Arctic human security in the era of Sustainable Development Goals (SDGs): The case of Sweden, Norway and Finland

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Sweden, Norway and Finland are the countries with advanced economic development and social security systems that are actively implementing UN Agenda 2030. In this study I investigate Arctic human security in the northern regions of Sweden, Norway and Finland. Human security is constructed as "proclaimed" or stated in the official documents and as "experienced" by people. I study proclaimed human security in the Arctic reflected in national human security agendas and human security coverage in the national Arctic strategies. Experienced human security construct incorporates objective measures of economic, health and personal security. Economic security is measured as disposable income and poverty risk. Health human security is measured as tertiary education attainment and hospital beds available per 1000 people. Personal human security is proxied by crime rates by type of criminal offences (e.g. traffic, sexual). The results of the study indicate that human security is presented strongly in national and foreign policy agendas, but rather weakly in the Arctic strategies. People who live in the Arctic regions have substantially lower levels of disposable income on average and are at higher poverty risk especially compared with the capital regions of the same countries. Tertiary education attainment data demonstrates risk in human security for the male population. Crime statistics indicate higher risks of traffic offences in northern Finland and higher sexual offences risks in the northern Norway regions. The study identifies the risks and discusses disconnectedness between national human security agendas, SDGs and Arctic strategies. Human security lenses can be useful for identifying most imminent risks in human security and tailoring SDGs to the Arctic-specific context.

Introduction

Human security received a new boost after the launch of the UN Agenda 2030 in 2015. The Nordic countries of Sweden, Norway and Finland perform extremely well in international assessments such as quality of life, happiness index, etc. At the same time northern, Arctic regions of these countries experience negative population dynamics with decreasing populations of youth and young adults, and disparities in tertiary education attainment (Business Index North 2018). The objective of this article is to identify human security risks in the Arctic regions of Sweden, Norway and Finland. The scope of the study is limited to this area in order to compare neighboring regions that share many similar challenges, e.g. ageing population, long distances to major markets and capital cities. The similarities of the northern regions of Sweden, Norway and Finland is recognized

by the Interreg Nord (EU-funded) programme aimed at strengthening of economic and social development and cross-border cooperation.

Human security is constructed as "proclaimed" or stated in the official documents and as "experienced" by people. I study proclaimed human security first by addressing national policies, and secondly by reviewing Arctic national strategies. Experienced human security is measured by an array of indicators addressing economic, health and personal security. The results of the study indicate that while human security is presented strongly on the national and foreign policy agendas of the aforementioned countries, it fails to materialize for the people living in the North where the risks are high in economic, health and personal components of human security. Arctic national strategies address several components of human security, but lack targets and action plans to support human security in the North. The study contributes to the findings of Hoogensen Gjørv (2012), Greaves (2011), Emmerson and Lahn (2012) all pointing to the insufficient role of Arctic human security on the national agenda by empirically studying proclaimed and experienced facets of human security in Sweden, Norway and Finland. Moreover, the study investigates Arctic human security in the light of SDGs and provides some examples on linking these concepts.

The article proceeds as follows: section 1 discusses human security construct from a historical point of view, provides different definitions and highlights current trends in human security. Section 2 provides an overview of previous research on human security in the Arctic. Section 3 presents methods and data. Results are presented and discussed in Section 4. Finally, Section 5 concludes the article.

Human security construct

Human security is a multilayered concept that is understood through an interplay of global players such as UNESCO, governments, NGOs and academia. The incipience of the term "human security" can be traced back to the 1990s emerging from the UN Development Program (UNDP). Human security was long understood to be a part of foreign policy but since 1994 a shift from the sovereign states and their national interests to the well-being of the people happened as a result of the UNDP (Greaves, 2016.) This shift broadened the scope of security analysis and policy from territorial security to the security of people (Gomes & Gasper, 2015).

The UNDP defined human security as "safety from such chronic threats as hunger, disease and repression and protection from sudden and hurtful disruptions in the patterns of daily life" (UN Human Development report, 1994). Building on the UN Human Development report (1994) human security comprising seven pillars economic, health, food, environmental, personal, community and political was consequently adopted by more than 170 head of states (Lautensach, 2013).

Over the past years, "human security" has entered international discourse on par with the "sustainability" concept (Hunter & McIntosh, 2010). On the semantic level securitization assumes that an object of security is threatened by some issue, event or circumstance (Buzan et al, 1998). What separates human security from other types of security, is that it must be about humanity at every level, on every scale: individuals, (small) groups, and the global population (Wilde & Boer, 2008). By making the individual the centre of analysis, human security focuses the attention of all actors on addressing the root causes of insecurities and looks for solutions that build on local capacities (Jolly & Ray 2006). Human security can be regarded as a foundational value, from which

flow other individual and social values. Quite often human security is compromised not by risks of being attacked by terrorists or weapons of mass destructions, but by so-called soft threats economic insecurity, hunger, lack of safe drinking water and sanitation and endemic diseases (Hunter & McIntosh, 2010).) The challenge in defining human security stems from the existence of overlapping concepts such as in human security, human rights and economic development (Greaves, 2011).

It is understood that the state remains to be the main provider of security. The provision of security to individuals by the state is a social contract in which the state gains its legitimacy (Krause, 2007). By placing the individual at the centre of analysis, human security poses new questions relevant to the 'problem' of security: "Security for whom? Security from what? Security by which means?" (Tadjbakhsh & Chenoy, 2007: 13). Furthermore, security can be constructed by understanding what constitutes insecurity, or fear of human existence (Erickson, 2010). Apart from a conceptual understanding of human security, it should have mechanisms in place that govern human security.

In 2015, human security received a new set of lenses with the introduction of UN Agenda 2030 comprising the United Nations Sustainable Development Goals (SDGs). SDGs include 17 universal goals (applicable to all countries) targeting sustainable peace, poverty reduction, gender equality and inclusive societies, etc. The implementation of SDGs rests on countries' own sustainable development policies, plans and programmes. Altogether, 244 indicators were introduced to monitor the progress towards SDGs achievement, with possibility to introduce new indicators if needed.

In addressing interrelatedness of human security and SDGs, the UN provides the following comment: "the application of human security does not add additional layers to the work of the United Nations. Rather, it builds on and strengthens existing frameworks by closing potential gaps; combining existing tools to accelerate delivery" and goes on to add that "human security serves as both an analytical lens and a programming framework that complements and enriches mechanisms to attain the SDGs" (Human Security and Agenda 2030 report, 2017: 2). During a high-level event on 'Human Security at 25: Building on its Contributions to Achieve the SDGs', Achim Steiner, UNDP Administrator, commented that "human security has maintained its relevance in the context of the 2030 Agenda and the SDGs, and called for the UN development community to keep it as a reference point for bringing together different domains of development". However, the practical application of human security in the context of SDGs remains unclear and needs to be further addressed. When dealing with human security what set of lenses should prevail? How are we to combine these two frameworks? In the methodological part of the article I elaborate on this further.

Human security in the Arctic context

Human security should be built upon context, values and practices (Hoogensen Gjørv, 2012). The context determines the parameters, values inform security and practice denote mechanisms and actors in place for ensuring the process of securitization or achieving a secure state. Therefore, human security should be understood in the Arctic context, I further review previous research on human security in the Arctic.

The Arctic Council was established in 1996 as an intergovernmental high-level forum to provide a means for promoting cooperation, coordination and interaction among the Arctic states. The

Arctic Council does not address security issues, nor does it utilize "human security" in its lexicon. It, however, addresses human security by its work on environmental impacts, sustainability and protection of local communities, mainly by producing documentation of these impacts. During its history, Arctic Council work initiated three international agreements: the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (2011), the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (2013) and the Agreement on Enhancing International Arctic Scientific Cooperation (2017).

The challenges of human security in the Arctic regions receive attention from scholars and data driven reports. Arctic countries with their capitals far from the North historically adopted center-periphery relationships with the northern regions (Hoogensen Gjørv, 2012). Greaves (2016) denounced Arctic human security as pathological due to the prevailing emphasis on control, extraction and consumption of hydrocarbon resources, while arguing that Arctic security shall be based on the critical understanding of human-caused environmental change. Analyzing Canadian Arctic policies Greaves (2011: 231) concludes that "links between people and security are absent from current Arctic policy", while sovereignty is prioritized over all other policy areas. Similarly, Emmerson & Lahn (2012) find that the Arctic states place the emphasis on economic opportunities exploitation while downplaying social and ecological consequences. Lukovich and McBean (2009) found that the human security of people in the Canadian Arctic was threatened by environmental, social and economic conditions. The intricacies of environment, identity of peoples, supply of traditional foods, community health, economic opportunities, political stability and Indigenous peoples' human security in the Arctic are examined in Hoogensen Gjørv (2013). Heininen (2016) and Hossain & Cambou (2018) discuss approaches to human security in the Arctic incorporating multiple dimensions such as environmental, economic, health, food, water, energy, communities, political and digital security.

Several Arctic reports produced either by the Arctic Council Working Groups or other authors indirectly touch upon components of human security. The Arctic Human Development Report in its two editions (2004, 2011) addresses among other economic systems, human health and wellbeing, community viability and adaptation. The Arctic Resilience Report (2016) assumes human capacity for agency and calls for engaging in deliberate action, while the call for action for the Arctic states remains unclear. Economy of the North (2008, 2015) and Business Index North reports (2017, 2018, 2019) provide a wealth of comparable socio-economic indicators across Arctic regions but do not directly elaborate on the human security construct. What is missing from these studies and reports is connectedness to the larger human security context and human security goals of the Arctic countries.

Methods and data

In this study I approach human security in the Arctic as "proclaimed" or stated in the official documents and as "experienced" by people (see Figure 1). In order to access these two human security facets, qualitative and quantitative data analyses are employed. For studying "proclaimed" human security I apply qualitative content analysis (Mayring, 2004) of documents most relevant to human security in the Arctic. Content analysis of documents related to human security is used due to its ability to reconstruct perceptions and beliefs of documents' authors (Pfeffer, 1981), and ability to discern values and concerns expressed in the documents (Sackmann, 1992, Donleavy, 2012). "Experienced" security in its turn is accessed by analysis of objective statistical indicators

that correspond to certain dimensions of human security. Experienced security provides an objective gauge of human security by only using quantitative data due to unavailability of qualitative indicators across countries.
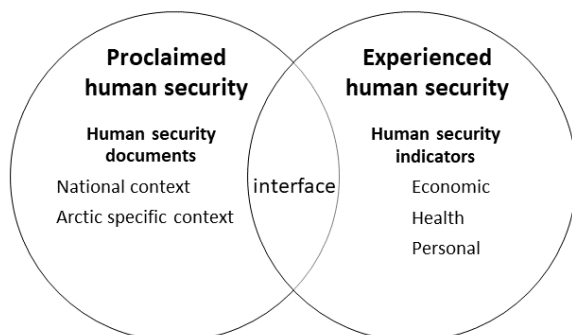

Figure 1 Research approach to human security

In order to access "proclaimed" human security, I use a range of documents, including Agenda 2030 related documents at the national and Arctic-specific context (see Table 1 for data sources). I analyze documents at the national context (such as human rights policy guidelines) and the Arctic strategies of Sweden, Norway and Finland by exploring whether they address human security and if so, elaborate on the elements that are deemed important in the national Arctic strategies pertinent to human and security aspects. All data are publicly available. For the analysis of the human security themes of the national Arctic strategies, I utilized NVivo software.

Table 1 Documents used in the analysis of human security discourses

Context	Sweden	Norway	Finland
National	Human rights, democracy and the principles of the rule of law in Swedish foreign policy (2016)	Human Security Network	Finland's international human rights policy
	Strategy for Sustainable Peace 2017–2022 (2017)	Human rights policy guidelines (2013)	Internal Security Strategy, A Safe and Secure Life (2017)
	Sweden's implementation briefs covering UN agenda 2030	Documents related to implementation of UN agenda 2030	Documents related to implementation of UN agenda 2030
Arctic-specific	Sweden's Strategy for the Arctic Region (2011)	Norway's Arctic Strategy (2017)	Finland's Strategy for the Arctic Region (2013)

Note: The list of the documents may be not all-encompassing, only main policies were considered.

In "experienced" human security facets I concentrate on three dimensions of human security, namely economic, health and personal security. The choice of these three dimensions is driven by a focus on physiological and safety needs. Maslow's (1970) hierarchy of needs presented as a pyramid proposes that for human development and motivation, fundamental physiological and safety needs must be met first in order to progress to higher levels. In the analysis I concentrate

on three dimensions, namely economic, health and personal security due to their primal importance and due to the availability of robustly comparable data that is up-to-date.

Indicators of "experienced" human security are used for monitoring how well countries and their corresponding regions are performing in achieving SDGs. The link between human security dimension, corresponding indicators and their relatedness to SDGS is presented in Table 2. See Appendix I for details on how these indicators are linked to monitoring SDGs. Data are obtained from Eurostat, Statistics Norway, Oulu and Lapland Police Offices. Data are available on Nomenclature of Territorial Units for Statistics (NUTS) 2 level[1] for economic and health indicators. Personal security indicators are available on NUTS 3 level for Norway and custom calculations are applied for Finland. Throughout the analysis, for all indicators, I use national country average and data for capital regions when available (e.g. Helsinki-Uusimaa in Finland) to address the center-periphery divide. When necessary, I construct comparable indicators, e.g. number of beds per 1000 or criminal offences rate per 1000 people.

Table 2 Human security indicators and correspondence with UN SDGs (see Appendix I for more detailed description)

Human security dimension	Indicator	Description	Relatedness to UN SDGs
Economic security	At poverty risk	% of people at risk of poverty or severely materially deprived or living in households with very low work intensity	SDG 1 No Poverty SDG 10 Reduced Inequality
	Disposable income per inhabitant	Disposable income expresses the financial resources available for spending (or saving) and determines ownership of (or access to) material goods and services	
	Disposable income in Purchasing power standard (PPS) per inhabitant	Same as disposable income but adjusted for PPS	
Health security	Population aged 25-64 by educational attainment level, sex and NUTS 2 regions (%)	% of population with tertiary education attainment by sex	SDG 3 Good health and wellbeing SDG 4 Quality Education

	Number of hospital bed per thousand inhabitants	Indicator for availability of services for acute and complex conditions at hospital	SDG 10 Reduced Inequality
Personal security	Registered criminal offences per 1 000 population (drug, traffic and sexual offences)	Prevalence of criminal offences per 1 000 population	SDG 3 Good health and wellbeing SDG 5 Gender equality

The economic domain of human security relates to the economic stability and is measured by three indicators: disposable income per inhabitant, disposable income in purchasing power standard (PPS) per inhabitant and at poverty risk as a percentage of population. These indicators collectively help to understand how Arctic regions are performing in meeting SDG 10 on reducing inequality within and among countries, and SDG 1 on ending poverty in all its forms everywhere, here specifically looking at local levels of poverty.

The health component of human security is measured as population aged 25-64 with tertiary education attainment level and number of hospital bed per thousand inhabitants. Tertiary education attainment is used as predictor of future earnings, health and life expectancy (Lahelma, 2001, Ross & Wu, 1995). The number of hospital beds per inhabitant measures health infrastructure available and represents health support system. Collectively, these indicators provide a view on how Arctic regions perform in achieving SDGs 3, 4 and 10. These indicators can be used to complement the monitoring of SDG 5 (Gender Equality).

The personal security component encompasses threats to human life in the form of crimes committed in the region. It corresponds with the notion of "feeling safe on the streets" (Kaldor et al, 2007). The indicators do not address issues with domestic abuse and violence in homes due to data unavailability. The data on personal human security is collected by crime rates by major type of criminal offences (drug and alcohol, traffic offences and sexual offences) to address the personal risk the Arctic communities in the European Arctic are facing. Analysis of these indicators helps to understand meeting SDG 3 (Healthy life and wellbeing).

Results and discussion

The content analysis of documents listed in Table 1 provides understanding of proclaimed human security. Further, I present the findings of experienced human security constructs as composed of economic, health and personal security indicators.

Proclaimed human security in a national context

Sweden

Sweden's approach to human security is linked to its work on human rights. Sweden promotes areas of human rights where it believes itself to be strong at home. Human rights, democracy and the principles of the rule of law in Swedish foreign policy (2016) communication to the government does not use the expression 'human security' but instead lists as priorities inclusive

and democratic societies, equal rights for all, security, justice and accountability and integrated approach.

Additionally, Sweden's Strategy for Sustainable Peace (2017) focuses on the prevention of armed conflict, effective conflict resolution, sustainable peacebuilding and state-building, increased human security in fragile and conflict-affected states, and empowerment of women as well as of youth, children and other excluded groups in these situations. The Swedish approach is international in nature whereby "the aim of Swedish international development cooperation is to create preconditions for better living conditions for people living in poverty and under oppression" (Strategy for Sustainable peace 2017: 2).

Sweden is in the processes of adopting Agenda 2030. In 2018 it published five implementation briefs covering the following SDGs: 6 - Clean water and sanitation; 7 - Affordable and clean energy; 11 - Sustainable cities and communities; 12 - Responsible consumption and production and 15 - Life on land. Remarkably, none of SDGs (1-5) addressing poverty, health, education and equality received a separate briefing.

Norway

Norway is one of the lead players in the 'Human Security Network' which was formed in 1999 consisting of several states and NGOs that endorsed the concept of human security. The aim of the network is to promote the concept of human security as a feature of national and international policies. The focus of the network is primarily on promoting human rights.

As part of its foreign policy Norway provides human rights guidelines on specific topics that it deems important. Guidelines are available on sexual orientation and gender identity, efforts to support human rights defenders, promoting the abolition of the death penalty, protection and promotion of the rights and freedoms of persons belonging to religious minorities and the rights of Indigenous peoples. These documents do not feature human security per se but communicate Norway's position in human rights priorities.

Norway embarked on adopting UN Agenda 2030 and provides elaborately planned actions for each of the SDGs, but the implementation is hampered by perceived challenges such as sustainable consumption and production, health and education, equality, employment, and migration. The Government prioritizes quality education and employment, especially for young people and those at risk of marginalization.[3]

Finland

Finland's international human rights policy prioritizes women's rights, the rights of persons with disabilities, the rights of sexual and gender minorities, the rights of Indigenous peoples, economic, social and cultural rights (The Government of Finland human rights report, 2014).

Analysis of Finnish human security policies demonstrates that Finland applies human security concepts to internal policy. In 2017, Finland published Internal Security Strategy, A Safe and Secure Life that provides a road map for ensuring that Finland will be the safest country in the world, as envisaged in the Government Programme. The strategy recognizes human security risks as youth unemployment (especially for 20-24-year-old males), mental health problems, deprivation and social exclusion. The strategy mentions risks associated with migration, internal group conflicts, crimes and ethical conflicts inside Finland.

In the implementation of Agenda 2030, Finland focuses on establishing governance structures and in the period 2016-20 put an emphasis on: 1) Rights of women and girls; 2) Reinforcing developing countries' economies to generate more jobs, improve livelihoods and enhance wellbeing; 3) Democratic and well-functioning societies, including taxation capacity; 4) Food security, access to water and energy, and the sustainable use of natural resource.

Overall, Norway, Sweden and Finland are strong players in the field of human security and human rights, mainly using the means of foreign policy. Notably, Finland is one of the countries that apply human security concept in its internal strategy. All countries embarked on adopting Agenda 2030 and some have prioritized SDGs they are going to pursue. Human security is not utilized as concept in SDGs context.

Proclaimed human security in national Arctic strategies and policies

The national Arctic strategies define priorities and demonstrate countries' values and commitments. I first search whether the national Arctic strategies of Sweden, Norway and Finland contain a reference to "human security". The term *per se* is used in neither of documents, but there are some surrogates that try to capture the concept of human security. I continue by searching of mentioning of "human", "people" and "security" separately to understand in what context these words are used and what meaning they convey. Table 3 summarizes the frequency of words occurrences in the documents.

Table 3 Frequencies of words occurrences in the national Arctic strategies

Strategy document	"Human/s"	"People"	"Security"
Sweden's Strategy for the Arctic Region (2011)	11	19	28
Norway's Arctic Strategy (2017)	4	22	10
Finland's Strategy for the Arctic Region (2013)	6	23	55

Next few examples demonstrate how "human/s", "people" and "security" are contextualized in each of the strategies.

Human

In the Norwegian Arctic strategy "human" is understood in the context of growth:

> A sustainable region is one that has a balanced population structure and is one where human and natural resources are managed in a way that promotes development and growth (Norway's Arctic Strategy 2017: 9).

> Further growth will have to be based on an even better utilisation of the region's natural and human resources (Norway's Arctic Strategy 2017: 23).

The Finnish strategy supports the claim of climate change caused by "human action". Sweden's strategy has a whole subchapter dedicated to the "human dimension" addressing amongst others "negative health and social effects of climate change, hazardous substances and the anticipated increase in the use of Arctic natural resources" (Sweden's Strategy for the Arctic Region, 2011: 41).

People

Norwegian Strategy acknowledges that North Norway "has an ageing population and the proportion of people of working age is decreasing, especially in rural areas (Norway's Arctic Strategy, 2017: 10)". However, there are several instances attributable to the future wish, not the current demographic situation in the North whereby:

> We will build local communities that can attract people of different ages and genders, and with different skills and expertise (Norway's Arctic Strategy, 2017: 3).

> We want even more young people to choose to build their future in the north (Norway's Arctic Strategy, 2017: 10).

Swedish strategy focuses on sustainable livelihoods for the people:

> The basic prerequisites for the people living in the Arctic are: a long-term optimism; opportunities for them to earn a livelihood; good communications and social care. In order not to undermine the social or natural environment for people living in the region, its economic developments must be sustainable in the long term. (Sweden's Strategy for the Arctic Region, 2011: 30)

Finnish strategy underlines the need for:

> increased attention to actions to mitigate climate change; conserve and protect the natural environment; promote the well-being of the local population; and secure the viability of the traditional cultures of the Indigenous people (Finland's Strategy for the Arctic Region, 2013: 8).

At the same time Finland's Arctic strategy emphasizes that "the necessary prerequisites for the welfare of the people living in Finland's northern parts must be secured. Welfare encompasses mental and material well-being, access to work, efficient basic services, equality, security and education (Finland's Strategy for the Arctic Region, 2013: 11)". This description comes as close to the meaning of human security as possible.

Security

Security appears to be a widely used word in all strategies. In Swedish and Norwegian strategies security is tightly linked to foreign policy. Sweden states that "The current security policy challenges in the Arctic are not of a military nature" (Sweden's Strategy for the Arctic Region: 14), however, the document dates to 2011. Norway's strategy emphasizes international cooperation for maintaining peace and security. Finland uses the word security in more diverse contexts addressing it from a foreign policy perspective: "Finland promotes stability and security in the region in line with its foreign and security policies (Finland's Strategy for the Arctic Region, 2013: 14)". Finland introduces a notion of a "comprehensive concept of security, which consists of securing the vital functions of society through close cooperation between the authorities, industry, NGOs and citizens" (Finland's Strategy for the Arctic Region, 2013: 43).

Finally, Finland has a whole section addressing internal security where it warns of potential security threats in the future:

> While the Arctic region is of no special concern in terms of crime prevention for the time being, it is important to watch the developments in the area and give due

consideration to potential future security threats (Finland's Strategy for the Arctic Region, 2013: 42).

Overall, Arctic strategy documents do not prioritize human security. People and the human dimension are portrayed with the forward-looking lenses, e.g. Norwegian strategy for the Arctic aspires that young people will choose to build their future in the North but fails to explain how to achieve this goal. Moreover, the Arctic strategies do not explicate how to address human security risks in the Arctic. There is a disconnectedness between state policies and Arctic strategies on the question of human security. The results are in line with Hoogensen Gjørv (2012) that finds that human security values are strongly articulated on the level of international policy, but somewhat disconnected from other actors. Results support the findings of Greaves (2011), Emmerson & Lahn (2012), whereby human security is not considered as an essential part of the Arctic strategies.

Experienced human security in the Arctic

Economic security

Economic indicators of human security are presented in Figures 1 and 2. All Arctic regions demonstrate a disadvantaged economic situation for its inhabitants. Smaller disposable income limits human security in terms of access to food, quality living conditions, and leisure activities.

Figure 1 Disposable income per inhabitant in EUR and in Purchasing Power Standard (PPS), 2016
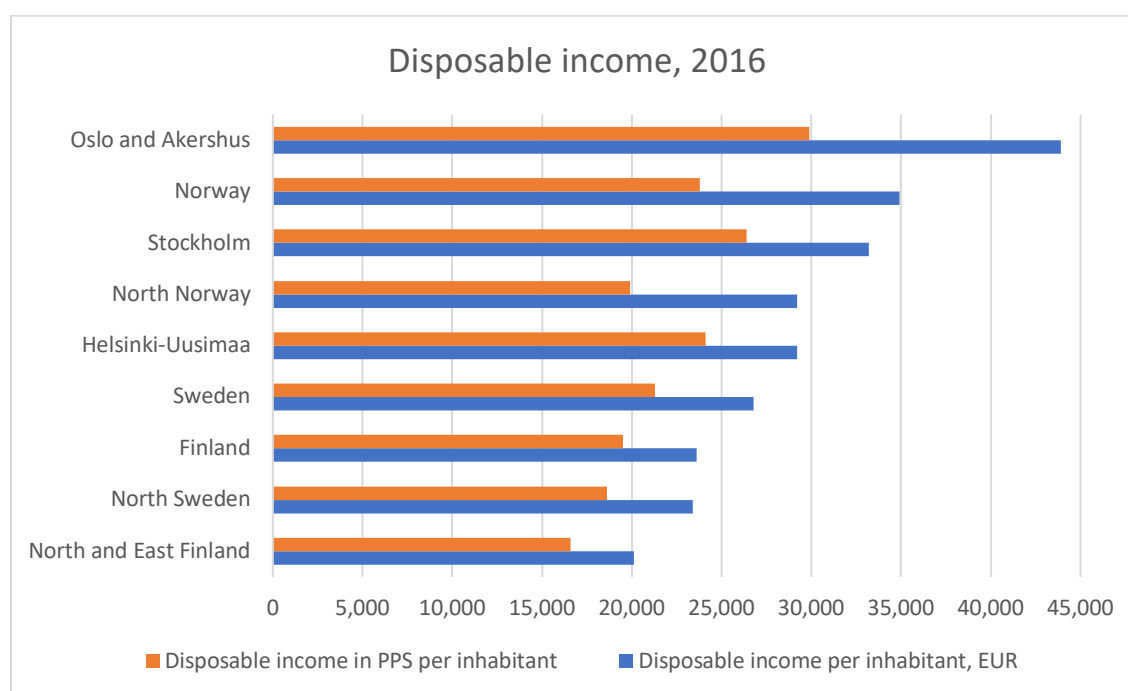

Note: see Appendix I and II for data sources

Figure 1 illustrates big differences in disposable income per inhabitant, whereby disposable income in the capital regions is on average 7000 EUR higher if compared to the country-wide averaged income in Sweden, Norway and Finland. People in the northern regions may expect to have on average 4000 EUR less than the corresponding country's average. The similar result appears when looking at disposable income adjusted by purchasing power standards (PPS) of the actual

individual consumption of households and by the total resident population. For instance, people in the north of Norway are expected to have at their disposal 10,000 EUR less if compared to the capital region of Oslo and Akershus and over 3500 EUR less than the country average (income in PPS per inhabitant). This finding illustrates a threat to economic security, it creates a negative image of the region and damages attractiveness for newcomers. The growing elderly population that is economically inactive contributes to lower levels of disposable income, coupled with low levels of tertiary education attainment amongst male populations (Business Index North report 2018).

Figure 2 demonstrates that all Arctic regions have poverty risk, which is higher compared to country averages and disproportionately high compared to capital regions. This divide actualizes real problems of material deprivations. North of Sweden has an *at poverty risk rate exceeding* 16%, meaning that every sixth person is at risk of poverty. Big differences of at poverty risk are observed between capital and northern regions, compare Helsinki-Uusimaa 7% rate to 14% in North and East Finland. Nelson (2013) documents diseases of poverty amongst Arctic Indigenous peoples and Duhaime & Édouard (2015) observe monetary poverty in Inuit Nunangat in Canada. Economic security indicators used in this study indicate a threat to all Arctic populations including local and Indigenous peoples in Sweden, Norway and Finland.

Figure 2 At poverty risk rate as % of population, 2017
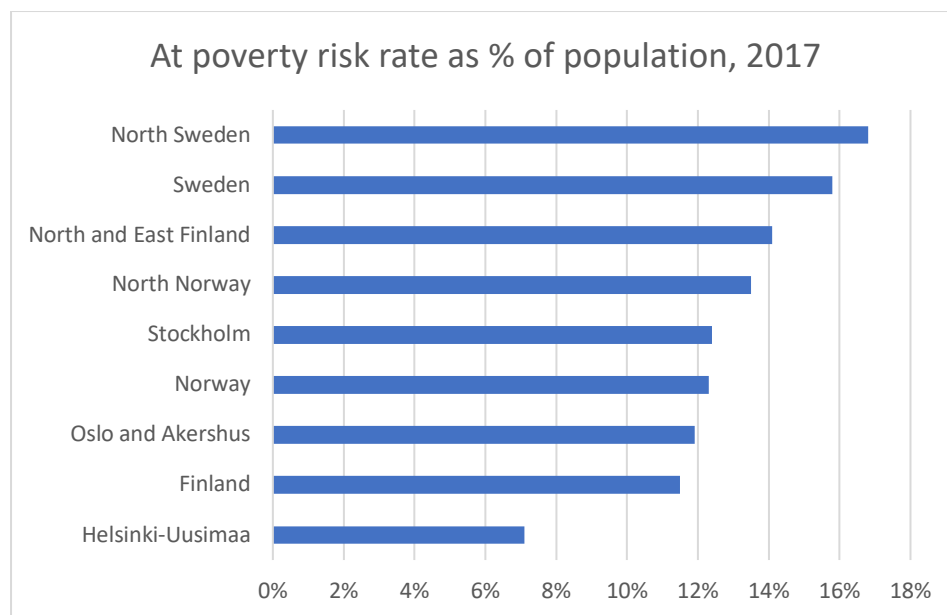
Note: Data from Eurostat

Health security

Figure 3 shows that males in the northern regions have considerably lower levels of tertiary education attainment in the range of 20 percentage points when compared to the capital regions and subsequent country's averages.

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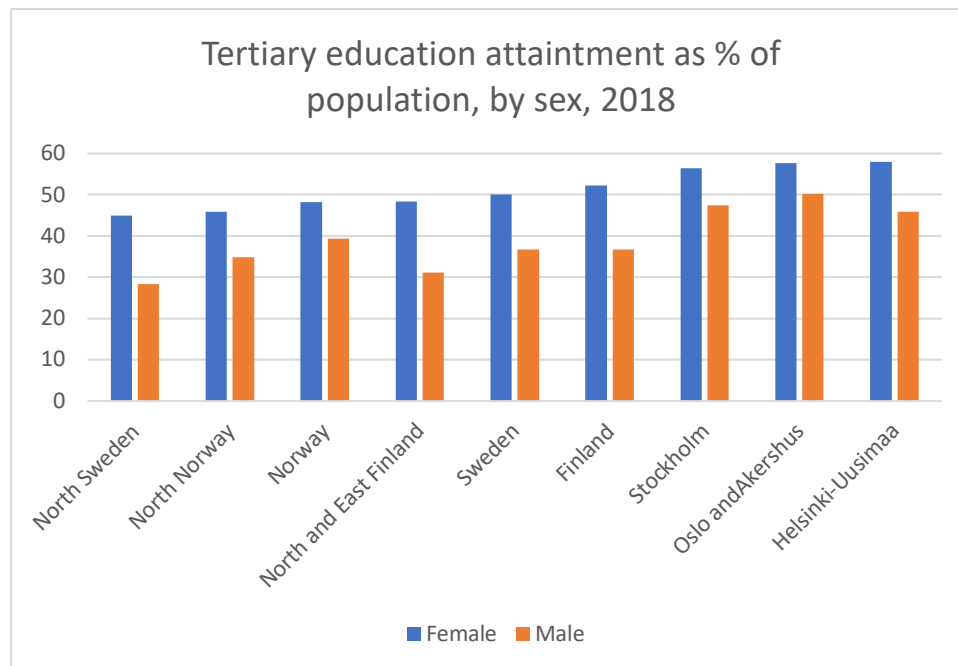**Figure 3** Tertiary education attainment as % of population, by sex, 2018

Figure 4 illustrates how basic health needs are met at the hospitals. All countries under analysis have fewer number of beds per 1000 than the EU-28 average of 5.1. North and East Finland, North Norway and North Sweden have a slightly higher number of beds than their country's averages. This can be attributed to a growing elderly population in the North. The negative trend over the years 2013-2016 demonstrated the worsening of health security. The number of beds in hospitals just shows availability of planned and emergency health care. What is more needed is an understanding of preventive medicine needs and risks in the Arctic.

**Figure 4** Number of hospital beds per 1000 people, 2016
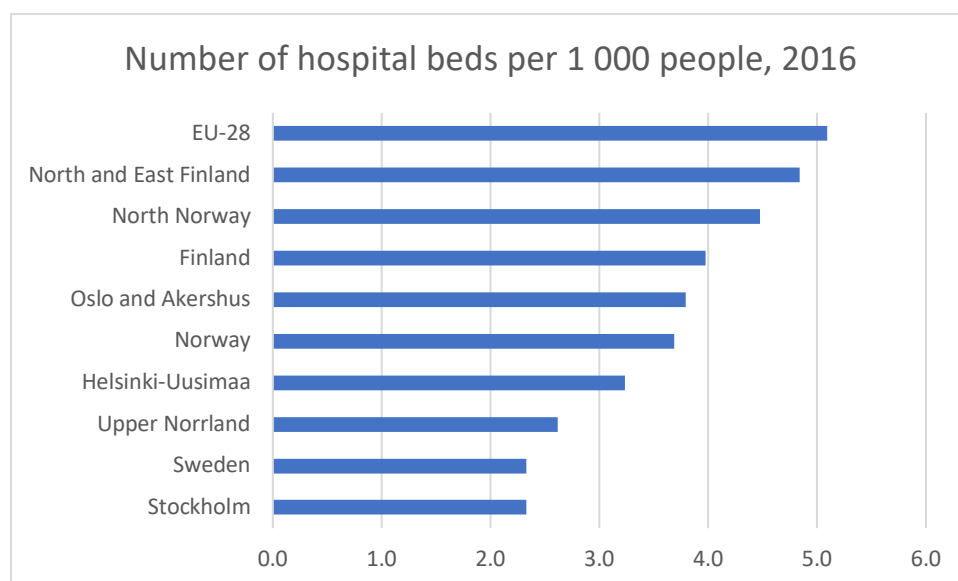
For instance, obesity is much more common in northern Finland where every fourth person (25.9%) aged 24-65 is obese (BMI>30), compared to the national average of 19%.[4] Comparable

measures of health security are needed on the Arctic level. Hartley (2004) suggests that interventions for combating rural-centre disparities should include three key elements—activated patients, prepared practitioners, and community resources.
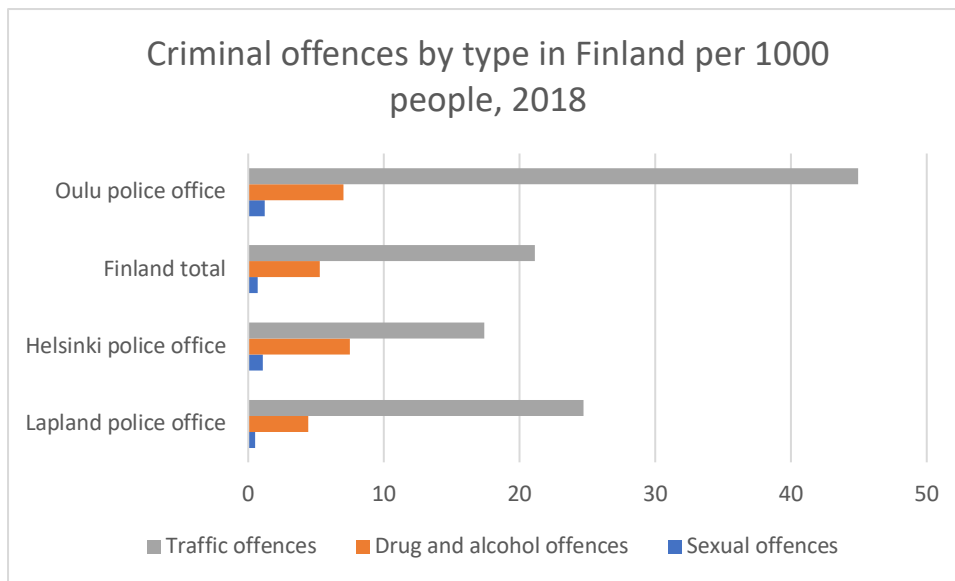
Personal security

The comparison results of crime statistics shall be treated with caution because each country has different methods of registering offences and hence results should be only compared within the country (see Figures 5, 6 and 7).. Figures 5 illustrates crime offence rates in Norway. The northern regions of Finnmark, Troms and Norland exhibit much higher rates than the total of Norway and especially the capital region of Oslo. The most staggering divide is observed in traffic offences between the Finnmark and Oslo region with a rate of 11.8 in Finnmark which is 5.8percentage points higher than in Oslo. Sexual offences are more prevalent in the north of Norway (see Figure 5). Finnmark had the highest rate of 2.7, ahead of Norway's average of 1.6. Oulu police district had a much higher traffic offences rate than country's average In Finland sexual offences rate is a bit higher in Oulu police district1.2 compared to Finland's average of 0.7. Despite rather a low rate of sexual offence in Oulu police district, the city of Oulu image suffered due to several underage rape offences largely covered by the national and international media (Reuters, 2019). The Swedish National Council for Crime Prevention reported that sparsely populated regions recorded an increase of reported crimes over the last decade (BRÅ database, 2007). Figure 7 illustrates that in Sweden the biggest difference between the North and Stockholm region is in traffic offences that were 1.9 percentage points higher in the Region Nord. At the same time there are no big regional differences in sexual offences and violations against Narcotics Drug Act.

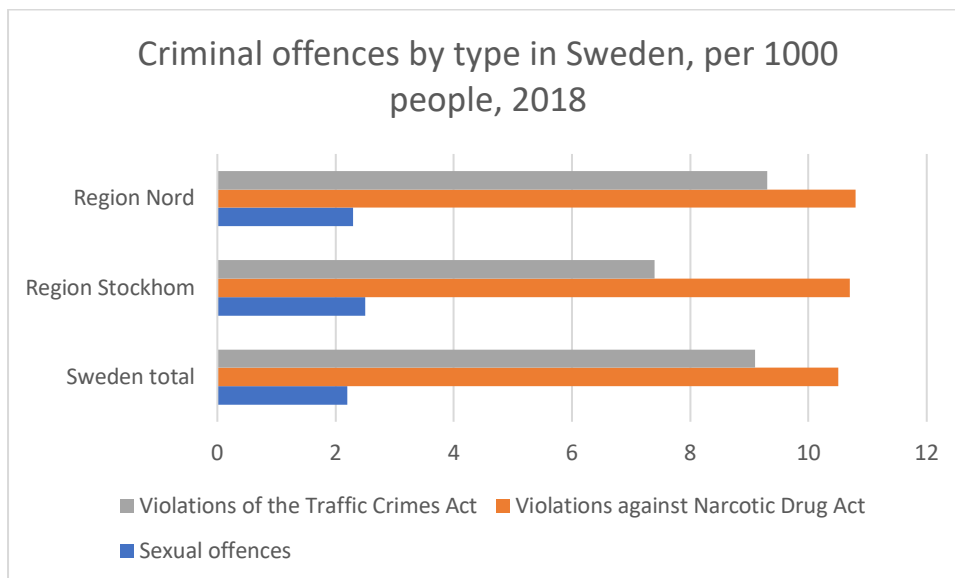**Figure 5** Criminal offences by type in Norway, per 1000 people, 2018.
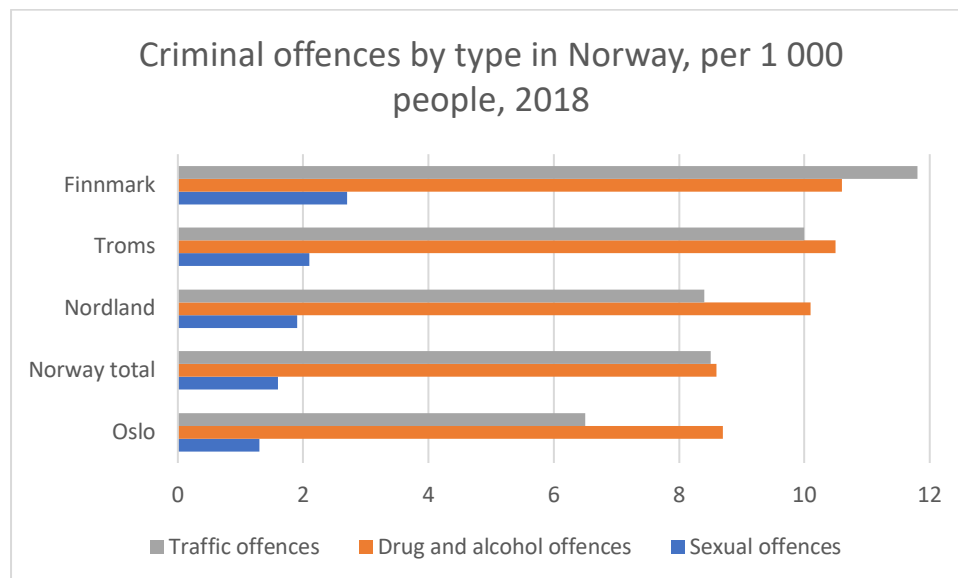
Source: SSB Norway

Figure 6 Criminal offences by type in Finland, per 1000 people, 2018

Criminal offences by type in Finland per 1000 people, 2018

Oulu police office	
Finland total	
Helsinki police office	
Lapland police office	

■ Traffic offences   ■ Drug and alcohol offences   ■ Sexual offences

Source: Data from Statistics Finland, custom calculations.

Figure 7 Criminal offences by type in Sweden, per 1000 people, 2018

Criminal offences by type in Sweden, per 1000 people, 2018

Region Nord	
Region Stockhom	
Sweden total	

■ Violations of the Traffic Crimes Act   ■ Violations against Narcotic Drug Act
■ Sexual offences

Source: Data from BRÅ (The Swedish National Council for Crime Prevention) Region Nord includes: Jämtland, Norrbottens Västerbotten and Västernorrland regions.

Crime offences are closely linked to indicators of economic deprivation (Burton et al, 1994) and negatively affect communities' social cohesion (Hirschfield & Bowers, 1997). The literature indicates that crime may result from increasing poverty and exclusion in rural areas (Petee & Kowalski, 1993). The risk of any offence is highest in areas with a large proportion of young males (Ceccato & Dolmen, 2011). This can be one of the explanatory factors for higher criminal offences rate in the North since many remote Arctic municipalities have a very high male to female ratio (Middleton, 2019).

Conclusions

The analysis of proclaimed human security in Sweden, Norway and Finland reveals that the countries have a sophisticated understating of human security embodied in the foreign policy. Domestically human security is put forward through the implementation of Agenda 2030. The Arctic strategies lack human security per se while elaborating on some components of human security such as the wellbeing of the people, improved education and economic growth. These components, however lack concrete targets and action plans.

The results of experienced human security demonstrate that Sweden, Norway and Finland are not performing well in mitigating human security threats in the Arctic. In meeting SDG 1 and 10 (reducing poverty and inequality), especially stark differences exist within the regions of the countries themselves, whereby capital regions have considerable favorable economic security. Moreover, people in the Arctic regions are almost twice as likely to be at poverty risk, which might come as a surprise to the rest of the world having a picture of Nordic countries as the safest in terms of human security. Hence the achievement of SDG 1 ending poverty is especially relevant for the Arctic regions. Analysis of data on the health components of human security reveal that SDG 4 (Education) and 5 (Gender equality) need to be addressed for the male population, which is disproportionately lower educated resulting in shorter life expectancy and poorer health overall (SDG 3). Gender equality needs to be addressed for providing opportunities for males to receive education and for females to have a diversified job market. Moreover, external health provisions such as beds per population are weakening in the Arctic regions. More information is needed on the roots of health insecurity, such as access to primary care and preventive medicine. Regarding personal security, traffic offences are much higher in the northern regions of Finland than in the country in general and in Sweden North when compared to the capital region. In Norway, sexual offences and drug and alcohol offences are more prevalent in the North than compared to the country average.

These results demonstrate the existence of two different universes inside the countries where the divide between capital and the Arctic regions is especially big. Human security in the Arctic lacks the "people"[5] component. To address the challenges of the Arctic regions, a human security approach is useful for mapping human security threats and adds value as an operational tool to ask questions about the roots of insecurity (Human Security Handbook, 2017).

There is no magic to fix challenges in human security overnight, but the approach shall be context specific and inclusive of preventive measures like support for the people that are at the brink of poverty in the Arctic, are subject to sexual abuse or have limited opportunities to participate in quality education. Based on the human security approach mapping a set of specific SDGs (especially addressing poverty) with achievable targets can be adopted in the Arctic. A discussed construct of human security is not all-encompassing since there are many components of human security like environmental ones that were out of the scope of this paper but need to be addressed in further studies. At the same time, it is good to start by tackling the most acute societal problems through a coherent approach, e.g. an Arctic specific set of SDGs, and put an effective monitoring mechanism in place. Furthermore, Arctic strategies can be designed as living documents that act as an interface between "proclaimed" and "experienced" human security through targets, actions and accountability.

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Notes

1. See Appendix II for definitions.
2. Available at https://www.regjeringen.no/en/dokumenter/follow-up-sdg2/id2507259/
3. Data from Statistical information on welfare and health in Finland (sotkanet.com)
4. See discussion about people-centered approach in Tadjbakhsh (2014).

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Appendix I

Data used for measuring Arctic human security

Domain	Indicator	Description	Data Source
Economic	Disposable income per inhabitant	The disposable income of private households is the balance of primary income (operating surplus/mixed income plus compensation of employees plus property income received minus property income paid) and the redistribution of income in cash. These transactions comprise social contributions paid, social benefits in cash received, current taxes on income and wealth paid, as well as other current transfers. Disposable income does not include social transfers in kind coming from public administrations or non-profit institutions serving households. The indicator is part of the EU Sustainable Development Goals (SDG) indicator set. It is used to monitor progress towards SDG 10 on reducing inequality within and among countries and SDG 1 on ending poverty in all its forms everywhere.	Eurostat
	Disposable income in Purchasing power standard (PPS) per inhabitant	The adjusted gross disposable income of households per capita in PPS is calculated as the adjusted gross disposable income of households and non-profit institutions serving households (NPISH) divided by the purchasing power standards (PPS) of the actual individual consumption of households and by the total resident population. It is used to monitor progress towards SDG 10.	Eurostat
	At risk of poverty rate	This indicator corresponds to the sum of persons who are: at risk of poverty or severely materially deprived or living in households with very low work intensity. Persons are only counted once even if they are present in several sub-indicators. At risk-of-poverty are persons with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 % of the national median equivalised disposable income (after social transfers). Material deprivation covers indicators relating to economic strain and durables. Severely materially deprived persons have living conditions severely constrained by a lack of resources, they experience at least 4 out of 9 following deprivations items: cannot afford i) to pay rent or utility bills, ii) keep	Eurostat, SILC (Statistics on Income and Living Conditions)

		home adequately warm, iii) face unexpected expenses, iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, vi) a car, vii) a washing machine, viii) a colour TV, or ix) a telephone. People living in households with very low work intensity are those aged 0-59 living in households where the adults (aged 18-59) work 20% or less of their total work potential during the past year. It is used to monitor progress towards SDG 10.	
Health	Population aged 25-64 by educational attainment level, sex and NUTS 2 regions (%)	The indicator "Tertiary educational attainment" is defined as the percentage of the population aged 23–64 who have successfully completed tertiary studies (e.g. university, higher technical institution, etc.). This educational attainment refers to ISCED (International Standard Classification of Education) 2011 level 5-8 for data from 2014 onwards and to ISCED 1997 level 5-6 for data up to 2013 It is used to monitor SDG 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The indicator can also be used to complement the monitoring of SDG 5 (Gender Equality).	Eurostat
	Number of hospital bed per thousand inhabitants	Hospitals complement and amplify the effectiveness of many other parts of the health system, providing continuous availability of services for acute and complex conditions. Hospitals concentrate scarce resources within well-planned referral networks to respond efficiently to population health needs. They are an essential element of Universal Health Coverage and are critical to meeting SDG 3 (Good health and wellbeing)	Eurostat
Personal security	Registered criminal offences per 1 000 population	Drug and alcohol offences Addressing drug and alcohol offences will help meeting SDG 3, Target 3.5 Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse. Traffic offences Addressing Traffic offences will help meeting SDG's (3), Target 3.6. By 2020, halve the number of global deaths and injuries from road traffic accidents. Sexual offences Addressing sexual offences would lead to meeting SGD 5 (especially Measures to prevent violence against women)	SSB Norway; Statistics Finland) The Swedish National Council for Crime Prevention

Appendix II

NUTS 2 level description according to Nomenclature of territorial units for statistics /NUTS 2016/EU-28

Region NUTS 2	Name used in the article	Composition
FI1D Pohjois- ja Itä-Suomi	North and East Finland	Etelä-Savo, Pohjois-Savo, Pohjois-Karjala, Keski-Pohjanmaa, Lappi, Kainuu, Pohjois-Pohjanmaa
SE3 Norra Sverige	North Sweden	Norra Mellansverige, Mellersta Norrland, Övre Norrland
NO07 Nord-Norge	North Norway	Norland, Troms, Finnmark

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