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# **Contextualizing small towns - Trends of demographic spatial development in Germany 1961 to 2018**

Manuel Wolff,<sup>a,b,\*</sup> Annegret Haase<sup>b</sup> and Tim Leibert<sup>c</sup>

*<sup>a</sup>Department of Geography, Lab for Landscape Ecology, Humboldt Universität zu Berlin, Berlin, Germany.*

*<sup>b</sup>Department of Urban and Environmental Sociology, Helmholtz Centre for Environmental Research – UFZ, Leipzig, Germany.*

*<sup>c</sup>Department of Regional Geographies of Europe, Leibniz Institute for Regional Geography – IfL, Leipzig, Germany.*

\* Corresponding author:

Manuel Wolff, Geography Department, Humboldt-Universität zu Berlin, Unter den Linden 6, 10099 Berlin, Germany, E-mail: manuel.wolff@hu-berlin.de, ORCID 0000-0003-0820-5281.

# **Contextualizing small towns - Trends of demographic and spatial development in Germany 1961 to 2018**

## **Abstract**

For the past ten years, the growth debate has been urban-centric, at least in Germany, while rural areas have been largely associated with depopulation. Despite their importance, small towns fall into a systematic perception gap in scientific and planning discourses. Against this background, this paper applies a threefold conceptualisation of scalar relations paying analytical attention to (1) population trajectories, (2) the relation of spatial proximity and development, and (3) the influence of international migration on population development. Covering the period 1961–2018, this paper shows that despite a current demographic respite due to increased international migration, many small towns will continue to face the long-term consequences of population decline. This is accompanied by an increasing spatial differentiation of population growth rates. The relation between proximity to large centres and population growth is weakening, giving rise to other factors, e.g. residential amenities and competition between small and medium-sized towns. Based on this quantitative assessment, we conclude that small towns are the most dynamic settlement type in Germany and, at the same time, extremely heterogeneous in terms of trajectories and underlying driving factors. We also discuss conceptual aspects regarding process-understanding, terms, categories, and tools to analytically grasp the complexity of small towns.

Keywords: small town; Germany; spatial development; demographic change; analytical approach

## **Introduction**

For the past ten years, the growth debate has been urban-centric, at least in Germany, and urban issues, e.g. housing shortages, have dominated everyday discussions. Rural areas, on the other hand, have been mostly associated with depopulation. Recently, an interdisciplinary debate has emerged in Germany on the role of small towns – an ‘in-between’ settlement type with both strong ties to the rural hinterland and urban characteristics. Being important nodes in Germany’s polycentric urban network, small towns not only guarantee the provision of services of general interest for their own inhabitants but also for the surrounding rural population and consequently provide the urban functions to avoid rural depopulation and urban drift (European Commission 2011).

Despite their importance, small towns fall into a systematic perception gap in the scientific and planning literature (Bell and Jayne 2009; Demazière 2017) because the predominant paradigm is still based on a simple urban-rural dichotomy – but “this is simply not the way the world is organized; in fact, it never was” (Lichter and Brown 2014, 5). This lack of scientific interest is, firstly, due to a lack of available data. Changes of data definitions prevent researchers from providing a fuller analysis of driving factors of population development and their interrelations. Secondly, changes of boundaries as a result of administrative reforms pose a challenge for comparisons over time (Bretagnolle et al. 2019; Porsche and Milbert 2019). These methodological aspects are particularly challenging in Germany due to the high administrative autonomy of the federal states (*Länder*) which has, to put it bluntly, resulted in 16 different urban systems. At the same time, the German case allows us to compare and hence better understand the long-term development of small towns on both sides of the former Iron Curtain.

Most research on small towns is thematically and spatially limited to individual and comparative case studies seeking to shed light on both the ontological complexity and different institutional contexts of towns (Wolff and Haase 2019). Alternatively, a quantitative “territorialist approach” (Brenner and Schmid 2013) has the potential of overcoming the urban-rural dichotomy. This approach seeks to find methodological solutions for the empirical impasses allowing for comparative analyses and uses typologies based on selected criteria to understand the heterogeneity of small towns (Sevillo et al. 2017). Following the research agenda for small towns outlined by Bell and Jayne (2009, 692), these criteria are in particular: regional context, proximity to larger centres, historic population and social dynamics, governance structures, economic position, and heritage/culture. In response to the critique of the “territorialist approach” and in order to stimulate policy attention (see e.g. Bell and Jayne 2009; Sevillo et al. 2017), these criteria should, first, be contextualized within the wider urban hierarchy and, second, explored in terms of their spatial relation to other levels of the spatial hierarchy (e.g. regions) and to other spatial entities (e.g. larger cities).

Based on the territorialist approach described above, we exemplify three theoretical-conceptual scales which will form the three analytical pillars of this paper (to be detailed in the following section): (1) the historical scalar relation by population trajectories, (2) the horizontal relation by the spatial proximity of small towns to larger urban centres, and (3) the regional embedding by the influence of international migration on population development of small towns. Against this background, this paper seeks to pay analytical attention to the performance of small towns in Germany in terms of these three trends and offer an entry point for further questions, debates, and studies in Germany and beyond. The analytical questions of the paper are:

- Are there specific spatial patterns of population growth and decline of small towns which manifest themselves in distinctive regional differences?
- What is the effect of proximity to urban centres for the development of small towns?
- Which role do small towns play for international migration?

### **Theoretical-conceptual background**

Small towns are a distinctive and hitherto under-researched settlement type - a “perception gap in spatial research” (ARL 2019, 4). The “broad picture” of small towns remains largely incomplete (ARL 2019, 4; Bell and Jayne 2009; Demazière 2017) aside from several quantitative studies on the national and European scale (e.g. Spasic and Petric 2006; Powe et al. 2009; Porsche and Milbert 2019; ESPON 2013; Wolff and Wiechmann 2017; Bretagnolle et al. 2019).

From a definitional perspective, small towns can be conceptualized by three basic approaches (ÖIR et al. 2006). A (1) morphological definition defines a small town by density and continuity of the built-up area; (2) an administrative definition defines a small town as a territorial unit of local government with a certain minimum population and functions within the administrative boundaries; (3) a functional definition defines a small town as the core of an urban (functional) region, as measured through travel-to-work relations and the concentration of jobs, services and other functions that serve other settlements in the hinterland. For Europe, the ESPON project TOWN defines small towns as morphological units with a population of between 5,000 and 25,000 inhabitants and a population density of more than 300 inhabitants per km<sup>2</sup> (ESPON 2013). According to this definition, there are 7,348 small towns in Europe (80% of all urban morphological units) that are home to 15% of the total population. Wolff and Wiechmann (2017) detect

5,122 small towns in Europe (66% of all urban municipalities) using an administrative definition with a minimum density, share of built-up area, and a population of between 5,000 and 25,000 inhabitants. They found that, between 1990 and 2010, the population of around 18% of small towns declined in contrast to 68% which experienced population gain (in 14% the development was stable). In comparison, the share of shrinking urban units is higher among the bigger cities (e.g. 25% of the cities between 100,000 and 500,000 inhabitants).

From an analytical perspective, the territorialist approach can be used to exemplify three scalar relations. The first scalar relation refers to the relationship between small towns and the corresponding region and assumes that regional dynamics are essential factors of socio-economic dynamics in small towns (Servillo et al. 2017; Wolff and Wiechmann 2017). This includes the challenges related to globalisation and increasing international migration (e.g. Woods 2018 for Ireland) or national factors that shape the population trajectories of small towns (Smith 2017). Second, a “horizontal” spatial relation between the development of small towns and their proximity to larger centres (Camagni and Capello 2015) where proximity can be understood in terms of physical distance, economic or commuter flows etc. defining the accessibility of a town towards a larger centre. For instance, a lack of accessibility can have negative consequences, such as economic downturns and selective out-migration (see e.g. Makkai et al. 2017 for Hungary; Weber and Fischer 2012 for Austria; Krzysztofik et al. 2019 for Poland; Lazzeroni 2020 for France and Italy; Hoekveld 2014 for the Netherlands). In contrast, small towns might also benefit from “borrowing” agglomeration effects while avoiding agglomeration costs based on their proximity to centres (Camagni and Capello 2015). Third, thinking about scale in terms of temporal dimensions allows us to understand the current development of small towns as a result of their historical evolution. Shrinking towns can be a result of

long-term ageing processes (see e.g. Caselli et al. 2020 for Italy; Janiszewska and Klima 2019 for Poland) and historical path dependencies (see e.g. Novotný et al. 2016 for Slovakia). A historical relation allows also to detect large scale patterns, for example, the major slowdown of urban growth in the 1970s and its consequence for today's spatial patterns (counter-urbanisation, Champion 2001; Guérois et al. 2019).

## **Data and methods**

We use the official German definition for small towns which is based on both population size and centrality. A small town is a municipality with between 5,000 and 20,000 inhabitants or “with at least formal functions of a basic or lower-order centre and partial functions of a middle-order centre” (ARL 2019, 3). These functions are identified in regional plans and cover, among other things, the basic needs (daily requirements) of the population and providing a minimum level of public and private infrastructure (secondary school, family doctor, pharmacy, retail, etc.). According to this definition, there were 2,106 small towns in Germany in 2017, which translates into 46.5% of all municipalities. These small towns are home to 29.2% of the German population (Porsche et al. 2019, 7).

To ensure comparability with other scholarly work dealing with urbanisation pathways, population development was used as an easily accessible and frequently used indicator (Beauregard 2009; Turok and Mykhnenko 2008). The data on the level of municipalities was provided by the regional statistical offices for 1991, 2001, 2011, and 2018 (StÄdBL 2019) and from EUROSTAT (2019) for 1961, 1971, 1981, and 1991.<sup>1</sup> For each decade

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<sup>1</sup> German data refers to the 31.12 of each year while Eurostat data refers to 1 January of the following year. We decided to indicate the year of the date referring to 1 January of each year.

we calculated the annual population growth rates as follows:  
$$\frac{[POP_{T_2} - POP_{T_1}] * 100}{POP_{T_1} * \Delta Years}$$
 We used the municipal boundaries as of 31.12.2017 (BKG, 2019) and recalculated all data accordingly to ensure comparability over the decades. This methodological decision entails a certain overestimation of the number of small towns, in particular towards the beginning of the period under consideration, as municipalities might have passed the population threshold at a later point in time as a result of population growth or administrative reforms. However, we applied this method as the most commonly used one in longitudinal analysis on population change as historical criteria of certain functions are not available (for a comparison of methods see Guérois et al. 2019). This methodology is also in line with many other comparable studies on population change (e.g. Bretagnolle et al. 2019; Wolff and Wiechmann 2017). Migration data according to nationality was also collected for each year between 2012 and 2018 at the district level as this indicator is not available at the municipal level and for earlier dates (StBA 2019).

The analysis was performed in three steps. First, we classified the annual population growth rates (see Figure 2 and 3). We used the software Slider ([www.slider.parisgeo.cnrs](http://www.slider.parisgeo.cnrs)) to produce frequency plots for the changes over time. We introduced a regional differentiation (Kippes 2015) to distinguish between Eastern, Northern, West-Central, and Southern Germany and analysed the relationship between growth rates and town size using  $R^2$  statistics (see Figure S1).

Second, we analysed the proximity to larger urban centres, defined as municipalities with at least 50,000 inhabitants in 2018 (following international standards, ESPON 2013; Servillo et al. 2017). Proximity is defined as the shortest Euclidian distance to the nearest large urban centre. The corresponding proximity value is then contrasted with the

individual annual population growth rate for each decade using  $R^2$  as a measure for the relation between the two sets of values (see Figure S1). In order to mirror the spatial distribution of this relation, we created nine types for the period 2011 to 2018 ranging between population decline, stagnation and growth (using  $\pm 0.15\%$  as limits), as well as very near, near and far proximity categories (using terciles as limits to form three groups of the same sample size, Figure 4 and 5).

Third, due to missing data on the municipal level, we calculated the share of foreign citizens on the total number of migrants from 2012 to 2018 for the 401 districts of Germany. This share is contrasted with the share of the population in small towns as a proportion of the total population of a district in 2018. For both sets of values we used a threshold of  $\pm 5\%$  around the rounded median value, resulting in five types (see Figure 6). We chose 2012 as the year in which the free-movement-regulation within the European Union was introduced.

### **Contextualizing small towns in Germany**

Before focusing on the three scalar relations for small towns in Germany, we briefly contrast small towns with other settlement types in order to understand their role within the urban hierarchy.

Small towns and rural areas have shown the highest average growth rates in the 1990s (Figure 1) as a result of high internal migration (Leibert and Schaarwächter 2019), the immigration of asylum-seekers and late-repatriates (*Spätaussiedler*), and a particularly strong suburbanisation wave (Münter 2014). Due to the dynamics and selective nature of migration, this demographic process has had a strong impact on the population

development of all settlement types. The intensity of both international and internal migration decreased considerably in the 2000s (Wolff and Leibert 2016). The number of international immigrants increased again after 2010, in the aftermath of the global economic and financial crisis. Factors such as the introduction of the freedom-of-movement-regulations within the European Union in 2012, international conflicts, and the arrival of a large number of asylum-seekers and refugees in 2015–16 have also contributed to an increased migration intensity in Germany (Körner-Blätgen and Sturm 2015; BBSR 2015). Consequently, the rate of internal migration has increased as well (BBSR 2013), as refugees from initial-reception-centres are distributed to the urban and rural districts (Glorius 2017) and approved asylum-seekers moved to metropolitan areas due to more favourable opportunities for work, support infrastructures, and existing migrant communities (IWH 2019). Hence, immigration is not contributing to a positive population trajectory all over the country, but only in selected areas – e.g. large cities as they are particularly attractive for migrants in terms of living conditions, availability of jobs, or educational infrastructures (Slupina et al. 2016). In addition to the changes in the overall population numbers, migration also contributes to changes in the population structure, e.g. in terms of ethnicity, gender, or age (Leibert 2019). With the high numbers of migrants, asylum-seekers, and refugees who have arrived in Germany since 2012, small towns face both challenges of integration and opportunities of demographic stabilisation. Due to the poor availability of detailed data at the local level, it is unfortunately difficult to determine the role small towns play in the integration process of international migrants.

Since 2011, all settlement types have, on average, experienced new or reinforced population growth. In contrast to the previous decades, this might suggest an average convergence of population development trends between settlement types leading to

reduced regional differences. The average values, however, do not indicate to what extent a convergence of population trends could also be observed within each settlement type. Moreover, contrary to the trends in the 1990s and 2000s, which are chiefly associated with the diverging economic development of East (German Democratic Republic GDR) and West (Federal Republic of Germany FRG) Germany, figures 1B and 1C show long-term systematic differences. Small towns in the FRG experienced the strongest population growth during the 1970s and 80s. At the same time, population development in the GDR reflected the urban hierarchy: the larger a settlement, the stronger the population growth.

Figure 1: Average annual population development of settlement types 1961–2018.

Since the turn of the millennium, the urban hierarchy has been a good predictor of population growth in Germany with larger cities growing on average at the fastest and rural areas growing at the slowest rate (figure 1A). In contrast, depopulation in the former GDR in the 1990s was primarily caused by urban decline while small towns and rural areas experienced strong population growth. This applied especially to small towns and rural areas in the vicinity of larger cities but was not limited to this settlement type. Proximity to larger cities was hence a decisive factor for the population growth of many small towns. Figure 1A suggests a changing relationship between the demographic development of small towns and their spatial relationship to other settlement types. For instance, small towns experienced the strongest growth rates in two periods: in the 1970s and 80s – decades with a certain urban growth-orientation – and in the 1990s, with a pronounced trend of rural population growth.

## **Results**

### *Population trajectories of small towns*

The population growth rates of small towns in Germany have changed over the decades leading to patterns of both convergence and divergence between regions.

Between 1961 and 1991, the variance of growth rates decreased in all regions while the considerable difference between population loss and growth remained. The intensified growth of the 1960s and 70s slowed down and was accompanied by a trend from divergence to convergence of growth rates (Figure 2). In the 1960s, most of the small towns in the then-GDR saw an overall population decline. However, the decline was rather moderate and several small towns grew as a result of the regional and economic planning policies of the GDR which channelled migration flows towards new industrial centres or established district seats (Rink, 2011). From the 1970s, in particular, small towns in the south of the GDR lost population while the newly emerging industrial towns in the north, like Schwedt or Eisenhüttenstadt, grew considerably. After 1991, however, the growth rates of formerly growing small towns and industrial centres declined as a consequence of East-West migration. This led to a quite homogenous decade until 2001 in terms of population development, during which most of the small towns in Eastern Germany shrunk at similar rates (convergence, Figure 3).

For small towns in the FRG, growth rates were highest in the 1960s. However, the growth slowed down in the 1970s except for small towns close to larger cities (Figure 2). In particular, in West-Central Germany the variance of growth rates decreased, leading to a convergence of growth rates until 1991 (Figure 3). In contrast, the variance of growth rates in Northern and Southern Germany was quite high, although the growth rates have decreased over time. Moreover, in the 1980s a clear difference between Northern and

Southern Germany is obvious with very pronounced population growth in the South (Figure 3). Population development in the FRG varied between growth in economically prosperous areas of Southern Germany and the suburban hinterland of larger cities, and stagnation or even shrinkage in the Northern and Western regions (Figure 2, see also Häußermann and Siebel 1987; 1988; ARL 1995).

Figure 2: Annual population development in small towns from 1961 to 2018.

Reunification marked a clear break with previous trends in all regions. The loss of 1.4 million jobs in the former GDR between 1989 and 1994 has led to massive East-West migration (BPB 2010). Small towns in virtually all parts of West Germany have benefited from this exodus. Aside from East-West migration, the population development of the Eastern *Länder* was characterised by a short but intensive suburbanisation wave that lasted until the mid-1990s. This trend was associated with very pronounced growth of small towns near larger cities while most of the small towns in rural areas significantly lost population (Figure 2).

In the 2000s, the growth of small towns in all German regions slowed down (Figure 3) with the notable exception of some economically prosperous regions, e.g. around Munich. Population decline was the dominant trend in small towns in Eastern Germany, except for a belt around Berlin. This population loss can be traced back to out-migration and a drop in fertility rates (Haase et al. 2006; Kil 2004; Lüdtke-Daldrup 2003). Additionally, in West-Central Germany, structurally weaker regions were faced with population losses and out-migration (Figure 3, Siedentop and Wiechmann 2007; Herfert 2002). This slowdown of growth is also connected to a change of trends in the population

development of large cities, namely the incipient reurbanisation and an affiliated decrease in suburbanisation (Nuissl and Rink 2005; Haase et al. 2010; Herfert 2007).

The 2010s marked another turning point for small towns throughout the country, showing increasing growth rates, less pronounced decline in East Germany, and regrowth in West Germany. After a convergence trend of growth rates between all German regions from 1961 to 2011, that was interrupted by the turbulent demographic consequences of reunification, the major sequences in Figure 3 suggest the possibility of a new phase in which trends of population growth and decline are diverging. For instance, in West-Central Germany many small towns continue to lose population while an equal number experience new or continued population gain. A similar increase of variance can also be observed in Northern Germany. In Eastern Germany, growth is concentrated around larger cities (similar to the 90s) while the majority of small towns still lose population. However, Figure 3 shows that this loss is less pronounced than in the 1990s; as a result, almost all small towns are experiencing an improvement in their growth rates. In Southern Germany, the growth of small towns is similar to the 1980s and clearly restricted to economically prosperous areas (Figure 2), with the large majority experiencing improved growth rates similar to Eastern Germany (Figure 3). Figure 2 also shows a remarkable continuity of pockets of depopulation in the Western *Länder*, e.g. in the Bavarian region of Upper Franconia, the Palatinate highlands, Northern Hesse and the south-eastern part of Lower Saxony.

Figure 3: Frequency plot showing changes between classes of annual growth rates in small towns from 1961 to 2018 per region.

There may be several reasons for this divergence. The resurgence of international migration had a considerable impact on population growth in the period 2011–2018. Re-urbanisation, accompanied by new population growth after a period of decline, was reported for larger Eastern German cities like Leipzig (BBSR 2015), but could also include small towns. The reasons are diverse and range from demographic explanations, such as the second demographic transition (Steinführer and Haase 2007), socio-economic trends of shifting gendered patterns of employment (Häussermann 2009), the divergence of job and life due to multi-locality (Montanari et al. 2013; Kabisch et al. 2012), and economic explanations such as the shift from Fordist to Post-Fordist modes of production (Menzl 2014). The selective out-migration of young adults, and especially young women, has led to a dynamic ageing process, decreasing levels of qualification among the remaining population, increasing unemployment rates, and infrastructure divestments in economically weak rural regions (Leibert 2016; 2013; Schumacher and Kunz 2016; Neu 2016). In many shrinking small towns, particularly in Eastern Germany, a persistent structural crisis keeps these areas on a long-term trajectory of depopulation that is reinforced by natural population losses (Fink et al. 2019). The role of factors such as economic performance and city size has also changed since the 1960s. While particularly small towns have grown between 1961 and 1971, they have grown faster between 2011 and 2018 the larger they are (see Figure S1).

The reason why some small towns experience continuous population growth while others are faced with decreasing population numbers might also be related to spatial proximity to larger centres. Furthermore, the question as to what extent (international) migration can compensate for losses due to negative natural population development is decisive for the population development of small towns.

### *The influence of proximity to large centres on the development of small towns*

During the 1960s, the population growth of small towns was faster the closer they were located to larger centres. During the following decades, this relation weakened more and more and became particularly weak in the 1980s. In the early 2000s, the relationship between population growth and proximity to urban centres reappeared: the further away a small town is located from a larger centre, the faster it shrunk. In the most recent period 2011–2018, however, this relationship weakened again (see Figure S1).

Contrary to the regions in the FRG, proximity to larger centres in the GDR was not that important for the growth of small towns – in fact, the closer a small town was located to a centre, the faster it lost population (Figure 4). This is because, during the GDR period, housing construction concentrated on the larger cities. Moreover, small towns located close to large industrial centres often suffered from bad environmental conditions, as in the case of the Leipzig-Halle region. After reunification, small towns in Eastern Germany experienced a complete turnaround in their population development, with average growth rates far exceeding those of the other regions. In contrast, small towns further away from centres (>50km) have been facing continuous population decline since the 1960s – only in the most recent period 2011–2018 have population losses started to slow down.

The average growth rates of small towns in the remote regions of the Western *Länder* are not oscillating as widely as for small towns that are in closer proximity to centres. For these municipalities, larger distances allow rather a continuous development of population growth or decline while small towns in the area of influence of urban centres experience stronger fluctuations in population growth rates. This is, in particular, visible

in Southern and Northern Germany (Figure 4). For many of these small towns, the impact of natural losses is an important reason for the unfavourable long-term population development reinforced by the absence of in-migration.

Figure 4: Average annual population development in small towns in relation to proximity to larger urban centres 1961 to 2018 per region.

Small towns in Western Germany near centres have experienced the strongest average growth among all regions since the 1960s – particularly in the 1990s. This has been the result of the overall population growth after reunification caused by high East-West migration. An exception is Northern Germany, where small towns in the mid-range of centres experienced the highest average growth (Figure 4). Between the 1990s and the early 2000s, small towns saw a similar drop in their average growth rates that were independent of their relative location to larger centres. This is obvious for West-Central, Southern, and Eastern Germany (Figure 4). Since the 2000s, many small towns in suburban areas around economically weaker urban centres have been facing significant ageing of their populations, declining housing prices and increasing probability of vacancy rates due to a new orientation towards cities (Münter 2014; Friedrich et al. 2014; Zakrzewski et al. 2014). This development is particularly visible in suburban areas of Eastern Germany, for example, around the cities of Halle (Saale), Schwerin, or Erfurt, which all show a turnaround of population loss 1991–2001 towards population gains in 2001–2011 (Figure 2). Overall, the classical suburban model that is characterised by the focus on children and home-ownership, and which was expressed by a certain

homogeneity of the suburban areas in terms of building structure or social and lifestyle patterns, is under increasing pressure (Häussermann 2009; Menzl 2014). Due to changes in society and the job market, suburban areas have diversified depending on their attractiveness to families, or because of housing prices and transportation options (Münter 2014).

Figure 5 displays the location of nine types showing the different relationships of proximity and population development for the period between 2011 and 2018 (the reader is reminded that in this period this relationship is among the weakest, see Figure S1). Most of the growing small towns are located in the vicinity of larger centres (22% of all small towns). For example, this is the case in the corridor between Frankfurt (Main) and Karlsruhe, around Munich and Stuttgart, as well as around large cities in Eastern Germany like Berlin, Leipzig or Dresden. In West Germany, suburbanisation is still a dominant process, in particular in growing metropolitan areas (BIP 2019; Bertelsmann Stiftung. 2015). This tendency is, among other factors, a result of the spatial redistribution of residential, economic or infrastructural functions from the fast densifying urban core towards the suburban hinterland (Schulz 2014). These areas also absorb the increasing land-use demand, in particular, for residential and commercial use. As a result, such areas are rapidly densifying through the construction of residential buildings or new infrastructure for transport, supply, and consumption.

About 15% of all small towns have grown although they are located far away from large centres (this represents the third largest group of all small towns, Figure 5). The reasons for this are various. First, the growth of metropolitan areas such as Hamburg or Berlin can spill over longer distances if good accessibility due to low proximities is provided (Siedentop and Uphues 2015; Born 2011). Good accessibility leads to increasing numbers

and frequencies of flows, e.g. for commuting or recreation activities, usually followed by the extension and construction of infrastructure networks (Wolff and Leibert 2016). The increasing influx of young families, for example, or the fact that they choose to stay, results in a younger age structure.

Figure 5: Typology of proximity to larger urban centres and population development of small towns, 2011 to 2018.

Second, small towns far away from centres can also grow (Danielzyk 2007). Several small towns are central places for their rural hinterland. Infrastructure such as (public) transport, educational facilities, or health care can be attractive e.g. for elderly or families and can lead to population growth (Glasze and Graze 2007; BIB 2014; Steinführer and Kohring 2019; BIB 2019). Consequently, even though they are comparably far away from large centres, small towns like Bitburg, Parchim, or Tönning are growing because of such “anchor-functions.”

Third, small towns in touristic areas such as Cochem, in the vine valley of the river Mosel, or the Baltic resort Binz, benefit from growth as they are attractive as places to live and work. This is not least because they are better equipped with infrastructure facilities than comparable small towns outside tourist regions due to the additional demand and spending power of tourists. Fourth, small towns that are far away from large centres can grow simply because the whole region is growing (see Danielzyk 2007 for the Emsland region of Lower Saxony). Finally, the in-migration of asylum-seekers and refugees, in particular, can significantly influence the population development of small towns, which

are the locations of initial-reception-centres (*Erstaufnahmeeinrichtungen*) or other accommodation for refugees.

Almost half of all declining small towns are located far away from large centres, particularly in large parts of rural Eastern Germany, but also in some areas of West-Central (e.g. Northern Hesse) or Southern Germany (e.g. Upper Franconia, Upper Palatinate) (Figure 5). These small towns face the interrelated and mutually reinforcing challenges of peripheralisation: out-migration, a weakening and disconnection of socio-spatial uncoupling, dependence, and stigmatisation (Keim 2006; Leibert and Golinski 2016; Neu 2016; Kühn and Weck 2013).

Declining small towns near larger centres represent the smallest group among all small towns. Still, they account for 17% of all small towns and are chiefly located in structurally weak and old industrial regions (e.g. in Saarland). Consequently, distance is not as decisive for population growth. This is because many factors play a role, such as local potential, infrastructure equipment, and the role of (international) migration. It needs to be noted that the size of the corresponding centre impacts the trajectory of the small towns within a certain proximity. Based on our analysis we can draw the conclusion that the relationship between growth rates and proximity is strongest when small towns are located in the influence sphere of bigger agglomerations: the closer smaller towns are located to a bigger centre the more quickly they grew between 2011 and 2018 (Figure S2). Besides, the larger the centre, the stronger is this relation. In contrast, the size of the small town itself does not have an impact on this relation. Displaying the complex interrelations based on various transport networks and polycentral settlement relations is however clearly beyond the scope of this paper.

### *The relevance of international migration for small towns*

Birth rates have been below replacement level for more than 50 years in Germany (Kohler et al. 2002). Against this backdrop, population growth depends on a positive migration balance. Especially structurally weak regions are locked in a vicious circle of age- and sex-selective outmigration, depopulation, and a deterioration of their reproductive potential (Weber und Fischer 2012). The out-migration of young adults and in particular young women reinforces the ageing process in the region of origin and leads to an increased probability of above-average death rates and future population losses (BIB 2019; Leibert 2016). Long-term shrinkage of rural areas has and still does dominate large parts of Eastern Germany – a process that is even intensifying in particular related to natural population decline. Moreover, there are also regions in West Germany which are showing an unfavourable population structure and consolidating population losses, e.g. in the south-eastern part of Lower Saxony, Saarland, or east Westphalia. During the last couple of years, this structural shrinkage was “mitigated” or even “compensated” due to the assignment of refugees to the corresponding regions (Leibert 2019) – the assignment happened for formal regulations of refugee distribution and did not represent a deliberate measure to support shrinking areas. However, immigration of refugees can, at best, mitigate the shift in the age structure to a limited extent, but not turn it around (Weber 2015).

In recent years, migration has become an important driver of population growth in Germany. Since 2011, many districts have benefited from high numbers of international migrants, notably the large cities and their respective hinterlands (Figure 6). The regions with both comparably high volumes of international migration and a high shares of the population living in small towns are mostly located in Southern Germany, around

Frankfurt (Main), and in the North-West (Emsland and Oldenburg Münsterland regions of Lower Saxony). In these regions, international in-migration significantly contributes to the growth of small towns. This might lead to a qualitative shift in population structure. Foreign citizens are predominantly of childbearing age (2015: 72% between the ages of 15 and 45, Leibert 2020) and thus contribute to a rejuvenation of the population. However, the slightly improved natural population development since 2013 (Wolff and Leibert 2016) is only a limited consequence of increased international immigration, as immigrants are predominantly male (2015: 71% between the ages of 15 to 25, 60% between 25 and 40).

In the Eastern *Länder*, the share of foreign nationals is considerably lower than in the West. Only districts that host initial reception centres for refugees (*Erstaufnahmeeinrichtungen*) show high volumes of international migration. Among these districts, only four also have a high share of the population living in small towns. Given the unclear prospects and preferences of the refugees in terms of staying in Germany in general and in structurally weak regions in particular, it is rather unlikely that this type of international migration will contribute to long-term population growth.

Figure 6: Typology of the share of small towns and migration of foreigners in districts, 2012 to 2018.

## **Discussion: Contextualising small towns in Germany**

The dynamics of small towns in Germany outlined above are the result of a complex interplay of historical, regional, national, and even international factors (e.g. BIB 2019; Fink et al. 2019). Coming back to our initial research questions, we discuss our results presented in the previous section along with the three conceptual-theoretical scales that correspond with them.

### ***Trajectories***

From a historical perspective, small towns are the most dynamic settlement type in Germany. Looking at aggregate statistics, small towns have been, on average, the fastest growing settlement type in the 1960s and 1990s, as a consequence of counter-urbanisation and suburbanisation (Cattan et al. 1999; Champion 2001). However, both processes are expressed differently in East (GDR) and West Germany (FRG). Counter-urbanisation was an important aspect of spatial development in the FRG, but virtually absent in the GDR.

The comparison to other European countries suggests that small towns in West Germany show similar growth patterns as other Western European countries. However, small towns in East Germany is not following in the footsteps of other former state-socialist states (Guérois et al. 2019). While proximity to larger centres was decisive for the growth of small towns in the FRG before the 1980s, it was a key factor for the boost in population growth rates in East German small towns only after the 1990s. This strong suburbanisation process in East Germany is also not comparable to the parallel development in other Eastern European countries where, in turn, growth rates slowed down considerably during the 1990s (Bretagnolle et al. 2019; Guérois et al. 2019).

The average growth rates suggest a convergence of the development of small towns between East and West Germany only from 2001 onwards. During the 2000s, small towns experienced the lowest average growth rates. This was, basically, not the result of internal factors, but rather the attractiveness of larger cities at the beginning of the re-urbanisation phase (Buzar et al., 2007; Cheshire, 2006). Between 2011 and 2018, however, small towns experienced a revival of population growth similar to the other settlement types in both parts of Germany.

However, the individual trajectories of small towns and their mapping suggest that there is neither a convergence in terms of spatial distribution nor of development paths between East and West Germany. While in West Germany small towns are growing with – on average – similar rates as large or medium-sized cities, small towns in East Germany are still shrinking. The three most frequent sequences of trajectories for East Germany show that the majority of small towns have experienced a constant population decline. Many small towns, particularly in East Germany, still suffer from the long-term effects of natural population loss and ageing. If these natural losses intensify, even small towns with migration gains will face population loss. This intensification is very likely as, for instance, more than 50% of the inhabitants in small towns are over 50 (see Leibert, 2020 for Saxony). This indicates a long-term impact of natural population development that increases over time depending on the age structure. This ageing, in particular in small East German towns, is comparable to central Italy or central France (Cauchy-Duval et al., 2017). But it is completely inverse to the general tendency in Poland, Slovakia and, to some extent, the Czech Republic where smaller cities are comparably young (Bretagnolle et al., 2019). If looking for converging or diverging trends, a finer regional differentiation within Germany is needed. Our results indicate a slight convergence of the development of small towns between the regions Eastern and West-Central Germany between 2011

and 2018. As the average growth rates in Eastern Germany increase while they decrease in West-Central Germany, it can be assumed that the underlying factors differ, however.

### ***Proximity***

Another explanation for the different patterns of divergence and convergence is proximity to larger centres. In Eastern Germany, for instance, the three agglomerations Berlin, Dresden and Leipzig drive the growth of nearby small towns. All over Germany, the relationship between proximity to a centre and the growth rate of a town has gotten weaker in each decade from 1961 on. Consequently, there is a large variety of patterns in the most recent decade from 2011 to 2018.

Just 10% of all small towns suffer from low accessibility: they are located far away from urban centres and experience population decline. This type of small towns can also be found in other European countries, e.g. France, Spain, Sweden, and Romania, where remote small towns are rapidly ageing (Bretagnolle et al. 2019). In contrast, 15% of small towns grow even though they are also located far from centres. This also reflects the settlement structure of the different federal states and allows us to draw conclusions about regional spatial policies. Located in rural areas, these small towns can perform important anchor functions for the ageing population in their surroundings by providing infrastructure and services, even leading to rural gentrification (Mayfield et al. 2005; Van Leeuwen 2010). These small towns are essential for avoiding rural depopulation and ensuring territorial cohesion (European Commission 2011; Demazière 2017). However, they could also draw population from the surrounding areas, e.g. from elderly populations due to retirement migration (Steinführer and Kohring 2019). Our analysis has found no

evidence that the size of a town is more important compared to the interurban competition or political, social and economic functions (see also Camagni and Capello 2015). For instance, Eckardt (2006) demonstrated that a medium-sized city like Weimar (65,000 inhabitants) is of national historical and cultural importance. Consequently, any quantitative assessment needs to rely on local case studies (Bell and Jayne 2017; Wolff and Haase 2019).

Still, the majority of small towns benefit from proximity to economically strong centres, for instance in Southern and Western-Central Germany but also in Eastern Germany (22%). On the one hand, this is an effect of “borrowed size” (Alonso 1973), which describes, based on physical distance, the extent to which small towns and cities can (economically) grow thanks to nearby large urban centres (Scott 2001; Camagni and Capello 2015). On the other hand, small towns close to large urban centres can also grow as a result of the latter’s agglomeration disadvantages (e.g. congestion, noise, pollution, and social challenges, see BIB 2019; Fink et al. 2019). In particular, housing markets in many agglomerations have become increasingly tight in the wake of strong population growth since 2011. Deficits in new construction or the refurbishment of affordable and/or family-friendly housing lead to housing market bottlenecks and, eventually, to the displacement of low-income or price-sensitive households (DMB 2016; Helbrecht 2016; Rink et al. 2014). Favoured by the current phase of low-interest rates and the resulting ease of acquisition of owner-occupied homes, these effects make the surrounding areas potentially more attractive as destinations for both supra-regional and intra-regional migration (Münter 2014).

The extent to which small towns in the hinterland of large centres will continue to benefit from either the borrowed size effect or agglomeration disadvantages of the corresponding larger centres largely depends on inter-local competitions (Geppert and Gornig 2010;

Born 2011). It is not foreseeable that rents and real estate prices will significantly decrease in the medium term (Feld et al. 2017), especially with sharpening competition between different municipalities in the vicinity of larger centres. Also, our historical analyses have shown that the effect of being near urban centres is weakening. This is a result of the increasing mobility of the workforce and the fact that proximity of small towns and cities is less and less based on physical distance and more and more on flows between locations also in far distances (Camagni and Capello 2015). Consequently, economic factors and demographic effects are increasingly decoupling. In contrast to other continents, the relationship between city size and economic performance has limited relevance in Europe (Demazière 2017). Therefore, small towns could have some advantages due to their relatively lower level of socio-economic complexity compared to large agglomerations, which allows creative responses to challenges (Hamdouch et al. 2017).

### ***Migration***

International migration and the distribution of refugees and asylum-seekers to the *Länder*, districts, and municipalities can lead to migration gains even in small towns with long-term population decline and an unfavourable age structure. In Germany, 90 districts with a considerable share of small towns have experienced a population gain through international migration. However, looking at the regional distribution, the majority of districts of this type are located in Southern and Northern Germany – the regions with the strongest population growth of small towns between 2011 and 2018. After 2011, international migration has contributed to the demographic stabilisation of small towns. In many cases, however, population growth has nothing to do with the attractiveness of the destination itself, but rather with the centrally managed allocation of refugees. Also,

international migration has declined recently and foreign citizens are increasingly leaving small towns and rural municipalities towards the larger cities where they expect better integration opportunities, more advanced cultural and ethnic networks as well as more diverse job opportunities that improve their prospects of staying (IWH 2019).

For small towns with high vacancy rates, the allocation of refugees is discussed as an opportunity for economic and demographic resurgence (Wolff and Rink 2019; Fuhrhop 2016). However, a population gain through international immigration can just be reported for four districts in Eastern Germany with a considerable share of small towns. In contrast, in some small towns, international immigration in combination with high costs of living has increasingly taken a political and social dimension in recent years (Fink et al. 2019). It can be observed that the increasing withdrawal of politics, business, and services of general interest lead to a lack of infrastructure and jobs in these small towns giving rise to growing right-wing populism (Hillje 2018). Thus, a “persistent problem situation” can emerge ranging between demographic, social, and political challenges (Förtner et al. 2019).

Most importantly, the quantitative magnitude of international migration masks the migration patterns of persons of German nationality since 2011 (Wolff et al. 2020). Migration losses among the population of German nationality in the economically prosperous south of Germany also indicate a decoupling of demographic and economic factors among the complex push and pull factors for migration motives (Wolff and Leibert 2016). Since then, at the latest, it can be concluded that population decline in small towns is rather the result of a lack of attractiveness for in-migrants than the consequence of disproportionately high out-migration. This problem is aggravated by the gradually decreasing number of people with the highest probability of migration (young adults between 18 and 30). This is a consequence of natural population decline and earlier

selective out-migration which results in declining numbers of births because potential parents have moved away. Therefore, despite a current “demographic respite” due to increased international migration, many small towns continue to face the long-term consequences of ageing, continued selective out-migration, and declining birth rates.

## **Conclusion and outlook**

Across Germany, population growth is not solely concentrated in larger cities; neither is decline an exclusive characteristic of small towns. In turn, small towns are not only located in rural areas but are also part of larger metropolitan areas (BIB 2019). Although a favourable population trend can be currently observed for many small towns in Germany, the differences between population growth rates are diverging more significantly than the differences between settlement types (urban, rural, small towns). Consequently, small towns are the most dynamic settlement type in Germany and, at the same time, extremely heterogeneous in terms of trajectories and underlying driving factors.

This emerging spatial differentiation between small towns requires robust conceptualisations considering the diversity and interrelation of, and interaction between, local and contextual factors (Fink et al. 2019; BIB 2019). This paper applied a threefold conceptualisation of scalar relations, which can also be applied to national assessments in data-scarce countries: historical, inter-local, and regionally embedded relations. The results allow us to conclude that international migration results in a current “demographic respite” for the majority of small towns. At the same time, these small towns see themselves confronted with the increasing competition due to more complex flows, e.g. of employees, money, information etc. (Wolff and Wiechmann 2017). Further quantitative assessments are required to answer the question of whether intermediate

areas such as urban hinterland municipalities and small towns will play a stronger role in regional population development. In particular, further research is needed on the changing impacts on migrants' preferences e.g. on the role of small towns as places for a retreat from larger cities during the challenging times of COVID-19 pandemic. The quality of life and social capital of small towns can be a decisive factor for the development of larger cities in the future. Small towns in rural areas can make a decisive contribution to the question of whether an entire region will shrink in the long term or stabilize as these small towns provide certain anchor functions such as schools or hospitals. To this end, it is, however, necessary to broaden the view to factors beyond demographic processes such as economy, infrastructure, investment, accessibility, or poverty. We must raise the question: Do we have the appropriate process-understanding, terms, categories, and tools to meet the complexity of small towns in our investigation? In this sense, it is not uncovering patterns of convergence or divergence which is of most interest, but the (de)coupling of certain factors across temporal and spatial scales.

From the perspective of spatial planning, quantitative national assessments are needed to prevent undermining the local potential of small towns but rather bring them (back) on the list of priorities of national and supranational policy fields (Demazière 2017). Despite many excellent assessments for Europe (e.g. ESPON 2013, Bretagnolle et al. 2019), and the 2015 Latvian Presidency of the EU, which placed the topic of small towns on the EU Cohesion and Territorial Development policy agenda (Latvian Presidency 2015), the attention in science and policy has shifted back again to larger cities. It is thus more essential than ever to quantify the role of small towns for the territorial development and to qualify small towns as a coherent analytical category despite conceptual and methodological difficulties. This paper seeks to contribute to this ambitious endeavour.

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## **Annexe**

Figure S1: Average annual population development in small towns in relation to proximity to larger urban centres (left) and size of towns (right) 1961 to 2018.

Figure S2: Average annual population development in small towns in relation to proximity to larger urban centres (left) and size of towns (right) 2011 to 2018, differentiated by three categories of urban centres.