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To cite this article: M Pitukhina *et al* 2020 *IOP Conf. Ser.: Earth Environ. Sci.* **539** 012116

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239th ECS Meeting

with the 18th International Meeting on Chemical Sensors (IMCS)

ABSTRACT DEADLINE: DECEMBER 4, 2020



May 30-June 3, 2021

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Migrants' strategies within the Arctic Council member-states: bottleneck vacancies analysis (by the example of Finland, Sweden, Denmark and Norway)

M Pitukhina¹, O Tolstoguzov¹, I Radikov²

¹Russian Science Academy, Petrozavodsk, Russia

²St.Petersburg State University, St. Petersburg, Russia

maria.pitukhina@gmail.com

Abstract. The article deals with the Arctic Council labor market characteristics analysis, particularly, we have looked at some macro indicators and reviewed about 800 bottle-neck vacancies to identify differences across 4 Arctic Council member-states (Finland, Sweden, Denmark, and Norway), sectors and level of education referring to skill levels in demand. Differences in levels of economic development also seem to have an effect on labour demand in different countries. Our bottle-neck vacancies analysis has shown that vacancies demanding higher vocational education are highly necessary especially in Denmark and Sweden. Finland and Norway are demonstrating acute shortage both in vacancies with higher and secondary vocational education. Under bottleneck vacancies analysis a great emphasis was made upon high-tech/non hi-tech economic sectors. Vacancies demanded in high-tech economic sectors are mostly represented with mountain metallurgy technicians, software developers, chemical engineers, mechanics, biotechnologists, heavy industry technicians, IT engineers, and electrical engineers. These vacancies are particularly demanded in Sweden, Denmark, Norway. Non-high-tech bottleneck vacancies are represented in such economic sectors as construction, light industry, forestry, transportation and trade. Medical staff vacancies are also in high demand. Health care specialists are primarily demanded in Finland. One possible reason for that could be rapidly ageing population in the Arctic Council member-states resulting in higher demand for healthcare professionals.

1. Introduction

The article deals with labor market characteristics analysis of four Arctic Council member-states, both factors and conditions analysis of migrants' employability, bottleneck vacancies analysis. Data on migration trends, characteristics, institutions, traditions and employability is extremely important for both migration policy and labor market regulation.

Currently the Arctic Council member-states are facing a number of troublesome demographic trends: restructuring of the population towards less youth share and young adults, ageing decline in labor force for some areas, general depopulation, challenges for sparsely populated areas (Northern Nordics). Thus, concentration in big cities and "dying" of small cities are accompanied by a huge demographical changes and migration volumes increase (Arctic Russia) Migration for the Arctic is a very acute issue. A number of researchers claim serious youth outflow, for example, is very intense within the Arctic territories of the Arctic Council member-states [1; 2; 3; 9;10].



However, we shall identify migration flows. Each of the following migration type is highly useful for the Arctic territories development- labor migration, educational migration, sunshine migration, snowbird migration.

Labour migration is providing labor resources for the Arctic territories. Circular labour migration is perceived as a form of interregional labor migration amounting to 15-20% of the average employees number while foreign labor migration amounts to 2-3% only [4].

Educational migration is known as a human capital growth opportunity in the region. Graduates flows from universities and colleges to their first workplaces in the Arctic as well as enrollees outflows dynamics from Arctic territories to study at universities and colleges at the "mainland" shall be evaluated.

"Snowbird" migration meaning senior citizens outflow to a places of residence in regions with more favorable climatic conditions in undoubtedly reducing public expenditures in the Arctic territories [5].

"Sunshine" migration is a vocation type of migration flow analysis for both human healthcare and well-being.

In this article we shall concentrate on labour migration within four Arctic Council member-states. Thus, according to the UN International Migration Report 2017, international migrants share as a percentage of total population is the highest in Sweden - 17.6%, Norway – 15.1%, Denmark – 11, 5%, and Finland – 6,2%. Giver the fact that 80% of these migrants are in the age group of 20-64 years old, what we might call as labour migrants.

2. Recent migration trends within the Arctic Council member-states

Arctic turns out to be a increasingly interesting and relevant in terms of its development, especially in a terms of its sustainable development. At the same time, despite high importance of this macro-region, migration challenge within various Arctic regions is not well enough scrutinized. From the point of view of quantitative indicators, this flow is not so noticeable versus general trends of mass migration within the countries (Finland, Russia especially).

At the same time, while studying such a complex phenomenon as migration, it is necessary to take into account some specific territories features. Arctic regions do have some specific spatial conditions. In particular, they are characterized by uneven development of urban and rural territories, especially due to sparsely populated territories as well as due to settlements' remote localization and geographical isolation. Therefore, it is necessary to take into account geographical feature as well as increased importance of current migration trend. It is also necessary to take into account the fact that Arctic macroregion includes both advanced and depressive territories in terms of its socio-economic development. At the same time, it is necessary to pay attention to municipalities' socio-economic sustainability since one of the Arctic region fundamental characteristic is linked to districts polarity. They are concentrated on one hand around industrial and mining centers, and on the other hand, within close proximity to infrastructure facilities, so-called dichotomy of both "mainland" and "island" economy models [1]. These 2 economy models are developed in different socio-economic ways due to resources location and extraction; innovations are assimilated in different ways here too.

Recent high importance of Arctic research in Russia is especially intensified under Russia's chairmanship in the Arctic Council (2021-2023). In this regard, the Presidential Decree is being developed dealing with principles, goals and objectives of the Russian Chairmanship in the Arctic Council. According to the statement of the Minister of Foreign Affairs of Norway Ine Marie Eriksen Søreide currently several Nordic countries (Norway, Finland, Sweden) are developing their new Arctic strategies [11].

Study of migration phenomenon in the Arctic is extremely relevant, since this huge macro-region has recently fallen into economic agenda modernization. Since the society modernizes gradually, population mobility increases within the territories. In addition, while considering migration phenomenon of the Arctic macro-region, a comprehensive approach is still needed that would consist of both incoming and outgoing migration flows analysis in terms of migration types, gender and age,

level of education, push/pull factors etc. Nowadays research of migration flows is highly diverse and is most often considered from the point of view of demographic [12], economic [13;14;15;16;17], sociological [18] and other approaches. However, in relation to the Arctic territories, an integrated approach is highly needed.

Thus identification of migration characteristic types, migration activity pull/push factors, both in the Arctic region as a whole and within Arctic municipalities would contribute to human capital development of the Arctic territories what is especially important in terms of national security.

In a context of increasing levels of population mobility, another important aspect of migration phenomenon study is dealing with motivational component. In this case, it is necessary to consider motivation from the point of reasons for leaving, arriving and returning to the Arctic territory.

It is also well known that drivers causing an ever-growing flow of migrants all over the world are traditionally (within the framework of the classical theory of E. Ravenstein [19]) socio-economic [20] and natural factors [21] what is also proved by the report of International Migration Report 2018. Besides globalization there are factors causing migration: geopolitical [22], social [23], demographic [24;25], cultural [26], geographical [27], production and new communication technologies [28] etc.

At the same time geo-economic factor associated with technologies development (including information and communication) and accompanying labor market structural transformation influences Arctic regions significantly not limiting to traditional factors of migration agenda only. As a result, selection of best practices on migrants' integration strategies in a labour market would harmonize Arctic communities sustainable development.

3. Migrants' integration strategies in a labour market: bottleneck vacancies analysis

Nowadays, the cornerstone of the agenda for the whole Europe, including the Arctic Council member-states is migrants' integration, including in the labour market too. It is believed that the most favourable conditions for migrants are created precisely within these four Arctic Council member-countries, where a state is trying to integrate migrants through studies of history, culture, national cuisine, and traditions. However, in the Arctic Council member-states there is a very wide range of different tools aimed at migrant integration in a labour market.

In order to perceive migrants strategies in a labour market of some Arctic Council member-states, their specific tools should be especially listed:

- implementing "integration upon arrival" for all migrants (Finland);
- compensation for hiring migrants to employers, employment services are oriented at migrants (Sweden);
- migrants' counselling for migrants (Denmark).

There's no significant differences between the four Arctic Council members-states (Finland, Norway, Sweden, Denmark) in terms of migrants integration in a labour market. These countries have programmes and practices more relevant to migrants integration and these apparently result in higher employment rates.

Bottleneck vacancies analysis shall be considered to be a good tool for migrants' integration in a labour market. A comparative analysis of employability characteristics in the four Arctic Council member-states was conducted based on aggregated indicators developed on the basis of quantitative and qualitative parameters grouped by means of expert analysis. Also a functional-structural vacancy analysis was widely applied, taking into account geographical and regional components, level of vocational education, technological performance of certain economic sectors and employers' qualification requirements to job applicants. Statistical methods are widely used for data processing: both vacancies and migrants' unemployment indicators etc. Main measurement tools are bar charts design, ranking, grouping and data classification, experts evaluations.

We've managed to analyse 800 bottle-neck vacancies in terms of the following criteria:

- geographic – including Finland, Norway, Sweden, Denmark (Table 1);
- level of education – including higher vocational education (HVE) and secondary vocational education (SVE) (Table 2);

Out of 800 vacancies reviewed in the Arctic Council member-states, 500 vacancies were requiring higher vocational education and 300 were requiring secondary vocational education. As a result, a bottleneck vacancies ranking both with higher and secondary vocational education in Finland, Norway, Sweden, Denmark was developed (Table 1).

Table 1. Top-5 demanded occupations in Northern Europe labour market^a

Norway	Finland	Sweden	Denmark
Technician	Nurse	Mountainmetallurgyengineer	Electricalengineer
Mountainmetallurgytechnician	Socialworker	Craneoperator	IT engineer
Truckdriver	Dentist	Geodesist	Softwaredeveloper
Industrialengineer	Preschoolteacher	Softwaredeveloper	Civilengineer
Chemicalengineer	Psychologist	Chemicalengineer	Engineer

As it is visible from the Table 2, vacancies demanding higher vocational education are highly necessary in Scandinavian labour market, especially in Denmark and Sweden. Finland and Norway are demonstrating shortage both in vacancies with higher and secondary vocational education.

Table 2. Top-15 demanded occupations grouped according to the level of education

Higher vocational education	Secondary vocational education
Preschoolteacher	Nurse
Psychologist	Socialworker
Pharmacist	Dentist
Engineer	Technician
Forestworker	Mountainmetallurgytechnician
Industryengineer	Truckdriver
Chemicalengineer	Craneoperator
Mountainmetallurgyengineer	
Geodesist	
Softwaredeveloper	
Chemicalengineer	
Electricalengineer	
IT engineer	
Civilengineer	
Engineer	

Our bottle-neck vacancies analysis has shown that specialists with higher vocational education and secondary vocational education are equally demanded in selected four Arctic Council member-states (Finland, Norway, and Sweden, Denmark). At the same time, Finland and Norway are demonstrating shortage both in vacancies with higher and secondary vocational education while Denmark and Sweden only in vacancies with highervocational education.

4. Conclusions

The above-mentioned experience of migrant integration, following the example of the Arctic Council member-states is important. The implementation of the listed measures, based on the best international experience, would mitigate the situation with migrants' integration in other four Arctic Council member-states, including Russia, Canada, the USA, Iceland.

Under bottleneck vacancies analysis a great emphasis was made upon high-tech/non hi-tech economic sectors. Vacancies demanded in high-tech economic sectors (235 vacancies with higher vocational education and 78 vacancies with secondary vocational education) are mostly represented with mountain metallurgy technicians, software developers, chemical engineers, mechanics, biotechnologists, heavy industry technicians, IT engineers, and electrical engineers. These vacancies are particularly demanded in Sweden, Denmark, and Norway.

Non-high-tech bottleneck vacancies (365 vacancies with higher education and 122 vacancies with secondary vocational education) are represented in such economic sectors as construction, light industry, forestry, transportation and trade. Medical staff vacancies (i.e. doctors, psychologists, pharmacists, nurses, dentists, social workers) are also in high demand. Health care specialists are primarily demanded in Finland. One possible reason for that could be rapidly ageing population in these countries resulting in higher demand for healthcare professionals.

Acknowledgement

This paper is under the RFFI project "Live, Work or Leave! Youth – wellbeing and the viability of (post) extractive Arctic industrial cities in Finland and Russia".

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