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Urban development beyond a centre-periphery dichotomy: An analysis of small and medium-sized towns in Denmark

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Abstract

There is growing European policy interest in the potential of small and medium-sized towns (SMSTs) to contribute to more balanced territorial development. National policy in Denmark has only recently begun to address SMSTs directly. Often, the development of SMSTs is reduced to either being part of larger urban regions or, in the case of rural areas, hidden behind broader regional development agendas. A key research question is therefore which development paths can be detected beyond the growth–decline dichotomy. Against this backdrop, the ESPON TOWN DENMARK project (2022) juxtaposed general trends of growth and decline in population and employment in Danish SMSTs with other aspects such as demography, education, industry, service provision and regional position. We develop and apply an analytical typology adding more nuances to SMST pathways within and outside metropolitan areas.

Keywords

Towns, typology, regional development, service provision, demography, employment

Introduction

Development policies and strategies of small- and medium-sized towns (SMSTs) are often reduced to either being part of larger urban regions or, in the case of rural areas, being an add-on to regional development agendas (Demazière, 2017). This suggests a dichotomy between centrally and peripherally located SMSTs. Despite their obvious functional embeddedness in urban systems, small and medium-sized towns differ greatly in their assets and functions (Servillo & Paolo Russo, 2017). Differences can sometimes be more substantial among towns within the same region than between regions (Atkinson, 2017; ESPON TOWN, 2014). Furthermore, many SMSTs are the administrative centres of local authorities and centres for local democracy and decision-making.

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There is growing policy interest in the potential of SMSTs to contribute to balanced territorial development (Rauhut & da Costa, 2021). The EU Territorial Agenda 2030 explicitly calls for the exploitation of their “potential to cushion polarisation” (Territorial Agenda, 2020, §47). In many European countries, new policies were recently established to support small town development (Pertoldi et al., 2022).

In Denmark, development disparities between central and peripheral areas came under public scrutiny and debate from the early 2000s. However, it is only recently that national policy has started to address SMSTs more directly. Several policy initiatives are planned to redirect both national and EU funding towards SMSTs, ranging from supporting the improvement of organisation and strategic capacity, to investments in physical change.

A lack of knowledge hinders the more precise identification of the key drivers of local development and impedes local improvement in small and medium-sized towns. Against the backdrop of this knowledge gap, the ESPON TOWN DENMARK (2022) project juxtaposed general trends of growth and decline in population and employment in Danish small and medium-sized towns with other key aspects of local development such as demography, educational and industrial structures, service provision and the regional position of towns. We apply an analytical typology, adding more nuances to SMST development pathways. Besides the towns either generally growing or generally declining, we focus also on two other types: towns with growing populations but decreases in employment and the other way round. Are these towns only intermediate versions or do they show some specific development characteristics? The typology does not take core or periphery situations as the point of departure, rather we analyse the types in terms of sociodemographics, employment, industry, services and, not least, regional accessibility. The inventory provides a basis for a more nuanced view of types of towns and future town policies.

Small and medium-sized towns and the Danish context

Despite small and medium-sized towns being a rather underrepresented subject in research (Porsche et al., 2021; Servillo et al., 2017), research and publication activity is increasing (Wagner & Growe, 2021). In their recent systematic review of the field, Wagner and Growe (2021: 105) showed that the development of SMSTs is most significantly influenced by “spatial location and innovative activity, networking, and the intensity of cooperation with other cities”.

Geographical location is a decisive factor for SMSTs as their role is strongly influenced by the urban structure in their region, e.g. in providing residential space for the wider labour market or providing services for the rural surroundings (Atkinson, 2019). The latter is especially true for towns in more isolated locations, as they are endowed with services and much larger or more specialised amenities than similar towns within metropolitan areas (Fertner et al., 2015; Jacobs-Crisioni et al., 2023).

Traditionally, many SMSTs have a strong manufacturing base. Bole et al. (2020), however, found that current development differences between Slovenian SMSTs are only very small between towns with and without a strong industrial sector. On the other hand, the knowledge economy plays a stronger role in many SMSTs today, not least because of more mobile and flexible working models that allow work to be undertaken at greater distances to urban centres (Wagner & Growe, 2023). In their German study, Wagner and Growe also identified five types of towns, which we will refer to in the discussion of our typology.

Many SMSTs engage actively in cooperation and networking with rural areas and other cities. The forms of cooperation can be very different, often motivated by questions of practical constraints and resource needs (e.g. in service provision) or optimisation (e.g. in administration) (Schorn & Priebes, 2021). Networking with other public and private partners is also argued to increase the resilience and structural functionality of SMSTs (de Noronha & Vaz, 2020).

Finally, there is a tendency to see SMSTs as a homogeneous group (Atkinson, 2019), although it is obvious that they can be characterised by very different inner structures and specific regional functions and relations (Porsche et al., 2021). This is also underlined by Wagner & Growe's (2021) review, which concludes that, besides the factors mentioned above, transport infrastructure, planning approaches and exceptional individual architectural buildings also influence the development of SMSTs.

Denmark's current urban structure has been shaped by various historical policies and mega trends. The construction of railways and changes in economic regulations led to a development boom of several hundred new towns across the whole country at the beginning of the 20th century. In 1970, an administrative reform reduced the number of municipalities from 1,100 to below 300, centralising functions from smaller settlements to small and medium-sized towns (SMSTs). These "new" central small towns experienced over-average growth in the following decades (Illeris, 2010). The position of these towns was again altered through an administrative reform in 2007, whereby the number of municipalities was reduced to 98.

In the past decades, the development of small towns has been closely tied to their regional location. Towns within commuting distance to the largest cities have expanded, while those located outside have often stagnated or declined in population (Andersen et al., 2011). However, changes in SMSTs are not occurring at the same speed, and other dynamics (like immigration from rural areas) partially cushion these tendencies (Fertner et al., 2015). This is also seen in the important influence many towns have on local development, because of their local concentration of public and private urban functions, industries and local labour markets.

Nonetheless, in the period since the financial crisis in 2008, many small towns have experienced a receding population and declining employment (Hansen & Winther, 2018). Moreover, many towns in rural areas are challenged by the out-migration of young people

(Sørensen, 2020) and the process of double urbanisation. Double urbanisation involves, on the one hand, migration from the medium-sized towns in the periphery to the largest cities and, on the other hand, migration from villages and small towns to the medium-sized towns in the rural regions, which creates unequal population growth between towns in the same municipality (Laursen, 2020). This trend has meant that local development is increasingly embedded in regional development, where the distance to “thick” labour markets, i.e., large labour markets with a heterogeneous workforce and a large pool of potential job opportunities, influences population trends and employment development in regional cities. Last, but not least, the municipal reform has changed the situation for many SMSTs and employment in the public sector has been restructured, e.g., through the closures of municipal centres and centralisation or relocation of public services and institutions (Altinget, 2018).

Methodology

Definition of small and medium-sized towns

Denmark is highly urbanised. Currently, 88 percent of its population live in urban areas (UN, 2018). Copenhagen is by far the largest city in Denmark with 1.3 million inhabitants in the morphological city, i.e., the continuously built-up urban area. A relative majority (48%) of the Danish population though, lives in towns with populations below 50,000. Nevertheless, population thresholds are of course always artificial and towns with the same size population can have very different functions, services, job opportunities, etc.

A previous pan-European study (ESPON TOWN, 2014) defined small and medium-sized towns as settlements with a population between 5,000 and 50,000 inhabitants. This definition is, moreover, used by the European Commission (EC, 2022), and we likewise follow it in this study. ESPON TOWN also included thresholds for population density to account for problems when using data based on administrative boundaries (municipalities). Statistics Denmark (DST) defines urban areas morphologically. Urban areas are contiguous settlements with at least 200 inhabitants where houses are no more than 200 m from each other (DST, 2020).

Out of almost 1,400 urban areas in Denmark, we consider 111 as small and medium-sized towns (SMSTs), i.e. with a population of between 5,000 and 50,000 inhabitants. 27 percent of the Danish population live in these towns. Table 1 shows the distribution of towns by population in 2021. Out of the 98 municipalities in Denmark, 72 have one or more SMST. In about half of the cases, the SMST is also the “municipal capital” with the town hall, council and main administration. Before the municipal reform of 2007, more than 80 percent had this role.

Settlement size (continuously built-up area)	Number of settlements	Total population	Population share
Copenhagen	1	1,336,982	23%
100,000 – 500,000	3	582,889	10%
50,000 – 100,000	7	417,801	7%
10,000 – 50,000	53	1,158,470	20%
5,000 – 10,000	58	414,596	7%
1,000 – 5,000	391	842,876	14%
200 – 1,000	884	392,808	7%
Total urban population	1,397	5,145,577	88%
Outside urban areas		694,468	12%
Total population		5,840,045	100%

Table 1 – Distribution of settlements by population size in 2021. Source: the authors, based on Statistics Denmark.

Choosing a morphological definition for our analysis is not without difficulties. Everyday life does not necessarily correspond with the limits of the built-up area. For example, commuting can extend far beyond such boundaries (the average distance commuted in Denmark is 20 km), basic education like primary schools and kindergarten are hyper-local, while shopping activities depend on individual mobilities and preferences. However, the morphological definition provides us with a clear and easily understandable concept. Not least, especially in the case of small towns without considerable suburbs, the morphological definition can be assumed to coincide with what its inhabitants would identify as the town. To account for the regional context, we included several variables in the analysis, e.g. distance to one of the four largest cities in Denmark or jobs within 20 km.

Data

Our analysis of SMSTs uses descriptive statistics of key variables for urban development. All variables are based on data from Danish registers, accessed either directly or via DST. Data on towns defined by DST, as recorded above, is therefore an aggregate of register data. For example, the population living within a town is based on home addresses, while the number of employees working in a town is based on people's workplace addresses. However, the production of certain variables takes some time, e.g., workplace-related data is often only available with a two-year delay. The selected variables include data on the regional context, sociodemographic trends, employment development and service provision (Table 2). For some variables we also include data from 2012 to analyse changes over time.

	Variables	Source	Year
Row 1	Location, delineation, population	DST	2021
Regional context	Accessible population and employment, distance to coast and cities	Eurostat, DST, CVR, GeoDanmark	2018/19/21
Sociodemographics and employment	Population, employment, age, education by residence and workplace, employment by industry	DST	2012 and 2019
Service provision	Shops, hospitals, education facilities, city hall	Company register (CVR)	2021

Table 2 – Data and sources

Analytical typology based on employment and population growth

Development trajectories of SMSTs are diverse, depending on internal and external factors. We therefore use a typology as an analytical lens. However, instead of grouping SMSTs by location (e.g. inside/outside metropolitan areas), we focus on internal development. Of course, the regional context is a critical factor for a town's development, and we will address this with separate variables. But we do not use it upfront for the classification.

Our typology is based on employment and population growth in each town between 2012 (after the financial crisis) and 2019 (latest available data for employment), two aspects commonly understood as part of urban growth. In this period, the population in Denmark increased by 4 percent and the number of employed persons (workplaces) by 7.8 percent. Four categories arise when plotting the 111 SMSTs in a coordinate system based on their growth in workplaces and population relative to the Danish national average:

- Type 1 (n=14): Relative decrease in number of jobs, relative increase in population size.
- Type 2 (n=34): Relative increase in number of jobs and in population size.
- Type 3 (n=39): Relative increase in number of jobs, relative decrease in population size.
- Type 4 (n=24): Relative decrease in number of jobs and in population size.

Especially type 1 and type 3 towns (increase in one while decrease in the other axis) illustrate more diverse development patterns than what we typically see when using a centre-periphery dichotomy, expecting type 2 (all increasing) and type 4 (all decreasing) towns. The typology allows for a more detailed analysis of socioeconomic similarities and differences within each type of town with the other data and variables presented in Section 4.

Results

Four types of development

Figure 1 shows the growth in population and employment in each town between 2012 and 2019, relative to the national average. 34 towns displayed relative growth in employment and population compared to the national average (type 2), while 24 towns experienced a relative decline in both aspects (type 4). In 14 towns, only population increased faster than in Denmark as a whole, but not employment (type 1). In 39 towns, only employment increased faster than in Denmark (type 3). Out of 111 SMSTs, 74 had a relatively stronger increase in employment than in Denmark, while only 48 increased relatively more in population. Generally speaking, SMSTs are rather important centres for job growth, but less important in terms of population growth.

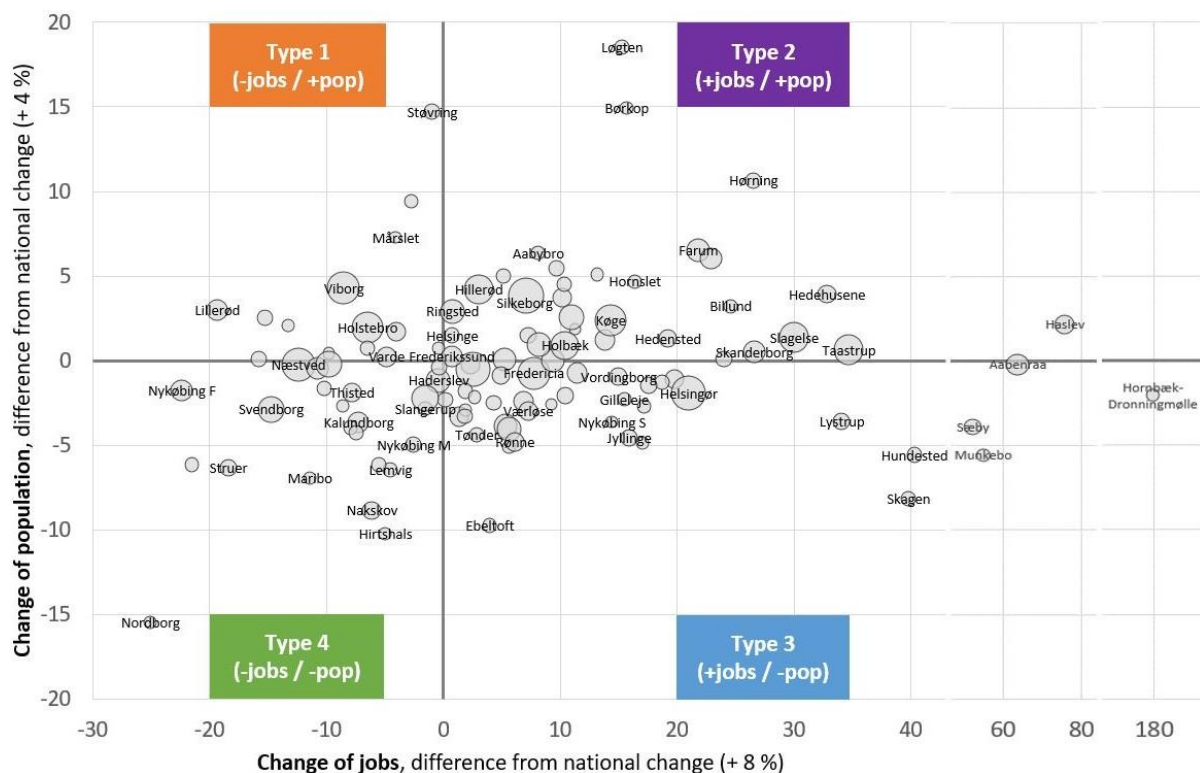


Figure 1 – Population and employment growth in SMSTs relative to national average, 2012 – 2019. Circle size illustrates population in 2019. Data: the authors, based on Statistics Denmark.

A look at the map (Figure 2) provides some hints on location patterns of the four types. Many SMSTs experiencing relative population and job growth (type 2) are located close to the biggest cities or main agglomerations (around Copenhagen and Aarhus), while those with relative population and job decline (type 4) are located further away, especially in the south and northwest of Denmark. Note that many type 4 towns have experienced growth in population and/or employment but at a rate that is still below the national average, which means that they are losing out to other towns.

The location pattern of the other two types is less obvious. Towns with a decline in employment but a growth in population (type 1) are also close to bigger cities or are themselves bigger provincial towns. Type 3 towns, those growing in employment but declining in population, seem more diverse. Some, close to agglomerations, may profit from the “borrowing size” effect (Meijers & Burger, 2022), i.e. employment is created because of the big labour market. Others may be tourist destinations, small towns characterised by the location of a big company, or centres for public services and institutions in a less densely populated area.

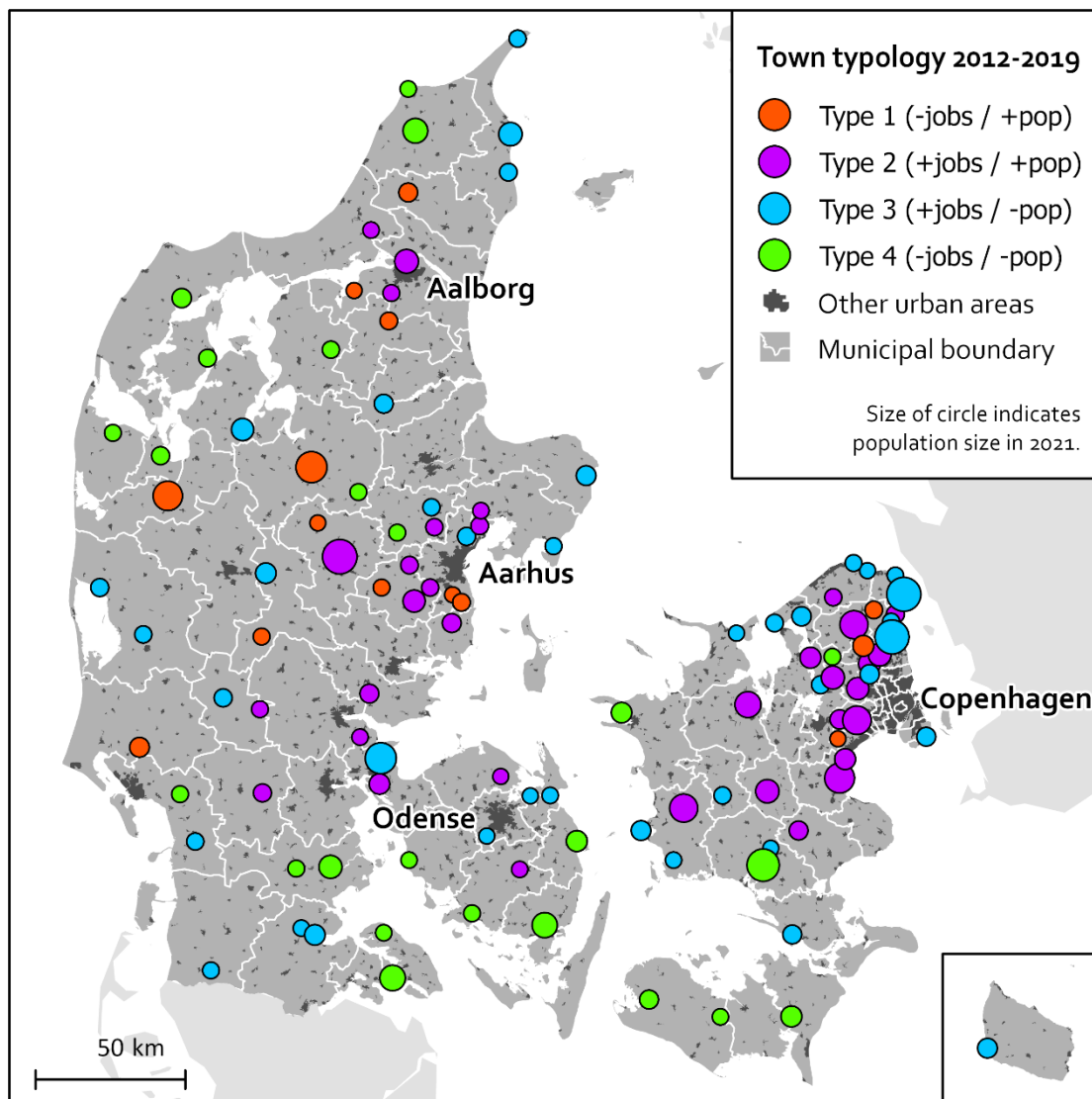


Figure 2 – Distribution of SMSTs in Denmark according to town typology. Source: the authors, based on Statistics Denmark. Geodata: Geodanmark.

Regional context

Our typology is based on internal development in population and employment. Such development is obviously closely related to the regional context. In Denmark, the average job-commuting distance was 22.2 km in 2021 (DST, 2023). The size of accessible population and

amount of employment within such a catchment area differs quite considerably between the types (Table 2). Within 20 km from type 2 (+jobs/+pop) towns, there are on average 480,000 residents and 210,000 jobs. In the same catchment area around type 4 (-jobs/-pop) towns, there are only 100,000 residents and 34,000 jobs. This is equivalent of a 1 to 5 ratio in population and a 1 to 6 ratio in employment. Types 1 and 3 have a relatively similar number of residents and jobs within 20 km and rank between type 2 and 4 towns.

Considering the distance to one of the four cities with more than 100,000 inhabitants (Copenhagen, Aarhus, Odense, Aalborg), we can see a similar pattern. The distance of type 2 towns to the four cities (30 km) is on average half that of type 4 towns (60 km). Also type 3 (+jobs/-pop) towns are located relatively far from the four cities (54 km); type 1 (-jobs/+pop) towns are a bit closer. However, these are averages and there are variations within the types.

Finally, turning to the geographical context of Denmark, the distance to the coast also reveals relevant location patterns. The coast represents a natural barrier which can limit accessibility to employment or population. Type 3 and 4 towns (those with relative population decline) are closer to the coastline than types 1 and 2.

	Type 1	Type 2	Type 3	Type 4	All SMSTs
Population within 20 km*	282,754	475,372	266,363	98,876	296,238
Employment within 20 km*	115,499	207,230	103,473	34,419	121,841
Distance to major city (km)**	40.8	29.5	54.1	60.7	46.3
Distance to coast (km)	12.2	8.3	4.3	3.9	6.4

* 20 km buffer from town polygon including town itself. Population also includes cross-border numbers where applicable (Germany, Sweden), employment includes only Denmark.

** The four cities in Denmark with more than 100,000 inhabitants: Copenhagen, Aarhus, Odense, Aalborg.

Table 3 – Accessibility and location. Data: the authors, based on Statistics Denmark and Central Company Register (CVR).

Considering all towns, a correlation analysis shows that a relative population increase is positively correlated with the number of residents and jobs within 20 km (Pearson correlation coefficient $PCC=.22$, significant at 0.05 level). Also, distance to the coast has a positive correlation with population increase ($PCC=.27$, sig. at 0.01), while distance to the four big cities is negatively correlated with population increase ($PCC=-.4$, sig. at 0.01).

Sociodemographic development

Type 1 (-jobs/+pop) and 2 (+jobs/+pop) towns have on average a higher share of children and teenagers (age group 0-19, see Table 4) than type 3 (+jobs/-pop) and 4 (-jobs/-pop) towns. Regarding young adults (age group 20-35), type 3 towns have a 2 percentage points lower share than the other types. The group of 36-65 is more equally distributed across the four

types. Lastly, the share of persons of retirement age (above 65) is 3 percentage points higher in types 3 and 4 towns than in types 1 and 2.

In general, the population grew by approximately 7 percent in type 1 and 2 towns, but only by approximately 1 percent in type 3 and 4 towns. A similar pattern appears in the four age groups. Type 1 and 2 towns display significantly higher growth rates across all categories compared to type 3 and 4 towns, which demonstrate negative growth rates for age groups 0-19 and 36-65.

This pattern is not surprising, since the criteria for type 1 and 2 towns is population growth. What is interesting is that the pattern is nevertheless consistent across all age groups, even the 66+ group that often generates the highest growth rates and do not perform well on traditional economic indicators such as job growth, education etc.

	Type 1	Type 2	Type 3	Type 4	Denmark
Shares (%) of age groups 2019					
Population aged 0-19	24.9	24.5	22.2	21.4	22.4
Population aged 20-35	16.8	17.4	14.9	17.4	20.6
Population aged 36-65	38.5	38.9	39.4	38.1	38.6
Population aged 66+	19.8	19.1	23.4	23.1	18.4
Change (%) of age groups 2012–2019					
Population aged 0-19	2.6	0.5	-6.3	-5.8	-3.3
Population aged 20-35	11.9	14.9	7.4	5.6	11.9
Population aged 36-65	0.4	0.7	-5.2	-5.5	-1.6
Population aged 66+	26.4	25.1	21.5	18.2	20.0
Population, all	7.2	6.9	1.6	1.0	4.0

Table 4 – Population shares and growth rates for four types of towns in Denmark 2012-2019. Data: the authors, based on Statistics Denmark.

The population structure and development are important but so too is the educational structure of the population and the employment offered, as these factors reveal the developmental potential of towns and it is often argued that the developmental direction of towns depends on them (see e.g. Glaeser, 2012).

In Table 5, the shares and growth rates of the residential population with vocational training and the share with higher education are displayed. Also, the same type of educational levels and growth rates are displayed only for those employed at workplaces in the towns, thus indicating the demand for educated labour of local workplaces.

Addressing vocational training by place of residence, numbers diverge by 3 percentage points between type 2 and 4 towns but are close to 35 percent. This figure is a little higher than the national level, probably because it seems likely to be notably lower in the major urban areas. The opposite is the case for the shares of people with higher education by place of

residence. Here the national level is higher than in all four types of towns. However, the differences between the national level and town types 1 and 2 are only marginal while the divide is more than two percentage points for town type 3 and more than 5 percentage points for town type 4. Especially towns of type 4 tend to have notably lower shares of highly educated residents in their populations.

Viewing the same two categories of educational levels but by workplace, a similar pattern emerges. All four types of towns have between 38 and 42 percent of their employment in the vocational training category, which is 3 to 7 percentage points higher than the national level. Remarkably, type 2 towns, which display growth in both population and employment, have only 38 percent of their employment in the vocational category, while the remaining three town types have 40-42 percent.

Furthermore, the share of the higher education group at the national level is again above the level of the four types of towns. Moreover, type 2 towns show higher levels than the three other types of towns, with type 4 towns close to 3 percentage points below type 2 towns. This pattern replicates the often-highlighted link between high levels of education and urban growth; type 2 towns perform best on the two selected variables.

	Type 1	Type 2	Type 3	Type 4	Denmark
Shares (% of 15–65 year-olds) of educational levels 2019					
Vocational training by residence	35.1	34.6	36.1	37.7	33.1
Higher education by residence	10.5	10.2	8.6	5.2	10.9
Vocational training by workplace	40.2	38.3	41.2	42.4	35.1
Higher education by workplace	9.1	10.4	8.3	7.6	12.5
Change (%) in educational levels 2012–2019					
Vocational training by residence	-6.1	-6.3	-9.6	-8.7	-7.1
Higher education by residence	34.0	42.3	24.3	24.9	44.2
Vocational training by workplace	-6.6	12.4	14.9	-6.5	-2.5
Higher education by workplace	18.2	63.4	49.6	22.0	42.8

Table 5 – Shares of educational levels and growth rates for four types of towns in Denmark 2012–2019. Source: the authors, based on Statistics Denmark.

Various changes in the educational categories took place in the period 2012-2019. The lower part of Table 5 shows that vocational training is mostly in decline, while higher education is growing. This pattern is visible in the educational levels for the residential population. However, it is worth stressing that the growth rates of the higher education group are lower in town types 3 and 4 even though these towns came from a lower starting point in 2012. This indicates that developments have only increased the difference between type 1 and 2 towns compared to type 3 and 4 towns.

The development of educational levels by workplace reveals an interesting observation. While vocational training is declining in general, the two types of towns that generate employment growth above the national level (types 2 and 3) also show growth rates in vocational training. Although we also see growth rates for higher education here, the data on vocational education might demonstrate that the jobs available in these towns are not only for high-end knowledge workers but also demand craft skills for manufacturing production.

Employment per industry

The industrial structure in Table 6 shows that all towns have above national average shares of employment in manufacturing. However, type 2 towns stand out with two to three percentage points lower than the three other types of towns. Retail and the hospitality sector do not vary much between the four typologies but the share of employment in the public sector does. Type 2 towns, characterised by growth in population and employment, stand out with a markedly lower share than the other types of towns.

	Type 1	Type 2	Type 3	Type 4	Denmark
Shares (%) of employed in four different industries 2019					
Manufacturing	15.7	12.6	14.6	15.6	10.8
Retail	6.1	5.8	5.9	6.6	5.4
Hospitality	2.3	2.5	2.9	3.1	3.4
Public sector	35.8	30.9	32.9	37.4	30.6
Change (%) in employment in four different industries 2012-2019					
Manufacturing	-4.8	16.3	24.6	-8.6	4.7
Retail	-2.1	16.1	12.6	-5.4	1.9
Hospitality	41.4	57.9	51.9	42.2	41.8
Public sector	-2.1	21.2	19.3	-0.04	5.3
Employment, all	-0.5	22.9	20.9	-2.0	7.8

Table 6 – Share of labour in four industries and growth rates for four types of towns in Denmark 2012-2019. Data: the authors, based on Statistics Denmark.

Table 6 shows that both type 2 and type 3 towns have generated high growth rates above 20 percent. Manufacturing and retail have grown especially in such towns, in contrast with developments in type 1 and 4 towns, which have experienced decline in both industry sectors. This corresponds well with the findings related to the development of educational levels, which showed growing numbers among vocational training, most likely linked to manufacturing. All four types of towns have generated high growth numbers in hospitality, but these relate to low shares overall. Finally, Table 6 shows that changes in public sector employment also vary significantly between the different types of towns. Types 1 and 4, both representing decreasing employment, show decreasing employment in the public sector, whereas types 2 and 3 both

experienced growth rates that are well above the national average. In this case, it is interesting that the growth pattern of employment in the public sector is more aligned with the development of employment in general than it is with population trends, although many public sector activities are closely linked to demographic developments.

Service provision

The provision of shops, health services, education and public administration are important factors for SMST attractiveness. We do not have information on the activity level of such functions, but we can obtain their locations from the Danish company register (CVR). Besides services in towns, we also consider services that are accessible within 20 km of the town (excluding services in the town itself). This represents a typical commuting distance and mirrors a certain mobility in advanced functions of service provision. To enable a comparison, we standardise the number of services per 10,000 inhabitants in the town.

However, we do not consider the smallest types of towns, a certain focus on advanced services is required. In terms of shops, we do not include groceries (supermarket, discounter, etc.), but all other kinds of specialised retail. For health services, we include only hospitals. This includes private and public hospitals (including psychiatric), emergency rooms and services provided by medical and paramedical staff, including laboratory services, radiology and anaesthetics. General practitioners, dentists and ambulance transport are not included. For education, we include facilities of secondary education (ISCED class 3) and (semi)tertiary education (ISCED class 4+). Finally, for the public administration, we selected the location of the municipality's city hall.

Type 4 towns (-jobs/-pop) have the highest number of shops (excluding grocery stores) in town, while type 2 towns (+jobs/+pop) have the highest number within 20 km. The latter are also the towns located closest to the big cities. The top scorer is Værløse, north of Copenhagen, with 6,500 shops per 10,000 inhabitants within 20 km. At the other end of the scale is Skagen in Northern Jutland with only 30 shops per 10,000 inhabitants at a 20 km distance from the town. However, Skagen leads the list of shops within towns with 104 (per 10,000 inhabitants), while Værløse is at the lower end with only 33. This distribution is clearly related to Skagen's role as an isolated tourism hotspot and Værløse's location close to Copenhagen. Both are type 3 towns, which illustrates the potentially big variation within our typology when it comes to services or tourism-related aspects.

For hospitals and facilities of secondary education we can see a similar pattern with the best coverage in type 4 towns, while type 2 towns have the best coverage within 20 km. However, for the more specialised (semi)tertiary education, type 1 (+pop/-jobs) and 3 (-jobs / +pop) towns have the best services in towns. Finally, the status as "municipal capital", towns with the city hall of the municipality, also provides interesting insights. Most type 4 towns are

(still) municipal capitals, while most type 3 towns lost their status as municipal capitals with the 2007 structural reform, where 270 municipalities were merged to form 98.

Places per 10,000 inh.	Geography	Type 1	Type 2	Type 3	Type 4	All SMSTs
Shops (excl. grocery stores)	in town	56	51	61	65	57
	within 20 km	944	1,343	931	266	946
Hospitals	in town	0.9	1.0	1.0	1.6	1.1
	within 20 km	19	28	18	4	19
Secondary education	in town	2.1	2.0	2.9	3.2	2.5
	within 20 km	29	37	25	8	26
(Semi)Tertiary education	in town	1.3	0.5	1.1	0.9	0.9
	within 20 km	44	54	30	5	35
Municipal capital status						
No		29%	24%	13%	0%	15%
Status lost in 2007		29%	26%	46%	38%	36%
Yes		43%	50%	41%	63%	49%

Table 7 – Shops, hospitals and higher education per 10,000 inhabitants (2021) in town and within 20 km and share of towns that are municipal capitals. Data: the authors, based on Central Company Register (CVR).

Discussion

A well-known pattern of towns in central and peripheral locations

Type 2 and 4 towns present two extremes in Denmark. The former is growing in both population and employment, while the latter is losing population and employment, relative to the national average. The regional context variables confirmed the importance of external factors, i.e., factors outside the town, for the two types. Type 2 towns are geographically closest to the four big cities and have the highest population and job accessibility within 20 km of all four types. Type 4 towns range at the other end of the spectrum, representing a peripheral location.

The analysis of service provision fits well into this picture, where towns close to metropolitan areas have good access to services in the region, but not necessarily within the town itself. The more isolated type 4 towns have better access to services inside the town but, in general, are more poorly served when the surrounding region is taken into consideration. The change of municipal capital status also mirrors the regional context, where type 4 towns, typically located in more peripheral areas, remained the largest towns (and therewith kept the

city hall) after merging with neighbouring municipalities. On the other hand, SMSTs in metropolitan areas were often merged with municipalities with larger towns, which in turn became the administrative centre for the new municipalities.

Towns beyond the dichotomy

For our analysis we chose to use a morphological approach to towns. We based the typology on population and employment development within these built-up areas to prevent a generalised categorisation of towns beforehand into metropolitan/non-metropolitan contexts. The variables reflecting the regional context (see Table 3) clearly show, though, that type 2 and 4 towns represent two extremes in this regard, which is certainly not unexpected.

However, besides this well-known pattern, the other two types provide interesting insights into other pathways of development. Type 1 and 3 towns often either take a middle position between type 2 and 4, e.g. regarding population and employment accessibility within 20 km, or are rather close to the type with which they share the general population change pattern, thus type 1 resembles type 2, and type 3 resembles type 4. This is the case for many of the sociodemographic variables, although there are also notable peculiarities.

Type 1 towns, which relatively speaking lost employment but gained population, are on average the towns located farthest from the coast. On the other hand, they have the highest share and increase of 0-19 year-olds and the highest share of residents with higher education. This mirrors their role as attractive towns to settle in, at an acceptable distance to a regional labour market. The loss of employment is rather high in all categories. Out of the four types, type 1 towns have the highest loss in employment in the public sector but remain on a relatively high level. Furthermore, type 1 towns offer on average the greatest supply of (semi)tertiary education, marking them, at least in some cases, as important educational centres for young adults.

Type 3 towns, with a relative gain in employment but a loss in population, are on average rather close to the coast, like type 4 towns. However, accessibility to population and employment is slightly below the average of all towns, but much higher than for type 4 towns. Type 3 towns have the highest share of elderly people and the greatest decline in young residents. In this way they resemble type 4 towns. However, the towns also experienced a very high increase of employment in hospitality, which is strongly related to the importance of tourism in such towns. For manufacturing, type 3 towns even had the biggest increase of all. This might be connected to their location: less peripheral than type 4 towns, while probably still offering rather cheap land prices and access to a relatively large labour market.

Four types of towns

The four types of towns are constructed categories, and we can expect more complex variation within the categories. However, as “ideal types” the categories provide relevant input to the debate on the future development perspectives of SMSTs.

Type 1 towns (-jobs/+pop) could be characterised as “Residential hubs and higher education” – towns either in metropolitan areas or of a certain size and attraction themselves while also offering higher education. The type might correspond somewhat with what Wagner & Growe (2023, p. 13) called “important working and education centres with residential function” in their analysis of the knowledge economy in SMSTs in Germany.

Type 2 towns (+jobs/+pop) can be viewed as “Well-connected growing small towns”. These towns are embedded in metropolitan areas and offer attractive locations for residence as well as workplaces. However, type 2 towns are also rather dependent on the development of the metropolitan core, where e.g., high demand and prices can benefit the growth of small towns in commuting distance. This type corresponds well to functional typologies known from other SMST studies, sometimes called “agglomerated” towns (ESPON TOWN, 2014).

Type 3 towns (+jobs/-pop) are characterised by “Touristic and/or manufacturing employment”. These towns grow less in population than the national average, but have a strong performance in job growth, often related to tourism (many towns are located along the coast) but also to manufacturing. Generally speaking, type 3 towns are rather average in many respects and also represent the largest group of the four, with 39 towns out of 111, similar to Wagner & Growe’s (2023) “average medium-sized towns”, though with the difference that some of the towns experienced very strong employment growth.

Finally, type 4 towns (-jobs & pop) can be understood as “isolated small towns”, because of their significantly limited regional accessibility to employment and population. However, with often the highest rate of service provision in the towns, many remain important regional centres for a limited surrounding area. Similar to type 2, this type can be found in many typologies, sometimes called “autonomous” towns (ESPON TOWN, 2014).

Conclusion

The development of small and medium-sized towns (SMSTs) is diverse and related to internal and external factors, similar in this respect to cities or towns of other sizes. However, all too often, SMSTs are reduced to their location within or outside metropolitan areas, simplifying their actual potential and challenges. Such a perspective is often adopted in policy, e.g. relocation of public sector employment from the capital area, a political tool that has been employed by the Danish government in several programmes. Here one criterion was pure distance from Copenhagen.

The applied typology provides more nuances without zooming in on single cases. It is based on the town’s development in population and employment, not taking the town’s

location, e.g. metropolitan versus non-metropolitan, as a predefining factor. Certainly, towns growing in both population and employment (type 2) show a clear relation to geographical locations close to a larger urban area, while those declining in both population and employment (type 4) are generally further away from the largest agglomerations. Towns only growing in employment (type 3) or population (type 1) (and declining in the other factor) often take an intermediate position between the only growing or declining towns. This is, for instance, true for regional accessibility to population and employment. However, in other aspects including most of the sociodemographic variables, type 1 and 3 towns are closer to one of the other types, namely the type with which they share the general population change pattern, indicating a stronger dichotomy of towns in terms of population development.

Certain variables also show peculiarities for such intermediate towns, e.g. where some are strong in service provision within higher education or are significant centres for tourism. In general, service provision appears to be thriving in all four types of towns. Only type 4 towns have significantly less services accessible in the larger surrounding area (within 20 km), and they are characterised by lower variety within similar service categories such as education.

Our study employs a typology and a descriptive approach to a range of variables characterising the development of SMSTs. In future research, a more in-depth statistical analysis might provide more insights to the relation between the factors analysed here. Also, zooming in on one or two types of towns could further improve our understanding of SMST development. However, as Denmark is a rather small country with only 111 SMSTs, statistical significance will suffer. Testing the typology with a wider geographical scope could be a way forward. Even though national contexts differ, our analysis of the development of Danish SMSTs shows growth and decline patterns that are similar to what is reported from other countries in Europe, underlining the potential of using such a typology in a setting with wider scope.

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Conflict of interest

The authors declare no conflicts of interest.

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