius housing market and region, which has experienced the most intensive socio-spatial change.

§ 1.3 Socio-spatial developments

The historical background provided above is important to an understanding of the recent socio-spatial changes and the processes behind them. In the context of the macro-level changes presented above (changes to the political and economic system, urban and regional planning policy, and economic restructuring), this section focuses on four areas of social-spatial change: population decline, shifting residential patterns, social segregation and regional inequalities. Figure 1.1 schematically illustrates the structure of this thesis, and the relationships between the macro-level changes and the four areas of socio-spatial change. It has to be noted, that all three general macro-level changes, located in the outer circle, have an important effect on four areas of socio-spatial change. Meanwhile, these four areas are closely interrelated and affect each other. The figure also positions the five empirical chapters and the broad research questions they will address.

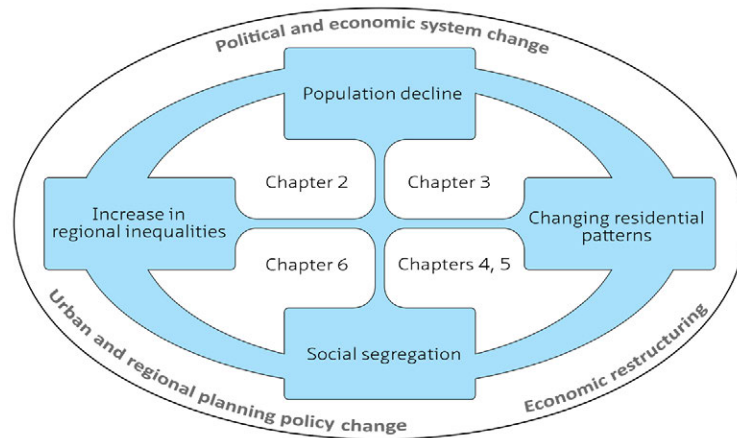


FIGURE 1.1 Structural overview of the thesis

In recent decades, many developed and developing countries have been confronted with population decline, increasing regional inequalities and greater levels of social segregation (Haartsen & Venhorst, 2010; Haase, Athanasopoulou, & Rink, 2016; Hospers, 2012; Pourahmad, Khavarian-Garmsir, & Hataminejad, 2016; Reher, 2007; Wolff & Wiechmann, 2017). These processes were particularly characteristic of CEE countries that experienced political-economic transition (Brade, Herfert, & Wiest, 2009; Gentile et al., 2012; Lang, 2011; Schmidt et al., 2015; Smith & Timár, 2010). Considering the discussion above, it can be expected that more profound socio-spatial changes took place in Lithuania during the post-socialist period; firstly, due to its exceptional geopolitical situation (the experience of a radical shift from the Soviet Union to the EU by Lithuania and the other Baltic States); and, secondly, due to the specific legacy of Soviet planning policy.

This section provides a literature review regarding the processes of socio-spatial change which characterise the experience of Lithuania, although they may be shared with many other countries. There are four major aspects of this socio-spatial change: population decline, changing residential patterns, segregation and increasing regional inequalities. All of these processes are closely intertwined. For example, it is known that population decline, especially if it is determined by migration processes, is usually followed by growing regional inequalities and increasing levels of segregation (Cortese, Haase, Grossmann, & Ticha, 2014; Fol, 2012).

§ 1.3.1 Population decline

Population decline depends on political, economic and social conditions and is therefore multifaceted, complex and usually difficult to predict (Haase, Bernt, Grossmann, Mykhnenko, & Rink, 2016). In most cases, depopulation is seen negatively and attempts are made to reverse it. However, once population decline in an area has started, it is difficult to reverse, and the decline continues (although this is not a fundamental rule) (Hudson, 2015b; see also Myrdal, 1957). Depopulation often begins with economic downturn and becomes part of a vicious circle, causing a downward spiral of the economy, declining tax revenues, a decline in service provision and social infrastructure, and increasing numbers of abandoned buildings (Elshof, van Wissen, & Mulder, 2014). Such self-reinforcing developments make the shrinking areas even less attractive to the people who are left behind and increase the probability that they will also leave. Myrdal (1957) has described this as 'circular cumulative causation'. According to Fratesi and Percoco (2014), persistent population decline, especially when it is accompanied by an aging population and 'brain drain', is the most harmful and difficult to reverse, as it leads to imbalances between regions and may hinder economic growth (Cortese et al., 2014).

The phenomenon of population decline is not unique. Today, increasing numbers of cities and regions around the world are facing population loss. There is a large body of literature on population decline in peripheral, sparsely populated and former industrial regions of Europe, such as northern Sweden (Eriksson, 2008; T Niedomysl & Amcoff, 2011), rural France (Fol, 2012; Kupiszewski, Baccaini, Durham, & Rees, 2000), Spain (Collantes, Pinilla, Sáez, & Silvestre, 2013; García Coll & Stillwell, 1999) and Scotland (Slee & Miller, 2015; Stockdale, 2002, 2004), the former East Germany (Bontje, 2005; Eberstadt, 1994; Lang, 2012). It is surprising that a lot less attention has been paid to developments in CEE countries, as, in recent decades, many of them were among the fastest shrinking countries in Europe and the world at large (Eurostat, 2017; United Nations, 2015). The pattern of population change in Europe, with a clear divide between east and west, can be seen in the map in Figure 1.2 (Wolff & Wiechmann, 2017; German Federal Institute for Research on Building Urban Affairs and Spatial Development, 2015). This pattern is mainly the result of political and economic reforms in post-socialist countries and the successive increase in international migration from these countries. The reforms in the 1990s and the enlargement of the EU in 2004 opened the borders within Europe and lifted restrictions on mobility, causing large migration flows from Central and Eastern Europe to Western Europe. Population decline was especially sharp in the Baltic and Balkan countries. In many, including Lithuania, population decline was not limited to decline in certain regions or cities but affected the whole country.

Average annual population development in European Local Administrative Units

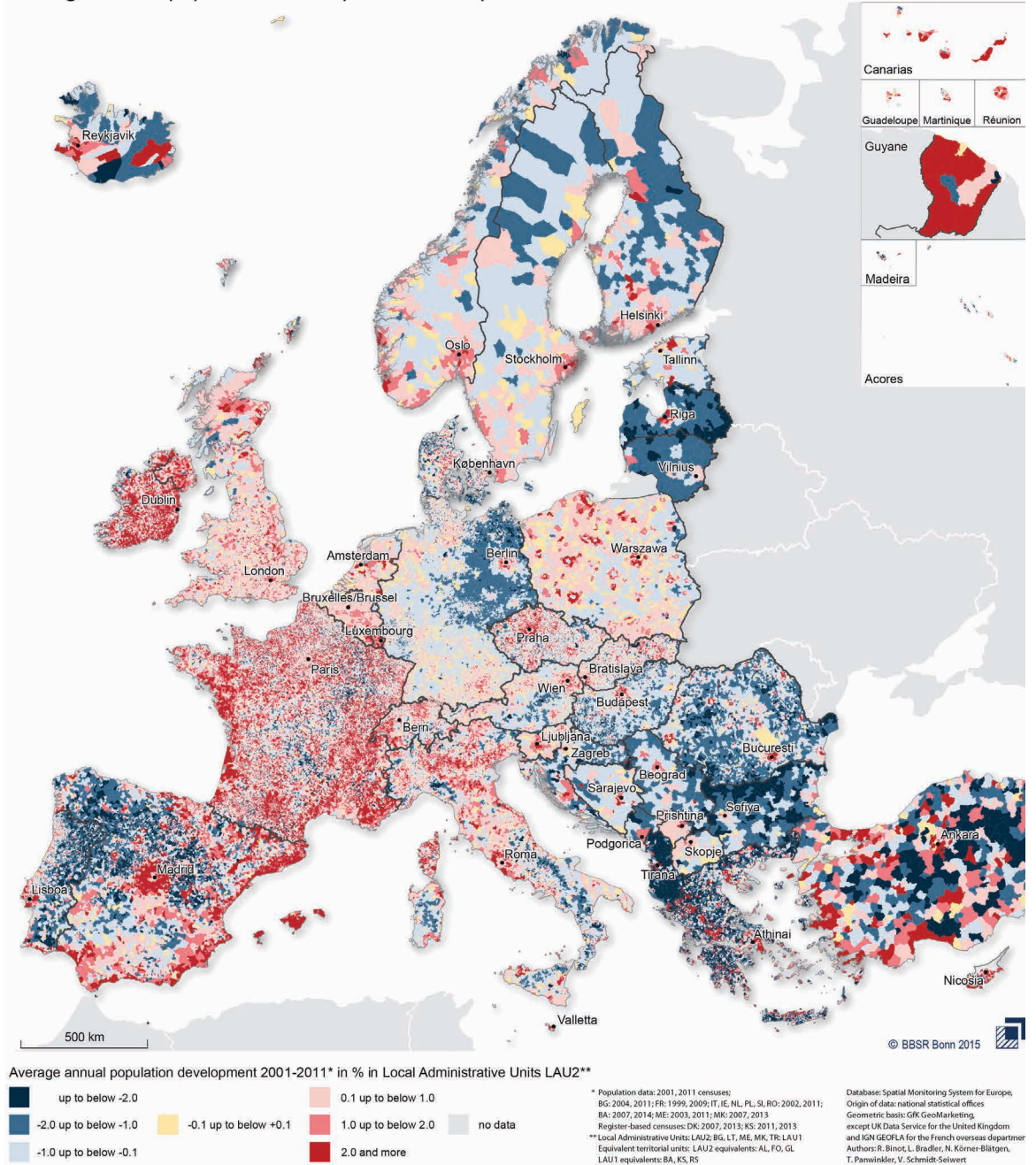


FIGURE 1.2 Average annual population change in Europe between 2001 and 2011

Source: German Federal Institute for Research on Building Urban Affairs and Spatial Development, 2015

Lithuania is one of the 'leaders' in terms of population decline in the post-socialist region and in the world overall (United Nations, 2015). According to census data, in the period between 1989 and 2011, the country lost 17.2 percent of its residents. The actual loss may be as high as 25 percent, because many emigrants do not officially declare they have left the country (Civinskas, Genys, Kuzmickaitė, & Tretjakova, 2011; Sipavičienė & Stankūnienė, 2011). The population started to decline soon after the reforms, primarily due to the outflow of former immigrants from other former Soviet republics (mainly from Russia). In fact, these immigrants were an important source of population growth in Lithuania during the Soviet period. In 1989, the Lithuanian population was 3.6 million, and it was expected that the number would reach 4 million within the coming decades. However, instead of growing, it started to shrink, with the population census of 2011 recording a little over 3 million inhabitants. The population decrease accelerated over time, and, since the 2000s, the country has been shrinking, on average, by -1.2 percent every year (Statistics Lithuania, 2017). The pessimistic scenario, according to the United Nations as well as the majority of Lithuanian demographers, predicts that the country might lose half of its current population by 2100 (Jackevičius, 2016; United Nations, 2015). In addition, the population change varies a lot across Lithuania. Some regions have already lost close to half their population, while other regions almost doubled in population between 2001 and 2011. The geography of population decline in Lithuania is analysed in Chapter 2 of this thesis.

The controversial role of emigration

Although this thesis does not directly address the questions related to emigration, this is an important element in the population decline and thus in the current processes of the socio-spatial change in Lithuania. Emigration accounted for approximately 80 percent of total population loss over the past decade (Statistics Lithuania, 2017). Within a decade of Lithuania entering the EU in 2004, 10 percent of the population had emigrated to Western countries (Klūsener et al., 2015). Lithuania now has one of the highest emigration rates in the EU (Eurostat, 2016). The number of incoming migrants has been very small and the natural change in the population is negative.

In most cases, emigration is a response to labour market conditions and educational opportunities (Genelyte, 2017; Kazlauskienė & Rinkevičius, 2006; Sipavičienė & Stankūnienė, 2013). The main reason of high rates of emigration from Lithuania is a mismatch between demographic and economic structures. This mismatch started to emerge right after the 1990s when the structure of economy began to reorganize and unemployment to increase, and at the same time a lot of young people grew to enter the labour market, while the post-war baby boom generation was still

economically active. New jobs were not created fast enough to guarantee jobs for everybody, thus emigration, of mostly young people, began to increase rapidly. Although between 2004 and 2015 10 percent of the total population emigrated abroad, this did not have much effect on the number of employed persons in Lithuania (Statistics Lithuania, 2017). It is highly unlikely that Lithuania's economy would have been able to create as many new jobs, as many people have emigrated. These new vacancies would have had to make one third of all existing jobs. An increase in the retirement age and the greater employment of retirees have also reduced the growth of wages and employment opportunities of young generation. According to Klusener et al. (2015), another reason encouraging emigration from Lithuania is a mismatch between the supply and demand of highly educated workers. Many people decide to leave the country because they feel undervalued. For example, an average gross salary of the Vilnius university staff was 705 euro in January 2017, while the total average in Lithuania was 823 euro ('Lithuanian State Social Insurance Fund Board', 2017).

On the other hand, there are those who see advantages in emigration. For example, personal remittance inflows have accounted for approximately 4 percent of total annual GDP since 2010 (Sipavičienė & Stankūnienė, 2013; The World Bank, 2017c). Emigration also reduces unemployment levels. According to the Statistics Lithuania (2017), during the global financial crisis in 2007-2011, 80 percent of those who emigrated from Lithuania abroad were long-term unemployed. Thus, in the absence of mass emigration other negative effects, such as high unemployment and crime rates, may have had occurred.

In 2010, research on potential migration from Lithuania revealed that around 30 percent of the adult population of Lithuania had the intention to emigrate. Among young people (up to 29 years), 58 percent said they would like to emigrate (Sipavičienė & Stankūnienė, 2011). As a result of emigration, the mean age of the Lithuanian population is rapidly increasing: from 37.7 years in 2001 to 41.5 years in 2011, and the share of pensioners has grown by 4 percent over a decade. As a consequence, the economy of the country is increasingly being 'drained', as social spending increases while the country is losing an important part of the workforce. The current demographic trends in CEE countries, including Lithuania, have been described as 'demographic shock' or 'demographic crisis' (Eberstadt, 1994; Rychtaříková, 1999; Sobotka, Zeman, & Kantorová, 2003; Vladislava Stankūnienė, 2003; Steinführer & Haase, 2007). It is obvious that such trends have adverse future effects on welfare, social security and economy of Lithuania and other CEE countries.

The literature review on population decline in Lithuania can be summarised as follows:

- Lithuania is one of the ‘leaders’ in terms of population decline in the post-socialist region and the world overall.
- In Lithuania, population decline started soon after the 1990s: while in Soviet times there was an inflow of migrants from other Soviet Republics, after the 1990s, a large-scale out-migration to Western countries began.
- Although depopulation affects almost the entire territory of Lithuania, there are great spatial variations in population change throughout the country.
- The role of emigration is ambivalent in Lithuania. While it reduces the levels of unemployment and generates approximately 4 percent of the total annual GDP through the personal remittances, at the same time due to the emigration Lithuania is losing an important part of the workforce.

§ 1.3.2 Changing residential patterns: the outcome of migration

Previous studies have shown that migration plays a major role in the processes of population redistribution and growing spatial imbalances (Ambinakudige & Parisi, 2015; Boyle, Halfacree, & Robinson, 1998; Martí-Henneberg, 2005; Ubarevičienė, 2016). Migration is a cause as well as the consequence of socio-spatial change. This can be explained from both a macro and micro perspective. According to Cadwallader (1992, p. XV), the ‘macro approach is concerned with explaining aggregate migration patterns by measured characteristics of the socioeconomic and physical environment, while the micro approach explains individual migration behaviour within the framework of a psychological decision-making process’.

The same mechanisms operate in both internal and international migration. Migration is usually a response to labour market conditions, educational opportunities, family factors, or a desire to improve one’s quality of life (Biagi, Faggian, & McCann, 2011; Thomas Niedomysl, 2011; Nivalainen, 2004). A dominant approach to understanding flows of people is based on neoclassical economic theory (Abreu, 2010; Arango, 2000; Lewis, 1954; Sjaastad, 1962). This theory states that labour migration is the result of the uneven geographical distribution of labour and capital and that migration is mostly motivated by economic reasons. Thus, people move to places where they have better access to jobs, services, housing, etc. In the neoclassical view, labour migration should eventually lead to a new (spatial) equilibrium (Sjaastad, 1962).

The neoclassical economic model has been questioned on a number of counts. It has been noted that economic motives and rational decisions are not the only concerns of

migrants. As stated by Blau and Duncan (1967, p. 244), 'men do not flow from places of poor to places of good opportunity with the ease of water'. Institutional (political) constraints, personal characteristics, migration networks (prior links between countries or individuals), the stage in the family life-cycle, and other factors, are no less influential in determining mobility or immobility. Migration is therefore multilayered and very complex in its nature. Different aspects of this complexity can be explained by deterministic, humanistic and biographical approaches (Ní Laoire, 2000). Contrary to the neoclassical economic model, alternative migration theories (e.g. the new economics of labour migration, dual labour market theory and world system theory) assert that migration usually reinforces inequality rather than leading to its reduction (Abreu, 2010; Arango, 2000; Fratesi & Percoco, 2014). Therefore, the process of migration typically leads to growing regional disparities in terms of population distribution and economic performance, characterised by an increasing gap between the 'winning' and 'losing' regions.

High levels of out-migration often have significant effects such as an ageing population and lower birth rates in the 'losing' regions. This is because it is mainly young people who move away (Elshof et al., 2014; Nugin, 2014; Sipavičienė & Stankūnienė, 2013). Another effect of out-migration is the 'brain drain', when more people who are highly educated move away and 'brain waste' when educated migrants enter low-skilled labour markets (Favell, 2008; Genelyte, 2017; Kazlauskienė & Rinkevičius, 2006; Kelo & Wächter, 2004). According to Fratesi and Percoco (2014), migration is often skill-selective: skilled people are most likely to relocate because they benefit most from migration. At the same time, the regions from which they come lose their human capital and eventually also their economic potential. Moreover, the initial migrant stream may encourage a second stream, with the first migrants followed by family and friends: this process is called 'chain migration', facilitated by a migration network (Boyle et al., 1998; Maslauskaitė & Stankūnienė, 2007). All of the discussed trends apply to CEE countries and in a large extent to Lithuania.

Although out-migration is often identified as a 'loss of human and social capital', the positive sides of migration are often forgotten (Stockdale, 2004). Mobile individuals can enjoy opportunities which would otherwise not be available to them. Experience and social contacts acquired abroad are often very beneficial in the country of origin if people return. Moreover, migration is a natural response to the lack of employment opportunities or job prospects, or to other structural changes in the economy.

The general trend in many countries is that people are moving from less urbanised to more urbanised areas, and from agricultural to industrial and service-led regions, resulting in metropolisation and peripheralisation of people and economy. While this is particularly characteristic of the post-socialist region (Lang et al., 2015), it can also

be found in many other countries. In this context, the case of Lithuania is of special interest, due to the unique city system that was formed in the socialist period. In Lithuania, planning policy focused on decentralisation and sought to limit the growth of the major cities. Consequently, rural-urban migration, which had long been the prevailing direction of migration in many countries, was restricted in Lithuania until the early 1990s. Therefore, previous restrictions on residential mobility should have been compensated by more intensive migration flows (internal and external) and population redistribution after the 1990s. Corresponding increases in the level of segregation and regional inequalities, respectively, should also have been more visible during recent decades. Thus, if we want to understand the processes of population redistribution and growing regional inequalities we need to gain more insight into internal migration. The role of selective mobility, with specific attention being paid to the rapidly declining regions, will be analysed in Chapter 3.

Suburbanisation

Suppressed urbanisation and rural retention during the Soviet period resulted in major changes in land use patterns after the introduction of the market economy in CEE countries (Bertaud & Renaud, 1997; Borén & Gentile, 2007). One of the most significant features was urban expansion through the process of suburbanisation (Kok & Kovács, 1999; Krišjāne & Bērziņš, 2012; Leetmaa & Tammaru, 2007; Novák & Sýkora, 2007; Nuissl & Rink, 2005; Ouředníček, 2007; Tammaru, Leetmaa, Silm, & Ahas, 2009). Like many other former centrally planned cities in Europe, Vilnius is also undergoing rapid suburbanisation – a process which started immediately after independence at the end of the 1990s (Brade et al., 2009; Cirtautas, 2013; Ubarevičienė et al., 2011).

Similar to many other Central and Eastern European cities, during the Soviet period, the hinterland of Vilnius was devoted exclusively to agriculture and associated industrial production. After the collapse of the Soviet Union, the introduction of a free market economy and privatisation liberated the previously constrained growth potential of Vilnius and allowed the city to expand very quickly. The attractiveness of suburban locations, in terms of natural environment and metropolitan potential (associated with jobs and facilities), drew growing numbers of people to the suburbs. Since the 1990s, the population in the suburban zone has increased by approximately 30,000 (+20%), while in the city the population has dropped by 40,000 (-7%) (Statistics Lithuania, 2017). The process of suburbanisation was loosely regulated from the start. Today the suburban zone can be characterised by the scattered, small-scale residential developments. The density of the suburban dwellings is high near to the borders of the city and rapidly decreases with distance. Suburban settlements can be

found in the rural areas as far as 40 km from the city centre (Ubarevičienė et al., 2011). It is worth mentioning that the expansion of the city of Vilnius, which is regarded as the economic motor of Lithuania, is influencing one of the least economically developed regions of Lithuania, historically dominated by ethnic Polish residents. The suburban zone is now a site of increasing interaction between the original residents, many of whom have a Polish identity, and newcomers, who are mainly of Lithuanian origin. The ethno-political effects of suburbanisation in the Vilnius region will be explored in the empirical results presented in Chapter 4.

The main trends in changing residential patterns in Lithuania can be summarised as follows:

- Soviet regional planning focused on decentralisation of the population and economic activities; the growth of the largest cities was suppressed and the development of the regional centres enhanced.
- Since the 1990s, residential mobility has no longer been centrally regulated and the mobility opportunities of residents have increased.
- The general trend is that people are moving from less urbanised to more urbanised areas, and from agricultural to industrial and service-led regions, resulting in metropolisation and peripheralisation of people and economy.
- Suburbanisation of the residents from the major Lithuanian cities is one of the most significant features of socio-spatial development since the 1990s.

§ 1.3.3 Social segregation

Different people tend to inhabit different spaces, leading to spatial inequalities based on social differences. In other words, segregation occurs when two or more population groups occupy different spaces within the same city, region or country (Hiebert, 2009, p. 673). Segregation can take place on the basis of ethnicity, economic status, education, political preferences or any other social division. Usually, segregation refers to residential segregation, which is the degree to which two or more social groups live separately from one another within a specified geographical area (Massey & Denton, 1988). However, there are other types of segregation, such as at school (Owens, Reardon, & Jencks, 2016; Valenzuela, Bellei, & de los Ríos, 2014; Yang Hansen & Gustafsson, 2016) or in the workplace (Andersson, García-Pérez, Haltiwanger, McCue, & Sanders, 2014; van Ham & Tammaru, 2016). Massey and Denton (1988) point out that groups can be segregated in a variety of ways; for example, they may be evenly distributed throughout a certain area on one side of a city, or concentrated in a small space. Taking this variety into account, several indexes corresponding to different

aspects of spatial variation were adopted to measure levels of segregation (Massey & Denton, 1988). Different distributional characteristics may be associated with different consequences of segregation.

Research on social segregation started with the Chicago School (Burgess, 1928; Park, Burgess, & McKenzie, 1925) and since then it has received continuous scholarly and political attention (Musterd, 2005). Numerous studies have been performed to gain more insight into the drivers and effects of segregation (Burgers & Musterd, 2002; Cassiers & Kesteloot, 2012; Scarpa, 2015; van Kempen & Murie, 2009). According to Hiebert (2009, p. 673), 'segregation can arise from discriminatory forces outside a group and/or from the social organisation and predilections of the group itself'. Segregation can be voluntary and involuntary (van Ham, Tammaru, de Vuijst, & Zwiers, 2016). It has also been shown that patterns of selective mobility, as well as in situ changes, can reshape the population composition of neighbourhoods and thus influence the levels of segregation (Boschman, 2015; Musterd, Marcińczak, van Ham, & Tammaru, 2016). Selective mobility means that certain groups in the population move from one place to another and thus alter the composition of the two places. Meanwhile, in situ changes occur due to social mobility, for example, people might attain a higher occupational status but do not change their place of residence. Usually, both processes occur simultaneously. In addition, many other factors play a role in processes of segregation, including the housing market, the labour market, access to information, social networks and the welfare state (Aidukaitė, 2011; Musterd, 2005; Tammaru, Marcińczak, et al., 2016).

The consequences of segregation have been widely discussed by geographers and sociologists (Hiebert, 2009). A limited degree of segregation can sometimes be advantageous, as people benefit when they live close to similar people – for example, there may be increased social contact between neighbours – or a degree of segregation might help to increase a sense of safety, maintain cultural diversity and even promote entrepreneurship (Cheshire, 2007; van der Laan Bouma-Doff, 2007; van Ham et al., 2016). However, there are increasing concerns about growing levels of segregation and poverty concentration (Musterd et al., 2016). High levels of segregation may have implications for social stability, cohesion, the competitive power of cities, educational opportunities and achievements, increasing social unrest and deviant behaviour (Tammaru, Marcińczak, et al., 2016; Valenzuela et al., 2014; van Ham et al., 2016). Hiebert (2009, p. 673) has pointed out that 'segregated landscapes are both the result of inequality and also a mechanism for the reproduction of inequality'. One of these mechanisms is the neighbourhood effect (van Ham, Manley, Bailey, Simpson, & Maclennan, 2012), when, for example, a high concentration of poverty can lead to negative outcomes for individuals. Therefore, in many countries, especially in Western Europe, social mix policies have been introduced to reduce segregation processes (Cassiers & Kesteloot, 2012; Cheshire, 2007; Musterd, 2005).

Today, most attention is focused on segregation in the capital cities, and the majority of studies analyse either or both ethnic and socioeconomic segregation. Socioeconomic segregation refers to the spatial separation of population groups by occupation or income, while ethnic segregation is based on ethnic background. A relationship between these two forms of segregation has also been found to be important (Clark & Blue, 2004; Tammaru, Kährik, Mägi, Novák, & Leetmaa, 2016).

In CEE countries, more detailed studies on segregation have only started to emerge two decades ago (Kährik, 2002; Kovács, 1999; Sailer-Fliege, 1999; Sýkora, 1999). This may partly be explained by their socialist past and a lack of adequate data. While processes of segregation have been studied for almost a century in Western Europe, their findings provide little help in understanding segregation processes in CEE countries. This is particularly true in the case of ethnic segregation. At present, ethnic diversity in Western Europe can, in many cases, be regarded as a result of post-colonial processes, while ethnic diversity in CEE countries, especially in the Baltic countries, can mostly be deemed the result of colonialism. In the Baltic States during the Soviet period, rapid industrial growth was followed by immigration of Russian-speakers (mainly from Russia), which prompted a need for new housing that was instantly met in the form of high-rise multi-family complexes (Rybakovskiy & Tarasova, 1991). Ethnic minorities that immigrated to Baltic cities were in more favourable socioeconomic positions than people from the titular nations, which resulted in ethnic residential differentiation (Gentile & Tammaru, 2006; Kulu & Tammaru, 2003; Milstead, 2008; Ruoppila, 2004). These patterns of segregation have changed after the post-communist reforms were introduced and the position of national languages in public and institutional life was strengthened. However, a more recent study of Estonia has shown that the changes in residential differentiation of ethnic minorities 'have been too modest to overcome the inherited patterns of housing segmentation' (Hess, Tammaru, & Leetmaa, 2012).

Scholars generally agree that the socio-spatial structure was more homogenous in socialist cities compared to Western capitalist cities and that social segregation (income and ethnic inequality) has started to increase in CEE cities since the early 1990s (Marcinićzak et al., 2015; Sýkora, 1999; Szelényi, 2001; Tammaru, Marcinićzak, et al., 2016; Tsenkova, 2006). The main changes included the beginning of gentrification and suburbanisation processes, which resulted in the concentration of high-income groups in the most desired parts of the suburbs and inner-city (Brade et al., 2009; Kok & Kovács, 1999; Kovács, 1999; Sailer-Fliege, 1999; Sýkora, 1999; Szelényi, 1996). While people with low socioeconomic status started to concentrate in the cheaper neighbourhoods in the outer-city (Krišjāne & Bērziņš, 2014; Marcinićzak et al., 2015). In addition, Soviet-era large housing estates are becoming increasingly stagnant and unattractive for younger and more affluent people (Burneika, Ubarevičienė, & Valatka, 2016). Despite these trends, recent studies show that the

levels of socioeconomic segregation in many CEE cities remain relatively low compared to the western counterparts, although income inequality has grown considerably in the first decades after the demise of communism (Marcińczak et al., 2015; Tammaru, Marcińczak, et al., 2016). It is likely that income inequality will continue to increase. Furthermore, CEE countries might face greater consequences of rising inequality in the near future, because they do not have a strong social housing sector, or resources to deal with housing problems or social mix policy (van Kempen & Murie, 2009). In addition, according to Cortese and colleagues (2014, p. 2053), 'social cohesion is even more difficult to achieve in shrinking cities than in other cities because ... [they] are overburdened with challenges but left with few(er) resources at hand.' Population decline modifies the demographic and socioeconomic composition of cities, affects job market, and results in abandoned infrastructure and housing (Cortese et al. 2014). These processes inevitably lead to poverty concentration in the most affected neighbourhoods of the declining CEE cities (Burneika et al., 2016; Cortese et al., 2014).

In Lithuania, studies that directly address social segregation and its spatial dimension have only recently started to appear. The studies by Krupickaitė (2014), Žilyš (2013) and Tereškinas et al. (2013) were survey-based and the spatial dimension rather limited as a result. Research by Marcińczak et al. (2015) was based on the 2001 census data at the level of census tracts. This study compared the levels of segregation in CEE capital cities, including Vilnius. All of these studies found that the levels of segregation were relatively low in Vilnius and the other large Lithuanian cities. However, they did not investigate how the levels of segregation may have changed over time. The processes discussed in this introduction – suburbanisation, economic restructuring and professionalisation of the workforce, selective migration, etc. – lead us to expect increasing levels of segregation in Lithuanian cities, and particularly in Vilnius. The processes of socioeconomic and ethnic segregation and the change over time will be investigated in Chapters 5 and 6 of this thesis. Indeed, these Chapters will show that the levels of segregation are increasing in Lithuanian cities.

The main trends in social segregation in Lithuania can be summarised as follows:

- The processes of socioeconomic segregation were inhibited by the socialist system and became much more exposed in the market-led system.
- The Russian-speaking ethnic minorities were in a more favourable socioeconomic position than the Lithuanians during the Soviet period, but this changed after the 1990s.
- Earlier studies found that the levels of segregation were relatively low in Vilnius and the other large Lithuanian cities. However, they did not investigate how the levels of segregation have changed over time.

§ 1.3.4 Increasing regional inequalities

The processes presented above have different effects in different places and therefore lead to uneven socio-spatial development. During recent decades, socio-spatial inequalities have become increasingly apparent on the international, national, regional and local scales (Kühn, 2015). These inequalities involve economic, social, political and other dimensions and are usually produced by processes of centralisation and peripheralisation of people and the economy. The metropolitan regions continue to grow demographically and economically, while many of the other regions face a spiral of decline. This is reflected in the loss of jobs and enterprises and the reduction of social services in the latter, thus encouraging out-migration. It is believed that great spatial imbalances in the development of countries may threaten their social and economic stability (Ehrlich, Kriszan, & Lang, 2012; Hudson, 2015; Lang, 2011).

The first theories on regional inequality appeared in the 1950s. They emerged as a critical response to neoclassical theories which denied uneven development and assumed that differences across regions tend to diminish over time (Dawkins, 2003; Myrdal, 1957; Sjaastad, 1962). Inspired by neoclassical theories, the traditional model of regional development was based on location theories developed by W. Christaller (1933), A. Lösch (1940), J. H. von Thünen (1926) and others (Hudson, 2011). These theories attempted to explain the location of economic activities and demonstrate regional development processes in the industrial period. However, these location theories did not pay much attention to the emergence of uneven spatial development. For example, they assumed that the markets were perfectly competitive, the production technologies identical and labour and capital inputs homogeneous across regions (Dawkins, 2003).

In response, and in the context of increasing globalisation, liberalisation and technological progress, theories of regional economic divergence began to develop in the 1960s, and region-specific elements were introduced to explain uneven spatial development. Since then, space has started to be perceived through a diversified-relational lens (Capello, 2009). Among the theories of divergence are cumulative causation theory, developed by Myrdal (1957), and growth poles theory, developed by Perroux (1955). Both are highly applicable in explaining population decline and spatially uneven population change. More recent theories, developed after the 1970s (e.g. world-systems theory, network theory, new trade theory, territorial capital), also address regional inequalities and patterns of uneven development, but are less adapted to explaining the spatial development of particular regions or individual countries.

Over the past decades, interest in socio-spatial inequalities and the reason they develop has increased considerably (Dawkins, 2003; Hudson, 2005). Researchers from different disciplines (economics, geography, sociology, political science and others) are interested in processes that are fundamentally spatial in nature. A large body of theoretical and empirical literature has examined the causes of spatial inequality and considered its effects on society and the economy (Hudson, 2015). Most have concluded that a certain level of inequality is inevitable in a free market economy (Cassiers & Kesteloot, 2012; Dawkins, 2003; DeFilippis, 2017; Hudson, 2011; Smith & Timár, 2010). Furthermore, inequality seems to increase with economic growth and development (Kim, 2008). Qualitative as well as quantitative differentiation between places is often attributed to the capitalist economic model as well as Marx's theory on capital (Harvey, 1999). Most of the classic works, as well as more recent development theories, explain differentiation in relation to capital accumulation (Dawkins, 2003; Haas, 2007). Since capital tends to produce as well as to exploit spatial differentiation, uneven development becomes a cumulative and self-reinforcing process (Hudson, 2015; Myrdal, 1957). According to Kühn (2015), 'agglomeration provides a context to innovations, which in turn attracts more activities and reinforces the agglomeration'. Such agglomeration is to the disadvantage of non-metropolitan regions, which are increasingly left behind. The territorial agendas of nation-states, as well as the EU, see more balanced spatial development as a necessity, seeking to keep inequality within acceptable limits (Hudson, 2015). However, the agglomeration effect may not only be associated with negative consequences; the growth achieved by a particular territorial area may be beneficial for development on the national scale (Capello, 2009; Puga, 2010; Quigley, 2013). This may be manifest in several ways. For example, through the 'spillover effect', the creation of innovation, increasing economic efficiency, improvement in employment opportunities or participating in global competition.

In CEE countries, the contrast between the development of metropolitan regions and non-metropolitan regions is becoming increasingly pronounced (Kühn, 2015). In the 1990s, the capital regions started to attract economic and political interest, to the disadvantage of the rest of the regions (Lang, 2015). According to Ehrlich et al. (2012), the metropolitan regions can be called the 'winners' of these socio-spatial changes, while other areas in CEE countries have experienced adverse developments. The most radical demographic changes took place in the peripheral countryside regions, which have been losing population at the highest rates and experiencing profound changes in their demographic and socioeconomic composition. These regions are characterised by low population density, the predominance of employment in agriculture, and relatively large distances from the bigger cities (outer and inner peripheries of the countries). A significant drop in the importance of agriculture, which was prioritised under the communist regime (Enyedi, 1998; Leetmaa & Tammaru, 2007; Tammaru, 2001), has reduced the number of jobs in rural regions several times over and raised

the level of unemployment, thus leading to out-migration. The terms frequently used to describe these trajectories in recent socio-spatial development in CEE countries include metropolisation, centralisation, peripheralisation, polarisation, residential differentiation and segregation (see e.g. Gentile et al., 2012; Lang et al., 2015).

In Lithuania, the trends in socio-spatial development are similar to what can be observed in the other CEE countries (Borén & Gentile, 2007; Ehrlich et al., 2012; Gentile et al., 2012; Sailer-Fliege, 1999; Smith & Timár, 2010; Sokol, 2001). However, we can expect that the increase in regional inequalities was even more pronounced here. For decades, regional disparities in Lithuania were avoided by strict Soviet planning policy, which favoured the organised and uniform spread of the population and economic activity throughout the country. The transition to a market-led economy, strengthening domestic and international competition, processes of globalisation and social segregation, as well as other effects, created many challenges relating to the territorial structure that had been inherited. As it did not meet the needs of the post-socialist democratic society and market-led economy, it began to change. Previously controlled flows of internal migration changed direction, and many people moved to the larger cities or abroad. Most economic growth and demographic potential started to concentrate in a few metropolitan regions, particularly in Vilnius (Burneika & Ubareviciene, 2015; Cirtautas, 2013; Krupickaitė, 2014; Ubarevičienė & Burneika, 2015; Ubarevičienė et al., 2011). Many regions, whose growth had been stimulated during the Soviet period by providing jobs in low-tech industry, were suddenly unable to provide sufficient levels of employment and standards of living under the new political and economic system. After the collapse of the Soviet Union, most of the peripheral regions did not receive investment, and public as well as private service provision constantly declined in these regions. It is evident that such a situation would lead to out-migration, contributing to the further deterioration of living standards for the majority of the remaining population, insofar as there was even less likelihood of further investment in service provision or employment.

The findings of the literature review on regional inequalities in Lithuania can be summarised as follows:

- Regional inequalities in Lithuania have constantly increased since the 1990s.
- In the peripheral regions, many jobs were lost and unemployment increased, which resulted in out-migration.
- While in Soviet times the uniform spread of the population and economic activity was advocated, now most of the economic growth and demographic potential are concentrated in a few metropolitan regions, particularly in Vilnius.

§ 1.4 Gaps in current knowledge, aims and research questions

Most of the existing research on socio-spatial change in CEE countries has focused on political and economic restructuring. However, increasing attention is being paid to the spatial and social consequences of change, such as population decline, increasing regional disparities and higher levels of segregation. According to Stanilov (2007), due to the very rapid pace of change, the recent socio-spatial development in CEE countries can be seen as a perfect 'laboratory for observation'. The previous sections of this introduction highlighted that in recent decades Lithuania has been experiencing more profound socio-spatial transformations than other CEE countries. However, compared to these other countries, there has been relatively little research on the case of Lithuania. One of the main reasons for this has been the limited availability of data on Lithuania. This thesis seeks to fill some of these current knowledge gaps on socio-spatial change in Lithuania.

The knowledge gaps concern four issues: population decline, changing residential patterns, social segregation and increasing regional inequalities. Firstly, there is not much research on the socio-spatial development processes and their consequences in Lithuania. The existing research is focused on either natural population change (Kalėdienė & Sauliūnė, 2013; Stankūnienė & Jasilionienė, 2008; Vlada Stankūnienė & Jasilionis, 2011; Stumbrys, 2016) or on the economic aspects of emigration (Genelyte, 2017; Klūsener et al., 2015; Sipavičienė & Stankūnienė, 2013). In addition, existing studies focus on the national level (Civinskas et al., 2011; Jasilionis, Stankūnienė, Maslauskaitė, & Stumbrys, 2015; Vladislava Stankūnienė, 2003) or municipal level (Klūsener et al., 2015) and lack a more detailed spatial focus. As a consequence, little is known about the specific drivers of population change and the regional variations within the country. Secondly, studies on internal migration, which is the driver of changing residential patterns, are particularly scarce in Lithuania (Ubarevičienė, 2016). Previous studies have used aggregated-level data on the municipal level (Juškevičius, 2015; Kuliešis & Pareigienė, 2011) and could therefore only investigate net migration. Little is known about the directions of migration flows within the country as a whole, or about the demographic and socioeconomic composition of these flows. Individual-level data is the most suitable for migration studies; however, until now individual-level census data was not available to socio-spatial researchers. Thirdly, research on social segregation is also scarce in Lithuania (the rare examples are Krupickaitė, 2014; Marcińczak et al., 2015; Tereškinas et al., 2013; Žilys, 2013). There are no previous studies investigating how the local spatial dimensions of social inequality have changed over time. Finally, greater attention should be paid to the increasing levels of socio-spatial inequality, which is the cause and the consequence of population decline, selective migration and segregation processes.

In summary, this thesis contributes to the existing literature by investigating population decline, migration patterns and processes of segregation in Lithuania. While the focus is on Lithuania, the results of this study are also of value for other CEE countries, many of which have experienced similar trajectories of change during recent decades. *The aim of this thesis is to gain more insight into the recent socio-spatial transformation processes and their consequences in Lithuania. The thesis investigates the main features and drivers of socio-spatial change in post-socialist Lithuania.* This aim has resulted in five empirical chapters, where each chapter presents different aspects of socio-spatial change.

Chapter 2: Shrinking regions in a shrinking country: The geography of population decline in Lithuania 2001-2011

This chapter serves as a starting point for the analyses of socio-spatial change in Lithuania. While most studies focus on specific cities and regions, much less is known about the spatial dimension of population decline on the national level and the regional factors determining spatially uneven population change. The aim of this chapter is to gain more insight into the geography of population change in Lithuania and to increase our understanding of the regional factors that contribute to population change. The main question raised in this chapter is: *What are the underlying reasons for the observed geographical pattern of population decline?* More insight into regional differences in population change and their drivers should contribute to the development of coping strategies and policies to deal with especially high population decline.

Chapter 3: Population decline in Lithuania. Who lives in declining regions and who leaves?

The goal of this chapter is to gain more insight into the recent processes of socio-spatial change and the role of selective migration in Lithuania. The patterns of population change in Lithuania show a concentration of the population in the metropolitan areas and a sharp decline in peripheral rural regions. Internal migration plays a major role in the processes of population redistribution and growing spatial imbalances. However, little is known about the direction of migration flows within Lithuania or the demographic and socioeconomic composition of these flows. Knowing that migration tends to be selective by nature, it can be expected that the population leaving declining regions in Lithuania is also very selective. Extreme population decline in some regions of Lithuania and the growth of population in others can be expected to result in residential differentiation. This chapter addresses the following research questions: *Who live in the rapidly declining regions? Who are most likely to leave such regions?*

Chapter 4: Ethno-political effects of suburbanisation in the Vilnius urban region: An analysis of voting behaviour

One of the most significant features of socio-spatial development in Lithuania is the urban expansion of Vilnius city through the process of suburbanisation. The suburban zone of Vilnius is a site of increasing interaction between the original residents, many of whom have a Polish identity, and newcomers, who are mainly of Lithuanian origin. A confrontation of ethnic groups with partly different needs, priorities, worldviews, quality of life standards and value systems might cause ethnic tensions in the suburbs. The research question of this chapter is: *What are the consequences of suburbanisation for voting behaviour in the surrounding Vilnius region?* We hypothesise that the number of votes for the Polish party and voting turnout will increase in the suburban ring due to the mobilisation of Poles, aiming to strengthen their political influence during a period in which others are moving to the region. The changing electoral behaviour might be an indicator of growing ethno-political tensions, and the zones of the most intense change could identify areas of potential social tensions between ethnic groups.

Chapter 5: Large social inequalities and low levels of socioeconomic segregation in Vilnius

The political-economic reforms in the 1990s resulted in a changing occupational structure and an increase in socio-spatial inequality in Lithuania. Vilnius is playing an increasingly important role in the organisation of society and the economy of the country; thus, the processes of socio-spatial segregation are the most intensive here. The aim of the chapter is to gain more insight into recent socioeconomic segregation processes in Vilnius. The chapter addresses the following three research questions: *How has the occupational structure of the population of Vilnius city changed between 2001 and 2011? Do we find evidence of increasing or decreasing levels of occupational segregation in the 2000s following the growth of social inequality since the 1990s? How do the segregation processes vary between the city zones?*

Chapter 6: Socio-ethnic segregation in the metropolitan areas of Lithuania

If Chapter 5 focuses on socioeconomic segregation in Vilnius, Chapter 6 addresses socio-ethnic segregation in three major metropolitan areas in Lithuania. One of the specific features of many post-Soviet cities is their multi-ethnic structure, which was strongly influenced by internal migration within the Soviet Union. We assume that the ethnic landscape inherited from the Soviet period started changing after free-

market forces began playing their role. However, the question remains *whether spatial residential differentiation has started to disappear or, on the contrary, is increasing*. This article seeks to gain more insight into the interrelationships between social and ethnic residential differentiation in three major metropolitan areas of Lithuania formed by the cities of Vilnius, Kaunas and Klaipėda. We seek to learn whether different ethnic groups can be associated with different socioeconomic statuses and whether these groups tend to occupy different urban spaces.

§ 1.5 Data

Ideally, one would have access to longitudinal geo-coded individual-level data to study patterns of socio-spatial change. Such data is only available in a few countries, such as the Netherlands, Sweden, Finland and the United Kingdom. Among CEE countries, Estonia has the most advanced data infrastructure, as researchers have been able to link the 2000 and 2011 Estonian censuses on the individual level, while currently there are plans to also link the final Soviet-era census to the data. This latest development would expand the already unique Estonian database, which would allow researchers to gain more insight into population development at the crossroads of the socialist and post-socialist systems.

One of the challenges encountered when doing research on Lithuania for this thesis was limited data availability. In Lithuania, as in most CEE countries, the most important and reliable source of data is from the 2000/2001 and 2011 population censuses, sometimes supplemented by surveys or register data. Although there were also censuses before 2000, the availability of such data is very limited. Most of the data gathered during the socialist period was in the possession of political-administrative institutions and considered secret. In addition, part of it was lost during the reform period.

Most of the research in this thesis is based on the 2001 and 2011 Lithuanian censuses. At the start of this project, data availability was limited to cross-sectional aggregated data on the municipality or ward⁹ level. However, as the project progressed, access to more detailed spatial level data (census tracts) and, eventually, also individual-level geo-coded data, was obtained. As a result, this thesis is the first study to use individual-

9

Equivalent to Local administrative units (LAU 2 level) in the EU member states.

level Lithuanian census data in socio-spatial research.¹⁰ Access to this data made it possible to study processes of spatial mobility on a very small spatial scale. This new individual-level data is an important research tool for Lithuania and opens up new possibilities for future research. Although the data for the 2001 and 2011 censuses are not linked at the individual level, this might occur in the future, as was the case in Estonia, opening many more opportunities to learn about the processes occurring in Lithuania. In addition to the census data, this thesis has also used electoral data to illustrate the ethno-political effects of suburbanisation (Chapter 4).

Census data, which includes the whole population, is the most reliable source of information for the analyses of socio-spatial change in Lithuania. However, census data typically has some shortcomings. First of all, the population census is only conducted every ten years. In addition, it takes several years for the collected data to be processed and systematised, and thus available for use in research. Thus, studies based on census data use relatively 'old' data. Additional issues arise when investigating migration processes. Firstly, Lithuanian census data from 2001 and 2011 only captures a change of residence in the one-year period before the census date. It records the current place of residence and the previous place of residence if the person has moved inside Lithuania, but the exact timing of the migration cannot be observed. Secondly, information on individual characteristics is only available for the census date. This implies that we only know the characteristics of movers after the move but not before. Therefore, the effects of time-varying variables such as education, occupation and household status should be interpreted with caution. Thirdly, census data in Lithuania does not provide information on intra-urban or intra-rural migration: only those moves in which the boundary of a city municipality or ward (LAU 2 region) was crossed have been recorded. Fourthly, census data does not contain any information on the reasons or motives for internal migration. Finally, both of the Lithuanian censuses (2001 and 2011) were conducted in post-crisis periods, which may have temporarily affected the directions of internal migration flows. All studies using census data suffer from similar problems, no matter the country (Leetmaa & Tammaru, 2007; Nivalainen, 2004; Sjöberg & Tammaru, 1999; Tervo, 2000), and it is important to be aware of these issues when discussing study results.

10

There are demographic studies that use individual-level data, but they do not have a more detailed geographical dimension (e.g. Klüsener et al., 2015).

§ 1.6 Outline of the thesis

The rest of this thesis consists of five empirical chapters followed by the conclusion. Different chapters analyse different aspects of socio-spatial changes, but together they illustrate the complexity and unusually rapid pace and scale of the post-socialist transformations in Lithuania. Chapter 2 and Chapter 3 are focused on Lithuania as a whole. The remaining chapters are focused on areas where the socio-spatial transformations are the most intense – the metropolitan regions and in particular the Vilnius metropolitan region. Chapter 4 discusses suburbanisation in Vilnius and related ethno-political effects. Chapters 5 and 6 analyse processes of social segregation in Vilnius and two of the other largest cities in Lithuania. Chapters 2, 3, 4 and 6 have already been published in peer-reviewed journals. Chapter 5 was published as a book chapter. The conclusion briefly summarises the empirical chapters, reflects on the main research findings, discusses the limitations of the thesis and provides directions for future research.

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