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The System of Well-being Indicators in the Russian Arctic Regions

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Abstract

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Our paper is the interpretation of the indicators of Arctic Human Development Report taking into account the availability of data in the Russian statistics. We first review theoretical concepts of well-being and quality-of-life with circumpolar-specific frameworks. We then discuss the conceptual basis for human capabilities approach expanding the category of human potential for the Arctic regions. Having analyzed the up-to-date systems of well-being indicators we conclude that the social and demographic sphere of the Arctic regions may be described by a set of indicators covering different aspects of quality-of-life: demography, health, social security, education, culture, leisure, and so on. The system of social and demographic indicators of Arctic regions is finally proposed. All presented indicators of human well-being fall within six domains of health, education, material well-being, cultural vitality, fate control and natural resource and environmental sustainability. The problems of municipal statistics in Russia are also discussed.

Keywords: Arctic region, social development indicators, well-being, human capabilities.

1. Introduction

The unique geo-economic and geopolitical potential of the Russian Arctic zone is attracting increased attention to the issue of sustainable development, the need to ensure a balance between economic, social and technological development of the Polar Regions and to improve the people's well-being. At present stage the Russian socio-economic development is unstable and uneven. The rise of income inequality, a high degree of social disintegration, low level of human development, all these problems are, of course, valid for the regions fully or partially appurtenant to the Russian Arctic (Nalimov, & Rudenko, 2015).

Today, many official documents and development strategies in the Russian Arctic zone focuses on the development of natural resources base, on the implementation of the industrial and transport

projects in the Arctic. Social objectives are secondary, derivative of the economic ones (Riabova, 2012). Meanwhile the development of Arctic reserves, the realization of geo-economic interests in the circumpolar zone, maintaining populations of Arctic territories is impossible without the preservation and development of its unique human potential – people with special 'Arctic competence' regarding the life and work in the harsh circumpolar conditions. It is necessary that a new era of Arctic exploration, which opens today in Russia, must be more socially oriented.

2. The human capabilities approach to the study of well-being

Currently, the concept of human development, as a theoretical model, practice-oriented methodology of state regulation proceeds from the recognition of social progress irreducibility for material wealth augmentation. Until the 1970s, the development was seen as a purely economic phenomenon. It was assumed that the rapid increase in real per capita GDP automatically leads to an increase in the general level of well-being through the creation of new jobs. The main directions of theoretical thought in the field of development have been addressing the problem of the interaction between economic, social and sustainable development since the 1970s. Following the concept of unmet basic needs, economic development is indirect and is not an effective factor of social and sustainable development. The concept of unmet basic needs was buried by the Human development concept, emerged in 1990 as an important concept among those seeking an alternative to Gross Domestic Product (GDP) per capita as a measure of human well-being or the quality of life. The stimulus to research into the measurement of human development, with man and not income in the centre of attention (human-centred development) in the 90s, was the concept of Amartya Sen. He considered the concept of needs to be related to thinking in terms of what satisfies humans (measured by GDP), rather than what life we can live and actually live (the concept of capabilities) (Rokicka, 2014). "Welfare of a person can be understood as the quality of life…, life is a collection of 'functionings', which can be very diverse, ranging from as elementary as proper nutrition, enjoyment of good health…, to more complex achievements – happiness, sense of dignity, participation in society" (Rokicka, 2014). An important characteristic of the capability approach is its emphasis on individuals' freedom to make decisions for their own development. The capability perspective focuses on "the freedoms people actually enjoy choosing between different ways of living that they can have reason to value" (Sen, 1990). In that regard, the capability approach considers 'capabilities' as means to achieve personal well-being.

Since the specific culture and ideology of the Arctic indigenous people poorly adapt to the demands of the market economy, and the concept of human development is based on the idea of development of freedom, understood not only as the freedom of action but as an opportunity to make a genuine and autonomous choice of one's way of life, the Arctic regions should be manifested in the freedom of population (especially the indigenous) to select:

(a) Cultural integrity – belonging to a viable local culture;
(b) Fate control – guiding one's destiny;
(c) Contact with nature – interacting closely with the natural world.

3. Measuring the well-being in the Arctic

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A set of indicators to assess the social sphere has been developed since the early 70-s. "Towards a system of social and demographic statistics" Report was published by the UN in 1975. Presented in 1989, the Handbook on social indicators provided up-to-date development and definition of indicators within the context of the UN framework for the integration of social, demographic and related economic and other statistics. The working group on international statistical programmes and coordination report (E/CN.3/AC.1/1996/R.4) recommended to the UN Statistical Commission the adoption of the list of minimum national data set consistent of 5 domains: population and development, eradication of poverty, reduction of unemployment, social integration and gender status. Currently, social and demographic statistics of the United Nations consists of 41 indicators divided into five units: population (8), health (10), housing (5), education (9) and employment (9). As for the Russia we can highlight the systems of social and demographic indicators published by the Institute of Social and Economic Studies of Population at the Russian Academy of Sciences, RIA Rating, the Council for the Study of Productive Forces under the jurisdiction of the Ministry of Economic Development of the Russian Federation. The most well-known system of social indicators for inter-regional comparisons is the method proposed by Aivazian (2012).

At the international level, one of the earliest attempts to develop a complex social and demographic measure of development was a set of quality-of-life indicators proposed by Liu (1975). According to the scientist quality-of-life includes two components: the more qualitative subjective one (or psychological) and the more quantitative objective one (or social, economic, political and environmental). The Morris' (1979) Physical Quality of Life Index, Estes's (1988) Index of Social Progress, Johnston's (1988) Quality of Life Index, Miringoff's (1999) Index of Social Health are also worth of mentioning.

The United Nations Development Program's Human Development Index, proposed in the Human Development Report (1990), intensified the debate about measuring people's well-being. Later, Diener (1995) expanded the indicators of the Human Development Index and created two separate indices for developing and developed countries – the Basic Quality of Life Index and the Advanced Quality of Life Index (Diener, 1995). The method of calculating the HDI has been modified in the Human Development Report 2010. The Human Development Index remains an aggregate measure of progress in three basic dimensions of human potential: a long and healthy life, access to knowledge and a decent standard of living. But the indicators measuring progress in education and income were modified, as well as the way they are aggregated was changed. In the knowledge dimension mean years of schooling replaces literacy, and gross enrolment is recast as expected years of schooling. To measure the standard of living, gross national income (GNI) per capita replaced gross domestic product (GDP) per capita. For ease of comparability the average value of achievements in these three dimensions is put on a scale of 0 to 1, where greater is better, and these indicators are aggregated using geometric means. Three new indices have also been introduced to capture important aspects of the distribution of well-being for inequality, gender equity and poverty. The Inequality-adjusted Human Development Index measures the average level of human development of people in a society once inequality is taken into account. The Gender Inequality Index captures the loss in achievements due to gender disparities in the dimensions of reproductive health, empowerment and labour force participation. And, finally, the

Multidimensional Poverty Index complements money-based measures by considering multiple deprivations across the same three dimensions of health, education and living standards as the HDI. Methodology for calculating the HDI is often criticized for a limited number of factors accounted for the index and the lack of quality assessment of health and education. Some more alternative complex indictors of well-being have been developed: the Better Life Index, the Legatum Prosperity Index and the Human Capital Index.

The use of a new technique for constructing the HDI in the Russian regions is problematic because of the official statistics indicators absence, especially such indicators as mean and expected years of schooling. In this regard, the traditional method of calculating the index is in use, based on the GRP per capita terms, as well as literacy and gross enrollment rate. Rudenko (2014) proposed to apply the human capabilities approach assessing the well-being, which in addition to the basic components of health, education and income, also takes into account poverty and income inequality. Zubarevich (2004) offered the Crisis quality-of-life index and the Quality-of-full-life index. The first index can be calculated as the mean of the four partial indices: the ratio of per capita income to the cost of living, the proportion of people with incomes above the subsistence level, the employment and health indices. Although the Crisis index of quality of life does not account for the level of education and literacy, it can relatively characterize the well-being and allows for inter-regional comparisons in Russia. Quality-of-full-life index also evaluates education, access to basic services, security, environmental, and social health.

Although the above-mentioned indices are essential to the development of social indicators research in the Arctic they cannot fully accommodate the idiosyncratic characteristics of Polar Regions (Ozkan, & Schott, 2013). The authors of the Arctic Human Development Report identify the nature of human development in the Arctic by addressing human development in broader terms and taking into account a range of factors not represented in the HDI. It is mentioned in the Report that «the residents of many Arctic communities would not receive outstanding HDI scores. Yet humans residing in the Arctic do not generally see themselves as lagging behind in terms of human development or deficient with regard to some broader conception of human wellbeing. Clearly, there are social problems in the circumpolar North... But this does not mean that Arctic lifestyles, cultures, or social institutions are inferior to those in communities that rank higher in terms of HDI scores... Many Arctic residents – especially those who are indigenous to the region or long-term residents – associate a good life with the maintenance of traditional hunting, gathering, and herding practices. Yet it is difficult to use indicators like GDP per capita to measure the health of subsistence systems or mixed economies more generally. For many, well-being is to be found in a way of life that minimizes the need for the sorts of material goods and services included in calculations of GDP per capita» (AHDR, 2004).

One of the first attempts to develop more meaningful indicators for the Arctic was the Study of Arctic Living Conditions (SLiCA), which was initiated by Poppel in 1997 to measure the material (living conditions) and non-material (quality of life) wellbeing of indigenous people in the Arctic Region. The main motivation of the study was to compare “one’s own living conditions with those of other populations with the same developmental characteristics – instead of comparisons with the majority populations in the various countries” (Andersen, & Poppel, 2002). As SLiCA was consisted of

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583 different indicators but that could not consistently be measured for all regions of the Arctic, more initiative was conducted to resolve that problem of measurability, ease of data collection and comparability between circumpolar regions. Published in 2004, the Arctic Human Development Report highlighted the plight faced by the people of the Arctic regions and provided the assessment of human well-being on a circumpolar scale, describing various components of human development across the North. In terms of the UNDP approach, this report covered demographic, education and material well-being. However, knowing the specific conditions of the Arctic, the report also dealt with key northern issues that cut across the above domains, such as cultural integrity, fate control and contact with nature.

The Canadian Index of Wellbeing as an initiative to develop a complex index currently provided eight detailed research reports on different, but interconnected, categories of well-being: living standards, healthy populations, community vitality, democratic engagement, time use, leisure and culture, education and environment. Another proposed index of well-being assessment in the Polar regions was the Social Cohesion index suggested by Duhaime et al. (2004). The index was composed of six indices (social capital, demographic stability, social inclusion, economic inclusion; community quality of life, and individual quality of life). The Arctic Social Indicators (ASI) Report is a recent initiative to develop meaningful indicators for the northern well-being assessment. The ASI (2010) project provided circumpolar-specific indicators for six domains of human development. Ozkan & Schott (2013) suggested complementing some of the ASI indicators with other well-being indicators and with specific indicators for Polar Regions.

In our paper, we propose the indicators of well-being with account of the issues of affordability and Russian statistical data availability. All proposed indicators fall within six domains of health, education, material well-being, cultural vitality, fate control and natural resource and environmental sustainability (see table 1).

Table 1. Indicators of people's well-being in the Arctic regions

Domain	Dimension	Indicator	Definition
Health	Classical indicators of public health	Life expectancy at birth	Number of years to be lived by a person from a birth, assuming the mortality level for every age remains the same as in the years for which the rate is calculated
		Infant mortality	Number of deaths of infants less than one year old, per 1,000 live births
		Child mortality	Number of deaths of children less than five years old, per 1,000 live births
		Access to health care	Percentage of population within one hour of transportation to health care, and with insurance or government arrangements to pay
	Mental health	Suicide rate	Number of suicides per 100,000 population
		Self-assessed health	Percentages based on self-reports of the general state of health or existence of specific health problems
	Chronic disease	Smoking rate	Percentage of population currently smoking cigarettes or other forms of tobacco
			Number of cigarettes smoked per adult (inhabitant 15 years of age and older)
		Population morbidity	Number of recorded cases of patients with first diagnosis in life, per 1,000 population
		Alcohol-related morbidity rate	Alcohol related hospital admissions based on primary or secondary diagnosis per 100,000 population
		Alcohol-related mortality rate	Number of accidental poisoning by alcohol deaths per 100,000 population
		Alcohol consumption	Sales of pure alcohol per adult
	Demography	Birth rate	Number of live births per 1,000 of population

		Natural increase rate	Number of live births minus deaths per 1,000 of population
		Net migration	Population change due to the balance of in- and outmigration per 1,000 of population
		Low-birthweight babies	Percentage of newborns weighing less than 2,500 grams, with the measurement taken within the first hours of life, before significant postnatal weight loss has occurred
		Maternity	Percentage of births attended by skilled health staff
			Percentage of pregnant women receiving prenatal care
		Teenage mothers	Percentage of women ages 15-19 who have had children or are currently pregnant
		Adolescent fertility rate	Number of births per 1,000 women ages 15-19
Education	General education	Preschool participation rate	Percentage of children stated as attending preschool aged 3-7 years
		Dropout rate	Percentage of first-graders stated as being dropped out to grade 9
		School participation rate	Percentage of children stated as attending school aged 7-14 years
		Out-of-school children	Percentage of indigenous primary-school-age children who are not enrolled in either primary or secondary schools
	Post-secondary and tertiary education	Student attendance rates	Number of students per 10,000 population
		Education participation	Proportion of students pursuing post-secondary or tertiary education opportunities
			Proportion of indigenous population students pursuing post-secondary or tertiary education
		Tertiary education rate	Percentage of employed people with tertiary education
			Percentage of employed indigenous people with tertiary education
		Post-secondary education	Percentage of employed people with post-secondary education
			Percentage of employed indigenous people with post-secondary education
Material well-being	Economic participation	GRP per capita, PPP	Gross regional product divided by midyear population based on purchasing power parity
		Unemployment rate (ILO estimate)	Percentage of the labor force that is without work but available for and seeking employment
	Income	Household disposable income	Household disposable income divided by the number of persons of the household per month, [rub]
		Real disposable income	Ratio of per capita income to the subsistence minimum
		Meals spending	Percentage of costs for meals in the total amount of consumer spending
	Basic necessities and poverty	Poverty headcount index	Percentage of population with monetary incomes below the subsistence minimum level
		Relative poverty headcount index	Percentage of population with monetary incomes below 50% of the average actual income per capita
		Gini index	Extent to which the distribution of income among individuals or households within an economy deviates from a perfectly equal distribution
		Undernourishment	Percentage of population whose dietary energy consumption is continuously below a minimum dietary energy requirement for maintaining a healthy life and carrying out a light physical activity with an acceptable minimum body-weight for attained-height
		Malnutrition prevalence	Percentage of children under age 5 whose weight for age is more than two standard deviations below the median for the international reference population ages 0-59 months
	Housing	Dwellings with basic facilities	Percentage of the dwellings with drainage of total number of dwellings
		Housing quality	Percentage of population living in dilapidated and hazardous housing
		Social norm of housing	Percentage of population living in a dwelling with an area less than 20 (15) sq.m. per one person

		Housing expenditure	Expenditure of households in housing and maintenance of the house as a percentage of the household gross adjusted disposable income
		Housing satisfaction	Percentage of households dissatisfied with their housing conditions for various reasons
Cultural vitality	Language vitality	Indigenous language learning	Percentage of indigenous children learning indigenous language at school
		Indigenous language use	Percentage of households speaking indigenous language at home
	Belonging	Recreational or subsistence activities	Percentage of people engaged in recreational or subsistence activities on the land
Fate control	Decision-making power	Political power	Percentage of local personnel living in a locality for more than 10 years in key decision-making positions
			Percentage of indigenous members in governing bodies (municipal, regional) relative to the percentage of the indigenous people in the total population
			Percentage of seats held by indigenous people in regional parliaments
		Voter turnout	Percentage of indigenous individuals that cast a ballot during an election of President of Russian Federation in 2012 to the indigenous population registered to vote
	Local control	Resources control	Proportion of land, renewable and non-renewable resources in a given jurisdiction over which local population has some significant form of exclusionary rights (use, proprietary, disposition).
	Economic control	Self-generated income	Proportion of one's own revenue in the total volume of budget (regional, municipal) revenue
		Self-generated expenses	Percentage of public expenses within the region (regional government, municipal taxes, community sales taxes) raised locally
		Budget coverage	Ratio of minimum public expenses to revenues
	Access to information	Internet use	Percentage of individuals who have used the Internet (from any location) in the last 12 months
		Mobile cellular subscriptions	Subscriptions to a public mobile telephone service that provide access to the PSTN using cellular technology per 100 people
		Population covered by a mobile-cellular network	Percentage of people within range of a mobile-cellular signal, irrespective of whether they are subscribers or users or not
Natural resource and environmental sustainability	Contact with the nature	Traditional activities	Percentage of people or households engaged in the traditional economy
			Percentage of people eating meat of wild animals three or more times a week
	Environmental status	Provision of clean drinking water	Percentage of water samples with safe and conditionally safe drinking water over the total number of water samples

We understand that some of the measures will not be available at the Rosstat, but pressure should be put on national and regional statistical offices to continuously collect these data sets. The Russian Arctic zone includes all of the Murmansk Oblast, the Nenets, Chukotka and Yamal-Nenets AO, but only the northernmost municipalities of the Arkhangelsk Oblast, the Krasnoyarsk Krai, the Komi and Sakha Republic. So we need statistical data available at the municipal level comparing the Russian arctic regions. Unfortunately the quality of municipal statistics in Russia is very poor. Studying the accessibility and completeness of data sets the issues of relevance, comparability, and coherence should be raised. Just a few of proposed indicators for the well-being assessment are available and published online by the Rosstat. The number of units of observation at the municipal level is also very small

starting from 2009. Therefore additional methodological efforts are needed to provide data at the municipal level to assure the relevance of these data for small areas.

4. Conclusion

Having analyzed the up-to-date systems of social indicators of well-being we may conclude that the social and demographic sphere of the Arctic regions is described by a set of indicators covering different aspects of human well-being: demography, health, climate, social security, education, culture, leisure, and so on. The currently existing data sets are not significantly different; they generally have a similar structure and universal set of indicators. Our approach is a starting attempt of complex human well-being evaluation in the Polar Regions. Future development of this paper lies in the updating the system of proposed indicators, adding new ones and compiling ratings of regions by the specially designed new complex index of well-being for the Arctic zone.

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