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INTRA-REGIONAL DIFFERENTIATION OF POPULATION DEVELOPMENT IN SOUTHERN-LIMBURG, THE NETHERLANDS

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ABSTRACT

Although we are steadily getting a better understanding of why regional population decline occurs, little is known about the causes of differentiated levels of decline between municipalities in the same region. In this paper we address the causes of intra-regional differentiation in decline in the Dutch region Southern-Limburg. The quantitative and qualitative analyses reveal that in the 1900-1945 period, differentiation in population development was the result of economic boom and bust in the mining areas. After 1945 (except for 1985-1989) however, the economic argument lost much of its relevance: intra-regional differentiation has primarily been the result of intra-regional and international migration and these flows are steered predominantly by life course motives, the uneven spatial distribution of housing opportunities and access to these opportunities within the region.

Key words: Urban shrinkage, population decline, intraregional differentiation, regional geography, Southern-Limburg

INTRODUCTION

In the early twenty-first century, urban and regional decline, or shrinkage, claimed a prominent place on the research agenda of geographers, planners and economists. While the proper terminology, definition and type of analysis are still debated (e.g. decline or shrinkage, and/or only population decline or a more complex multidimensional process), some consensus has been reached about the causes of decline. In particular, structural economic factors related to globalisation and economic restructuring are stressed in the explanation of why some cities and regions shrink and others grow. Other factors are socio-demographic, socio-spatial and political factors, although these are usually assigned a

secondary role: 'The causes of this urban decline are complex, but in many ways they can be understood as socio-spatial manifestations of the forces of globalisation ... In most cases ... urban shrinkage is considered to be the effect of economic decline' (Pallagst *et al.* 2014, p. 3). Although this may indeed be true for many shrinking cities and regions, this underplays the role of several other factors and fails to explain intraregional differentiation in decline. Why do we see significantly different local outcomes within a region that is subject to largely the same macro-economic factors throughout its territory? Even within our case study of Southern-Limburg, a small Dutch region of about 660 km², the pace, extent and pattern of population decline has differed considerably between municipalities

over the past decades. Specific local factors must play a role here too, as we will highlight in this paper.

In several recently published articles and books (see Latten & Musterd 2009; Haartsen & Venhorst 2010; Verwest 2011; Elzerman & Bontje 2015). Southern-Limburg and its sub-region of Parkstad Limburg are mainly analysed as a whole and less attention is paid to variations of population development between cities and villages within the region. What is more, these publications focus mainly on the policy implications of population decline. By contrast our empirical account stresses the spatial differentiation in pace, extent and pattern of decline between municipalities in Southern-Limburg and how this differentiation can be understood. On the basis of statistical analyses and expert interviews, we first discuss the development of the region as a whole and then zoom in on possible factors that clarify local differentiation in population development within the region.

THEORETICAL FRAMEWORK

We acknowledge that urban and regional shrinkage or decline is a multidimensional phenomenon (Pallagst *et al.* 2014) which can be partly understood as a socio-spatial manifestation of globalisation (Martinez-Fernandez *et al.* 2012), in which population decline and economic decline often mutually influence each other. However, globalisation tends to affect the regional level rather than the local level and materialises, for example, in differences between growing and shrinking regions and not so much between shrinking cities. At the same time, as Grossmann *et al.* (2013, p. 222) point out, there is an 'astonishing plurality of shrinking cities' pathways'. Therefore Haase *et al.* (2013, p. 1) urge shrinkage researchers to avoid trying to explain all types of shrinkage with 'grand heuristics': 'a one-size-fits-all explanatory approach to shrinkage cannot deliver'. They plea for process-orientated instead of outcome-orientated shrinkage research. In the conceptual model they propose, changing contexts and trends, at scales ranging from regional to global, impact on urban

development at the local scale. This in turn can lead to population decline, which has direct or indirect consequences for urban development. Governance may also influence (and be influenced by) how the process of population decline and its direct and indirect consequences for urban development develop for each individual city. These direct and indirect consequences for urban development then also impact on urban development at the local scale, producing feedback loops. To add to this plurality of shrinkage trajectories, the dynamics of the shrinkage process in most shrinking regions are definitely not equal across the region. Hoekveld (2014) mentions intra-regional differences in settlement type, population composition, the presence or absence of amenities, local image and local politics as explanations for such intra-regional differences.

In this paper we particularly want to stress two factors that, in our view, contribute to these variegated pathways of shrinking cities and that, as yet, have not received the attention they deserve in shrinkage literature. While the first factor below links directly to the conceptual model of urban shrinkage proposed by Haase *et al.* (2013) and Hoekveld (2014), the second factor refers instead to debates in residential mobility literature about individual migration decisions, a topic not often discussed in the shrinkage literature so far:

- Long-term, structural demographic and socio-economic changes affecting recent regional and intraregional dynamics. Decline in recent years or decades can partly be explained by structural changes that took place many decades or even centuries ago. Beauregard (2009) and Turok and Mykhnenko (2007) are among the few who have been studying long-term trajectories of shrinkage in the US and Europe respectively. Such historical developments should be taken into account when analysing patterns of, and factors behind, population decline in recent decades. After all, at a certain moment high (or low) fertility often affects population dynamics a generation later (Plane & Rogerson 1991; Goldstein *et al.* 2004). This, in turn, affects the population composition in terms of age

and the share of working-age population. Another kind of 'echo effect' is that economic and/or political shocks often impact, with some delay, on fertility. A clear example of this is the sharp population decline in most Central and East European countries after the fall of socialist regimes and the subsequent deep economic crisis. Two decades later the demographic impact is still profound due to the selective out-migration of young people and postponing or forgoing having children in times of economic uncertainty (Witte & Wagner 1995; Mykhnenko & Turok 2007).

- The role of non-economic factors in residential mobility. The common assumption in most shrinkage research is that decline caused by migration is rooted in economic restructuring. Following the analytical framework of Mulder (1993, 1996), we regard migration decisions as being the result of interplay of individual preferences, resources and constraints, and macro constraints and opportunities. The shrinkage literature stresses (particularly economic) macro constraints and opportunities, while individual preferences, resources and constraints have been relatively neglected. However, all kinds of personal reasons to move or to stay can interfere with these macro constraints and opportunities, such as individual constraints (family circumstances like having school-age children or financial constraints making someone stay put) and individual preferences (preferring suburban living for instance).

How does this framework contribute to an understanding of intraregional variation in population decline? The intra-regional differences in the historic development trajectory may, in particular, stem from differences in migration, whereas natural changes (such as changes in fertility or ageing) often extend beyond local level. At the local level, it may in particular be individual preferences, resources and constraints that affect population development, as these differ from place to place within a region (see e.g. Haartsen & Venhorst 2010; Van Steen & Pellenburg 2010). A trade-off can occur, for example,

between the preferred living environment and/or housing type and the work location (Weisbrod *et al.* 1980; Dieleman 2001; Chen *et al.* 2008). Besides examining reasons why people move away from a shrinking place, equally interesting are reasons why people stay. As Richter (2013) argues, some shrinking cities shrink slower than others because these cities may be more successful in retaining their inhabitants because these identify with and feel attached to their city.

Although research into residential preferences tends to be dominated by case studies in growing cities and regions, the decisive factors for residential choice in shrinking cities and regions may be only partly different. The main differences are probably related to differences in household composition (younger urbanites in shrinking cities, for example). This relates to differences in preferences and to having more choice in shrinking areas because of higher vacancy rates, which relates to differences in opportunities (see e.g. Lauf *et al.* 2012, for a comparison of growth and shrinkage scenarios). In this paper, we provide an empirical account of the intra-regional differentiation of decline in Southern-Limburg and discuss how the two factors mentioned above contribute to this differentiation. The main research question is: which factors are relevant for understanding the intra-regional variation in population development in Southern-Limburg? This question is subdivided into:

- Which factors influence the variation in birth and death rates and migration rates and to what extent is this variation influenced by local and regional historical development trajectories?
- Which motives, preferences and constraints affect migration decisions of inhabitants of Southern-Limburg?

METHODOLOGY

For the first sub-question regarding the differentiation in natural development and migration, we compare and describe the historic trajectories and the impact of pro mille

natural changes and migration on total population development in the three economic-geographic sub-regions (the lowest administrative level data is available for in this early period, starting 1875). We then use regression analysis to identify the contribution of natural increase and net migration (independent variables) to the variance in total population development (dependent variable), per five-year period, from 1942 onwards. Since migration makes a larger contribution to the variance in population decline than natural developments, the analysis focused on the direction of migration. Subsequently, a regression analysis was performed which revealed which type of migration contributes most to the net migration rate: intra-regional, inter-regional or international? This was done for the period 2000–2012 (the only years for which this data is available).

Next, we analyse the preferences, motives and constraints affecting migration (the second sub-question). Here, we switch to an individual level of analysis using the large-scale WoOn surveys of 2006 and 2012 (BZK 2006, 2012). The 2012 dataset consists of approximately 70,000 Dutch respondents, of which 1,937 are in Southern-Limburg, while the 2006 dataset consists of 64,000 respondents, of which 1,349 are in Southern-Limburg. These respondents were questioned about their residential mobility, living preferences, satisfaction with their living environment, resources, etc. The scores are weighed in order to correct over and under-sampling of specific types of persons (for instance, the under-representation of young people) with a weight variable provided by the WoOn-Survey. An assessment was made as to whether there are significant differences in terms of preferences, perceived opportunities and residential mobility between the inhabitants of Southern-Limburg and the rest of the Netherlands (the regional effect) and between Southern-Limburg and growing and shrinking regions (the shrinkage effect). Unfortunately it was not possible to study the preferences, resources and constraints of the respondents of the various municipalities within Southern-Limburg as well (the local effect) because there were not enough

respondents who had recently moved or wished to move in each of the municipalities to make valid statements.

The findings of the quantitative analysis are scrutinised by an additional qualitative analysis. A total of 21 in-depth semi-structured interviews were conducted in the summer of 2013 with regional and local administrative and societal key persons. All research questions were addressed: the mechanisms steering the differentiation in population decline and the natural developments and migration. The interviewees were heads of departments of spatial planning and housing of local administrations, the province of Limburg, the Parkstad co-operation,¹ a regional housing co-operation, a regional housing market expert and two regional historians.

Case selection – The choice for Southern-Limburg (Figure 1) is motivated by the fact that of all declining Dutch regions, the variance in level of decline here was the largest (between –18.5% and –0.9%, see Figure 4). The regional spatial demarcation is based on the division of functional urban areas and comprises the South Limburg polycentric metropolitan area,² which also corresponds with to the Dutch COROP region³ of Southern-Limburg. For the main research question and the first sub-question, the unit of analysis is the municipality. For the second sub-question, the unit of analysis is the individual. We have conducted interviews in the underlined municipalities in Figure 1 (two municipalities were not willing to co-operate).

GEO-SPATIAL CONTEXT

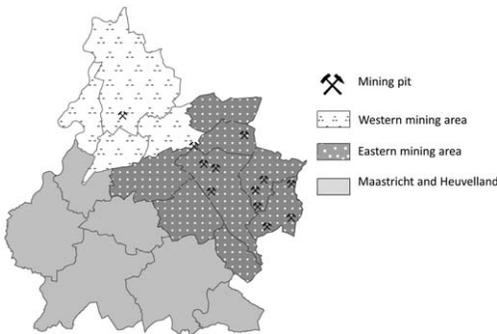
The region was agricultural until the end of the nineteenth century, which was when the mining industry started to expand rapidly. In Kerkrade, mining activities had been going on for centuries. However, large-scale mining operations only started in around 1900. Twelve mines were opened (Figure 2) between 1889 and 1927.

The mining industry dominated the entire sociocultural and economic structure of the Eastern mining region. In the northern part



Source: Authors, based on CBS/Kadaster (2012).

Figure 1. Case study region Southern-Limburg and investigated municipalities.



Source: Authors, based on CBS (2004).

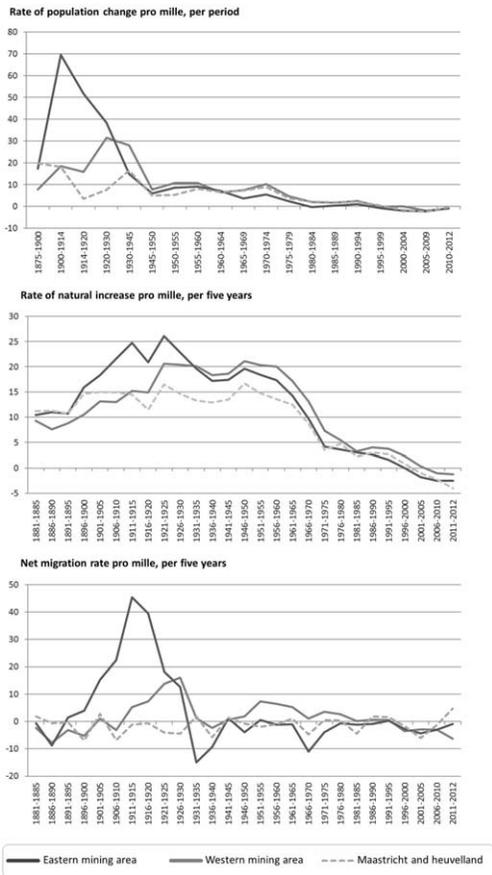
Figure 2. Economic-geographical areas and mines.

of the region there was chemical industry associated with the state mine. This later became the large DSM chemical company). The Heuvelland area (the hilly part of the region) remained predominantly agricultural, while the city of Maastricht was known for its ceramic industries.

From 1958 onwards, Western European coal mining regions were confronted with the arrival of cheaper coal and oil from Third World countries. The decline of the

coal market was aggravated by the discovery of a large gas field in the North of the Netherlands and the competition with subsidised coal from other European countries (subsidisation of Dutch coal mining was negligible in comparison to other Western European countries) (Second Chamber Parliamentary Proceedings 1969).

In 1965 the government decided to terminate coal mining in the Netherlands and to close the mines at the same pace as new jobs could be created. In this period of economic growth, during which there was already a shortage of labourers in the region (due to, among other things, substantial cross-border commuting to Germany; Bouwens 2008), no-one doubted that this objective could be achieved (van der Linden & Ruijters 1990). Since the closures were realised even faster than originally planned (Peet 2012), the effects of the closure of the mines were underestimated. The main goal of the economic restructuring plan of 1965 (Nota inzake de mijnindustrie en de industriële herstructurering van Zuid-Limburg) was to create new industrial employment, preferably a couple of large industrial businesses, and white-



Source: Authors, based on Philips (1955, 1956) CBS (2013a, 2013b).

Figure 3. Demographic development per economic-geographical region, 1875–2012, differing intervals.

collar employment through the relocation of governmental institutions (Den Uyl 1965). However, the spatial distribution of new sources of employment was rather uneven. Whereas a large automobile factory (DAF) was established in the Western mining area (where there was already some chemical industry), new employment in the eastern mining area was less coherent. The relocation of governmental institutions to this area did not quantitatively and qualitatively correspond to the large numbers of former miners. A university was established in Maastricht – although it was not located in the mining area – and this acted as a catalyst for a

period of growth as it attracted both students and scholars to the city.

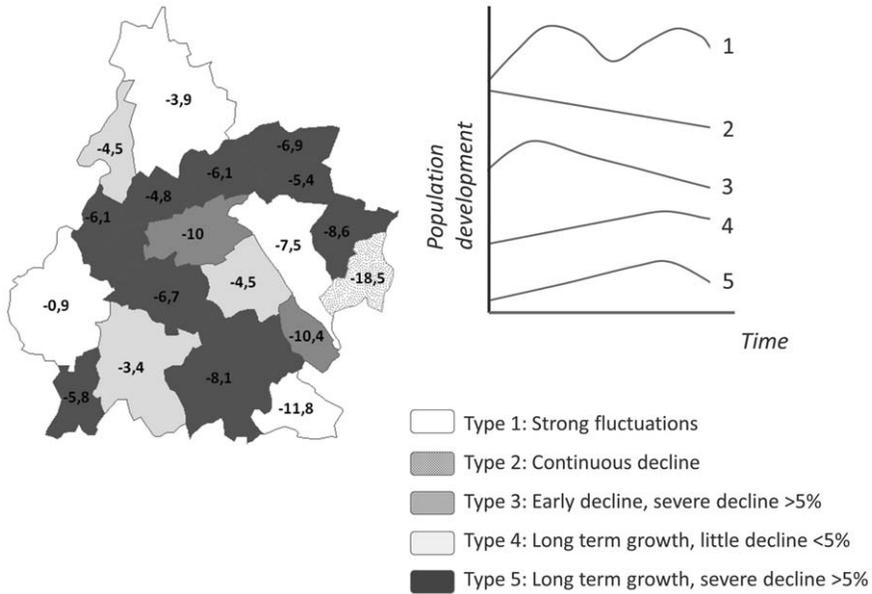
Less cyclically-sensitive economic branches were hardly developed in the region, therefore the region suffered more than other regions from the oil crisis of 1973, which once again reduced the volume of employment (Derix 1990). Another regional restructuring plan (Perspectievennota Zuid-Limburg) was formulated in 1978, with the goal of reducing unemployment levels and bringing them to the national average. Although this goal had been reached by 1990, unemployment levels in the Eastern mining area still exceeded the national average. Although the region recovered economically and now has a more diverse economic structure, this period of economic restructuring has had severe repercussions on the population development.

The economic development trajectory of the region had a clear impact on the spatial structure, with the urbanisation and infrastructure pattern being closely tied to the location of the mines. In the mining zone, the residential areas, or mine colonies, were often constructed by the mining companies or by housing corporations. This led to a strong socio-spatial dependency between the labour population and the mine (Langeweg 2012). In contrast to the high density mining areas, the Heuvelland sub-region remained largely low-density and agricultural.

SUB-REGIONAL POPULATION DEVELOPMENT

In the first half of the twentieth century the regional population boomed. However, this development was geographically and chronologically uneven. Figure 3 depicts the long-term population development of the three economic-geographical regions.

Until the Second World War – Generally, the two mining regions experienced the same phases of total population development, migration and natural changes until the closure of the mines, albeit with a substantial time lag and difference in intensity. Large-scale exploitation of the coal seams started



Source: Authors, based on CBS (2013a).

Figure 4. Municipal population decline in percentage and type of development trajectory.

around 30 years earlier in the Eastern mining area 2013a the Western mining area (resp. around 1900 and 1926). In the Eastern mining area the population quadrupled between 1875–1930, primarily because of migration. The growth of Brunssum’s population between 1900–1930 was a staggering 1,250 per cent (Philips 1955). In the first three decades of the twentieth century the net migration rate rose and, as these migrants were young and in the family-building phase, the birth rate also rose.

The decreasing net migration rate in the Western mining area was caused by two exogenous opportunities: first the improvement and extension of transport for the miners, which enabled them to live further away from the mine and second the crisis of the 1930s which stimulated out-migration (Langeweg 2012).

Post-war period and economic restructuring –

In the period between 1945 and the closure of the mines, all sub-regions experienced the same development trajectory with a baby boom followed by decreasing natural sur-

pluses, and fluctuating net migration rates. This baby boom was echoed in the 1985–1990 period by a small birth rate increase. The fertility rate decrease from the 1960s onwards was much higher in Southern-Limburg than in the rest of the Netherlands. The same pattern is seen in other Catholic countries and regions as well (Preston 1986; CBS 2003).

During the post-war period, the population in the mining areas was relatively young because of migration surpluses and the effect of the gigantic birth rates of the pre-war period. Conversely, Maastricht and Heuvelland had a relatively high number of deaths and low number of in-migrants. Later this pattern reversed with high death rates and out-migration in the mining areas. The large wave of deaths in the mining areas resulted from the population boom between 1900–1930 and the children being born in this period aged and formed a large elderly cohort of the age group 60–80 in the 1980–2000s. In Maastricht and Heuvelland this age structure was much more even. A second factor was the differentiated migration effects of

the closure of the mines and the economic restructuring. Eastern mining area municipalities had the highest number of out-migrants and these could by no means be compensated by immigration. Furthermore, the Western mining area profited from the expansion of the chemical industry and the car factory, whereas the economic restructuring of the Eastern mining area was rather problematic. From the economic and socio-cultural point of view mining has been much more firmly rooted in the Eastern mining area than in the Western mining area. At the same time, the formerly 'dormant' municipality of Maastricht started to blossom as a consequence of the arrival of the university.

The variance in population development at sub-regional level is therefore the result of the economic development with its boom period and the resulting effects on the age composition. However, as Figure 3 shows, the differences between the three regions started levelling out after 1950. We now turn to the local level and see why this is the case.

SAME SUB-REGION, DIFFERENT OUT-COME: LOCAL DIFFERENTIATION

As Figure 4 shows, there are differences in degree of decline and type of development trajectory within the region. However, these do not necessarily correspond to the three economic-geographic regions. A correlation analysis between total population development per five-year period and a dummy variable indicating whether the municipality was a mining municipality (1) or not (0) shows only significant relations in the period 1900–1930 1950–1955 (positive) and 1985–1990 (negative). During the economic restructuring phase (1965–1975), high out-migration was still compensated by natural surpluses. In the period 1985–1990 this compensation mechanism was flawed due to the surpluses turning into deficits as a result of the echo effect of the skewed population composition. For the rest of the periods, however, this differentiated population development at local level must be attributable to other factors.

The standardised beta coefficients between municipal 5-yearly population development

and 5-yearly net migration rate and rate of natural increase revealed that, as regards explaining population development in all periods, migration is relatively more important than natural developments. An investigation was carried out to establish which type of migration (intra-regional, inter-regional or international) contributes most to net migration. Unfortunately, data has only been available since 2000. Intra-regional and international migration have the highest standardised beta coefficients and inter-regional migration the lowest. The highest pro mille international migration rates are found near the German border, namely in Kerkrade, Vaals and Onderbanken, and Maastricht with its international students, and Schinnen with its American military base (closed in 2011). These figures challenge the argument often made that decline is predominantly caused by domestic regional out-migration.

As intra-regional migration has proven to be key for explaining differentiation in population development in the last decade, we will continue to investigate this type of migration and address our second sub-question: what are the motives, preferences and constraints affecting migration decisions of inhabitants of Southern-Limburg?

Motives and preferences of intra-regional movers – The scores of the WoOn survey indicate that, of those respondents who recently moved within Southern-Limburg ($n = 111$), 76 per cent mention life course reasons for their move (marriage/cohabitation, divorce/separation or leaving the parental home), a percentage which is similar to that of growing Dutch regions. For those who indicated non-life course arguments, the employment motive was the primary migration motive for only 3.2 per cent of the respondents and the education motive for only 3.4 per cent. Decisive factors were 'other reasons' (40%) and last dwelling (27%). The last dwelling was too small (40%) or not the right type (21%). Particularly the latter argument is found more often in Southern-Limburg than in growing regions or other declining regions. In addition, health issues were mentioned significantly more often in Southern-Limburg than in growing regions. However, this is a

'shrinking regions-issue', as health is also mentioned more frequently in the other Dutch shrinking regions.

Of the respondents, 68.1 per cent are absolutely certain they do not want to move in the coming two years, primarily because they are satisfied with their dwelling. Those who do want to move are driven predominantly by life course arguments (76%). Health issues, employment, educational and housing environment motives were mentioned significantly more often as a reason for a future move for Southern-Limburg respondents than other Dutch respondents. We performed a binary logistic regression on the binary dependent variable desire to move and a wide range of binary satisfaction variables (satisfaction with the dwelling, the neighbourhood, the population composition of the neighbourhood, nuisance, green space, traffic situation schools and shops) and attachment variables (attachment to neighbourhood, municipality and region). The best predictors for desire to move are low levels of satisfaction with the dwelling (odds ratio 4.226), level of attachment in the neighbourhood (3.317), level of solidarity in the neighbourhood (1.756) and satisfaction with neighbourhood's population composition (1.625). Compared to the rest of the Netherlands, Southern-Limburg respondents attach relatively high value to neighbourhood characteristics (another regional effect). Strong social cohesion and rootedness can tie people to the area and form an endogenous constraint. As a department head of an Eastern mining area municipality explains:

People don't say: 'I live in Kerkrade', no, they say 'I live in the neighbourhood Bleijerheide, Eyselshoven or Spekholzerheide.

This is a corollary of the parochial spatial structure of the region. The interviewee of a municipality in the Maastricht and Heuvelland area expressed that this strong social cohesion can be a barrier for newcomers though:

People from outside can integrate into the local culture and social life, but not for 100 per cent. It is like a family where you will never be considered a full member.

Although local politicians often argue that people are pushed away because of a lack of

Table 1. *Realised preferences of recent movers in Southern-Limburg 2012 (%)*

	Total	Home-owners	Renters
Preferred:			
Current town	66.5	59.2	70.0
Another town	9.9	7.4	11.2
No preference	23.6	33.4	18.8
	100	100	100
Chose consciously for:			
The dwelling	39.4	58.5	30.0
The neighbourhood	13.6	7.2	16.7
The dwelling and the neighbourhood	19.4	17.7	20.2
No conscious choice: first available dwelling	27.6	16.5	33.1
	100	100	100

Source: BZK (2012).

local shops and services, the WoOn-survey shows that dissatisfaction with the local level of services is relatively unimportant for the desire to move (odds ratio 1.325). Perhaps, as pointed out by the interviewee of the Parkstad co-operation:

It doesn't matter where the facility is located, as long as the facility is accessible somehow. Are there parking lots, are there bicycle tracks, is there a bus?

Constraints – Are migrants able to go where they prefer? The majority, that is 66.5 per cent, of the recent movers to or within Southern-Limburg (n = 228) found a dwelling in the preferred town (Table 1), yet these percentages are smaller than those in growing regions (where 74% found a dwellings in the preferred town) and also in other declining regions (71.3%). Consequently there is clearly a regional effect inherent in the possibility of finding the preferred dwelling in the preferred town. Particularly among the renters there is a substantial group of people who did not make a conscious choice, but took the first dwelling available, indicating that opportunities overruled preferences (Table 1).

A remarkable regional effect is found in the question why people did not move to the preferred town. Of the respondents, 54.7% in Southern-Limburg said they just could not find

a dwelling there (as opposed to 19.5% of the respondents in growing regions and 20% in other declining regions). Another reason has been the lack of elderly apartments, which was an important reason for respondents in both Southern-Limburg and other declining regions (a composition effect of a shrinking region). The respondents are willing to compromise on other preferences in order to find the preferred dwelling and those who want to move within two years will, if they cannot find the desired dwelling in the desired neighbourhood, search instead in another neighbourhood (50%), stay put (22%) or search in another town (19%) rather than modify their dwelling preferences (7%) (just as the respondents in growing and other declining regions).

The spatial distribution of opportunities – There are a couple of (partly specific regional or local and partly national) factors influencing the spatial distribution of the opportunities and people's access to these opportunities.

The spatial distribution of housing opportunities is to a large extent the outcome of local housing policy. Until recently local political actors still thought that building new dwellings solves the problem of population decline. Indeed, at local level this may be the case. However, those newly created opportunities spur intra-regional migration: growth in one area inevitably leads to decline in the other. Therefore, in 2013 the provincial authorities issued a decree that would prevent further regional housing stock expansion. This decree dictates that an old dwelling has to be demolished for every newly constructed dwelling. Alternatively, if a builder does not demolish it himself, he can contribute to a specific demolition fund by paying a kind of 'waste disposal fee'. In Sittard-Geleen, for instance, this fee amounted to 40,000 euros per dwelling for small building projects in 2013. This ensures that the total housing stock remains stable. This decree has a differentiating effect in the region. First, in Parkstad – where there is a higher need for housing market restructuring due to higher vacancy rates – the formula is 2:1, with two demolished dwellings for every new dwelling. Second, rural municipal-

ities with high homeownership rates, which are beyond the sphere of influence of the municipality, experience a discontinuation of rural housing development and argue that the urban municipalities with more corporate housing have a comparative advantage because they can more easily relocate their renters and demolish and subsequently construct new dwellings, possibly attracting new inhabitants.

A second spatially differentiating effect on housing opportunities comes from the housing stock restructuring policy in specific parts of the region, which originally started in Parkstad but is now being applied throughout the region. The primary goals of the restructuring policy are to maintain quality of life and reduce vacancies (both in social rental and in private sector dwellings), reduce the number of parcels with building permits and stimulate mobility up the housing ladder. Such policies affect both opportunities and current living satisfaction, which may have contradictory effects. On the one hand restructuring affects migration flows, as housing corporation tenants are relocated to other dwellings, including in other municipalities. On the other hand, such upgrading may increase the attractiveness of the present living area and reduce the desire to move. Indeed, the share of WoOn-respondents that think their neighbourhood has improved over the past two years is considerably higher in Parkstad than in the other municipalities. Their desire to move is also lower. Currently, the housing associations take on the largest part of the demolition task. However, the interviewee from the housing association stated that:

These housing association dwellings are not always the worst dwellings of the housing stock. Often the privately owned vacant dwellings are worse. However, we cannot get to those dwellings, as the owner is not willing to sell the property.

This means that dwellings are sometimes demolished that are still in a reasonable condition. In fact, 30–40% of the redundant dwellings in Parkstad are privately owned (STEC groep 2013). Housing associations are also creating and destroying opportunities as

they sell off property to their tenants in order to be able to pay for restructuring projects and other financial obligations. One example is a levy (*verhuurdersheffing*) imposed by the national government as one of the national spending cut measures. Because this levy created severe problems for housing corporations in declining regions, it was decided to lower the levy for these housing associations, subject to the condition that the deduction must be invested in the restructuring of their housing stock. Adding more dwellings to the already relaxed private housing market may cause house prices to decrease even further, making it even more difficult for the other owners in the region to sell their property. This reduces housing market mobility.

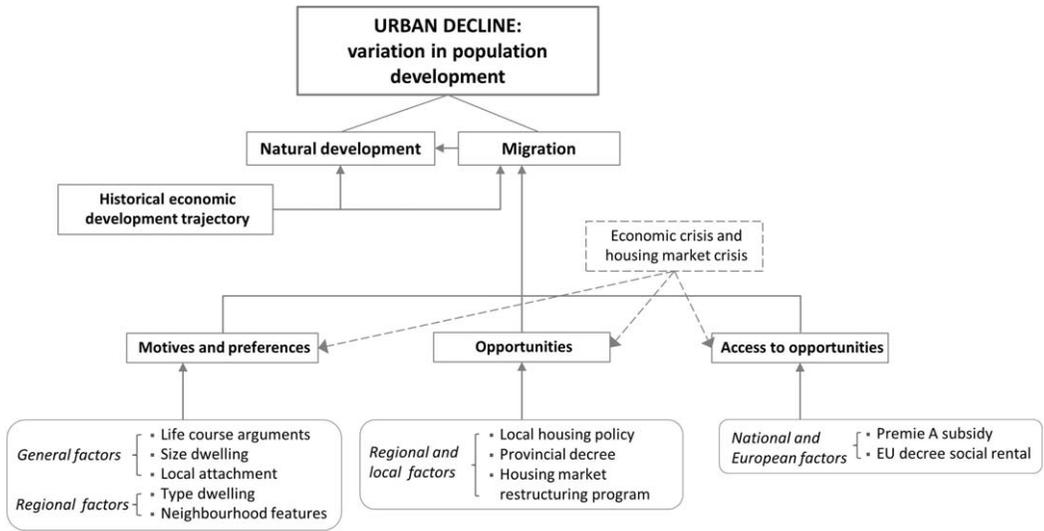
Access to opportunities – People's access to opportunities, and consequently their residential mobility, has been affected in several ways. The first factor was a national subsidy programme, the 'premie-A' subsidy, introduced in 1979, which was a resource to enable low-income households to purchase a dwelling. Although all low-income households in the region were eligible for this subsidy, the impact of this subsidy was still spatially differentiated. As this subsidy was also available to foreigners, the border municipalities of Kerkrade and Vaals in particular, attracted high numbers of Germans looking to benefit from the subsidy: up to 40 per cent of all applicants for this subsidy in Kerkrade in 1986 were German (Second Chamber Parliamentary Proceedings 1989), which led to substantial population growth. Although other Dutch border regions attracted Germans as well, the influx of Germans was particularly high in the Eastern mining area because of the housing scarcity across the border in Aachen and Herzogenrath (SAM 1993). Towards the end of the twentieth century, the direction of migration switched, partly as a result of German households moving back to Germany (in turn causing a considerable population decline in Kerkrade and Vaals), and partly because of the tax measure of deductible mortgage interests for Dutch households living abroad (Chkalova & Nicolaas 2009).

A second factor affecting the access to opportunities was an EU decree. The Euro-

pean Commission decreed that, as of 2011, 90 per cent of the social rental dwellings must be allocated to households with incomes below €34,600 (2014 prices) in order for housing associations to be able to get state funding. The housing association interviewed stated that because of this measure, in combination with the lack of affordable mid-range private rental and owner-occupied dwellings in the region, social renting households with higher incomes have stayed put and this has hampered housing mobility. Indeed, these changed requirements for social housing was a reason not to move for 18 per cent of the WoOn-respondents. This factor actually counteracts those general mechanisms steering intra-regional mobility.

Disrupting all mechanisms: the economic crisis – According to the interviewees, the current economic crisis and accompanying housing market crisis is also disrupting all general and local mechanisms explored so far. The crisis is affecting the opportunities, access to these opportunities and housing preferences.

Because of the economic crisis, which started in 2008, many people may have either lost, or fear losing their jobs, leading to lower incomes and job insecurity. What is more, the burden of housing expenses has risen since the start of the crisis because of a decrease in disposable income (Blijie *et al.* 2013). These possible changes in resources have also caused preferences to change. A profound change is the increasing demand for rental, with young people, in particular, putting off purchasing a dwelling. We investigated the transition from rent into homeownership of the WoOn-respondents in 2006 (pre-crisis) and 2012. In 2006, the proportion of renters moving into homeownership did not significantly differ between Southern-Limburg and the rest of the Netherlands. However, in 2012, the proportion of renters moving into homeownership almost halved in Southern-Limburg (from 31.2% to 17.4%), whereas for the rest of the Netherlands, the decrease was limited (from 33.5% to 26.9%). There is, therefore, a regional component to the impact of the economic and housing market crisis, possibly because of the combination of the general housing



Source: Authors.

Figure 5. Factors contributing to regional and urban decline in Southern-Limburg.

market crisis with the demographically-induced low housing demand in the region.

There is, however, no evidence that homeowners are also resorting to renting as well. This may partly stem from the problems homeowners are having as regards selling their property as a consequence of the housing market crisis. Their dwelling may no longer be worth as much as they had hoped. According to a municipality in the Eastern mining area:

Those people are going through the process of acceptance now. However, while they are going through this process, they are blocking the dwellings for young people.

So even when these young people do have the resources, the unavailability of dwellings may prevent them from realising their preferences. At the same time, young people who bought a house in the recent past are most likely to be unable to sell without a residual debt. As the interviewee from the Parkstad co-operation put it: ‘They are really stuck down here’.

In times of crisis, home-ownership can hinder migration even more than in other

times. This economic situation may lead to an increasing popularity of those municipalities with concentrations of (attractive) rental dwellings and those municipalities that are actively restructuring and upgrading their rental housing stock. According to the housing market expert, it is possible, however, that ‘as soon as the economy starts running again, these preferences will change again as well’.

CONCLUSION

This research has made clear that, for the explanation of the variance in municipal population decline, ‘a grand heuristic’ such as the process of deindustrialisation and globalisation alone is by no means sufficient. Figure 5 shows which factors contributed to differentiated population development in our case study of study Southern-Limburg.

In the period between 1875 and 1945, population development and economic development are strongly interrelated. The differentiation stems from the profound impact of the advent and presence of large-scale mining activities in a particular part of the region, which created employment

opportunities and led to immense population growth in the first half of the twentieth century and consequently an aged population and high death rates decades later.

After the Second World War, the relationship became more complex. Differentiation in population development is – in particular – attributable to migration. However, the mining history lost its relevance to explaining this differentiated population development. What is true, though, is that the closure of the mines and the concomitant process of deindustrialisation in 1965 to 1975 led to massive out-migration. However, in many former mining municipalities, this large-scale out-migration was still compensated for by large natural surpluses in this period, which were the result of the explosive population growth in earlier decades. Only in 1985–1990 did the surpluses turn into deficits with the decreases in the large birth cohort of the pre-war boom period. Therefore, even though the mining history determined the migration and natural developments to a large extent, this compensating mechanism between natural development and migration meant that, in the majority of the periods under investigation, this relationship did not materialise in the total population development.

In the post-restructuring period, local differentiation in population development is attributable to migration, more specifically intra-regional and international migration. This behaviour stems from both general mechanisms and local and regional specificities. The WoOn survey revealed that, in the last decade, these intra-regional migration motives have been life course arguments which is in line with the general migration motives found in growing regions as well. There are some regional effects on the migration preferences: in Southern-Limburg the type of the dwelling, local attachment and neighbourhood characteristics have a larger weight in migration decisions than in growing Dutch regions. Southern-Limburg respondents who recently moved had a slightly lower ability to realise their living preferences than those respondents in growing regions, as the desired dwelling was not always found in the preferred town.

This brings us to the importance of the availability and the accessibility of housing

opportunities for the intra-regional differentiation in migration (the local effect). The effects of local and regional housing market policy are spatially differentiated: current housing restructuring policies can lead to neighbourhood improvement, as they address run-down areas and vacancies, which may reduce the desire to move. At the same time, such restructuring processes require the relocation of households, thus spurring migration. Similarly, the provincial decree that ‘for every new dwelling, one dwelling must be demolished’ affects intra-regional differentiation, just as the premie-A-subsidy did in the past.

In recent times, these above-mentioned mechanisms have been overlapped and counteracted by the current economic crisis, as the total package of migration determinants seems to be affected: because of a decrease in disposable income and purchasing power (changing resources), the demand for rental housing increases (changing preferences). Housing opportunities diminish due to the standstill in housing construction and the low level of sales of existing dwellings, which leads to lower housing mobility. The total impact of these trends is not yet fully grasped and more research into this is needed.

Due to the lack of data at the lowest, municipal, level we could not analyse differentiated preferences and constraints at local level. We circumvented this problem by combining higher level data with the qualitative interviews in the various municipalities and literature study. However, future research into local-level differentiation in population development would benefit from adding local migration data (for instance via researching the migration histories of people within the region and of those who have left).

This research showed that the intra-regional differentiation in population decline is not simply the result of differentiated ‘socio-spatial manifestations of globalisation’. Rather, in line with the conceptual models of Hoekveld (2014) and Haase *et al.* (2013), we see it as the outcome of a diverse set of drivers, affecting natural and migration rates. These drivers operate at local and regional or even national level, and they can be contemporary processes or echo’s from the past, reverberating in current population developments. Institutional

factors have proven to be highly important driving the differentiation in decline. Policy responses to the consequences of decline are also contributing to this intra-regional differentiation. This supports the assumption that multi-level institutional frameworks steer intra-regional differentiation to a large extent. However, 'normal' drivers of population development, found in growing regions too, also play a role in shrinking regions (like those migration motives). In order to grasp the underlying dynamics of this process of decline, we must therefore, increase our historical awareness and look back and see how waves of economic and demographic boom and bust of the past 100 years have contributed to current population decline. Second, we must acknowledge that not only people leaving the region, but especially people moving around within the region, are causing much of the differentiation in decline (but not all of it). Third, we must not necessarily look for unique causes which only apply to such declining contexts, as general principles we know already from growing contexts may be causing the differentiation just as much.

Notes

1. Until 2013 Parkstad region was a WGR+ co-operation (law on municipal co-operation) in the former eastern mining area, consisting of eight municipalities with explicitly defined competences, such as housing, economic development, infrastructure and spatial development.
2. The demarcation of the FUA is based on ESPON (2007) Espon project 1.4.3 Study on Urban Functions. Final Report
3. COROP means COördinatiecommissie Regionaal OnderzoeksProgramma, formulated in 1971. Each COROP-region has a central core and a hinterland.

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