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The institutional approach to the development of education in the social and investment model of Russia's economic growth

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The goal of this article is to develop an institutional approach to the development of education in the social and investment model of economic growth in developing countries by the example of Russia. The hypothetical and deductive principles and regression analysis are used in this research. The research results show that the social and investment model of economic growth is being implemented in the countries of the CIS and Russia, and—as of now—the development of education slows down economic growth, instead of accelerating it. To solve this problem, we offer an institutional approach to the development of education in the social and investment model of Russia's economic growth. The new approach allows for a flexible selection of measures of management depending on the needs of education's development: development of only current, only future, or all workforce. The developed approach is based on the institution of the legal framework's adaptability to digital business models. Since workforce and skills play a key supporting role in digital business, the development of the institution of legal framework's adaptability to digital business models will stimulate the development of higher education and will ensure Russia's transition to the social and investment model of economic growth. For the practical application of the new approach, we develop an optimization model of institutional management in the interests of the development of education and transition to the social and investment model of economic growth in Russia. The model has shown that an increase in the possibility of the legal framework's adaptability to digital business models up to 100 points with a stable level of development of other institutions allows increasing skills of the current workforce by 44.05% and the future workforce by 20.96%.

KEYWORDS

economic empowerment, educational governance, inclusive innovation, higher education, developing countries, CIS, Russia

1. Introduction

The social and investment model of economic growth is one of the most topical contradictions and manifestations of the differences between developed and developing countries. The socioeconomic systems of developed countries have by now (2021) achieved such a high level of progress and the gap between them and other participants of global economic relations has become so large that they could ignore the rate of economic growth (temporarily) to raise the quality of life (Kapetanovic et al., 2022). This is what takes place in the social and investment model of economic growth, which ensures its moderate rate but a serious contribution to human development and realization of intellectual and innovative potential (Brown et al., 2022; Salamzadeh et al., 2022).

In the long term, under the effect of the dialectical law of transition from quantity to quality, large-scale social investments will be accumulated in the volume that would ensure acceleration of economic growth rate based on the capabilities of the fourth technological mode (Industry 4.0), the transition to which has only started (Nja et al., 2022). Developing countries cannot allow for a reduction in economic growth rate, but they are also interested very much (as compared with developed countries) in social investments (Batchaev et al., 2021). Therefore, there emerges a problem in the search for a new, special approach to implementing the social and investment model of economic growth in developing countries, which would allow increasing social investments and preserving a high rate of economic growth, avoiding its reduction (Slišāne et al., 2022).

This article aims to contribute to the resolution of the problem of adjusting social development with economic growth in developing countries. The research question is as follows: how to increase social investments and preserve a high rate of economic growth, avoiding its reduction? Since the main difference between developed and developing countries is observed in the sphere of institutions, we offer the following hypothesis: managing the development of institutions could ensure a crisis-free transition of developing countries to the social and investment model of economic growth. The goal of this research is to develop an institutional approach to the development of education in the social and investment model of economic growth in Russia.

The importance of this article is that developing countries require specific social and investment models of economic growth, which would take into account the specifics of their institutes. This article contributes to the literature by presenting a prospective social and investment model of Russia's economic growth. By the example of this model, we demonstrated the critical importance of the development of institutes to accelerate economic growth in its social and investment model.

2. Literature review

The theoretical base of this research is the concept of social investments, which emphasizes the important role of education and, in particular, higher education in supporting social development (Wasino et al., 2020; Gómez Zermeño and Alemán de la Garza, 2021; Grisolia et al., 2022; Guijarro-Garvi et al., 2022; Trong, 2022; MacKenzie et al., 2023). Thus, higher education lies based on the social and investment model of economic growth.

An institutional view of the development of the system of higher education is presented in the studies of Altinay et al. (2019), Anis and Islam (2019), Watson and McGowan (2019), Asiedu et al. (2020), Saqib et al. (2020), and Wright (2020). The selected observations in this sphere point to the positive link between social investments and economic growth (Xie, 2021; Bajraktari et al., 2022). This link makes the social and investment model of economic growth natural and organic in developed countries (Prada-Blanco and Sanchez-Fernandez, 2017; Marino et al., 2021).

Wong and Chu (2020), Lee et al. (2022), and Lima et al. (2022) point to the direct role of institutes in implementing the social and investment model of economic growth. This direct role consists of the direct stimulation of social investments, including state financing of higher education (Askari and El Refae, 2022; Fadda et al., 2022; Usman and Ab Rahman, 2023).

The accumulated experience of practical implementation of the social and investment model of economic growth and particular difficulties faced by developing countries is reflected in the studies of Hammami and Hendijani Zadeh (2019), Meng and Wang (2019), Oware and Mallikarjunappa (2019), and Vluggen et al. (2020).

As the literature overview has shown, the existing social and investment model of economic growth is based on the experience of developed countries and does not take into account the specifics of developing countries. The presented research is to fill this gap and to form an institutional approach to the development of education in the social and investment model of economic growth, adapted to the specifics and based on Russia's experience.

3. Materials and methodology

To obtain the most reliable and precise results, we use the method of regression analysis. The hypothesis is checked in two stages. At stage one, we determine the dependence ($z = a + b_1^* y_1 + b_2^* y_2$) of economic growth rate (z) on educational factors (skills of the current workforce: y_1 and skills of the future workforce: y_2).

At stage two, we determine the dependence of the given educational factors (y_1 and y_2) on the level of development of institutions: intellectual property protection (x_1), government ensuring policy stability (x_2), government's responsiveness to change (x_3), legal framework's adaptability to digital business models (x_4), and government's long-term vision (x_5), and compile equations of multiple linear regression: $y_1 = c + d_1^* x_1 + d_2^* x_2 + d_3^* x_3 + d_4^* x_4 + d_5^* x_5$ and $y_2 = e + f_1^* x_1 + f_2^* x_2 + f_3^* x_3 + f_4^* x_4 + f_5^* x_5$.

The choice of indicators for this research was predetermined, first, by the authority of statistical sources for these indicators: the World Bank (2020) and the World Economic Forum (2020), which guarantees the data reliability; second, by the accessibility of the values of the selected indicators for the CIS countries, for which there is a certain deficit of international statistics.

Third, by the advantage of the selected factor variables—in their totality, they allow for the most comprehensive characterization of the institutional support for the economy: intellectual property protection, government ensuring policy stability, government's responsiveness to change, legal framework's adaptability to digital business models, and government's long-term vision.

Fourth, the selected resulting variables reflect the close connection between education and social development and correctly show its central role in the social and investment model of economic growth. Therefore, an advantage of the selected indicators is that they reflect—not directly, but indirectly—education from the position of its results: skills of the current workforce and skills of the future workforce. They are supplemented by GDP growth—as the main indicator of the direct result of implementing any model, including the social and investment model of economic growth, according to the objective assessment of the World Bank (2020).

The hypothesis is deemed proved if there is reverse dependence ($b_1 < 0$, $b_2 < 0$), i.e., the development of education restrains the rate of economic growth, and if there is (at the same time) direct dependence ($d > 0$, $f > 0$) of at least several institutions on the development of education. As statistical accounting of the institutions in Russia is fragmentary and in the process of formation, and statistical accounting of the institutions and education in the international practice is changed annually (in terms of indicators), we cannot use the analysis of the development of institutions and higher education in Russia for a rather long period, and the use of the data for 1–2 years does not allow using the reliable methods of economic analysis.

Therefore, to obtain precise and correct results, we study the experience of Russia as a member of the Commonwealth of Independent States (CIS). This allows for determining common regularities, which are specific for the countries with similar geographical positions and similar levels and rates of socioeconomic development, and specifying these regularities based on Russia's experience. The statistical basis of the research is shown in Table 1.

The research sample reflects a group of countries (CIS), which have many similarities that include not only the same level of socioeconomic development but also geographical proximity and commonness of culture. This allows for minimizing the variation in countries, ensures a rather high homogeneity of the sample, and allows for the reduction of the probability of errors and distorted treatments. This enables us to determine—correctly and precisely—the influence of the factors of the institutes on the implementation of the social and investment model of economic growth, separately from the influence of other factors—e.g., climate—which is beyond the limits of this research.

The timeframe of the research was selected based on the desire to obtain the most precise results and to avoid the distorting influence of economic crises. Because the data in the article belong to 2020 (reflecting the results of 2019), the research and its results are not influenced by the COVID-19 pandemic and crisis and the following shocks in the world economic system.

4. Results

To find the contribution of higher education to economic growth in the CIS countries based on the data from Table 1, we compile the following regression equation:

$$z = 11.20 - 0.09y_1 - 0.03y_2, r^2 = 35.81\%.$$

According to this equation, the growth of skills of the current workforce by one point decreases the rate of economic growth by 0.09% per year, and the growth of skills of the future workforce by one point decreases the rate of economic growth by 0.03% per year. Multiple correlations are moderate: the change in the economic growth rate in countries of the CIS is explained by education's development by 35.81%.

To specify the correctness of the determined regularity in Russia, we find regression dependence of economic growth rate according to the World Bank (2020) on the education index from the Human Development Reports (UNDP, 2020) in 2010–2019 (Figure 1).

Regression analysis in Figure 1 has confirmed the determined regularity (based on the CIS countries) of the slowdown of economic growth rate in the course of education development in Russia. Therefore, the social and investment model of economic growth is not implemented in the CIS countries or Russia. To find the perspectives of applying the institutional approach to education's development, we used regression equations, which are created based on the data from Table 1. Regression dependence of skills of the current workforce on the institutions in the CIS countries in 2020 is as follows (as at the start of the year):

$$y_1 = 30.92 - 0.63x_1 - 0.90x_2 + 1.91x_3 + 0.47x_4 - 0.37x_5,$$
$$r^2 = 99.67\%.$$

The skills of the current workforce in the CIS countries grow by 1.91 points if the government's responsiveness to change grows by one point, and grows by 0.47 points if the legal framework's adaptability to digital business models grows by one point. Multiple correlation between the indicators is very high (99.67%), demonstrating the reliability of the obtained model. Regression dependence of skills of the future workforce on institutions in the CIS countries in 2020 is as follows (as at the start of the year):

$$y_2 + 46.98 - 0.09x_1 + 0.96x_2 - 0.15x_3 + 0.25x_4 - 0.60x_5,$$
$$r^2 = 88.28\%.$$

The skills of the current workforce in countries of the CIS grow by 0.96 points if the government ensures policy stability grows by one point, and grow by 0.25 points if the legal framework's adaptability to digital business models grows by one point. Multiple correlations between the indicators are very high (88.28%), demonstrating the reliability of the obtained model.

As the only common institutional factor that has a non-contradictory and clear influence on both manifestations of the development of higher education in the CIS countries is the legal framework's adaptability to digital business models, the optimization model (created based on the data from Table 1) of managing the institutions for the purpose of education's development and transition to the social and investment model of economic growth in Russia aims at this factor (Figure 2).

The model in Figure 2 shows that the growth of legal framework's adaptability to digital business models by 107.90% (up to 100 points), with the stable level of development of other institutions, allows increasing skills of the current workforce by

10.3389/feduc.2023.1128574

TABLE 1 Level of development of institutions, training of the workforce in the educational system, and rate of economic growth in the CIS countries in 2020 (data as of the beginning of the year, based on the results of the previous year), points 1–100.

Country	Level of the institutions' development					Education		GDP growth (annual %) (Rate of economic growth) %
	Intellectual property protection	Government ensuring policy stability	Government's responsiveness to change	Legal framework's adaptability to digital business models	Government long-term vision	Skills of the current workforce	Skills of the future workforce	
	x_1	x_2	x_3	x_4	x_5	y_1	y_2	z
Azerbaijan	70.4	73.6	75.4	60.1	72.1	65.6	72.3	2.2
Armenia	53.8	52.5	50.6	50.2	52.0	49.4	62.2	7.6
Kazakhstan	51.8	58.1	53.0	50.5	56.1	50.8	72.9	4.5
Kyrgyzstan	40.2	37.2	34.6	33.8	32.9	41.3	61.2	4.5
Moldova	47.1	33.4	35.2	37.4	32.2	44.4	62.1	3.5
Tajikistan	55.5	62.5	62.5	43.8	71.1	53.1	61.1	7.0
Russia	47.3	44.9	47.4	48.1	51.0	54.8	60.7	1.3

Source: Compiled by the authors based on the World Bank (2020) and the World Economic Forum (2020).

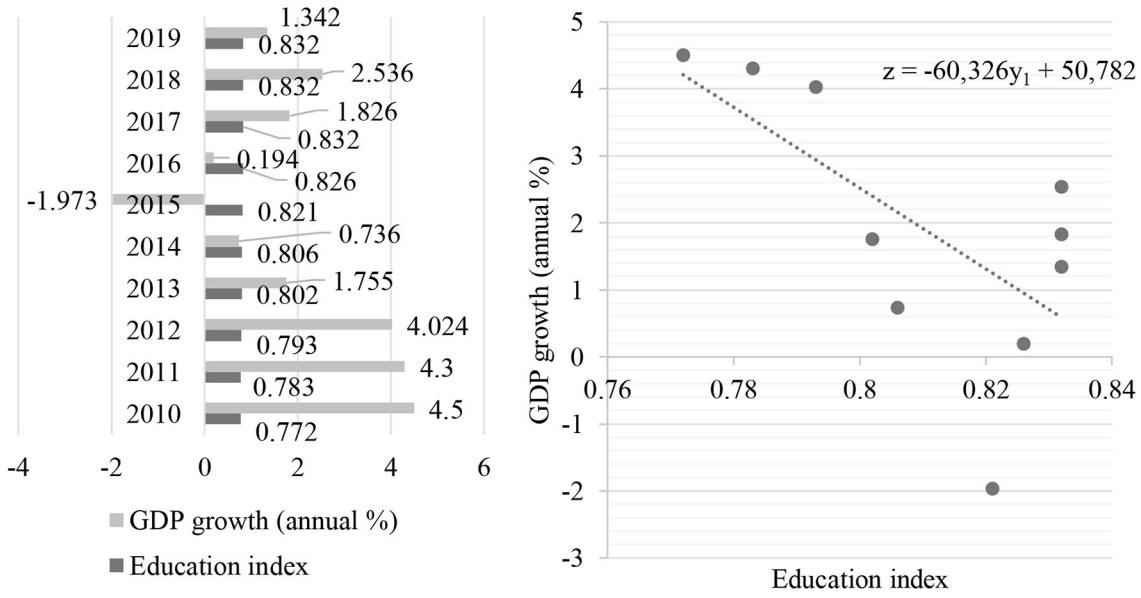

FIGURE 1
Rate of economic growth and the education index in Russia in 2010–2019 (data as of year-end) and their regression dependence. Source: Calculated and built by the authors based on the UNDP (2020) and the World Bank (2020).

44.05% up to 78.94 points and increasing skills of future workforce by 20.96% up to 73.42 points (well-balanced management).

Situational management is oriented toward an increase in the skills of only the current workforce up to 100 points, which also requires an increase in the government's responsiveness to change up to 58.43 points. Strategic management is oriented at an increase in skills of only the future workforce up to 100 points, which requires an increase in government ensuring policy stability up to 73.07 points and an increase in government's responsiveness to change up to 50.95 points.

5. Discussion

This article contributes to the literature for the development of the scientific provisions of the concept of social investments by justifying the importance of institutional support for education, in particular higher education, in its facilitating social development. Due to this, it was specified—in the example of Russia—that higher education lies based on the social and investment model of economic growth—under the condition of high effectiveness of the institutes of state regulation

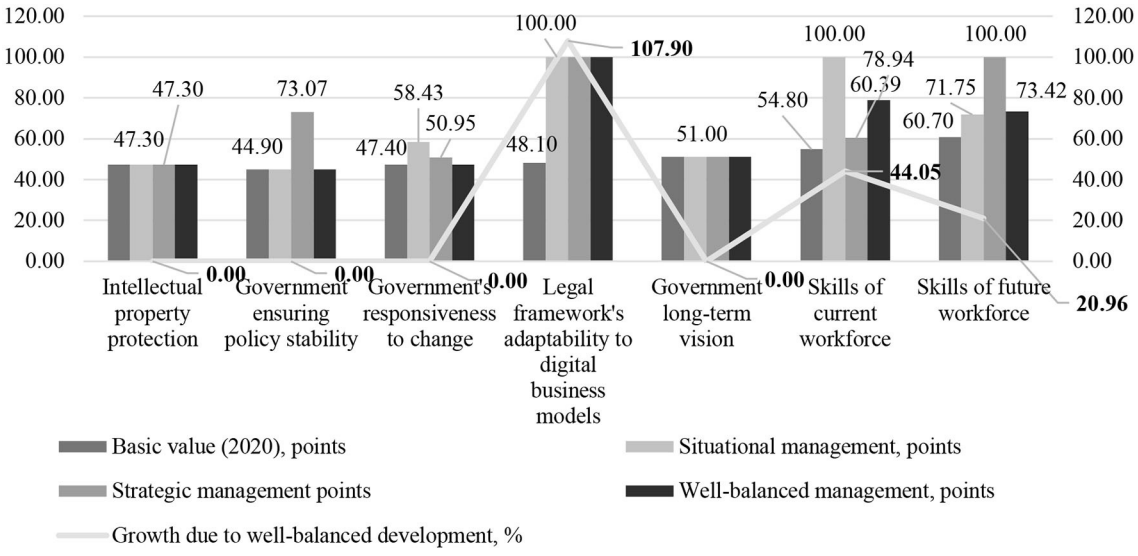

FIGURE 2
Optimization model of managing the institutions for the purpose of education's development and transition to the social and investment model of economic growth in Russia. Source: Calculated and built by the authors.

TABLE 2 Comparative analysis of the results obtained and the existing literature.

Criteria of comparison	Scientific provisions of the existing literature	New results and authors' conclusions that were made in the paper
The connection between social investments and economic growth	Positive connection, which makes the social and investment model of economic growth natural and organic in developed countries (Prada-Blanco and Sanchez-Fernandez, 2017; Marino et al., 2021; Xie, 2021; Bajraktari et al., 2022)	Negative connection, which hinders the developing countries' transitioning to the social and investment model of economic growth (proved by the example of the CIS countries)
Role of institutes in the implementation of the social and investment model of economic growth	Direct role: direct stimulation of social investments, including state financing of higher education (Wong and Chu, 2020; Askari and El Refae, 2022; Fadda et al., 2022; Lee et al., 2022; Lima et al., 2022; Usman and Ab Rahman, 2023)	Indirect role: the creation of a common stable macro-economic situation and favorable investment climate with the market self-regulation of social investments

Source: Authors.

of the economy and a favorable institutional environment on the whole.

Based on the example of the experience of the CIS countries, this article proved the hypothesis that managing the development of institutions could ensure a crisis-free transition of developing countries to the social and investment model of economic growth. The comparative analysis of the results obtained with the existing literature is presented in Table 1.

As shown in Table 2, unlike Prada-Blanco and Sanchez-Fernandez (2017), Marino et al. (2021), Xie (2021), and Bajraktari et al. (2022), we discovered not a positive (as in developed countries) but a negative link between social investments and economic growth, which hinders the developing countries' transitioning to the social and investment model of economic growth (proved by the example of countries in the CIS).

Unlike Askari and El Refae (2022), Fadda et al. (2022), Lee et al. (2022), Lima et al. (2022), Usman and Ab Rahman (2023), and Wong and Chu (2020), we justified that the role of institutes in the implementation of the social and investment model of economic growth is not direct but indirect. This indirect role consists of the creation of a common stable macro-economic situation and favorable investment climate with market self-regulation of social investments.

This scientific article is part of a line of research that is providing good results in the sphere of explanation of cause and effect links of economic growth in its social and investment model. In addition to the already known close connection between higher education and social progress, this article discovered a previously unknown important role of institutes in the strengthening of the considered link.

6. Conclusion

The research results have confirmed the offered hypothesis and have shown that the social and investment model of economic growth is only being implemented in the CIS countries and Russia; as of now, the development of education slows down economic growth, instead of accelerating it. To solve this problem, we offer the institutional approach to the development of education in the social and investment model of Russia's economic growth. The new approach allows for flexible selection of the management measures

depending on the needs of education's development: development of only the current workforce, only the future workforce, or all workforce.

The developed approach is based on the institution of the legal framework's adaptability to digital business models. Since workforce and skills play a key supporting role in digital business, the development of the institution of legal frameworks' adaptability to digital business models will stimulate the development of higher education and will ensure Russia's transition to the social and investment model of economic growth. Thanks to this development, the article provided an answer to the research question. To increase social investments and preserve a high rate of economic growth, avoiding its reduction, it is necessary to raise the effectiveness of institutes: (1) growth of legal framework's adaptability to digital business models, (2) increase in the government's responsiveness to change, and (3) increase in government ensuring policy stability.

For the analysis, we used a dichotomous scale, in which the positive influence of social investments on economic growth is opposed to their negative influence in developing countries (demonstrated by the example of the CIS countries). The research results, which consist of justifying the fact that the contribution of social investments to economic growth depends on the effectiveness of institutes, can help the statistical community in the explanation of the regularities of economic growth in its social and investment model.

The theoretical significance of this article is that it contributes to the search for a solution to the problem of implementing the social and investment model of economic growth in developing countries through the justification of the important role of institutes in this process. The practical significance of the authors' conclusions and results is due to Russia's model being a good alternative to the models of developed countries. Thus, the described experience of Russia will be useful for developing social and investment models of economic growth in other developing countries given the specifics of their institutes. Further studies should be devoted to this.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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