

Concert at Keiservarden in Bodø by pianist Leif Ove Andsnes. August 2006.  
Photo: Bjørn Erik Olsen / nordnorge.com / Bodø



## Population in the North

This chapter focuses on the population development trends in the BIN area, including population distribution, gender and age group analysis at the county and municipal level. In 2015, the BIN area's population equaled 1 661 341 people that accounted for 10 % of the total population of Finland, Norway, and Sweden. The population in the BIN area has grown by 2.3 % from 2006-2015. This report provides only an analysis of the trends in population development, without accounting for trends in births, deaths and migration inflows and outflows that will be the topic of the next BIN report on population.

The results suggest a continuing trend of urbanization of the BIN area, with population growth concentrated in regional urban areas. These regional urban areas are located in coastal areas that benefit from good transport infrastructure, while transport infrastructure in rural areas remains underdeveloped. Gender analysis shows high male-to-female ratios in all BIN counties, while a municipality level analysis reveals that the proportion of females is higher in large cities. This follows an international trend in which primarily prime-aged females (25-54) abandon rural areas for opportunities in cities (De la Roca and Puga, 2017<sup>1</sup>). Age group analysis shows declining population in the age group 0-19, moderate growth in the age group 20-39 and a considerable increase in population for the age group 65+. This chapter provides insights into structural changes in age groups in the BIN area. The changes in population in the BIN area create challenges and opportunities. Policy implications include redefining the role of the elderly population, employment policies, conditions for establishing new businesses, public finances for social services and health care. The decline in the younger population in the BIN area has long-term implications for labor and education markets.

### Population development

The BIN area is experiencing an ageing of its population, where the proportions of adults and elderly increase, while the proportions of children and adolescents decrease. This process results in a rise in the median age of the population. The median age for Norway, Finland, and Sweden increased from 40.1 years in 2006 to 40.9 years in 2015. In the BIN area, the median age increased even more from 40.3 in 2006 to 41.8 years in 2015. This means that half of the BIN area's population was older than 41.8 years, while the other half was younger. The age dependency ratio demonstrates the economically dependent part (net consumers) of the population to the productive part (net producers). In 2015, the dependency ratio equaled 58.8 years in the BIN area, while the total of Norway, Finland, and Swe-

den equaled 57.1 years. The rise in the dependency ratio indicates growing pressures on social security and public health systems in the BIN area.

### County level development

The population distribution across counties in the BIN area is not uniform. The county of Northern Ostrobothnia (Finland) accounted for 24 % of all the population in the BIN area in 2015. The second largest counties analyzed in Sweden were Västerbotten and Norrbotten, where 16 % and 15 % of the population resided. In Norway, the county of Nordland represented 15% of total BIN population. The smaller counties of Lapland (Finland) and Troms (Norway) each accounted for 11% and 10% of total the BIN population respectively. The smallest counties analysis analyzed, Finnmark (Norway) and Kainuu (Finland), each served as home to 5% of the total BIN population. On a county level, the population development was lower in all the BIN counties compared with the corresponding country averages, with the exception of Northern Ostrobothnia (Finland), where population growth (5.9 %) was higher than the country average (4.0 %) during 2006-2016. The Finnish counties Lapland and Kainuu experienced a population decrease of 2.2 % and 6.7 %, while their Norwegian counterparts Finnmark (4.3 %) and Troms (6.6 %) saw continued population growth. Diverse population development trends in the BIN counties reflect the processes of urbanization and different government policies supporting the High North across Norway, Finland, and Sweden.

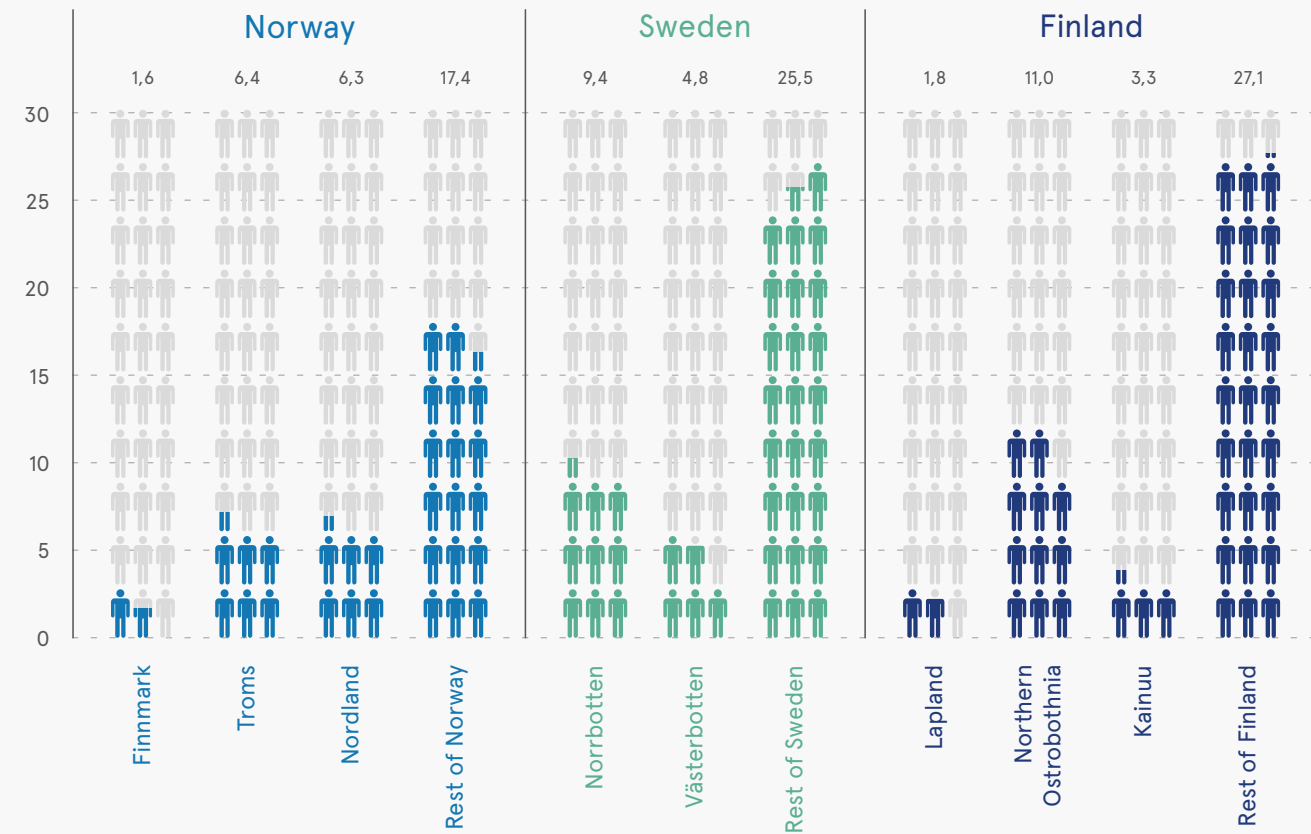
### Municipality level development

Municipality level analysis for the years 2006-2015 shows that only 32 % out of 175 municipalities saw population growth, whereas in the remaining 68 % there was a negative or zero growth in population. More remote municipalities had a low proportion of females in their population, while a higher number of females lived in municipalities with proximity to the regional urban centers.

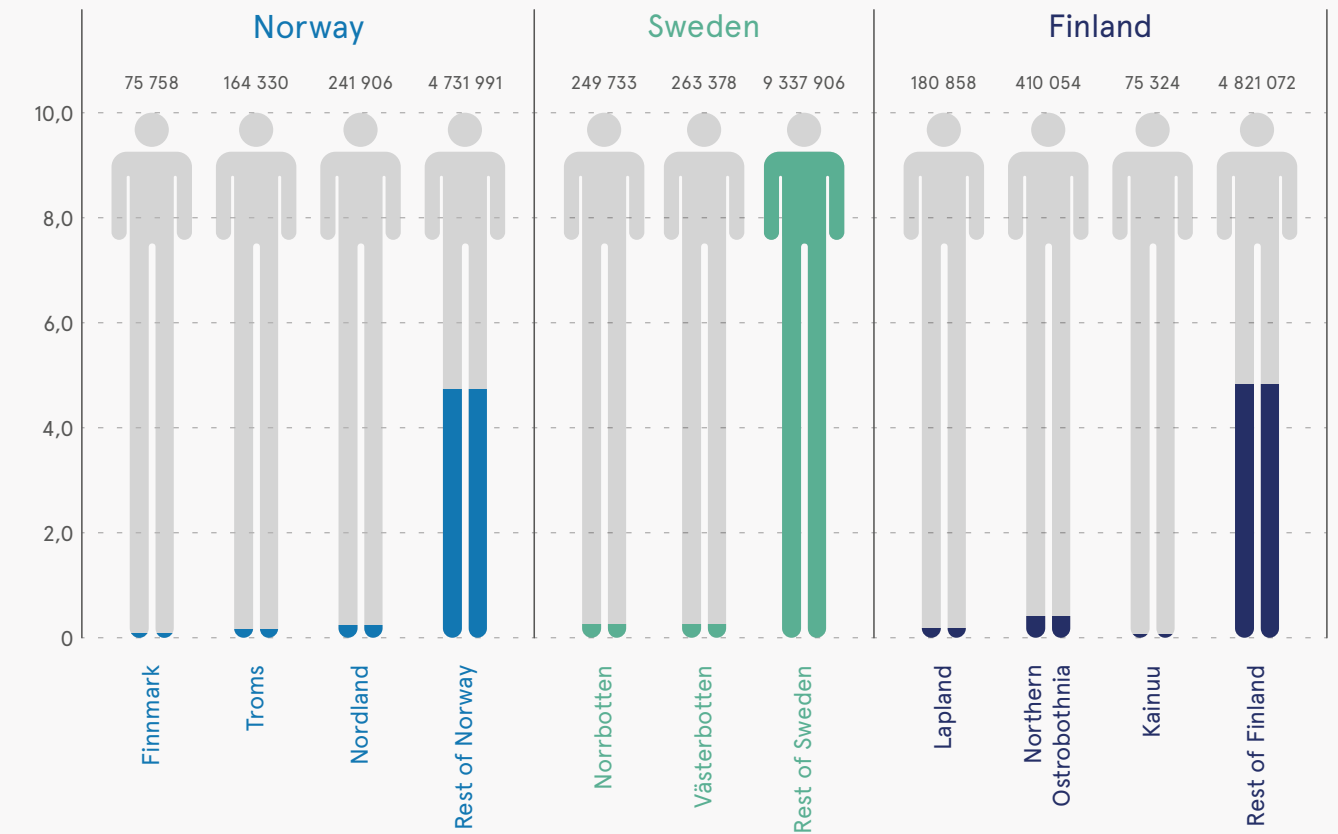
<sup>1</sup> De la Roca, J., & Puga, D. (2017). Learning by Working in Big Cities. *The Review of Economic Studies*, 84(1), 106-142.

### Density of population in the BIN area, 2015

Number of citizens per 1 km<sup>2</sup>

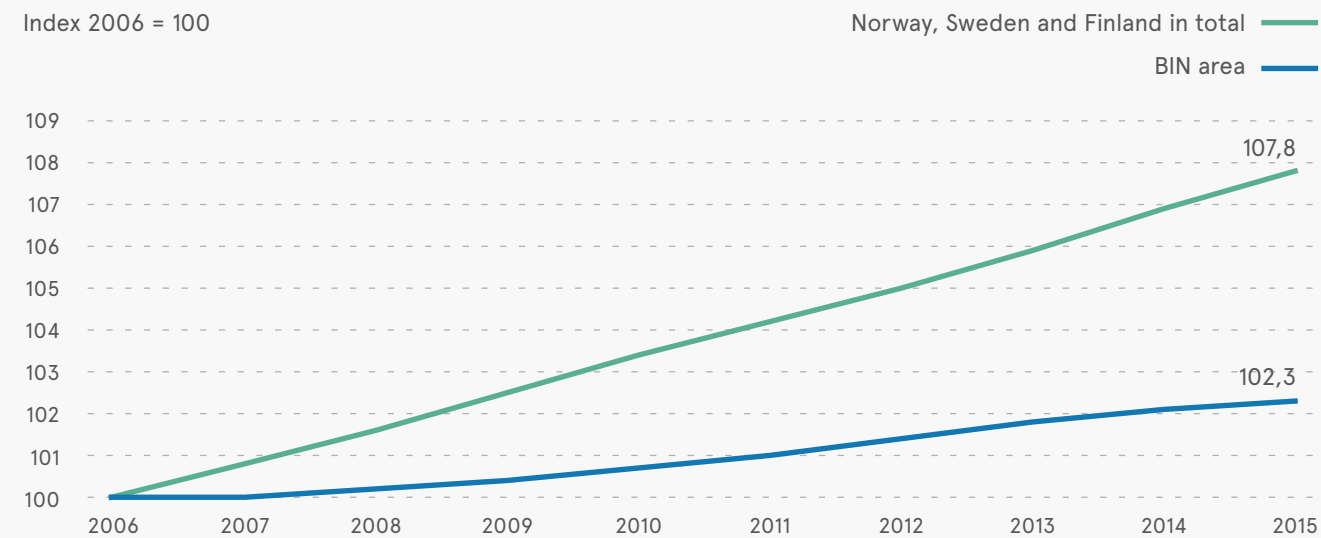


### Population in the north



### Population development from 2006 to 2015

Index 2006 = 100



### BIN area population development from 2006 to 2015 index=2006

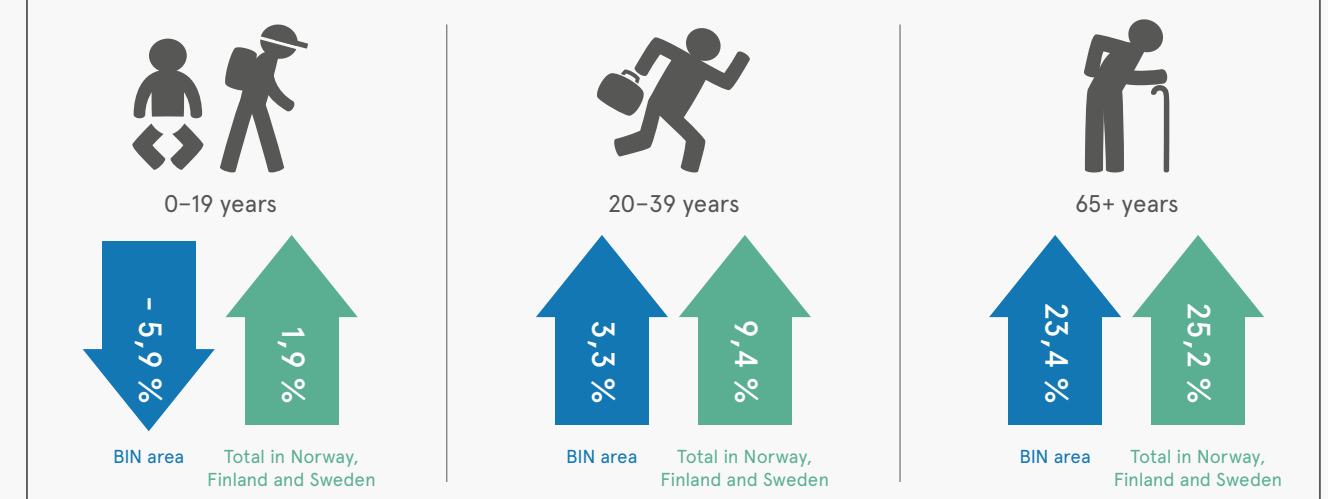


Figure 1 – Population development, 2006–2015, index 2006 = 100

Population in the BIN area grew with a surplus of 2.3 % from 2006 to 2015 (see Figure 1). The growth rate in the BIN area is, however, much lower than the average population growth of 7.8% in Finland, Norway, and Sweden over the years 2006–2015. The underlying reasons for that can be attributed to more attractive living conditions, employment and study opportunities in the southern metropolitan regions of Norway, Finland, and Sweden.

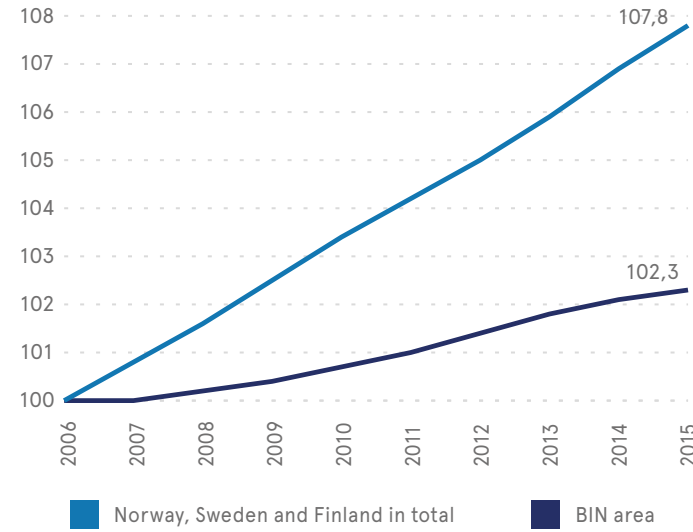


Figure 2 – Population development at the BIN county level, 2006–2015, %

The population development within BIN counties in Finland, Norway, and Sweden is not uniform (see Figure 2). In Finland, growth in the BIN area is maintained by the attractive Northern Ostrobothnia county, with its population growth reaching 5.9 % during 2006–2015. The counties with a diminishing population in Finland are Kainuu (-6.7 %) and Lapland (-2.2 %). The reasons for this are many, but the most obvious ones are the continuous processes of urbanization in Finland.

In Norway, the population of Troms county grew by 6.6 %, followed by Finnmark (4.3 %) and Nordland (2.7 %). The reasons for a surplus in population growth can be attributed to the migration flows and low unemployment rates in Norway. In Sweden, Västerbotten maintained a population growth of 2.3 %, in comparison to Norrbotten’s shrinking population (-0.9 %). Overall, the average growth of the Swedish counties in the BIN area is considerably lower than Sweden’s total population growth of 8.1 %.

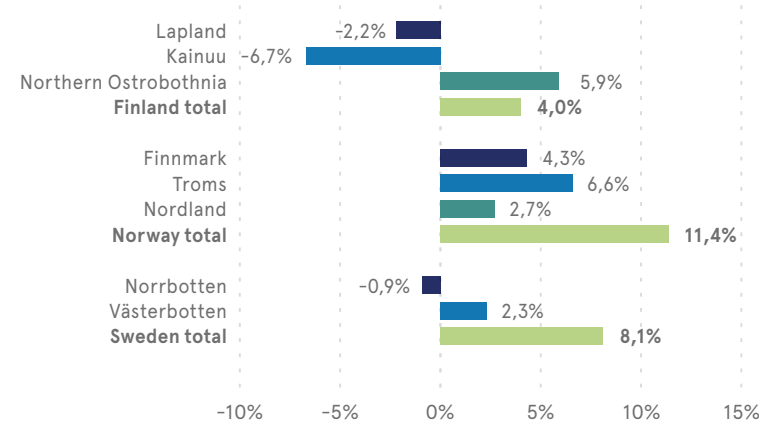


Table 1 – Municipality level development, 2006–2015

According to the OECD classification, regional urban areas of BIN area fall into the category of small urban areas with a population of between 50,000 and 200,000 inhabitants. The growth in BIN area is concentrated in the largest cities and their urban areas.

Table 1 demonstrates that 56 municipalities (32 %) experienced growth, whereas 68 % of municipalities had negative or zero growth in population during 2006–2015. Growth is concentrated in small urban areas and their surrounding municipalities.

Country	Number of municipalities	Number of growing municipalities
<b>Finland</b>	<b>59</b>	<b>12</b>
Kainuu	8	0
Lapland	21	3
Northern Ostrobothnia	30	9
<b>Norway</b>	<b>87</b>	<b>39</b>
Nordland	44	20
Finnmark	19	10
Troms	24	9
<b>Sweden</b>	<b>29</b>	<b>5</b>
Norrbotten	14	2
Västerbotten	15	3
<b>Grand total</b>	<b>175</b>	<b>56</b>

Table 2 – Positive and negative population growth in municipalities, 2006–2015, %

The population growth in municipalities varied greatly from 2006 to 2015; growth higher than 10 % or at a rate larger than 1 % annually is observed in university cities in Norway and Finland (see Table 2). Another explanation for the growth in large cities is the consolidation of municipalities around them and smaller municipalities joining bigger ones. Growth in the range of 5–10% or an annual growth rate higher than 0.5% is observed in a total of 14 Finnish and Norwegian municipalities, while in Sweden the municipality of Umeå was the only one that saw population growth in that range. Growth in the population in the range 0–5 % (annual growth rate larger than zero) is observed in 28 Norwegian municipalities, in two Finnish and in four Swedish ones. The population declined more than 10 % in 24 Finnish municipalities, in four Norwegian and five Swedish ones.

Country	Growth more than 10%	Growth 5–10%	Growth 0–5%	Negative growth more than 10%
<b>Finland</b>				
Kainuu				Hyrnsalmi, Kuhmo, Paltamo, Puolanka, Ristijärvi, Suomussalmi
Lapland		Kittilä, Rovaniemi	Kolari	Kemijärvi, Pelkosenniemi, Pello, Posio, Ranua, Salla, Savukoski, Tervola, Ylitornio
Northern Ostrobothnia	Kempele, Oulu, Tyrnävä, Ylivieska	Ii, Lumijoki, Muhos	Kalajoki	Kärsämäki, Merijärvi, Pudasjärvi, Pyhäjärvi, Pyhäntä, Siikalatva, Utajärvi, Vaala
<b>Norway</b>				
Finnmark	Hammerfest, Alta	Gamvik, Unjárga Nesseby, Sør-Varanger	Vadsø, Hasvik, Nordkapp, Båtsfjord	Loppa
Nordland	Bodø	Brønnøy, Træna, Sortland	Alstahaug, Fauske, Hamarøy, Herøy, Leirfjord, Narvik, Nesna, Rana, Saltdal, Vevelstad, Evenes, Værøy, Vestvågøy, Vågan, Hadsel, Øksnes	Bindal
Troms	Tromsø	Skånland, Lenvik	Harstad, Loabák Lavangen, Bardu, Målselv, Sørreisa, Balsfjord, Nordreisa	Ibestad, Lyngen
<b>Sweden</b>				
Norrbotten			Luleå, Piteå	Överkalix, Övertorneå
Västerbotten		Umeå	Skellefteå, Vännäs	Dorotea, Sorsele, Åsele

Figure 3 – Population development by gender, 2006-2015, index 2006=100

An analysis of population development by gender for the years 2006-2015 shows that the BIN area is male dominated, but gender distribution is consistent with the indices of countries averaging a total of 48 % female and 52 % male (see Figure 3). Historically, the high male-to-female ratio is driven by the labor market structure of the High North territories.

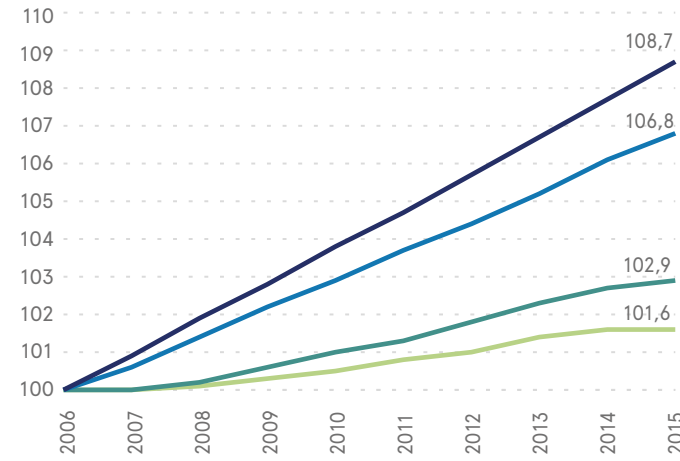
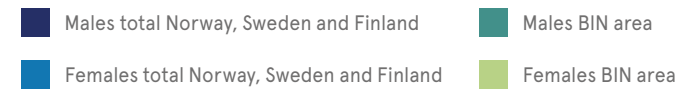


Figure 4 – Male population development at the BIN county level, 2006-2015, %

In Finland, the male population decreased in the Lapland (2.2 %) and Kainuu (6.5 %) counties, where the population is diminishing (see Figure 4). In Norway, the male population increased by 3.9 % in Nordland, 5.5 % in Finnmark and 7.6 % in Troms, but still remained below country's average of 12.9 %. Similarly, in Sweden, the male population development in the counties of Västerbotten, with an increase of 3.1 %, and in Norrbotten with a decrease of 0.2 %, were considerably lower than the country's corresponding number, with a total increase of 9.0 %.

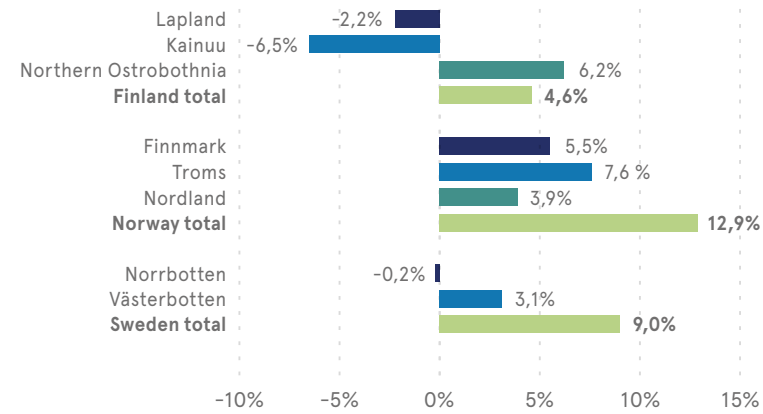


Figure 5 – Female population development at the BIN county level, 2006-2015, %

The analysis of female population development on a county level shows that Finnish counties of Lapland and Kainuu lost 2.2 % and 6.9 % of their female population respectively during 2006-2015. The county of Northern Ostrobothnia has a net gain in female population, with a growth of 5.5 % in Northern Ostrobothnia compared to 3.4 % in Finland as a whole. In Norway, all the BIN counties saw a growth in their female population; however, numbers were below the country average of 9.9 %. In the county of Troms, the female population increased by 5.6 %, followed by Finnmark and Nordland with an increase of 3.0 % and 1.6 % correspondingly. In Sweden, the county of Norrbotten lost 1.4 % of its female population and the county of Västerbotten had a small increase of 1 %, which is small compared with a total Swedish increase in the female population of 6.9 %. The increase in female population in Northern Ostrobothnia and Troms can be attributed to favorable living conditions, work and education opportunities offered by these BIN counties.

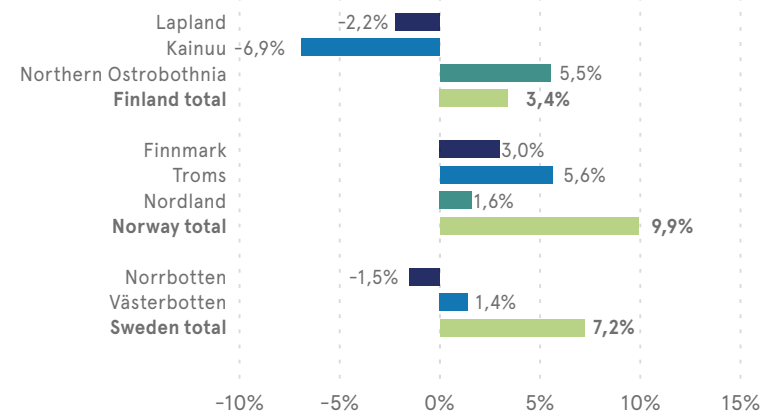


Table 3 – Proportion of female population at the BIN municipality level, 2015

At the municipal level of analysis, the proportion of females is calculated based on the male-to-female distribution of the BIN municipalities. The female population proportion is high in urban areas and low in rural areas. The proportion of females was less than 48 % in 27 municipalities out of 175 in 2006. By 2015, the number of municipalities with a female population lower than 48 % had increased to 53. The northernmost remote municipalities had a female proportion as low as 43.6 % in Gamvik and 44.6 % in Loppa (Norway), and 44.9 % in Savukoski and 44.8 % in Utsjoki (Finland) in 2015. The relatively high number of female-dominated municipalities in the county of Nordland can be attributed to attractive job opportunities for females in the tourism sector. In other cases, the proportion of females is higher than 50 % in urban centers with universities, e.g. Oulu, Rovaniemi.

Country	Female, % >50%	Female, % <48%	Female, % <45%
<b>Finland</b>			
Kainuu	2	3	-
Lapland	2	7	2
Northern Ostrobothnia	3	10	
<b>Norway</b>			
Finnmark	-	9	2
Nordland	4	7	-
Troms	-	7	-
<b>Sweden</b>			
Norrbotten	-	4	-
Västerbotten	-	2	-
<b>Grand total</b>	<b>11</b>	<b>49</b>	<b>4</b>

Figure 6 – Median age, years

The median age provides means for analyzing the population structure. The median age is the age that divides a population into two numerically equal groups; that is, half the people are younger than this age and half are older. Figure 6. shows that the median age increased in Norway, Sweden, and Finland as a whole, from 40.1 years in 2006 to 40.9 years in 2015. In the BIN area, the increase is steeper from 40.3 years in 2006 to 41.8 years in 2015. Therefore, the ageing of the population is more pronounced in the BIN area, comparing 0.8 years increase in Norway, Sweden, and Finland to 1.5 years in the BIN area.

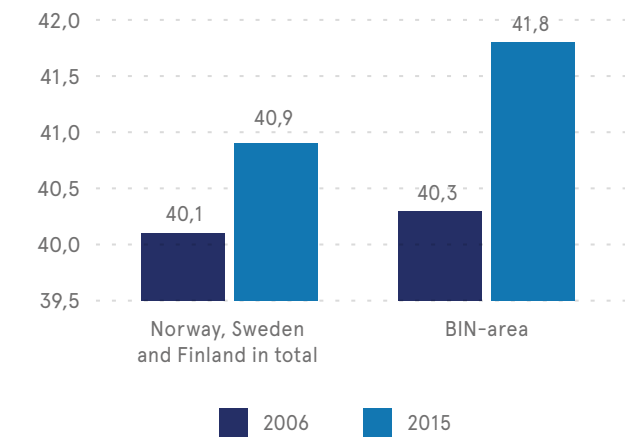
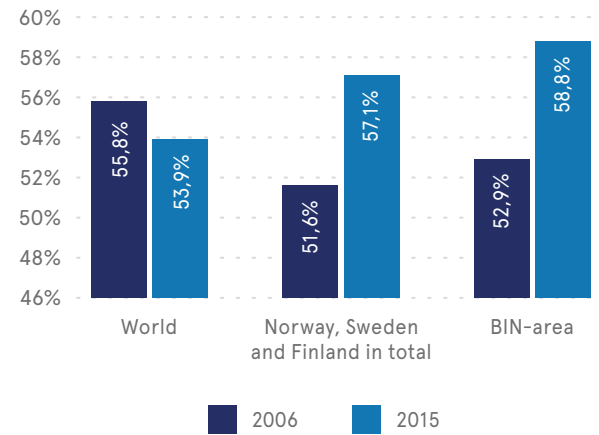


Figure 7 – Total age dependency, %

Total age dependency is used for comparing the economically dependent part (net consumers) of the population to the productive part (net producers). The total age dependency ratio relates the number of children (0-14 years old) and older persons (65 years or over) to the working-age population (15-64 years old). Data are shown as the proportion of dependents per 100 working-age population. Figure 7 demonstrates the trend in total age dependency for the years 2006 to 2015. The world dependency ratio decreased from 55.8 % in 2006 to 53.9 % in 2015. The total age dependency ratio in Norway, Sweden, and Finland as a whole increased from 51.6 % to 57.1 %. In the BIN area, the increase from 52.9 % to 58.8 % resulted in a higher total dependency ratio, 1.8 % higher than the ratio in Norway, Sweden, and Finland as a whole. In the BIN area, the high total dependency ratio indicates pressure on the economy and the active population in order to sustain the level of public services to young and elderly people.



Source of world statistics: World Bank

Figure 8 – Population development in age group 0-19 years, 2006-2015, index 2006=100

Measured as index, population in the age class 0-19 in the BIN area decreased by 5.9 % (see Figure 8), while for Norway, Sweden and Finland as a whole it grew by 1.9 % in the 2006-2015 period. The reasons for decline in age class 0-19 are, amongst others, low fertility rates in the reproductive age group 15-45, increased age of first-time mothers and out-migration of the 15-45 age group in order to obtain education and work.

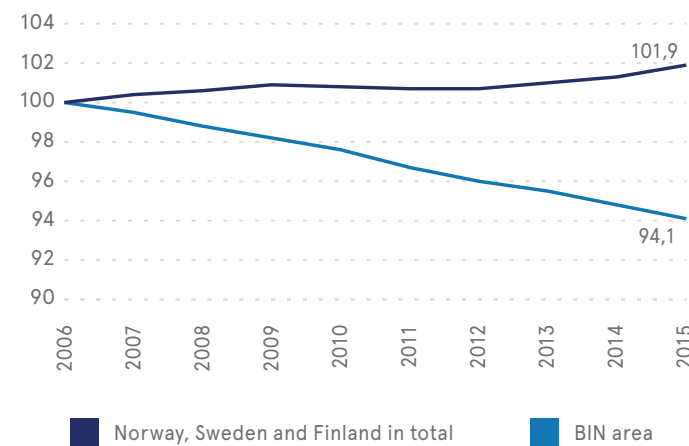


Figure 9 – Population development in age group 20-39 years, 2006-2015, index 2006=100

Measured as index, population in the age class 20-39 in the BIN area increased by 3.3 % (see Figure 9), while for Norway, Sweden and Finland as a whole it grew by 9.4 %. Slow growth in the active working population in the BIN area is due to out-migration of this class to southern areas that hold higher employability opportunities.

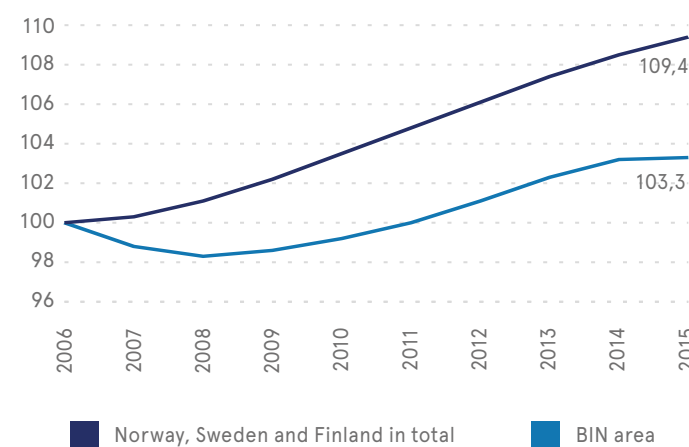


Figure 10 – Population development in age group 65+ years, 2006-2015, index 2006=100

Population in the age class 65+ in the BIN area grew by 23.4 % (see Figure 10), while for Norway, Sweden and Finland as a whole it grew by 25.2 %. This reflects a long-term pattern of greying population in Europe and longer life expectancy for this age class.

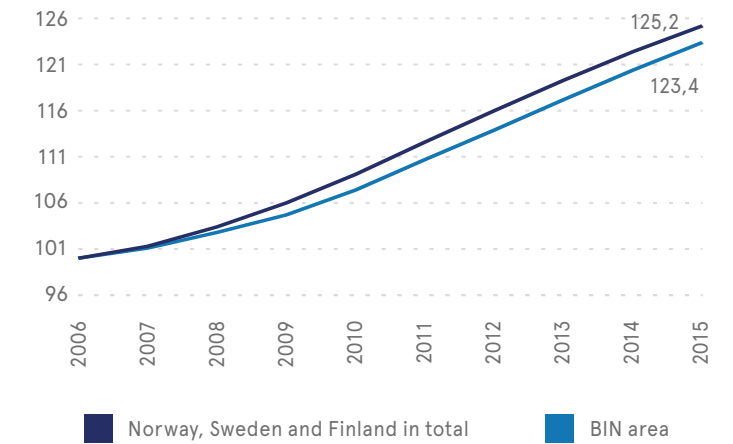
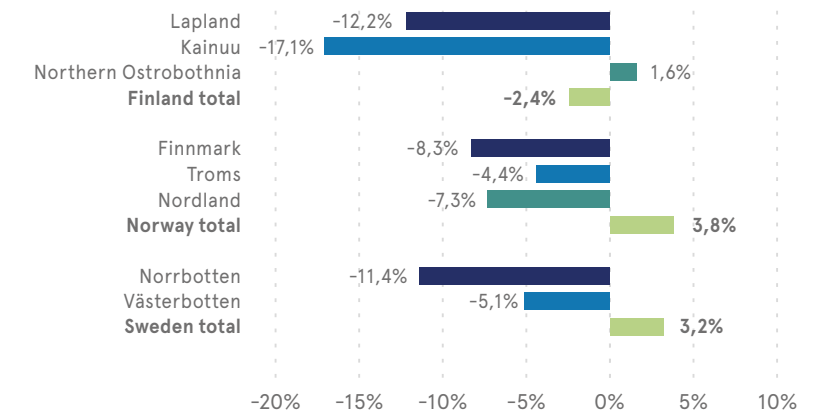


Figure 11 – Population development in age group 0-19 years at BIN county level, 2006-2015, %

On a county level, the trend in the age class 0-19 is negative in all counties of the BIN area (see Figure 11), e.g. Kainuu -17.1 %, Norrbotten -11.4 %. In Finnmark, Troms, and Nordland the number of young people in the age group 0-19 decreased considerably (8.3 %, 4.4 % and 7.3 % respectively). In Sweden, the counties of Norrbotten and Västerbotten observed the same trend, declining by 11.4 % and 5.1 % respectively. Out of all the BIN counties, it was only in Northern Ostrobothnia that the age group 0-19 increased, by 1.6 % during 2006-2015. The increase in the young population in Northern Ostrobothnia could be attributed to better education and work opportunities as well as a higher fertility rate, which is 2.05 children per woman in Northern Ostrobothnia<sup>2</sup>.



<sup>2</sup> Fertility rates in 2014 Finland (1.71), Norway (1.75), and Sweden (1.88). Source: Eurostat.

Figure 12 — Population development in age group 20-39 years at the BIN county level, 2006-2015, %

The increase of the age group 20-39 population in the BIN counties is much lower than the general average in Finland, Norway, and Sweden. An analysis of the population development in the 20-39 age group on a county level reveals (see Figure 12) that in Finland, the Lapland (2.3 %) and Northern Ostrobothnia (4.4 %) counties are the net gainers in that age group, while Kainuu represents a net loser with its 5.9 % decline in the age group 20-39. In Norway, Troms (6.3 %) proves to be a net gainer in the age group 20-39 population, while Finnmark (0.9 %) and Nordland (2.0 %) saw a very moderate increase in the age group 20-39 population. In Sweden, both Norrbotten and Västerbotten counties remain in the positive dynamics of the population development for the age group 20-39, but their increase of 3.2 % and 4.6 % respectively are much lower than the country's total average (10.5 %).

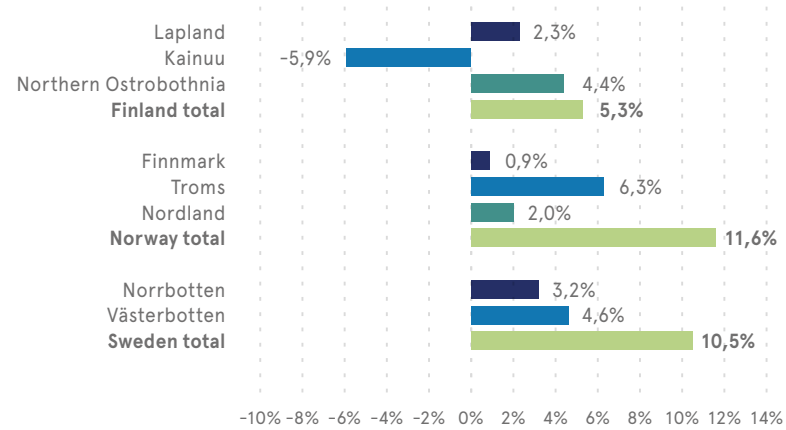
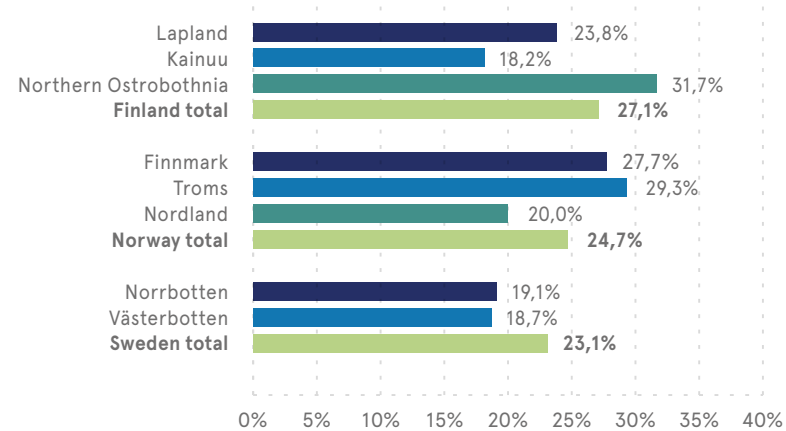


Figure 13 — Population development in age group 65+ years at BIN county level, 2006-2015, %

Figure 13 shows the development in the older population group 65+. Positive development in the group 65+ indicates a population growing older. In Finland, Lapland (23.8 %) and Kainuu (18.2 %) demonstrated smaller growth than Finland's national total of 27.1 %. In Northern Ostrobothnia, the growth of 31.7 % for age group 65+ was above the country's 27.1 % total.

In Norway, the counties of Finnmark and Troms saw a growth in the age group 65+ of 27.7 % and 29.3 % respectively, which is above the country's total average of 24.7 %, while Nordland had lower growth with its 20.0 %. In Sweden, both Norrbotten (19.1 %) and Västerbotten (18.7 %) counties had growth for the age group 65+ below the country's total average of 23.1 %. The differences in growth for the population group 65+ reflect the differences in attractiveness of BIN counties for elderly people in terms of services provided



## Implications

The analysis of trends in population in the BIN area has several implications for both policymakers and the business sector. Therefore, two sets of recommendations are developed based on the Chapter "Population in the North" findings.

For policy-makers:

- Redefining the role of the rapidly growing elderly population as active consumers and participants in the economic growth in the BIN area
- High dependency ratios in the BIN area affect financial planning of health care services and pension systems
- Designing social and health care services to accommodate the demands of the BIN area with a larger proportion of elderly population than the national average of Norway, Sweden, and Finland
- Reviving rural areas with a low proportion of females by community planning that offers an attractive combination of leisure, education and work opportunities<sup>3</sup>
- Assessing the impact of a declining young population aged 0-19 on the educational systems and education budgets
- Addressing the decline in young population aged 0-19 in the BIN area by developing policies and community planning for attracting young families to the BIN area
- Creating platforms for stakeholder engagement in order to develop the BIN area as a whole

For business:

- Business opportunities for companies supplying goods and services to the elderly population aged 65+
- Business opportunities in the arts, entertainment and recreation sector<sup>4</sup> to accommodate the needs of the elderly population
- Development of health technology in senior care and preventive health care for elderly
- Development of digital health technology, e.g. wearable health monitors, digital hospitals
- Business opportunities for companies specializing in urban and community planning in order to develop a socially and environmentally sustainable BIN area

<sup>3</sup> see report by Norden (2016). Gender, Education and Population Flows Summary report on knowledge, cross-Nordic experiences and examples from practice

<sup>4</sup> The Arts, Entertainment, and Recreation sector includes a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment, and recreational interests of their patrons (definition by US Department of Labor)