RESPONSIBLE RESOURCE WEALTH MANAGEMENT IN ENSURING INCLUSIVE GROWTH

Lapinskas A., Makhova L., Zhidikov V.[*]

Abstract: The purpose of this study was to evaluate the impact of a country's resource management on the level of its inclusive growth in the context of environmental agreements, green growth and sustainable development concepts as well as resource use intensification. The work used the scenario modeling method. The study object was represented by the Russian Federation. The proposed methodological approach to evaluating the inclusive growth provided the opportunity for a comprehensive analysis of its level. It was confirmed that positive changes in sustainable development and resource use intensification indicators contribute to subsequent improvements in the country's inclusive growth by 3% and 6%, respectively. This quite strong correlation emphasized the need for Russia to introduce effective resource management solutions in the sustainable development field. The advantage of the proposed approach lies in the possibility of a detailed assessment of the level of the country's inclusive growth, evaluation of its relationship with sustainable development and resource use, and specification of the degree of this influence. This study results and conclusions may be beneficial for those involved in developing a strategy focused on the country's economic and sustainable development and increasing its inclusive growth based on effective resource management. The findings obtained may provide a good starting point for discussion and further research in the context of supplementing the methodological tools for assessing inclusive growth.

Key words: developing countries, inclusive growth, macroeconomics, quality of life, Russia.

Introduction

The global economic crisis has demonstrated significant imbalances in the world economy growth models. It has caused numerous challenges for transitioning to a new, more flexible and balanced model that can support sustainable high growth rates while ensuring equal access to all types of resources. In this regard, several long term strategies for further development were put forward by the world

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scientific community. Recent attention of science, public, and governments in assessing the level of welfare of the state and quality of life has been drawn towards the concept of inclusive growth, gradually becoming one of the central ideas in sustainable development strategies. Inclusive growth pursues broader objectives than the growth of GDP (gross domestic product). It is aimed at human development, increasing their welfare, and reducing poverty and inequality. Among the central goals of inclusive growth is to enhance citizens' participation in economic development and equitable distribution of its benefits. Therefore, inclusive and sustainable growth is based on such an economic development type that allows every society member to feel its results in all areas of life. These days, numerous questions concerning the definition and measurement of inclusive growth, the choice of methods and tools for a comprehensive analysis of the country's socio-economic status and the quality of life of its citizens are still relevant. The concept of inclusive growth is based on the principle of equality, joint participation, and shared use of social benefits by all actors in the process – the government, society, and business. These principles should be reflected in the state economic policy, in particular, related to resource wealth management (Rajiani et al., 2018; Anand et al., 2013).

The growth of social tension and environmental problems, which leads to the use of traditional approaches in the management of economic entities of all levels, determines the interest in the new methodological apparatus of development management. A green economy can be defined as a complex system of measures for the transition to a resource-efficient, low-carbon economy, which leads to an improvement in human well-being in the long term. Green growth focuses on fostering economic development through investment and innovation, while preserving natural capital (Bulgakova and Nabok, 2017; Krzykowski et al., 2020).

Based on Russia's example, this study aims to assess the impact of a country's resource management on the level of its inclusive growth in the context of sustainable development and resource use intensification. This goal necessitates determining the presence and degree of the relationship between the efficiency of the country's resource management, the level of sustainable development, and inclusive growth. To achieve the goal established, the following tasks were set:

-Evaluate the level of inclusive growth of Russia using an integral indicator;

-Determine the relationship between the inclusive growth integral indicator, the Global Sustainability Index, and the Resource Intensity Competitiveness Index based on regression models;

-Model possible scenarios of changes in the level of inclusive growth as a result of managing the country's resources;

Establish the degree of the influence of resource management on the level of inclusive growth in the context of sustainable development and resource use intensification.

Literature Review

When starting to analyze resource wealth management strategies aimed at ensuring inclusive growth, one should not miss the fact that the conceptual foundations of inclusive growth date back to post World War II development theories. Their main idea lay in the hypothesis that the development proceeds in a pre-determined way. It was believed that income growth not only produces a certain population inequality but is also a completely normal phenomenon that eventually declines as the economy grows. Later, this theory was challenged by countries whose resource wealth management practices suggested that economic growth gave the opposite result – the increase in social inequality. Gradually, the idea that poverty and, most importantly, inequality can be overcome only by restraining economic growth gave way to the understanding that equality can and should be a part of the growth process. This is related to the fact that reducing inequality can both reduce growth and make it more sustainable. In this aspect, it is possible to trace these theories' relationship with stability (Urbański and Haque, 2020; Cioca, et al., 2008).

A number of studies confirm that government funding is directly related to both the improvement of the country's financial and economic condition and its sustainable and inclusive growth. The emerging crisis can stimulate inequality and poverty substantially. The confirmation for this is the Global Financial Crisis in 2008 that triggered a return of inequality in developed countries to the lowest levels of previous years. In a similar vein, an increase in inequality was noted in developing, low-, and middle-income countries due to the economic downturn associated with COVID-19 (Altyar et al., 2020; De Las Heras et al., 2020).

Measuring inclusive growth is often performed under the method of scenario modeling, which implies making forecasts regarding the further development of the country and the growth prospects. This method allows taking into account numerous internal and external determinants able to affect the national economy. It enables preparing several options for responding to possible threats and generating appropriate action plans (Bughin et al., 2018; Kovach, 2016).

Based on the analysis of modern economic literature, it is possible to determine the key objectives of inclusive growth, which include:

-Broad goals (not only an increase in income or GDP) (Oduro-Appiah et al., 2019);
-Comprehensive development of human capital (high level of employment, investment in education) (Pouw and Gupta, 2017);
-Improvement of the quality of life, reduction of inequality and poverty, social protection, promotion of greater social cohesion – development of social inclusion and promotion of the importance of active citizens' participation in economic life and not only in the distribution of income (Boarini et al., 2018);
-Benefits for the population, especially children, women, and older people (Marx et al., 2018);
-Careful use of natural resources, environmental protection, transition of the economy to "green principles" (Sait et al., 2019);

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-Territorial unity strengthening, necessity to extend economic growth benefits to all regions of the country (Sepashvili, 2017);
-Elimination of regional imbalances (McCann, 2020).

Today there are small emerging countries that produce little material wealth but specialize in food, services, transit, and raw materials export. They pollute the environment a little not because they have reached a certain development level but because of a weak industry. Due to low pollution, self-employment, or other local characteristics, a developed service sector is able to bring such a country to leading positions in the rankings. This result would be hardly achieved if the assessment is carried out traditionally (primarily in terms of GDP per capita). Therefore, a special scientific contribution of this study is the proposed methodological approach to measuring the inclusive growth of a country based on an integral indicator, as well as identifying its relationship with the level of sustainable development and resource use. Since sustainable development is associated with the intensification of resource use, these factors are not advisable to consider in the context of their correlation with each other.

H1. Inclusive growth of a country is affected by its sustainable development level.
H2. Inclusive growth of a country is affected by the intensification of the use of its resources.

Materials and Methods

Research Design
This study was based on (1) the assessment of the integral indicator of the country's inclusive growth; (2) the formation of regression models describing the relationship between sustainable development, resource use intensification, and inclusive growth; and (3) determination of the degree of mutual influence of these indicators. The examination was conducted on the example of Russia. The research process included four stages.

At the first stage, the integral index of the country's inclusive growth was evaluated. This stage of the study included five steps.

The first step presupposed the generation of an information space system by forming an initial data matrix $X = (x_{ij})$, where x_{ij} is the value of the *j*-th indicator for the *i*-th object (period). For the sake of better reliability, the study authors consider it important to take into account the values of the following indicators while measuring inclusive growth: Gini Index, Global Gender Gap Index, Education Index, Human Development Index, Quality of Life Index (according to the Economist Intelligence Unit).

The Gini Index measures the extent to which the distribution of income or consumption expenditures among national households deviates from a perfectly equal distribution. The Gini coefficient ranges from 0% to 100%, with 0% representing perfect equality and 100% representing perfect inequality (Sun et al., 2018).

The Global Gender Gap Index characterizes the degree of gender equality. It is calculated according to the World Economic Forum methodology based on publicly available statistical data relating to the areas of socio-economic development of countries throughout the world. The Index is designed to measure only gender differences in access to resources and opportunities in countries regardless of their development levels (i.e., without touching the actual levels of the available national resources and capabilities). According to the World Economic Forum methodology, the Global Gender Gap Index comprises fourteen indicators that look into such areas as economic participation and opportunity, educational attainment, health and survival, and political empowerment (Hong et al., 2019).

The Education Index, in turn, is a composite indicator of the United Nations Development Program (UNDP), which is widely regarded as a measure of well- being and one of the main indexes of social development. This Index characterizes the current level of education of the population by addressing the adult literacy rate and the combined primary, secondary, and tertiary gross enrolment ratio. What is more, the Education Index is found as a component of the Human Development Index, also included in the current study (Doumbia, 2019).

The second step concentrated on the matrix of standardized values of indicators. Since the indicators could be different and incomparable, the data were standardized. To do this, it was necessary to change the X-matrix to the Z-matrix. The elements of the Z-matrix were calculated by the formula (1):

$$Z_{ij} = \frac{x_{ij} - \overline{x_j}}{\sigma_j}, \tag{1}$$

where $\overline{x_j}$ is the average value of the j-th indicator, and σ_j is the average deviation of the j-th indicator. In turn, these parameters were calculated by formulas (2) and (3):

$$\overline{x_j} = \frac{1}{n} \sum_{i=1}^{n} x_{ij}, \tag{2}$$

$$\sigma_j = \left[\frac{1}{n} \sum_{i=1}^{n} (x_{ij} - \overline{x_j})^2 \right]^{1/2}, \tag{3}$$

where m is the number of output indicators used to obtain complex indicators, and n is the number of years for which calculations were made.

The third step implicated the formation of a "reference point" by differentiating the indicators of the observation matrix. All indicators were divided into stimulants and de-stimulants. The basis for their distribution into two groups was the nature of their influence on the enterprise's efficiency. Indicators that have a positive effect were called stimulants, whereas indicators with a negative effect were called de-stimulants. This distribution served as the basis for the formation of a reference point (P0) with coordinates Z_{01} ..., Z_{02} ..., Z_{0n}, obtained by formulas (4) and (5):

$$Z_{0j} = maxZ_{ij}, \text{ if } j \in J, \tag{4}$$

$$Z_{0j} = minZ_{ij}, \text{ if } j \notin J \ (j = J, \dots, n), \tag{5}$$

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where J is the set of stimulant indicators and Z_{ij} is the standardized value of the j-th indicator for the i-th year.

The fourth step implied calculating the Euclidean distance. The distance between the individual points and the point P0, representing the reference point, was calculated by the formula (6):

$$C_{i0} = \left[\sum_{j=1}^{m}(Z_{ij} - Z_{0j})^2\right]^{1/2} \tag{6}$$

The obtained distances represented the initial values used to calculate the integral indicator.

The fifth step was directed at calculating the inclusive growth integral indicator according to the formula (7):

$$d_i = 1 - \frac{C_{i0}}{C_0}, \tag{7}$$

where

$$C_0 = \overline{C_0} + 2 \cdot S_0, \tag{8}$$

$$\overline{C_0} = \frac{1}{m}\sum_{i=1}^{m} C_{i0}, \tag{9}$$

$$S_0 = \left[\frac{1}{m}\sum_{i=1}^{m}(C_{i0} - \overline{C_0})^2\right]^{1/2} \tag{10}$$

The closer the value of d_i to 1, the higher the integral indicator of the country's inclusive growth.

The second stage of this study provided for the creation of regression models to determine the relationship between the Global Sustainability Index, the Resource Intensity Competitiveness Index, and the inclusive growth integral indicator determined at the first stage.

The third stage entailed modeling possible inclusive growth scenarios based on the obtained regression models. Thus, optimistic, realistic, and pessimistic scenarios were elaborated with the only assumption that the realistic scenario would have no changes in the studied indicators, whereas optimistic and pessimistic scenarios will be marked by a 5% increase or decrease in the Global Sustainability Index and Resource Intensity Competitiveness Index.

At the fourth stage, the degree of mutual influence of the studied indicators was assessed by comparing changes in the Global Sustainability Index, Resource Intensity Competitiveness Index, and the inclusive growth integral indicator. Additionally, this stage included the analysis of the results obtained and acceptance or rejection of the formed hypotheses.

Data Analysis

In the first stage of the research process, macroeconomic indicators, as well as economic and statistical data that were supposed to uncover the general economic climate in Russia, the level of the country's socio-economic development, and its potential for inclusive growth, were analyzed following the chosen methodology.

Nowadays, the coronavirus pandemic is holding a special place among the chief economic development trends and factors affecting the key macroeconomic indicators (GDP, production growth rates, state of life and health of the population). There is no dispute that COVID-19 has provoked a severe recession in

the global market, which, in turn, affected the national economies of all countries, without any exception. The current decline in global industrial production remains one of the greatest since the global financial crisis of 2008-2009. Figure 1 explicates the GDP growth rate in Russia for 2005-2022.
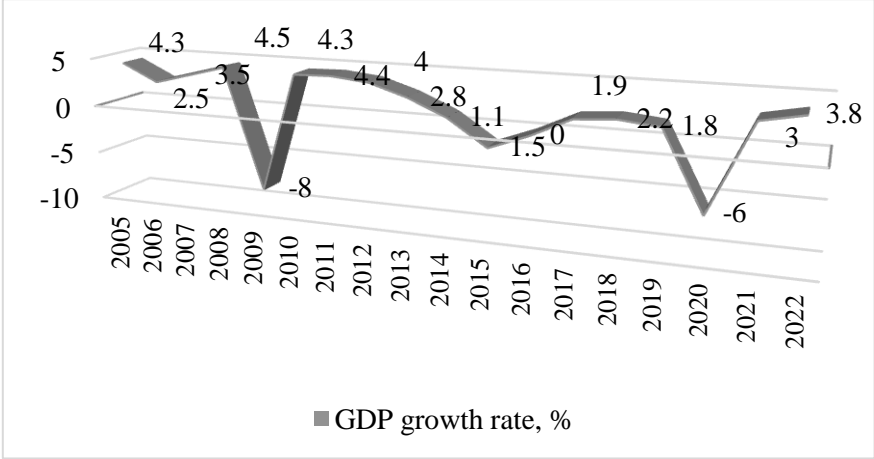

Figure 1: GDP dynamics in Russia for 2005-2022 (including forecasts for 2021-2022)
Source: based on the author's calculations as well as data retrieved from (Bobylev and Grigor'ev, 2017; World Bank, 2016).

As is evident from the preceding figure, the most significant GDP falls happened in the year of the global financial crisis and in 2019 in the light of the spread of coronavirus disease. However, following the World Bank forecasts, 2021 and 2022 will be the time of gradual recovery. When comparing the dynamics of Russian GDP with that of developed countries, one can note that in the first quarter of 2020, the total GDP of the EU economies decreased by 13.3-13.6% in average annual terms, and this became one of the most severe drops in almost the entire history of the EU. In the case of addressing other developing states, for instance, China, a country tightly connected with the Russian Federation by means of trade, it can be vividly seen that in the first quarter of 2020, its GDP decreased by 6.5-6.8%. Only starting from the second half of 2020, the Chinese economy is beginning to heal itself from the damage done.

Table 1 below compares the previous GDP data for Russia with that of the years 2019 and 2020.

Table 1. GDP dynamics in Russia by economic sector for 2018-2020

Indicator	Value	Year	Changes compared to one year ago, %	Changes compared to two years ago, %

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GDP	1700 USD Billion.	2019	1.9	0.2
GDP annual growth rate	-8%	2 qtr./20	x	x
GDP growth rate	-3.2%	2 qtr./20	x	x
GDP per capita	12012 USD	2019	2.2	2.8
GDP in Comparable Prices	20076 RUB Billion | 251,911 USD Billion	2 qtr./20	-2.4	-2.65
GDP per capita, PPP	27044 USD	2019	2.88	2.95
GDP from agriculture	602 RUB Billion | 7,554 USD Billion	2 qtr./20	-2.41	-2.86
GDP from construction	1046 RUB Billion | 13,125 USD Billion	2 qtr./20	-2.35	-2.44
GDP from manufacturing	2454 RUB Billion | 30,792 USD Billion	2 qtr./20	-2.41	-2.72
GDP from mining	1700 RUB Billion | 21,331 USD Billion	2 qtr./20	-2.48	-2.99
GDP from public administration	1666 RUB Billion | 20,905 USD Billion	2 qtr./20	-1.4	-1.95
GDP from transport	1182 RUB Billion | 14,832 USD Billion	2 qtr./20	-6.4	-6.68
GDP from services	479 RUB Billion | 6,01 USD Billion	2 qtr./20	-5.2	-5.45

Source: based on data retrieved from (World Bamk, 2020a, 2020b).

As can be seen from Table 1, almost all groups of indicators were heavily affected by the pandemic (as compared to the relevant periods in 2019 and 2018). Similar to GDP, a sharp drop in oil prices was also noted in early 2020. The oil industry is known to be one of the main benchmarks of the Russian economy and national exports, though the demand for oil in the first three quarters of 2020 decreased by almost 7-8%.

The analysis of changes in the Purchasing Managers' Index (PMI) revealed good results for Russia (Figure 2). They repeated global trends and, in general, were similar to those of developing and developed economies both in the service and manufacturing sectors. Notwithstanding this, by the second half of the year 2020, when the new outbreak of the coronavirus pandemic occurred, PMI declined significantly.
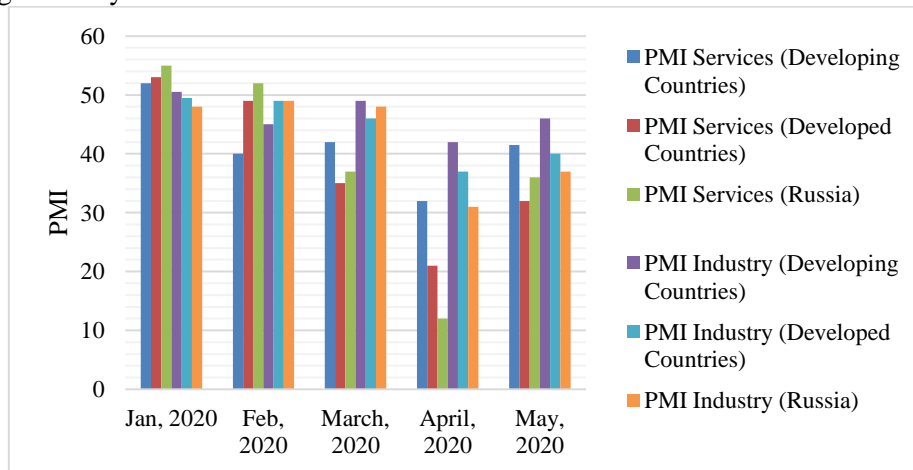

Figure 2: PMI dynamics in Russia compared to other developing and developed economies as of the first half of 2020
Source: based on data adapted from (World Bank, 2020a).

In addition to data retrieved from analytics, forecasts, and scientific research on the socio-economic state of the Russian Federation, it is also important to note the major trends and events affecting economic growth and the country's development, particularly from an inclusive point of view. Basically, the year 2020 and especially its second half are distinguished by negative changes in most sectors of the state economy. The manufacturing sector faced a 10% decrease in production, while the effectiveness of mining works declined by 3.2-3.3% in the first three quarters of the year. By the same token, Russia has experienced a reduction of state budget revenues and a weakening of the national currency – the ruble.

Whereas in 2019, the state budget surplus equaled nearly 1.3 trillion rubles, in the first half of 2020, the federal budget met an about 500 billion rubles deficit. From the time of January 2020, the Russian ruble exchange rate has fallen by 11-11.5% (World Bank, 2020a). What is more, due to the deterioration in the households' solvency, the country is now in a banking crisis, expecting an increase in the share of interest-bearing loans. Another notable consequence of the coronavirus pandemic is the weakened economic activity of Russian business and, as a result, unemployment growth. As of May–June 2020, the Russian Federation's unemployment rate rose to 6.1-6.5% compared to 4-4.5% in 2019. In general, the total number of registered jobless increased by approximately 1.5 million people.

In addition to economic manifestations, COVID-19 significantly affected the population's quality of life, influencing such areas as education (secondary and higher educational institutions), health care, and mobility.

Results

Based on the chosen research methodology, corresponding calculations were performed to determine the value of the integral indicator characterizing Russia's inclusive growth.

Table 2. Dynamics of socio-economic indicators characterizing the inclusive growth of Russia, for 2015-2019

Indicator	2015	2016	2017	2018	2019	Mean	Standard Deviation
Gini Index	37.7	41.2	43.4	44.1	43.9	42.06	2.41
Global Gender Gap Index	0.694	0.691	0.686	0.682	0.695	0.6896	0.00
Education Index	0.816	0.831	0.851	0.832	0.844	0.8348	0.01
Human Development Index	0.798	0.817	0.835	0.823	0.824	0.8194	0.01
Quality of Life Index (according to the Economist Intelligence Unit)	28.38	88.31	85.93	103.32	104.94	82.176	27.97

Source: based on data retrieved from (Sakevich, 2017; Sirvida Llorente, 2019; World Bank, 2016, 2020b).

The indicators given in the Table 2 were used to calculate the mean value and standard deviation. Even though a gradual increase in all the values presented can be noted, this does not testify to the effectiveness of Russia's policy in the context of inclusive growth since positive changes in the Gini Index and the Global Gender Gap Index are represented by the decrease. During the studied period (2015-2019), their values rose, which negatively impacted the overall inclusive growth.

Based on the table presented above, the calculation of the inclusive growth integral indicator was carried out. Standardized values of indicators and intermediate values of the reference point and the Euclidean distance were presented to determine the year-by-year integral indicator for the period under study (Table 3). An additional point to emphasize is that the Education Index, the Human Development Index and the Quality of Life Index were marked as stimulants of inclusive growth, whereas the Gini Index and the Global Gender Gap Index were defined as de-stimulants.

Table 3. Inclusive growth integral indicator for Russia, for 2015-2019

Indicator	2015	2016	2017	2018	2019	Reference Point	$\overline{C_0}$	C_0	S_0
Gini Index	-1.808	-0.357	0.556	0.846	0.763	-1.808	-	-	-
Global Gender Gap Index	0.894	0.284	-0.731	-1.544	1.097	-1.544	-	-	-
Education Index	-1.564	-0.316	1.347	-0.233	0.765	1.347	-	-	-
Human Development Index	-1.758	-0.197	1.281	0.296	0.378	1.281	-	-	-
Quality of Life Index (according to the Economist Intelligence Unit)	-1.923	0.219	0.134	0.756	0.814	0.814	-	-	-
Euclidean Distance	12.233	3.279	2.590	3.242	3.838	-	5.037	13.131	4.047
Inclusive growth integral indicator	0.068	0.750	0.803	0.753	0.708	-	-	-	-

Source: developed by the authors.

Due to fluctuations in the Global Gender Gap Index, Education Index and Human Development Index in 2017-2018, an increase in the inclusive growth integral indicator in 2018 was noted. In 2019, its value decreased but still exceeded the one of the year 2015. In general, since 2015, the integral indicator of inclusive growth boosted by 10.4 times. However, this conclusion is predominantly built on its low value in 2015, resulted from the overall decline in Russia's economic development. If one considers the period of 2016-2019 exclusively, then the opposite can be observed – a decrease of 5.6%. This negative trend confirms the recent decline in the level of inclusive growth in Russia.

To determine the relationship between responsible management of resource wealth and inclusive growth, regression equations were built for the inclusive growth integral indicator, the Global Sustainability Index (GSI) and the Resource Intensity Competitiveness Index (RICI) for 2015-2019 (Figure 3,4).
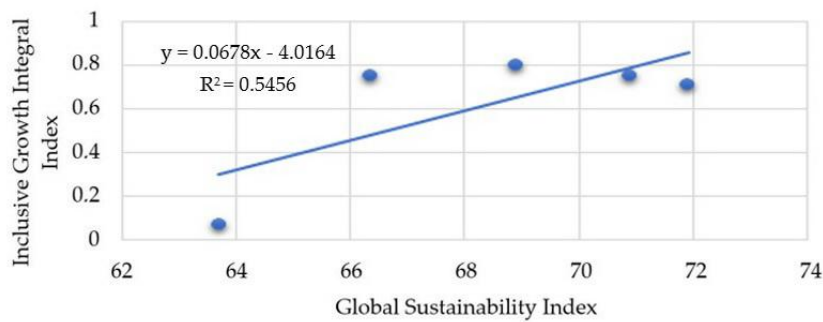
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Figure 3: Relationship between the inclusive growth integral indicator and the GSI.
Source: developed by the authors based on GSI data (Sustainable Development Report, 2020)

The linear regression model obtained in Figure 3 indicates the existence of a sufficient correlation between the inclusive growth integral indicator and the GSI (R^2=0.55). This fact fully confirms the first hypothesis about the impact of sustainable development on the country's inclusive growth. Therefore, it can be argued about the effectiveness of implementing a sustainable development strategy with the aim of increasing the level of inclusive growth in Russia.
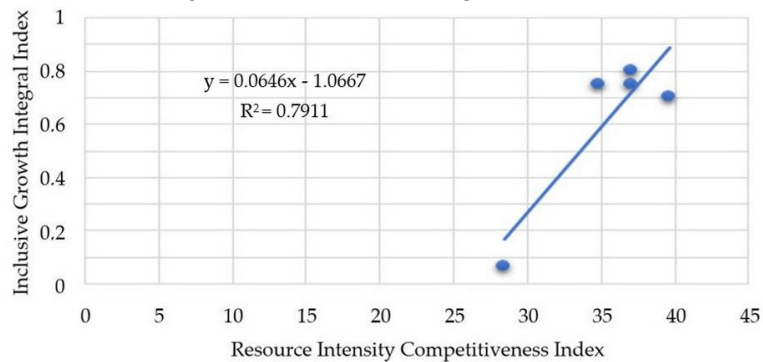

Figure 4: Relationship between the inclusive growth integral indicator and RICI.
Source: developed by the authors based on RICI data (Resource Intensity Competitiveness Index, 2020)

The linear regression model displayed in Figure 4 indicates a close relationship between the inclusive growth integral indicator and the intensity of using the country's resources (R^2=0.79). Accordingly, the second research hypothesis declaring a significant influence of resource use intensity (financial, natural, intellectual resources and the like) on the country's inclusive growth is proved.

In order to determine the influence of sustainable development and the intensity of resource use on the inclusive growth integral indicator (IGII), three possible scenarios were modeled with reference to the obtained regression equations: optimistic (OptSc), realistic (RealSc), and pessimistic (PesSc). It was assumed that

the realistic scenario would have no changes in the studied indicators, while in the optimistic and pessimistic scenarios, the GSI and the RICI would increase/decrease by 1%. The results of this stage are shown in Table 4.

Table 4. Inclusive growth scenario modeling results

Regression models	a	b	OptSc	RealSc	PesSc	Δ IGII
IGII (GSI)	-4.0164	0.0678	0.9085	0.8598	0.8110	0.0567
IGII (RICI)	-1.6667	0.0646	0.9170	0.8915	0.8659	0.0287

Source: developed by the authors.

Since, according to the optimistic and pessimistic scenarios, an increase (or decrease) in sustainable development and the intensity of resource use contributes to an increase (or decrease) in the level of the country's inclusive growth, the hypotheses formed are confirmed. A characteristic feature of the proposed methodological approach is the ability to determine the degree of this influence. The calculation results allow one to claim that a 1% increase in the level of sustainable development brings a 5.7% improvement in inclusive growth. In a similar vein, a 1% rise in resource use intensification will enhance the inclusive growth rate by 2.9%.

The models elaborated confirm that sustainable development and intensive use of resources can put significant pressure on inequality and institutional trust in the next five years, which can initiate alleviation of the situation. However, these trends appear reasonably likely to have different consequences, depending on whether Russia responds actively or passively to them.

Discussion

The close relationship between the examined indicators highlights the need for Russia to introduce effective resource management in the context of sustainable development. Assessment of inclusive growth alone is not able to demonstrate these connections. But yet, this study proved not only a close relationship between inclusive growth, sustainable development, and the intensity of resource use. It also revealed how much this influence is present in a percentage ratio (Kirsanova and Lenkovets, 2019; Nedosekin et al., 2019).

The advantage of the proposed methodological approach lies in the possibility of a comprehensive assessment of the country's inclusive growth and its relationship with sustainable development and the use of resources. What is more, the applied research method allowed the determination of the level of this influence in the context of scenario modeling (Cherepovitsyn and Ilinova, 2018; Makhova, 2019).

The use of the proposed methodological approach for analyzing other countries is possible as well. The set of indicators proposed in this paper is quite clear and

reasonable since it reflects the effectiveness of inclusive growth from its different sides and enables one to determine what specifically needs to be paid attention to in the first place. On top of that, these indicators and assessment methods can be adjusted depending on the specifics of the country's development. Hence, in the light of the foregoing, further research can be directed at (1) clarifying the composition of elements included in the inclusive growth integral indicator, (2) developing the most relevant approaches to assess it (adapted to individual conditions of the national economy), and (3) comparing the results obtained for different countries and regions. In the interim, future examination can be supplemented with building multicollinear regression models to determine the relationship of several variables, that is, evaluate the simultaneous influence of sustainable development and resource management's efficiency on the level of inclusive growth.

Conclusions

Regression equations built for the inclusive growth integral indicator, the Global Sustainability Index, and the Resource Intensity Competitiveness Index provided the possibility to determine the relationship between them. As a result, a closer link was outlined between inclusive growth and resource use intensification. Even though sustainable development was defined to have a strong influence on inclusive growth, it was still weaker than that between inclusive growth and resource management.

The generated inclusive growth regression models became the basis for developing realistic, optimistic, and pessimistic scenarios. Their modeling made it possible to determine the degree of influence of the indicators under study on the level of inclusive growth. In such a manner, it was confirmed that an increase in the level of sustainable development and in the intensification of resource use contributes to an improvement in the country's inclusive growth by 2.9% and 5.7%, respectively. Since a strong link was outlined between these indicators, Russia is recommended to concentrate on introducing effective resource management solutions to achieve more sustainable development.

The strong point of the proposed methodological approach is represented by the possibility of a comprehensive assessment of the country's inclusive growth, evaluation of its relationship with sustainable development and the use of resources, and determination of the level of this influence in the context of scenario modeling. At the same time, this study was limited to the end values of the indexes, which include numerous structural elements.

The findings gained may be of interest to persons involved in building a strategy focused on the provision of the country's economic and sustainable development and increasing the level of its inclusive growth based on effective resource management. Similarly, they may be taken advantage of by researchers attempting to supplement the methodological tools for assessing inclusive growth.

Limitations

The work was limited to analyzing the effectiveness of methods for measuring inclusive growth within the framework of resource management plans and strategies in developing countries. The object of the study was represented by the Russian Federation, whereas the focus was set on the scenario modeling technique.

References

Altyar, A. R., Habeeb, F. J. and Sedeeq, M. M., (2020). The impact of knowledge and human resource management on the economic growth of Arab countries: A panel GMM and robust standard error approach. *Polish Journal of Management Studies, 21*(1), 48-60.

Anand, R., Mishra, M., & Peiris, S., (2013). *Inclusive growth: measurement and determinants.* Washington, DC: Int. Monetary Fund.

Boarini, R., Causa, O., Fleurbaey, M., Grimalda, G. and Woolard, I., (2018). Reducing inequalities and strengthening social cohesion through inclusive growth: a roadmap for action. *Economics, 12*(63), 1-26.

Bobylev, S. N., Grigor'ev, L. M., (2017). *Report on human development in the Russian Federation*. Moscow: Analytical Centre of the Government of the Russian Federation.

Bughin, J., Mischke, J., Tacke, T., Hazan, E. and Sjatil, P. E., (2018). *Testing the resilience of Europe's inclusive growth model*. Retrieved from https://www.mckinsey.com/featured-insights/europe/testing-the-resilience-of-europes-inclusive-growth-model

Bulgakova, Y. V., Nabok, S. D., (2017). Interconnection of the concepts "green" economy, "green" growth and sustainable development. *International Research Journal, 5*(59), 89-91.

Cherepovitsyn, A. E., Ilinova, A. A., (2018). Methods and tools of scenario planning in areas of natural resources management. *European Research Studies Journal, 21,* 434-446.

Cioca, M., Cioca, L.-I., Buraga, S.-C., (2008); *SMS disaster alert system programming*, 2008 2nd IEEE International Conference on Digital Ecosystems and Technologies, IEEE-DEST 2008, 260–264, 4635212

De Las Heras, A., Luque-Sendra, A. and Zamora-Polo, F., (2020). Machine learning technologies for sustainability in smart cities in the post-COVID era. *Sustainability, 12*(22), 9320.

Doumbia, D., (2019 The quest for pro-poor and inclusive growth: The role of governance. *Applied Economics, 51*(16), 1762-1783.

Hong, G., Kim, S., Park, G. and Sim, S. G., (2019). Female education externality and inclusive growth. *Sustainability, 11*(12), 3344.

Kirsanova, N., Lenkovets, O., (2019). *Economic relations in the field of subsoil use at the present stage of their development.* Economics of Nature Management. Retrieved from http://www.uecs.ru/index.php?option=com_flexicontent&view=items&id=5450

Kovach, A. M., (2016). Scenario planning in modern strategic management. *Young Scientist, 29*(133), 419-422.

Krzykowski, M., Mariański, M. and Zięty, J., (2020). Principle of reasonable and legitimate expectations in international law as a premise for investments in the energy sector. *International Environmental Agreements: Politics, Law and Economics, 21,* 75-91.

Makhova, L., (2019). Effective investment policy as a factor of successful economic development. Acad. Account. *Financial Studies Journal, 22*(3), 1–9.

Marx, I., Verbist, G., & Nolan, B., (2018). Belgium: a poster child for inclusive growth? In *Inequality and Inclusive Growth in Rich Countries: Shared Challenges and Contrasting Fortunes* (pp. 75-96). Oxford Oxford University Press.

McCann, P., (2020). Perceptions of regional inequality and the geography of discontent: Insights from the UK. *Regional Studies, 54*(2), 256-267.

Nedosekin, A. O., Rejshahrit, E. I. and Kozlovskiy, A. N., (2019). Strategic approach to assessing economic sustainability objects of mineral resources sector of Russia. *Journal of Mining Institute, 237,* 354-360.

Oduro-Appiah, K., Afful, A., Kotey, V. N. and De Vries, N., (2019). Working with the informal service chain as a locally appropriate strategy for sustainable modernization of municipal solid waste management systems in lower-middle income cities: lessons from Accra, Ghana. *Resources, 8*(1), 12.

Pouw, N., Gupta, J., (2017). Inclusive development: a multi-disciplinary approach. *Current Opinion in Environmental Sustainability, 24,* 104-108.

Rajiani, I., Bačík, R., Fedorko, R., Rigelský, M. and Szczepańska-Woszczyna, K., (2018). The alternative model for quality evaluation of health care facilities based on outputs of management processes, *Polish Journal of Management Studies* 17, 194-208

Resource Intensity Competitiveness Index (2020). *Global Resource Intensity Rankings.* Retrieved from https://solability.com/the-global-sustainable-competitiveness-index/the-index/resource-efficiency-2

Sait, M. A., Chigbu, U. E., Hamiduddin, I. and De Vries, W. T., (2019). Renewable energy as an underutilised resource in cities: Germany's 'Energiewende'and lessons for post-brexit cities in the United Kingdom. *Resources, 8*(1), 7.

Sakevich, V., (2017). *Gender Inequality Index – 2016.* Retrieved from http://www.demoscope.ru/weekly/2017/0713/reprod01.php

Sepashvili, E., (2017). Eastern partnership integration with the EU and inclusive growth of national economies. *Management Dynamics in the Knowledge Economy, 5*(3), 439-453.

Sirvida Llorente, S., (2019). *Gini coefficient (income inequality index): formula for calculating the index, indicators in Russia.* Retrieved from https://journal.open-broker.ru/economy/koefficient-dzhini/

Sun, C., Liu, L. and Tang, Y., (2018). Measuring the inclusive growth of China's coastal regions. *Sustainability, 10*(8), 2863.

Sustainable Development Report (2020). *The Sustainable Development Goals and Covid-19.* Retrieved from https://sdgindex.org/reports/sustainable-development-report-2020/

Urbański, M., Haque, U. A., (2020). Are you environmentally conscious enough to differentiate between greenwashed and sustainable items? A global consumers perspective. *Sustainability, 12*(5), 1786.

World Bank (2016). *Systematic Country Diagnostic for the Russian Federation: Pathways to Inclusive Growth.* Retrieved from https://www.worldbank.org/en/country/russia/publication/systematic-country-diagnostic-for-the-russian-federation-pathways-to-inclusive-growth

World Bank (2020a). *GDP of Russia.* Retrieved from https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locale=ru&locations=RU

World Bank (2020b). *Russia Economic Report, No. 43, July 2020: Recession and Growth Under the Shadow of a Pandemic.* World Bank.

ODPOWIEDZIALNE ZARZĄDZANIE ZASOBAMI W ZAPEWNIENIU WZROSTU WŁĄCZAJĄCEGO

Streszczenie: Celem pracy była ocena wpływu gospodarowania zasobami kraju na poziom jego inkluzywnego rozwoju w kontekście porozumień środowiskowych, koncepcji zielonego wzrostu i zrównoważonego rozwoju oraz intensyfikacji wykorzystania zasobów. W pracy wykorzystano metodę modelowania scenariuszowego. Obiekt badań reprezentowała Federacja Rosyjska. Zaproponowane podejście metodologiczne do oceny wzrostu sprzyjającego włączeniu społecznemu dało możliwość kompleksowej analizy jego poziomu. Potwierdzono, że pozytywne zmiany wskaźników zrównoważonego rozwoju i intensyfikacji wykorzystania zasobów przyczyniają się do dalszej poprawy inkluzywnego wzrostu w kraju odpowiednio o 3% i 6%. Ta dość silna korelacja podkreślała potrzebę wprowadzenia przez Rosję efektywnych rozwiązań zarządzania zasobami w obszarze zrównoważonego rozwoju. Zaletą proponowanego podejścia jest możliwość szczegółowej oceny poziomu inkluzywnego rozwoju kraju, oceny jego związku ze zrównoważonym rozwojem i wykorzystaniem zasobów oraz określenie stopnia tego wpływu. Wyniki i wnioski z tego badania mogą być korzystne dla osób zaangażowanych w opracowanie strategii ukierunkowanej na ekonomiczny i zrównoważony rozwój kraju oraz zwiększenie jego inkluzywnego wzrostu opartego na efektywnym zarządzaniu zasobami. Uzyskane wyniki mogą stanowić dobry punkt wyjścia do dyskusji i dalszych badań w kontekście uzupełnienia narzędzi metodologicznych do oceny wzrostu sprzyjającego włączeniu społecznemu.

Słowa kluczowe: kraje rozwijające się, wzrost sprzyjający włączeniu społecznemu, makroekonomia, jakość życia, Rosja.

负责任的资源财富管理确保包容性增长

摘要：本研究的目的是在环境协议、绿色增长和可持续发展概念以及资源利用集约化的背景下，评估一个国家的资源管理对其包容性增长水平的影响。该工作采用情景建模方法。研究对象由俄罗斯联邦代表。拟议的评估包容性增长的方法为对其水平进行全面分析提供了机会。经证实，可持续发展和资源利用集约化指标的积极变化有助于该国包容性增长随后分别提高3%和6%。这种相当强的相关性强调了俄罗斯需要在可持续发展领域引入有效的资源管理解决方案。拟议方法的优势在于可以详细评估该国的包容性增长水平，评估其与可持续发展和资源利用的关系，并详细说明这种影响的程度。本研究结果和结论可能有益于参与制定以国家经济和可持续发展为重点的战略，并在有效资源管理的基础上促进包容性增长的人员。在补充评估包容性增长的方法工具的背景下，获得的研究结果可为讨论和进一步研究提供一个良好的起点。

关键词：发展中国家，包容性增长，宏观经济，生活质量，俄罗斯。