How are the Nordic regions feeling? A comparison of development potentials in the 66 Nordic regions

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**Abstract**

By synthesising individual components of a complex system, composite indicators are ideally used to compare regional performance and to initiate public debates. The Regional Potential Index (RPI) provides an index value for each administrative region of the Nordic Region to enable cross-regional comparison of development potential and to illustrate the regional balance. Data from nine selected socio-economic indicators concerning demography, the labour force and the economy was used to construct the RPI. This article hence aims to show how regional development potential looks in different parts of the Nordic Region and how the regional balance has developed over recent years. The results demonstrate a continued strong position of urban regions, while those administrative regions that have improved their ranking are mainly found in the rural parts of the Nordic Region. The large majority of the analysed regions increased their score between 2017 and 2019, which indicates diminishing differences between these administrative regions in terms of development potential and a positive development regarding the cohesion policy. Yet, it is important to note that the geography of an administrative region and the lack of reliable data on cross-border flows, qualitative dimensions, and carbon dioxide emissions influence the results in the ranking.

**Keywords**
Regional development, regional balance, Nordic Region, regional potential index, composite indicator
Introduction
The first initiative to collect Nordic statistics on demographics, labour market, and economic growth was taken in the 1970s when government officials from the five Nordic countries formed a Nordic working group. Today, State of the Nordic Region is published every two years and describes ongoing developments in the Nordic Region at municipal and regional levels. State of the Nordic Region 2020 is the 16th in a series of publications that has supplied policymakers and practitioners with comprehensive data and territorial analyses on Nordic regional development since 1981 (Grunfelder et al., 2020; see also Grunfelder et al., 2018; Nordiska ministerrådet, 1981, 1990). The reports are based on the latest statistical data on demographic change, labour markets, education, and economic growth, and the analyses use a broad range of indicators covering these areas. In this article, “region” is to be understood as an administrative region within the Nordic Region1, while the latter refers to a macro-region that can be defined as “an area including territory from a number of different countries or regions associated with one or more common features or challenges” (European Commission, 2009, p. 1).

The Regional Potential Index (RPI) aims at summarising developments in demography, the labour market, and the economy by creating an index value for each administrative region of the Nordic Region. It highlights the strengths and weaknesses of the 66 administrative regions in relation to one another across the Nordic Region and identifies the regions with the strongest development potentials. The purpose of preparing the RPI is thereby to compare the development potential of different regions and to give a picture of the territorial balance in the Nordic Region. Development potential is often understood merely in economic terms by comparing, for instance, the summary indicator of per capita personal income between different regions (McGillivray, 1991; Iammarino et al., 2017). Hence, a region’s level of income is considered to correlate with its level of labour force participation, production, and innovation (see, e.g., Iammarino et al., 2017, p. 5, for the “development clubs of EU regions”). As an alternative approach, a variety of composite indicators have been constructed to provide a more complex picture of development potential, including the UN Human Development Index (HDI) (Anand & Sen, 1994) and the European Commission’s Regional Competitiveness Index (RCI) (Annoni & Kozovska, 2010; Dijkstra et al., 2011; Annoni & Dijkstra, 2013). While the RPI measures development potential by taking into account its demographic, labour force, and economic dimensions, it does not include any qualitative or environmental proportions due to the lack of reliable and comparable regional-level data on such indicators (see also Hanell, 2018).

The regional balance between urban development and the development of rural and sparsely populated areas is an important issue in all Nordic countries. In the high-income country context, it is often argued that a region’s spatial organisation is directly linked to its development potential. In other words, a high degree of urbanisation – and the related accumulation of human and physical capital – is seen as beneficial for or as a determinant of economic growth (Glaeser et al., 1992; The World Bank, 2009; Castells-Quintana & Royuela, 2014; Desmet & Henderson, 2015; Frick & Rodriguez-Pose, 2018). In many rural and sparsely populated areas, demographic changes such as emigration, low birth rates, and an ageing population have for a long time led to a reduction in the number of inhabitants and thus to a deterioration of the tax base. However, all citizens expect public institutions to

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1. Denmark is divided in NUTS 2 regions (5), Iceland constitutes of 8 LAU1 regions (8), and NUTS 3 division is used for Finland (19), Norway (11), and Sweden (21). Both the Faroe Islands and Greenland form one administrative region each.
deliver different types of services of a certain quality even in peripheral regions. If the public sector is no longer able to provide services to the extent that is expected, the confidence of citizens in it will diminish. Many citizens in rural and sparsely populated areas feel that the difference between city and country is increasing and that their living conditions are deteriorating in favour of the inhabitants of big cities. This sense of exclusion may pave the way for populism and for political forces that offer simple solutions, also referred to as “the revenge of the places that don’t matter” (Rodríguez-Pose, 2018, p. 206, see also Iammarino et al., 2019).

With this article we want to show how regional development in terms of demographic, labour force, and economic development looks in different parts of the Nordic Region and how the regional balance has developed in recent years.

**Background**

Composite indicators or indices have been traditionally created to compare performance between different countries within the thematic areas of environmental, socio-economic, and technological development (OECD, 2008). The idea behind composite indicators is to provide an ordinal or cardinal ranking of country performance by manipulating separate indicators that are often also weighted based on their relative importance (Saltelli, 2007). While there is no single established and unambiguous definition of composite indicators, they are increasingly used to synthesise individual indicators or components of a “complex system”, based on an underlying model, in order to provide simplified illustrations to policy makers, media, and the wider audience (Greco et al., 2019). Composite indicators are thereby ideal to stimulate public discussion and capture media attention by summarising multi-dimensional realities that are otherwise difficult to grasp for the general public (OECD, 2008).

The use of composite indicators has been criticised, for instance, in the still ongoing debate driven by so called aggregators and non-aggregators. While the latter consider aggregated composite indicators as statistically meaningless products due to the arbitrary character of their construction process, one of the group’s main critics, the Nobel prize winner Amartya Sen, actually changed his stance based on the vast public debate encouraged by the HDI (Greco et al., 2019; OECD, 2008; Saltelli, 2007; Sharpe, 2004). Since composite indicators may point policymakers in the wrong direction if they are poorly constructed, the OECD (2008) introduced a checklist as a guideline to increase coherency of different steps required to build a composite indicator and overall transparency of the procedure (OECD, 2008; Greco et al., 2019). There have been also other attempts to provide methodological procedures as a solution to increase robustness and validity of constructed composite indicators (e.g., Ruiz et al., 2019). Yet, one should interpret composite indicators with caution since there may be deficiencies in the applied methodological framework influencing their validity negatively (Greco et al., 2019).

There are some previous examples of composite indicators that measure development potential of different regions or countries. The European Commission’s Regional Competitiveness Index (RCI) shows the performance of 268 NUTS 2 level regions in 28 EU member states regarding their level of competitiveness. The RCI 2019 indicates the capital and metropolitan regions as the most competitive ones in most of the countries, while there is a high level of variation within countries in many parts of the EU. These rather wide gaps seem to be quite stable when comparing between 2010, 2013, 2016, and 2019, but it is possible to see slightly decreasing difference between the top performer and other regions in
several countries of north-western Europe (European Union, 2019). The Global Competitiveness Index 4.0 (GCI 4.0) measures competitiveness and economic prospects of 141 economies, and it encourages policymakers to apply systems thinking when trying to develop holistic solutions to the ongoing complex global challenges (Schwab, 2019). In addition to the Nordic Region, the RPI has also been applied to compare administrative regions of the Baltic Sea Region (Rispling & Grunfelder, 2016). The use of such indices as a base for societal decision-making, however, has been criticised due to their focus on economic elements of the society and lack of information on qualitative aspects, such as subjective assessment of quality of life (Hanell, 2018).

Method
The RPI is constructed from a series of key socio-economic indicators with relevance for the analysis of regional development. The data from the nine selected indicators is categorised into three dimensions: demographic, labour force, and economic. These dimensions are included in other studies on regional development monitoring and territorial cohesion, for example, ESPON INTERCO (2013), among others. Table 1 provides detailed information on the three themes, related indicators, and weighting. For instance, the table highlights that the regional data on labour force and economy used is from 2018 and 2017 respectively, mirroring the lag in the release of data at regional level.

**Table 1.** The nine selected indicators included in the Regional Potential Index in 2019.

| Theme                        | Indicators in the RPI 2019                                                                 | Main benefits for the region                                                                 |
|------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Demographic dimension        | Proportion of population living in urban areas of 5,000 inhabitants and more in 2019 (maximum number of points allocated: 75). This replaces the indicator “population density” that was included in previous RPI. | Medium-sized and largest cities offer relatively good access to jobs (especially in the tertiary sector), health care, culture, environmentally friendly transport and other services, thanks to a critical mass of population. |
|                              | Net migration rate in 2018 (maximum number of points allocated: 75).                      | This highlights the attractiveness of a region as a place to live and work, both for domestic and international migrants. It contributes to increases in the workforce, taxes and social contributions. However, an important point is that net migration may make the region fragile (e.g. by imposing a burden on administrative and health services). |
|                              | Demographic dependency ratio in 2019 (maximum number of points allocated: 75).           | This highlights the economic burden on the working population who have the potential to earn their own income, in supporting members of the population who are not working (young people and pensioners). |
|                              | Gender ratio in 2019 (maximum number of points allocated: 75).                          | In a balanced situation, the regions offer education and workplaces for both genders. An unbalanced situation is often the result of the out-migration of women for education or work purposes, contributing to the intensification of demographic shrinkage (e.g. lower fertility rates and ageing). |
The chosen indicators also have strong communicative value. They are well established and are thus easily understood in the context of regional development. As such, the main intention behind the RPI is to use it as a starting point for stakeholders to discuss the situation in, and potential of, their regions within a wider Nordic context, rather than just the domestic.

The main data sources are the national statistical institutes in the different parts of the Nordic Region, as well as Eurostat. To bring the RPI up-to-date and make it relevant, the data has been harmonised to the latest administrative divisions. The demographic indicators have been calculated based on datasets from national statistical institutes such as population by urban area for the indicator *share of population living in urban areas*, number of in- and out-migrations for the indicator *net-migration*, population by age group for the indicator *demographic dependency*, and population by gender for the indicator *female ratio*. Similarly, the labour force indicators on *employment rate* and *youth unemployment rate* have been calculated based on datasets on Labour Force Survey from the national statistical institutes and Eurostat. The labour force indicator on *tertiary education attainment* has been calculated based on datasets from Labour Force Survey from the national statistical institutes and Eurostat. The labour force indicator on *tertiary education attainment* has been calculated based on datasets from national statistical institutes, Eurostat, World Bank and CIA Factbook (for Greenland and the Faroe Islands) were used to create the indicator *gross regional product per capita* (in purchasing power parity); and datasets from national statistical institutes, Eurostat as well as NIFU (Nordic Institute for Studies in Innovation, Research and Education) and SSB/FoU-statistikk (Statistics Norway) were used to calculate *R&D investments per capita*.

Among the Nordic countries, Denmark, Finland (including Åland) and Sweden are Member States of the EU, although only Finland (including Åland) is part of the Eurozone. Iceland and Norway are members of the European Free Trade Association (EFTA), which consists of four countries that, either through EFTA or bilaterally, have agreements with the

| Theme                  | Indicators in the RPI 2019                                                                 | Main benefits for the region                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Labour force dimension | Employment rate in 2018 (maximum number of points allocated: 100). This highlights the proportion of the population of working age who are employed. | Relatively high employment contributes to higher tax revenues and the overall regional economy and its production. It also indicates that the population in a region has the skills sought by employers. A high employment rate also contributes to both social cohesion and life satisfaction. |
|                        | Proportion of the 25–64 age group with higher education degree in 2018 (maximum number of points allocated: 100). | A high proportion contributes to a more skilled workforce and a better chance of being an innovation leader. It also tends to improve the quality of jobs and consequently the life satisfaction of the inhabitants in a region. |
|                        | Youth unemployment rate in 2018 (maximum number of points allocated: 100). | A low rate of youth unemployment highlights good conditions for entering the labour market. |
| Economic dimension     | GRP per capita in 2017 (maximum number of points allocated: 200). | This provides an indication of the level of production of goods and services in a region. It also generally provides a fairly reliable measure of how a regional economy is doing. |
|                        | Total R&D investment per capita in 2017 (maximum number of points allocated: 100). This replaces the indicator “Total R&D investment” that was included in previous RPI. | It helps show the readiness of a region for future development and is seen as a tool for translating innovation into economic growth. |
EU to participate in its internal market. The Faroe Islands and Greenland are not members of any of these economic cooperation organisations. These differences in supra-national affiliation have an impact on the data that is available for this study. For example, Eurostat, the statistical office of the EU, only provides data for EU, EFTA, and EU candidate states, which does not include the Faroe Islands and Greenland. Whenever possible, data for these regions has been supplemented from other sources or estimates have been made.

As described above, the nine selected indicators are drawn from solid datasets available at regional level for the whole Nordic Region. The indicators do not display high levels of correlation and very little data was missing. Most of the missing data was for regions in Iceland, except Hôfuðborgarsvæðið, the capital city region. It is difficult to calculate estimates, for instance for GRP and R&D investments, for regions with small populations; therefore, the same value has been attributed to the seven remaining regions. As a consequence of this procedure, the economic dimension of these regions in Iceland is slightly overestimated. While the applied Icelandic regions are much smaller than their counterparts in other Nordic countries in terms of the number of inhabitants, the RPI scores between the Icelandic and other administrative regions of the Nordics may not be fully comparable. Since this article’s focus is on the gap between the top and the lowest-ranked regions, and as Icelandic regions – except Hôfuðborgarsvæðið – do not appear among these regions, it is not considered problematic to include the Icelandic regions in the analysis.

The data has been harmonised in different ways to facilitate comparison over national borders (see also Rispling & Norlén, 2018). A simple example is the harmonisation of the reference year of population data for mapping the situation in 2019. Since the 2018 reference date for Sweden and Finland was 31 December, and the 2019 reference date for the other Nordic countries was 1 January, we merely harmonised the data across all countries to the same year. A more complex example is the management of labour market statistics, in which Labour Force Survey statistics provided by Eurostat are combined with register data from the NSIs to be able to make comparable estimates at municipal level.

The normalisation of the data used the min-max calculation. This normalisation of indicators generates a value ranging between 0 and 100 for each region by subtracting the minimum value and dividing by the range of the indicator values. The region with the weakest value is given 0 and the region with the strongest value is given 100. All other regions are given a value in-between. Identification of what is a weak or a strong value is determined for each of the selected indicators. For instance, having high employment or high gross regional product per capita is considered as strong, hence the region with the highest employment rate or the highest gross regional product per capita (in PPP) is given a value of 100. Similarly, having the highest demographic dependency or the lowest net-migration is considered as weak, hence the region with the highest demographic dependency ratio or the lowest net-migration rate is given a value of 0.

An equal weighting has been used when aggregating the three dimensions (demography, labour force, and economy) to calculate the overall RPI. Finally, the indicator GRP per capita was weighted more heavily than total R&D investment per capita within the economic dimension since historically it has been determined as the most reliable measure of the economic situation in a region.

Regions are compared within three categories: urban, intermediate, and rural – according to a typology developed by Eurostat (2018). Figure 1 shows the urban-rural typology of the 66 administrative regions in the Nordics. The map is based on the typology provided by Eurostat, in which the year 2016 NUTS 3 regions are classified in three categories according to their population density in 2011 and 2015, in 1 km² grids. In predominantly urban regions, at least
80% of the total population is urban, while in intermediate regions, 50–80% of the population lives in urban clusters. In regions that are predominantly rural, less than 50% of the population lives in urban areas with 5,000 inhabitants and more. One should remember that the Nordic administrative regions have been classified into the categories of predominantly urban, intermediate, and predominantly rural according to this typology that was elaborated for the European context, including the EU candidate countries (see Eurostat, 2018).

Figure 1. Urban-rural typology of the Nordic regions.
Results

Figure 2 shows the indicators used to calculate the average score for each type of region (urban, intermediate, and rural). The economic dimension is clearly a strength in the urban regions, whereas differences are less pronounced for the two other dimensions. The intermediate regions are characterised by strong demographic, but weaker economic, development. The rural regions are especially strong with regard to the labour market and distinguished by high employment, while high out-migration and low gross regional product are weaker factors.

Figure 2. Overview of average number of points for the nine selected indicators in the three types of region in 2019.

For an overall picture of the Regional Potential Index adapted to the 66 Nordic administrative regions, see Figure 3.
Figure 3. Nordic Regional Potential Index 2019.
Urban regions in 2019

Six administrative regions are classified as predominantly urban (see Figure 1) in the urban-rural typology developed by Eurostat (Eurostat, 2019) and adapted to the latest administrative structure of the Nordic Region. The top five places in the RPI are occupied by predominantly urban regions. The remaining urban region is ranked seventh. Oslo tops the ranking of regions that have the greatest potential in the Nordic Region, followed by the capital city regions of Denmark, Sweden, Iceland, and Finland (Figure 4).

A distinguishing feature they share is that all of them have the lowest old-age dependency ratio, relatively high employment rates, the highest percentage of well-educated inhabitants, the highest gross regional product per capita, and the highest R&D investment per capita respectively. Oslo stands out as the leading region mainly owing to its economic strength and favourable population growth. However, it must be added that Oslo is favoured by the fact that the region is synonymous with Oslo Municipality, which implies that a significant portion of Norway’s economic and educational resources have been concentrated in a relatively small geographic area. This issue of scale is also mentioned in other studies, such as the report on regional development trends for Norway (Kommunal- og moderniseringsdepartementet, 2018). In contrast to the case of Oslo, for example, Denmark’s capital city region also includes Bornholm. On the other hand, the Copenhagen region is favoured by an additional labour force that commutes from Skåne, which contributes to the economic growth on the Danish side of the border.

It is interesting to note that the strongest dimension (demography, labour force, or economy) is not the same for all the urban regions. The administrative regions of Oslo, Hovedstaden (the capital region of Denmark), and Stockholm have economy as their strongest dimension, due to having the highest GRP per capita and the highest R&D investment per capita. Höfuðborgarsvæðið, the capital region of Iceland, has demography and labour force as its strongest dimensions, thanks to one of the highest employment rates, one of the lowest demographic dependency rates, and one of the highest net migration rates in the Nordic Region. The two remaining urban regions (Helsinki-Uusimaa and Västra Götaland) have demography as their strongest dimension.

Intermediate regions in 2019

There are 28 intermediate administrative regions in the Nordic Region. They are spread throughout the RPI, indicating the diversity of socio-economic contexts in these regions. An overview of the points for each of the nine selected indicators (Figure 5) gives an indi-
cation of the main potentials and weaknesses in each region. The demographic dimension is where this group of regions scores best, with an average of 159 points out of 366. Their main weaknesses are in the economic dimension (e.g., having the lowest average GRP per capita of the three types of region), which is more than 2.2 times weaker than their demographic dimension. The labour force dimension for the intermediate regions is also, on average, relatively weak, with the lowest employment rates of the three types of region.

Figure 5. Overview of points for the nine selected indicators in the intermediate regions of the Nordic Region in 2019.

The region of Uppsala (Sweden) is the intermediate region with the highest overall position – sixth place – just ahead of one of the urban regions. The presence of a large university and a strong life science sector helps to explain why Uppsala has the highest proportion of people with a tertiary education and the highest level of R&D investment per capita of the intermediate regions. The region also benefits from the proximity of the capital region of Stockholm and Arlanda Airport, which contributes to Uppsala’s high net migration rate.

Rogaland (Norway) is the intermediate region with the lowest demographic dependency ratio and the highest GRP per capita; the latter being partially explained by the oil-dominated economy as well as soft factors such as a long tradition of cooperation across public actors and the business community. The other intermediate regions with good scores are in Denmark and Norway, while the Swedish regions in this group are to be found in both halves of the rankings. Finnish regions have the lowest scores, and the region of Kymen-
Laakso has the lowest score of all the intermediate regions. The region is characterised by out-migration, an ageing demographic structure, low employment rates, and limited R&D investment, partially due to the continuing challenge of structural change and decreasing industrial production.

Rural regions in 2019
There are 32 rural administrative regions in the Nordic Region. They are ranked between 8 and 66 (the lowest of all regions), indicating major differences between their situation, just as is the case of the intermediate regions. An overview of the points for each of the nine indicators (Figure 6) gives an indication of the most important potentials and the main weaknesses for each region. The labour force dimension is where the rural regions score best, with an average of 145 out of 352 points. On average, rural regions have relatively good employment rates, thanks to good scores attained by the rural regions of Iceland and northern Norway, the Faroe Islands, and Åland. In fact, the highest employment rate in the Nordic Region is in the Faroe Islands. The economic dimension is the weakest dimension for rural regions, due to limited GRP and R&D investment per capita, especially in rural regions of Denmark, Finland, and Sweden.

Figure 6. Overview of points for the nine selected indicators in the rural regions of the Nordic Region in 2019.
However, these average values hide a wide range of different contexts among rural regions in the Nordic Region. Suðurnes (Iceland), in eighth place overall, has the highest ranking of the rural regions. Primarily because of its nearness to the capital, Reykjavik, it has the highest net-migration and the highest GRP per capita of all the rural regions.2

Suðurnes has the highest net migration, primarily due to migration of labour from abroad, and the highest GRP per capita of all the rural regions. The other rural regions with relatively good scores are mostly in Iceland, parts of Norway, the Faroe Islands, and Åland. The lowest scores are for rural regions in Finland and Greenland. Etelä-Savo (Finland) had the lowest score of all the Nordic administrative regions in 2019. This region has the largest net out-migration, the highest demographic dependency ratio, and one of the weakest economic dimensions in the Nordic Region. The latter is partially explained by the low degree of processing, economic restructuring, increasing government regulation, lack of incentives for local production, and the small size of the businesses (Rikkonen et al., 2018; Etelä-Savo ennakoi, 2020).

The relatively good scoring of the Norwegian rural regions may be linked to the transformation of regional policies in Norway over the last three decades, involving a “drifting away from traditional rural-urban and centre-periphery dichotomies, [towards] a more integrating perspective”. Through spatial contraction and by implementing distinct urban centres in several parts of the country, these changes aspire to increase structural efficiency and reduce ecological footprints (Knudsen, 2018b, p. 78). Compared to Finland and Sweden, in general, there have been more favourable conditions for development of regional policies in Norway, owing to the country’s better financial capacity and status as non-EU country (Knudsen, 2018a). In Sweden, the generosity of the social security system has been declining over recent decades, particularly regarding the sickness insurance system (Stähl and Seing, 2018). While the maximum number of sickness benefit days was limited in 2008, a recent study shows that this policy change may not make it easier for long-term sickness absentees to return to paid work (Vaez et al., 2020). There is also evidence that the stricter rules for economically inactive persons have led to increased employment and unemployment rates in Sweden (Karlsdóttir et al., 2018).

Changes in Nordic administrative regions from 2017 to 2019
In general, regions in Iceland and the Faroe Islands have a higher ranking in 2019 than in 2017, thanks to a dynamic labour force, whereas the opposite is the case for most of the regions in Norway, mainly due to weaker GRP per capita and R&D investment (Table 2). Rankings are rather stable between 2017 and 2019 for regions in Denmark and Greenland. The picture in Finland and Sweden is more varied, with a number of regions ranking higher than in 2017 while others have fallen down the rankings in 2019. Those regions that have improved their ranking over the last two years are primarily to be found in the rural parts of the Nordic Region. The region of Austurland (Iceland) jumped 12 places between 2017 and 2019. The increased number of jobs in the tourism sector, requiring an external workforce, is the main reason. Blekinge (Sweden) was the region that dropped furthest in the rankings between 2017 and 2019, by 11 places, as a result of weaker labour and economic factors in comparison to other Nordic administrative regions.

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2. On 28 March 2019, the airline, Wow Air, declared bankruptcy; this process above all affected employees at the Keflavik airport, which is located in Suðurnes. Since the State of the Nordic Region 2020 is based on statistics from 2018 and earlier, the effects of the Wow Air bankruptcy have not affected the region’s ranking.
Table 2. Nordic Regional Potential Index (points for 2017 and 2019 and 2017–19 change in rank).

| 2019 rank (2017–19 change) | Region            | RPI 2017 | RPI 2019 |
|---------------------------|------------------|----------|----------|
| 1 (–)                     | Oslo (NO)        | 730      | 717      |
| 2 (+1)                    | Hovedstaden (DK) | 627      | 650      |
| 3 (–1)                    | Stockholm (SE)   | 631      | 625      |
| 4 (–)                     | Höfuðborgarsvæðið (IS) | 567 | 584      |
| 5 (+1)                    | Helsinki-Uusimaa (FI) | 496 | 511      |
| 6 (–1)                    | Uppsala (SE)     | 516      | 505      |
| 7 (+2)                    | Västra Götaland (SE) | 472 | 498      |
| 8 (+2)                    | Suðurnes (IS)    | 466      | 491      |
| 9 (–2)                    | Trøndelag (NO)   | 490      | 481      |
| 10 (+2)                   | Norðurland eystra (IS) | 452 | 468      |
| 10 (0)                    | Vestland (NO)    | 466      | 468      |
| 12 (+6)                   | Suðurland (IS)   | 419      | 460      |
| 12 (–4)                   | Rogaland (NO)    | 477      | 460      |
| 14 (+3)                   | Vesturland (IS)  | 420      | 450      |
| 15 (+1)                   | Midtjylland (DK) | 421      | 446      |
| 16 (+7)                   | Faroe Islands (FO) | 395 | 445      |
| 17 (–2)                   | Troms og Finnmark (NO) | 423 | 442      |
| 18 (–5)                   | Åland (AX)       | 450      | 441      |
| 19 (–5)                   | Viken (NO)       | 446      | 439      |
| 20 (–)                    | Norðurland vestra (IS) | 415 | 437      |
| 21 (+5)                   | Vestfjørður (IS) | 386      | 425      |
| 22 (+12)                  | Austurland (IS)  | 352      | 423      |
| 23 (–5)                   | Östergötland (SE) | 419 | 413      |
| 24 (–3)                   | Skåne (SE)       | 404      | 403      |
| 25 (–3)                   | Agder (NO)       | 398      | 401      |
| 26 (+4)                   | Jönköping (SE)   | 370      | 397      |
| 27 (–)                    | Syddanmark (DK)  | 381      | 394      |
| 28 (+4)                   | Kronoberg (SE)   | 364      | 391      |
| 29 (–2)                   | Nordland (NO)    | 365      | 390      |
| 29 (–4)                   | Västerbotten (SE) | 387 | 390      |
| 31 (–3)                   | Österbotten (FI) | 377      | 389      |
| 32 (–3)                   | Vestfold og Telemark (NO) | 373 | 383      |
| 33 (–)                    | Örebro (SE)      | 355      | 378      |
| 2019 rank (2017–19 change) | Region                     | RPI 2017 | RPI 2019 |
|---------------------------|----------------------------|----------|----------|
| 33 (–9)                   | Møre og Romsdal (NO)       | 394      | 378      |
| 35 (+6)                   | Varsinais-Suomi (FI)       | 329      | 365      |
| 36 (+2)                   | Nordjylland (DK)          | 338      | 359      |
| 36 (+3)                   | Pirkanmaa (FI)             | 339      | 359      |
| 38 (–4)                   | Västmanland (SE)          | 352      | 357      |
| 39 (1)                    | Innlandet (NO)             | 334      | 356      |
| 39 (–3)                   | Halland (SE)               | 345      | 356      |
| 41 (–4)                   | Norrbotten (SE)            | 342      | 350      |
| 42 (2)                    | Jämtland (SE)              | 304      | 329      |
| 43 (0)                    | Västernorrland (SE)        | 304      | 322      |
| 43 (1)                    | Värmland (SE)              | 313      | 322      |
| 45 (–3)                   | Dalarna (SE)               | 324      | 321      |
| 46 (+4)                   | Gotland (SE)               | 281      | 320      |
| 47 (–)                    | Sjælland (DK)             | 295      | 313      |
| 48 (3)                    | Greenland (GL)             | 279      | 304      |
| 49 (–)                    | Södermanland (SE)          | 284      | 300      |
| 50 (–4)                   | Kalmar (SE)                | 302      | 297      |
| 51 (–3)                   | Pohjois-Pohjanmaa (FI)     | 288      | 291      |
| 52 (+2)                   | Lappi (FI)                 | 270      | 290      |
| 53 (+2)                   | Keski-Pohjanmaa (FI)       | 267      | 288      |
| 54 (+4)                   | Pohjois-Savo (FI)          | 262      | 287      |
| 55 (–2)                   | Etelä-Karjala (FI)         | 273      | 286      |
| 56 (+3)                   | Satakunta (FI)             | 251      | 283      |
| 56 (+4)                   | Kanta-Häme (FI)            | 260      | 283      |
| 58 (–2)                   | Keski-Suomi (FI)           | 264      | 277      |
| 59 (–2)                   | Gävleborg (SE)             | 263      | 265      |
| 60 (+1)                   | Etelä-Pohjanmaa (FI)       | 236      | 259      |
| 61 (+1)                   | Päijät-Häme (FI)           | 235      | 258      |
| 62 (–11)                  | Blekinge (SE)              | 279      | 248      |
| 63 (+1)                   | Pohjois-Karjala (FI)       | 204      | 234      |
| 64 (+1)                   | Kainuu (FI)                | 191      | 230      |
| 65 (–2)                   | Kymenlaakso (FI)           | 210      | 224      |
| 66 (–)                    | Etelä-Savo (FI)            | 180      | 200      |
The large majority of regions (53 out of 66) increased their score between 2017 and 2019, with an average increase of 15 points. This indicates that differences between the regions in terms of development potential diminished between 2017 and 2019. Some of the changes are due to domestic contexts (e.g., a more dynamic labour market in Iceland), whereas others are due to specific regional context (e.g., attractive universities in the region of Uppsala in Sweden with good accessibility to the capital city region of Stockholm).

However, over-time changes were different between different types of regions. The over-time changes in terms of rank in the urban regions are very limited. These regions remained at the same rank (+/–1) between 2017 and 2019. Västra Götaland (Sweden) was the only urban region to climb two steps, owing to the region having slightly better scores in all three dimensions (e.g., higher employment rate and higher GRP per capita) as well as another region (Trøndelag, Norway) dropping in the ranking. The over-time changes indicate a slight drop of a couple of places for the majority of the intermediate regions, with the region of Blekinge (Sweden) falling the most (-11). Blekinge had the highest youth unemployment rate of all the Nordic administrative regions in 2018, and one of the lowest GRP per capita. The situation in this Swedish region is partially due to decreasing employment in traditionally important industries combined with a weak adaptive capacity (Sweco, 2019).

Varsinais-Suomi (Finland) made the biggest move up the rankings among the intermediate regions (+6), mainly due to higher employment and lower youth unemployment rates. A stronger business sector with a successful shipyard, automotive and life science sectors creating an important number of jobs in the region. The over-time changes indicate diverse trends in rural regions. On the one hand, Austurland (Iceland) made the biggest jump up the ranking (+12), thanks to improved demographics in the region (e.g., positive net migration and a relatively low demographic dependency ratio), which is explained by the boom in the tourism sector. The settlement of a new labour force from abroad is facilitated by a number of measures, such as a multiculturalism policy, language courses, and contact points. On the other hand, Møre og Romsdal, a rural region in Norway, dropped furthest in the ranking (-9) due to decreasing GRP per capita, which is partially explained by a large fall in production in the aquaculture, transport, and logistics sectors. Looking at the changes in the scores between 2017 and 2019, rural regions have increased by an average of 22 points, making this the group of regions with the highest increase in points.

To support the notion of change between 2017 and 2019 in the RPI, a simple statistical test was applied. The RPI point values of the five highest and the five lowest ranked regions were summarised for each year (3,071 and 1,020 for 2017, and 3,087 and 1,136 for 2019), and the difference between the summarised scores of the top-ranked and the lowest-ranked regions was calculated (2,051 for 2017 and 1,951 for 2019). By using this formula, the difference between the metropolitan top regions and the peripheral lowest-ranking regions is 100 point units smaller in 2019 than in 2017. This result indicates that the overall gap between the highest and the lowest-ranked regions has been decreasing over recent years.

Discussions and conclusion

Concluding remarks

The results of the 2019 RPI, summarising developments in demography, the labour market, and the economy of the administrative regions within the Nordic Region, indicate the strong position of urban (capital) regions (cf. Desmet & Henderson, 2015; European Union, 2019). As presented in the results section, these regions concentrate the highest GRP/capita and R&D investments/capita, making their economic dimension of the RPI a real strength.
The relatively young and highly educated populations in these regions contribute to a high rank in the 2019 version of the RPI, as has also been the case in previous versions. Intermediate and rural regions have, on average, a similar number of points in the RPI. However, the average is hiding the differences between these two types. On the one hand the intermediate regions are characterised by a strong demographic dimension (e.g., gender balance) and relatively weak economic dimension (e.g., low GRP/capita). On the other hand, the rural regions have a rather strong labour dimension (in particular, high employment). To summarise, according to the RPI scoring, the urban regions (and especially the capital regions of Norway, Denmark, Sweden and Iceland) score significantly higher than the other regions, while the differences between the intermediate and rural regions could not be directly related to the classification into urban, intermediate and rural regions.

Contrary to the image presented in the media of a growing gap between rich, densely populated urban regions, and sparsely populated peripheral rural regions (e.g., Rodríguez-Pose, 2018), the study shows rather that the distance has decreased, at least over the last two years (cf. European Union, 2019). Even if it is difficult to draw any major conclusions based on a short two-year period, the results of this study at the very least indicate a stable situation – so called status quo ante bellum – rather than a widening gap between the metropolitan and peripheral regions of the Nordic countries. This diminishing gap can either be the result of successful national cohesion policies or that the development potential of the latter type of regions is significantly underestimated. It may also be an indication that political forces that want to create dissatisfaction among the population have been successful in spreading poorly substantiated but popular messages. Yet, to be able to provide more robust conclusions, a comparison between the regional RPI scores over a longer time period would be necessary.

Limitations of the RPI

RPI is based on traditional, quantitative data. Therefore, when drawing conclusions, it is important to be aware of the methodological limitations due to lack of reliable data on welfare and environmental qualities. It is also noteworthy that despite repeated attempts, the national statistical units, so far, have failed to solve the problem of deficient border regional statistics.

It is important to know that the geography of an administrative region has an influence on its ranking, especially when the territory of a functional region goes beyond administrative regional borders. The region of Oslo, which corresponds to its municipal territory instead of being a capital region consisting of several municipalities, provides a good example since Oslo municipality is the main node of the functional capital region of Norway, having a large proportion of the country’s highly qualified workplaces and tertiary education concentrated together. This specific context contributes to the administrative region of Oslo having a high GRP per capita, high R&D investment, and a large proportion of people with a tertiary education up to degree level. As a result, the points for Oslo are somewhat higher than might be expected, and the points for the surrounding regions are somewhat lower. Due to these reasons, the value of GRP per capita of the region of Oslo, which is much higher than the value for any other administrative regions in the Nordic Region, has been handled as an outlying value.

Despite the rigorous process through which the ranking was developed, there are still limitations. First, the lack of a database on cross-border flows affects the ranking of border regions where cross-border flows are not balanced (e.g., the value of gross regional product per capita). Second, there is a lack of a good indicator for measuring accessibility to differ-
ent services at regional level across the Nordic Region. However, the demographic indicator “share of population living in urban areas with a population of 5,000” aims partially to resolve this deficiency. Nor does the ranking take into account any other qualitative dimensions, such as life quality or the existence of regional development or smart specialisation strategies, again due to the lack of a solid indicator available at regional level throughout the Nordic Region. Finally, indicators connected to the environment and emissions of carbon are not included in this ranking due to the lack of reliable and comparable data at regional level.

Working with cross-border statistics involves a number of challenges. For instance, despite frequent commuting over national borders in several administrative regions of the Nordics, there is a lack of data on such commuting between the countries due to legal obstacles related to the exchange of data. In the regular register data of Eurostat and the NSIs, which are the two prime data sources for this in the RPI, commuters to neighbouring countries are not included. This results in incomplete information (i.e. underestimations) regarding employment, incomes, and salaries for regions and municipalities located close to national borders, where a substantial share of the population commutes for work to the neighbouring country. For instance, inhabitants of Skåne (Sweden) working in the capital region of Denmark contribute to the GRP of the Danish region and not the Swedish one. Despite several initiatives, there is still no up-to-date, harmonised Nordic cross-border statistical data, other than that provided by some regional authorities.

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