

Article

Exploring the Role of Socio-Cultural Factors on the Development of Human Capital in Multi-Ethnic Regions

Maksim Vlasov ^{1,2} , Sergey N. Polbitsyn ^{1,2} , Michael Olumekor ^{1,*}  and Hossam Haddad ³ 

¹ Graduate School of Economics and Management, Ural Federal University, 620014 Yekaterinburg, Russia; m.v.vlasov@urfu.ru (M.V.)

² Institute of Economics of the Ural Branch, Russian Academy of Sciences, 620014 Yekaterinburg, Russia

³ Accounting Department, Business Faculty, Zarqa University, Zarqa 13133, Jordan

* Correspondence: molumekor@urfu.ru

Abstract: Human capital is among the most important factors for sustainable economic growth. However, there remains some debate on the factors promoting or inhibiting its development. This research attempts to put socio-cultural factors at the front of this debate. Using econometric models, we exploratively test the influence of a raft of social and cultural variables on human capital development in multi-ethnic regions of Russia. We found that factors such as marriage, divorce, life expectancy, accessibility to education and healthcare, and attitude towards tourism all influence human capital to varying degrees. Domestic tourism, including museum and theatre visits were particularly impactful. We argue that cultural knowledge and exchange can promote socio-cultural harmony in multi-ethnic regions which can contribute to the region's human capital development. By exploring the impact of socio-cultural factors, we hope to lead towards a holistic understanding of sustainable human capital development.

Keywords: socio-cultural factors; human capital; HDI (human development index); regional economy; multi-ethnic regions; institutions; economic development



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1. Introduction

The dominance of technologies is significantly changing production models and the very nature of socio-economic relations in the 21st century. The need to constantly update knowledge and education is becoming one of the key factors in achieving social harmony [1], human capital development [2], and sustainability. Studies have connected human capital development to both regional and national economic growth [3], firm performance [4,5], innovation potential and labour productivity [6], crime reduction and political participation [7], life outcomes for individuals [8,9], and sustainable development [10,11], among others. Furthermore, psychological studies have shown that human capital development begins in early childhood [8], which has led to calls for better policies, funding, and education for children [9,12,13]. Moreover, factors such as health, nutrition, parenting, and schooling/training can influence the human capital development of people [12,14]. All of which can have a consequential impact on the future prosperity of societies [15].

In recent decades, research has also begun to analyse how human capital is reproduced. Some studies show that socio-cultural factors influence human capital at the stage of its reproduction [16,17]. In addition, some researchers believe that the problem of the human capital production and reproduction in multi-ethnic regions has a significant regional bias which is fuelled by prevailing socio-cultural conditions [18,19]. Other studies have reached similar conclusions. For example, in an analysis of the evolution of human capital in thirty-one Chinese provinces between 1985 and 2016, Valerio Mendoza et al. [20] found that there are two clusters of provinces in China that differ markedly in the level of human capital. The first comprised of a small group of provinces with a high level of human capital, while the second consisted of the vast majority of provinces with a low level of human capital. This disparity

increased annually in part due to prevailing differences in the socio-cultural environment of both groups of territories, as well as the poor relationship between regional institutions and society. This is, however, not unique to China. Multi-ethnic regions and countries around the world face similar disparities. Due to territory size, migration, uneven settlement, and regional disparities in the economic development of multi-ethnic regions, it is important to assess the impact of socio-cultural factors in order to avoid falling into what has become referred to as the “human development trap” [21], which can be very difficult to leave.

Taking a socio-cultural approach to analysing human capital development in multi-ethnic regions also enables the analysis of demographic and socio-economic policies, and the impact of these policies on individuals and ethnic groups. For example, from a socio-cultural perspective, analyses of policies to address childcare must consider entrenched inequalities in the human capital development of ethnic minorities. Studies have established a link between the average human capital of a parent’s ethnicity to the future successes of their kids [22]. This, in turn, influences the overall success of regions and countries [15]. Therefore, the purpose of this paper is as follows: First, as studies on the impact of culture on economic growth and development continue to increase in number [23,24], we aim to explore how cultural practices can foster or inhibit economic growth and human capital development at the regional level, particularly in multi-cultural regions. In addition, despite an increase in studies on human capital development in post-soviet countries [25,26], there remains a significant research gap on research specific to the ethnic minorities of these countries. For example, in Russia, ethnic minority groups include the Indigenous Nenets peoples of the Arctic, and the Tartar peoples popular within the Republics of Tatarstan and Bashkortostan, among others. Studies have shown human capital development can be different for various ethnic and socio-economic groups [27]. However, unlike prior studies, ours differs by focussing exclusively on exploring how social and cultural factors can shape the human capital development of multi-ethnic regions within Russia.

To achieve our research purpose, we analyse existing literature on the production and accumulation of human capital. Then we analyse the socio-cultural differences of multi-ethnic regions in their human capital accumulation. Finally, we develop an econometric model to analyse the correlations between several socio-cultural factors and the reproduction and accumulation of human capital in multi-ethnic regions. As such, we make a number of important contributions. First, we contribute to the academic debate on human capital development in emerging economies. Second, we aim to establish socio-cultural factors as a pivotal instrument for understanding the human capital development of multi-ethnic regions. Then, we explore socio-cultural spillovers from one region to another. In the following sections we present the literature review, followed by our data and methodology, results, and discussion/conclusion.

2. Literature Review and Hypotheses Development

2.1. Human Capital at the International Level

The term “human capital” became prominent in academic circles in the 20th century; however, its historical roots go back much further [28]. Approaches to assessing the role of people in the economy were first developed around the 17th century by the mercantilist school of thought [29]. It included an assessment of people’s skills and creativity in economic development. Antonio Serra was among the first to suggest that the wealth of a city depends on the number of artisans and quality of the people working in it [30,31]. That is, the higher the level of human capital, represented by many qualified specialists in the economy, the greater the additional goods they produce for proportionately less expense. Therefore, such countries become wealthy [30,31]. This debate became more established following the works of scholars of the classical school of economics. A prominent representative of this school of thought was William Petty [32]. He was one of the first to draw attention to the relationship between labour skills and the contribution of the population to the creation of national wealth [28,33,34]. These ideas were buttressed by Adam Smith who believed that the talents of people are integral to the production process, and could

be acquired through investments in education and training [35]. Education/training and entrepreneurship can influence the development of public and private sectors [36–38], which also influence the level of human capital in a country.

The theory of human capital was formalised by the studies of Schultz [39] and Becker [18,40]. Building on economic approaches of the neoclassical school, they studied the contribution of social institutions, such as education and healthcare, to the development of a person, and the subsequent return on investment in the form of increased income the person receives. Their research was notable for including social factors as key determinants of the formation of human capital [39,40]. The role and impact of social and demographic factors on human capital has been extensively studied ever since. For example, using human capital theory, Thrane [41] found that gender, marriage, and parenthood can influence on the wages of Norwegian tourism employees, while Boucekkine et al. [42] found that endogenous growth can be influenced by socio-demographic factors. The socio-cultural approach to the study of human capital focuses on the structural analysis of its reproduction and accumulation, as well as the relationship between social and cultural capital, and the institutional environment. Furthermore, spatial studies on human capital have also found social factors to be influential. For instance, Borjas [22] found that issues like ethnicity and residential segregation can be linked to human capital externalities. Other studies have highlighted the impact of issues like immigration on regional economic performance [43], and the influence of culture and tolerance [19,44], among others.

2.2. Institutions and Human Capital in Russia

While it is clear that human capital plays an important role in fostering economic development [18], having an efficient institutional environment not only fosters the effective utilisation of human capital, it also leads to economic growth [45–47]. Studies on the importance of institutions have emphasised the role of both formal and informal institutions in the development of societies [48,49]. Formal institutions are the “structured systems of laws imposed by representative forms of governance” [49] which guides and restricts the behaviour of government and the behaviour of economic actors. On the other hand, informal institutions are the norms, culture, customs, and practices formed spontaneously by the private sector [50]. Unlike formal institutions which are centrally structured and enforced, informal institutions are not. They are, however, supported by public opinion. For this research, we take marriage/family and attitudes towards culture as the bedrock of informal institutions within Russia. Moreover, studies have shown that both formal and informal institutions promote the development of human/social capital [49]. Therefore, an imbalance in the relationship between both forms of institutions can lead to what Polterovich [51,52] refers to as an “institutional trap”. According to Polterovich, Russia experienced such an institutional trap during its transition years whereby barter exchange, mutual arrears, tax evasion, corruption, and other black market activities were prevalent [51,52]. In addition, weak institutions in Russia could not bring the level of human capital in line with the need to develop and introduce innovations and high technologies in enterprises. This has led some studies to argue that there is no demand for a high level of human capital from the Russian economy [53].

Furthermore, countries which fall into the institutional trap face a number of challenges with human capital and therefore economic development. For example, the educational sector fails to provide the necessary trainings and re-trainings for labour to thrive and there is often an under-production of public goods and services such as healthcare [54–56]. Moreover, the positive effect of producing and receiving high-quality public/social goods and services can be observed in the improvement of demographic indicators such as life expectancy, marriage rate, fertility rate, reduction in infant mortality, as well as the ability of people to accept innovations in work or daily life. In contrast, the negative effect is not only observed in poor socio-demographic outcomes, it can also lead to the emergence of socio-cultural barriers to the development of human capital [57]. For instance, a reduction in the quality of education or healthcare systems may lead to a change in reproductive attitudes, postponement of

childbearing, and eventually a deterioration of socio-demographic indicators such as life expectancy, among others. All these factors contribute to a reduction in the level of human capital in both the medium and long term [58,59].

On the basis of the aforementioned issues, we hypothesise the following:

Hypothesis 1. *Socio-cultural factors positively influence human capital development in multi-ethnic regions of Russia.*

3. Materials and Methods

3.1. Data Collection

Data for our research were collected from the report of the Analytical Center for the Government of the Russian Federation on Human Development Index (HDI) in Russian regions. The data include detailed indicators such as quality of life, demography, and education in multi-ethnic regions of Russia. Whereas data on socio-cultural factors were retrieved from the Federal State Statistics Service, Rosstat. In addition, data on the ethnic composition of Russian regions were retrieved from the census data of Federal State Statistics Service, Rosstat. Links to all sources are provided in the data availability statement. However, before beginning the data collection and analysis process, it was necessary to set some conceptual limits for our research. First, since it can be difficult to know the precise level of human capital in a particular region, we use objective HDI figures as representative of a region's human capital. Additionally, we define socio-cultural factors as the prevailing life values (career and self-realisation, etcetera), behavioural attitudes (such as attitudes to marriage and childbearing), and cultural traditions including attitudes towards tourism, among others, that are present in a society. Therefore, socio-cultural factors include are the indicators that characterise the prevailing norms in multi-ethnic regions regarding marriage, divorce, living conditions, possibility of visiting theatres and museums, and access to the healthcare system, among others. The following indicators were classified as socio-cultural factors (Table 1):

Table 1. Set of exploratory indicators and variables.

Indicator	Full Title	Unit of Measurement	Source
Human capital indicators			
HDI	Human development index (HDI)	Coefficient	Analytical Center for the Government of the Russian Federation
I_INC	Income index	Coefficient	Analytical Center for the Government of the Russian Federation
I_EDUC	Education index	Coefficient	Analytical Center for the Government of the Russian Federation
I_LONG	Longevity index	Coefficient	Analytical Center for the Government of the Russian Federation
EDUC_7_24	Enrolment of students aged 7–24	%	Analytical Center for the Government of the Russian Federation
OPJ	Life expectancy	years	Federal State Statistics Service
Socio-cultural factors			
SQ	Residential area per person	sq.m/person	Federal State Statistics Service
DIV	Total divorce rate per 1000 people	Number of divorces/1000 people	Federal State Statistics Service
MER	Total marriage rate per 1000 people	Number of marriages/1000 people	Federal State Statistics Service
SKR	Total fertility rate	Number of children born per woman	Federal State Statistics Service
OKR	Total birth rate per 1000 people	Number of children born per 1000 people	Federal State Statistics Service
DEM_LOAD	Dependency ratio	Number of people of non-working age per 1000 people of working age	Federal State Statistics Service
THEATRE	Number of theatre visits	Per 1000 people	Federal State Statistics Service
MUSEUM	Number of museum visits	Per 1000 people	Federal State Statistics Service
AMBUL	Capacity of outpatient organizations	Thousand visits per shift	Federal State Statistics Service
TUR_INT	Number of Russian tourists (domestic tourism)	Thousand people	Federal State Statistics Service
TUR_EXT	Number of Russian tourists (international tourism)	Thousand people	Federal State Statistics Service

Table 1. Cont.

Indicator	Full Title	Unit of Measurement	Source
Indicators of spatial development of regions			
DISTANCE	Distance from Moscow to regional centres	km	Calculations by employees of the Institute of Economics of the Ural Branch of the Russian Academy of Sciences Federal State Statistics Service
GRP	Gross regional product	RUB million	

Note: sq.m = Square miles. km = Kilometre. RUB = Russian Rubles.

Social factors:

- (1) Total residential area per person. Drawing from the prior literature [60], the number of square meters per person enables us to assess the living conditions of an individual and a family with children. Living conditions are known to influence self-development.
- (2) Based on the results of prior studies [61], the capacity of outpatient organisations enables us to determine the capabilities of the current healthcare system which we argue impacts HDI.
- (3) Demographic indicators: Drawing from the results of previous studies [62,63], we include total divorce and marriage rate, total fertility rate, total birth rate, and dependency ratio. These indicators enable the assessment of a society's potential to reproduce and accumulate human capital.

Cultural factors:

- (4) The number of visits to theatres and museums, and the number of tourists, both domestic and international. Some studies have connected tourism with human capital development [64].

Human capital indicators:

- (5) The Official HDI of the Analytical Center for the Government of the Russian Federation were used as the main indicator of the level of human capital in a particular region. In addition to this, we included HDI components such as income index, longevity index, education index, enrolment of students aged 7–24, and life expectancy as explanatory variables to determine not only their impact, but also their contribution to the development of human capital.

Spatial Development Indicators:

- (6) To understand the spatial development of multi-ethnic regions and its impact on the formation of human capital, we used data on the average distance from the capital of Russia, Moscow, to multi-ethnic regions (Table 1). Prior studies on Russian regions have demonstrated the impact of spatial factors such as distance to the main economic and knowledge intensive cities such as the capital city, Moscow, and Saint Petersburg [65,66]. Other studies have also buttressed established some spatial elements to regional economic growth in Russia [67].

The full set of indicators and data source for developing the factor models we used for our analysis are presented in Table 1 below.

Furthermore, since studies on multi-ethnicity use various criteria, we define multi-ethnic regions as regions with a high level of ethnic diversity. However, in order to set an objective criterion for inclusion, we take multi-ethnic regions as regions in which the share of one ethnic group does not exceed 50% of the overall population of the region.

Figure 1 shows the map of our study area. It shows the regions included and excluded from our study. Following our calculations using official census data for Russia, the following regions were included for research: Leningrad Region, Republic of Adygea, Republic of Kalmykia, Republic of Dagestan, Republic of Ingushetia, Kabardino-Balkarian Republic, Karachay-Cherkess Republic, Republic of North Ossetia–Alania, Chechen Republic, Republic of Bashkortostan, Republic of Mari El, Republic of Mordovia, Republic of Tatarstan, Udmurt Republic, Chuvash Republic, Altai Republic, Tyva Republic, Republic of

Khakassia, Republic of Buryatia, Republic of Sakha (Yakutia), Jewish Autonomous Region, and Chukotka Autonomous Okrug. Data on the full list of ethnicities in these regions can be found in the Rosstat link provided in the data availability statement.



Figure 1. Map of the study area. Source: Authors' elaboration. Note: grey colours show the multi-ethnic regions included in our study.

3.2. Data Analysis

Our research analysed the impact of socio-cultural factors at the regional and country levels. In addition, using econometric methods, we also examined spillovers in the socio-cultural relationship between regions. This means we observed how changes in the socio-cultural attitudes in one region influences socio-cultural changes in other regions. Nevertheless, we used a spatio-temporal series for multi-ethnic regions of the Russian Federation for the period between 2014 and 2021.

Our analysis comprised of two stages: First, in order to build mathematical models, we used econometric tools to analyse the relationships between indicators based on the matrix of paired correlation coefficients or pairwise correlation matrix. The obtained correlation coefficients enabled the identification of indicators that were most closely related to the indicator of human capital in the Russian regions, HDI. Second, we used the selected indicators to form two econometric models for the period from 2014 to 2021. In order to ensure the stability of the regression, the indicators in both equations were converted to a logarithm. The resulting econometric models had the following form :

$$\ln(HDI) = \beta_1 + \beta_2 \times \ln(GRP) + \beta_3 \times \ln(DIV) + \beta_4 \times \ln(MER) + \dots + \varepsilon. \quad (1)$$

In addition, during the development of our econometric models, we used a spatial autocorrelation coefficient. The application of the Arellano–Bond test revealed the significance of the coefficient itself (AR1) and the improvement of the qualitative characteristics of the obtained equations [68]. The introduction of the spatial autocorrelation coefficient indicates positive spatial effects between Russian regions. Thus, the resulting econometric equations enabled us to analyse the current trends on the topic, test the hypotheses, and

identify the direct and/or reverse influence of socio-cultural factors on the development of human capital in multi-ethnic regions.

4. Results

4.1. Human Capital in Russian Regions

The HDI data show that multi-ethnic regions have seen an increase in their HDI index, from 0.839 in 2013 to 0.87 in 2019 (Figure 1). The greatest annual increase in HDI occurred in 2017, which can be explained by the growing importance of socio-cultural factors in multi-ethnic regions.

Figure 2 shows an analysis of Russian regions in 2019 in terms of the HDI level showed that only some multi-ethnic regions have decent living conditions and access to quality education and healthcare. Accordingly, such regions have a high level of human development, which ranges from 0.94 to the average Russian level of 0.87. Most multi-ethnic regions have average HDI values (ranging from 0.83 to 0.866), while 21 regions have relatively low HDI (0.787 to 0.82) (Figure 2).

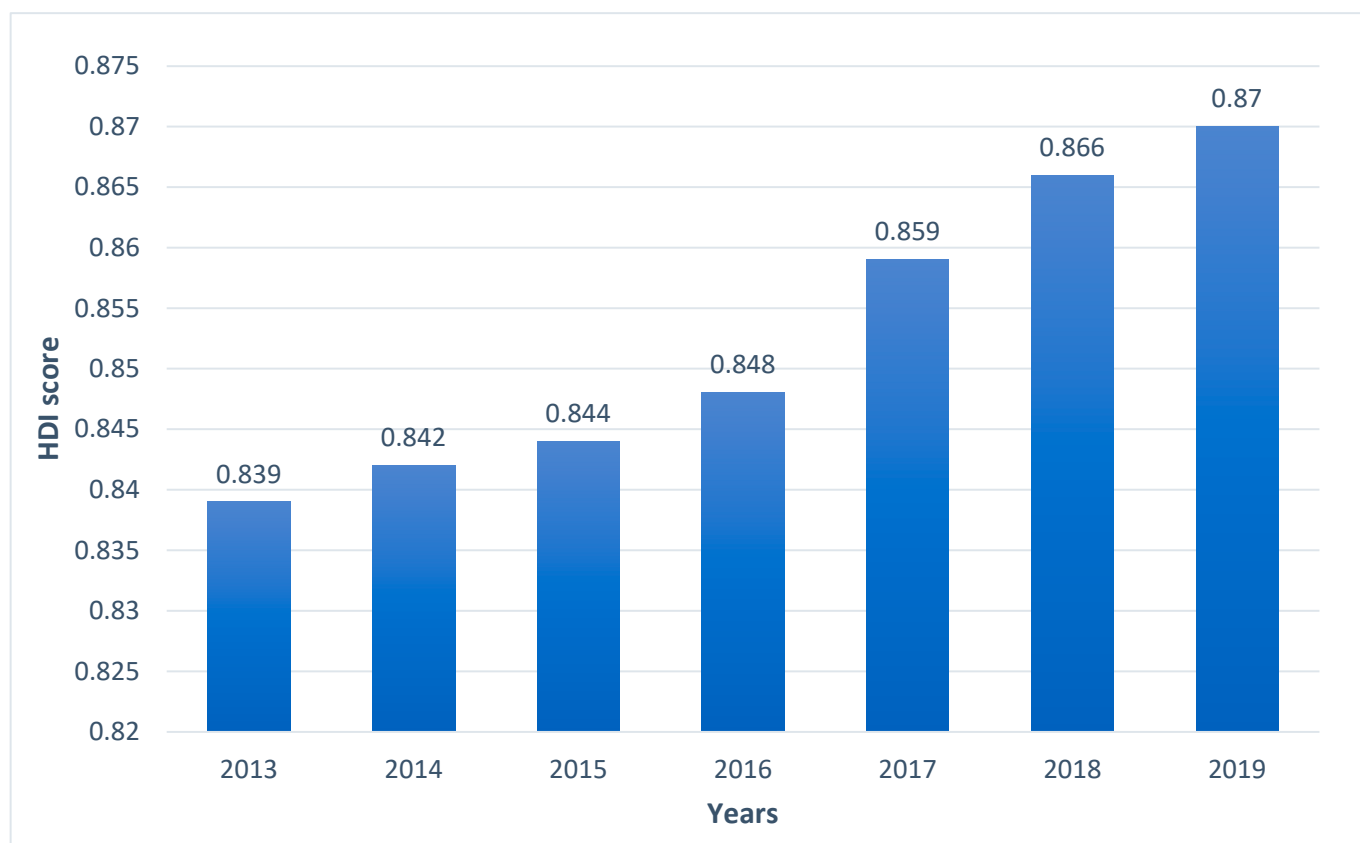


Figure 2. Cumulative HDI in multi-ethnic regions. Source: Authors' calculations from HDI data of the Analytical Center for the Government of the Russian Federation.

The pool of multi-ethnic regions with a high level of HDI includes 12 regions: Yamalo-Nenets Autonomous Okrug (0.902), Nenets Autonomous Okrug (0.899), Sakhalin Oblast (0.889), Tatarstan (0.897), Tyumen Oblast (0.891), Yakutia (0.886), Krasnoyarsk Krai (0.873), Tomsk Oblast (0.871), and Magadan Oblast (0.871). Along with resource-rich regions, this category includes regions with high scientific and technological potential (for example, Tomsk Oblast), which were able to not only to maintain, but also increase their human capital levels. On the contrary, multi-ethnic regions with lower levels of human capital include the Jewish Autonomous Oblast (0.788), Republics of Tyva (0.787), Mari El (0.83), Buryatia (0.81), Dagestan (0.827), and Chechnya (0.793) (Figure 3).

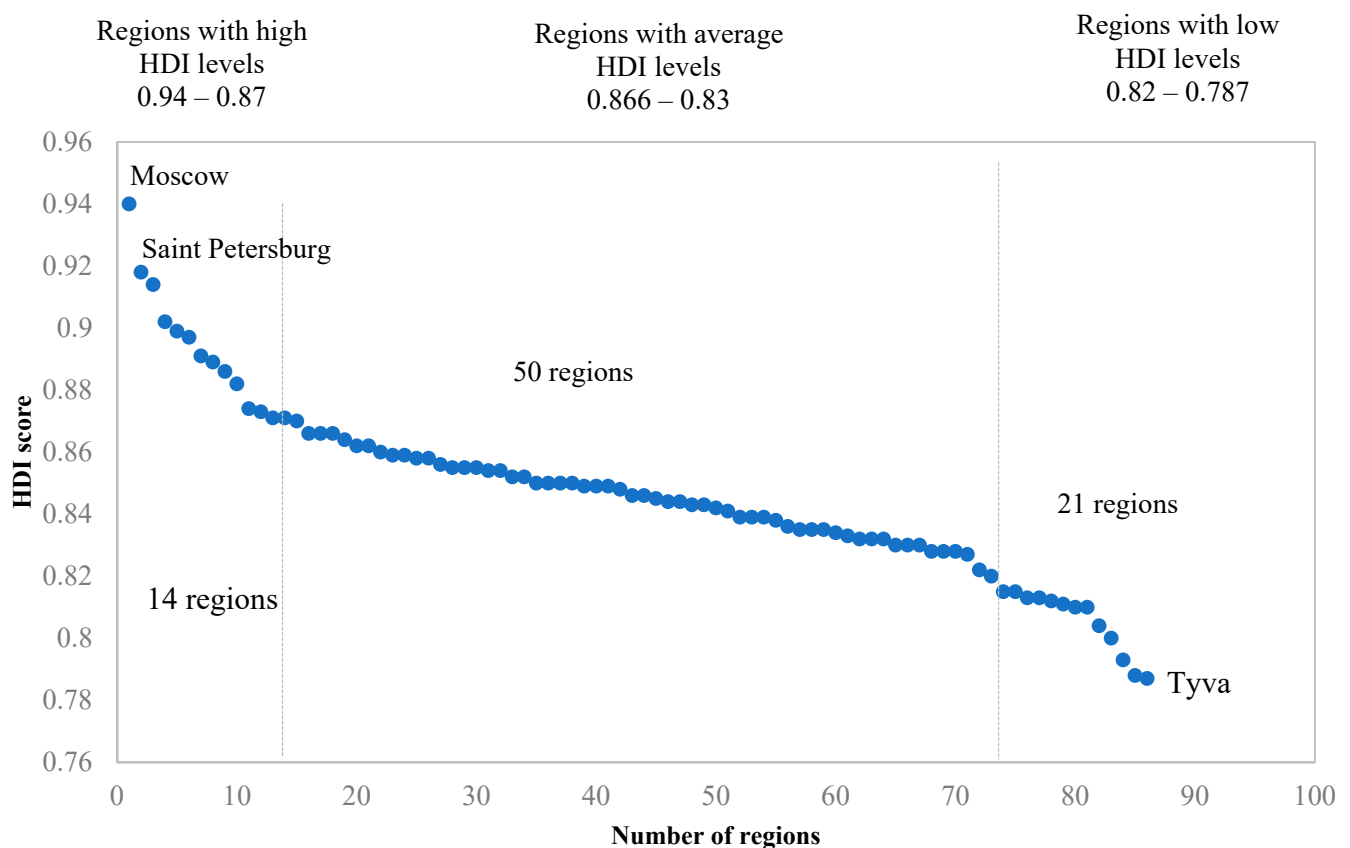


Figure 3. Overall HDI in all Russian regions for 2019. Source: Authors' calculations from HDI data of the Analytical Center for the Government of the Russian Federation.

Table 2 shows components of the HDI in Russian Federal Districts for 2019. It shows the Ural Federal District as the leading in terms of Purchasing Power Parity (PPP), while the North Caucasus was recorded the lowest PPP. The other results show some interesting contrasts. For example, while the North Caucasus federal district, comprising of some of the most multi-ethnic regions of Russia, ranked lowest in the education index and for share of students aged 7–24, it ranked highest for life expectancy. Nevertheless, other Federal districts with a number of multi-ethnic regions did not show the paradox of North Caucasus. For example, the Far Eastern region, home to many of Russia's Indigenous and ethnic minority groups/regions, had a relatively low life expectancy of 70.2 years, while its education index was also lower than all other districts except the North Caucasus.

Table 2. Weighted average HDI components by federal districts of the Russia in 2019.

Federal District	GDP, USD (PPP)	Income Index	LE, Years	Longevity Index	Literacy, %	Share of Students Aged 7–24	Education Index	HDI 2019
Central	32,727	0.875	74.5	0.826	99.8	0.90	0.965	0.887
North-western	32,433	0.873	73.7	0.812	99.8	0.892	0.963	0.881
Southern	19,176	0.794	73.7	0.812	99.7	0.865	0.953	0.85
North Caucasian	11,108	0.712	76.6	0.861	99.2	0.707	0.897	0.819
Volga	24,309	0.83	72.9	0.799	99.6	0.87	0.954	0.858
Ural	50,506	0.94	72.5	0.792	99.7	0.871	0.955	0.893
Siberian	26,057	0.84	71.1	0.769	99.6	0.882	0.958	0.852
Far Eastern	28,804	0.855	70.2	0.754	99.7	0.822	0.939	0.846

Note: GDP = gross domestic product. PPP = purchasing power parity. LE = life expectancy. USD = United States dollars. HDI = Human development index.

4.2. Results of Econometric Analysis

Table 3 shows the results of our correlation analysis. It shows that domestic tourism is more closely related to HDI than international tourism. In addition, the results of the correlation analysis also showed that in multi-ethnic regions, there was a negative relationship between HDI and birth rates, dependency ratio, and distance from Moscow to the regional Centre (Table 3). This means Russia and the regions in particular have an economic situation that is not conducive to the birth of children, which leads to an increasing pressure on the labour market and the working population. These trends intensify with increasing distance from the country's main economic hub, Moscow, which leads to greater disproportions in regional development/ level of human capital.

Table 3. Relationship between HDI and socio-cultural factors.

Indicator	HDI
	2014–2021
GRP	0.58
Residential area per person	0.25
Total divorce rate per 1000 people	0.32
Total marriage rate per 1000 people	0.20
Total fertility rate	−0.24
Total birth rate	−0.17
Dependency ratio	−0.20
Number of theatre visits per 1000 people	0.47
Number of museum visits per 1000 people	0.22
Capacity of outpatient organizations	0.51
Domestic tourism	0.48
International tourism	0.46
Life expectancy	0.23
Income index	0.81
Education index	0.41
Longevity index	0.20
Enrolment of students aged 7–24	0.40
Distance from Moscow to regional centres	−0.12

Note: GRP = gross regional product.

The results of the first model of our econometric analyses are presented in Table 4, whereas those of the second model are presented in Table 5. While the number of divorces had a positive impact on HDI, the number of marriages had a negative impact (Table 4) on HDI. This means divorced people have more opportunities for personal and professional development, which allows them to increase their contribution to the development of HDI. Whereas people who remain married have much less opportunities for development. Furthermore, socio-cultural issues like visits to theatres, and living condition, measured by residential area per person, all positively influence HDI. Also, spatial factors such as distance from Moscow to the regions positively influence the human capital of multi-ethnic regions. Whereas, total fertility rate and dependency ratio had a negative impact on HDI. Also, spatial spillovers, measured by the distance from Moscow to multi-ethnic regions, was positive for the period under analysis.

In addition, we did not find a statistically significant relationship between HDI and the capacity of outpatient organisations (Table 5). Moreover, we obtained statistically significant results for life expectancy, income index, and education index on human capital, confirming their important role in the formation of a high level of HDI in Russian multi-ethnic regions, all of which confirm our hypothesis on the impact of socio-cultural factors on human capital.

Table 4. Impact of socio-cultural factors on HDI—model 1.

Indicator	M1 (2014–2019)
Number of observations	510
GRP	0.01 ***
Divorce rate	0.02 ***
Marriage rate	−0.023 ***
Total fertility rate	−0.02 ***
Dependency ratio	−0.01
Residential area per person	0.002 ***
Number of theatre visits	0.01 ***
Distance from Moscow to regional centres	0.30 ***
Constant	0.90 ***
AR (1)	
R ²	0.84

Note: AR (1): Arellano–Bond test for first-order autocorrelation. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

Table 5. Impact of socio-cultural factors on HDI—model 2.

Indicator	M2 (2014–2019)
Number of observations	510
Divorce rate	−0.000 **
Capacity of outpatient organisations	0.001 **
Education index	0.32 ***
Income index	0.33 ***
Total birth rate	−0.002
Life expectancy	0.45 ***
Constant	−2.09 ***
AR (1)	0.17 **
R ²	0.92

Note: AR (1): Arellano–Bond test for first-order autocorrelation. Robust standard deviations are given in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$.

5. Discussion and Conclusions

Human capital is crucial for not only economic growth, but for sustainable development as well. As such, investigating the factors influencing the development of human capital is crucial to the long-term sustainability of the world [10]. This paper develops an econometric model to explore the impact of socio-cultural factors on human capital development in multi-ethnic regions of Russia. Our analysis consisted of a pairwise correlation matrix, and the Arellano–Bond test for first-order autocorrelation to further investigate the relationship between social factors and human capital. Using a range of variables, we take marriage/family and culture as informal institutions, and legal systems and economic policies as formal institutions [49]. Therefore, informal institutions are similar to socio-cultural factors and include attitudes towards marriage, divorce, having children, and gaining education, among others [50]. The results of the econometric analysis revealed the multi-vector influence of socio-cultural factors on the formation and accumulation of human capital in multi-ethnic regions. This confirms the findings of previous literature which have demonstrated the influence of a number of socio-demographic and cultural factors on human capital [41,42,69,70].

Furthermore, we found that factors such as marriage, divorce, life expectancy, accessibility to education and healthcare, and attitude towards tourism all influence human capital to varying degrees. Our results are in alignment with several prior studies such as those of Horwitz and Lewin [63] which found that factors such as marriage and divorce can influence human capital and life outcomes of both kids and adults. Several studies have reached similar conclusions [71,72]. In addition, extensive studies on education accessibility and healthcare have also revealed their connection with the development of human capital [61,73–75]. Moreover, we also found that tourism, domestic tourism in particular, plays an important and positive role in the development of human capital in

all multi-ethnic regions. This buttresses the conclusions of previous studies such as Li and Qamruzzaman [76], and Folarin et al. [64]. It however contrasts with the findings of Kožić [77] who concluded that the limited skills required for employees in the tourism sector can lead to the deterioration of human capital in tourism-intensive towns and municipalities. Notwithstanding, for multi-ethnic regions, we believe developing domestic tourism can contribute to the strengthening of the socio-cultural harmony of the people, thereby allowing them to enrich their human capital through the exchange of cultural ideas and traditions between different groups of people. We believe this can positively influence their human capital development.

Our paper contributes to the academic debate on human capital by putting socio-cultural factors at the front of this debate. We argue that developing social/cultural institutions can help regions and countries improve human capital development. Our results provide useful insights to regional policy makers. Among a number of practical implications, we suggest incentivising and supporting marriage through policies which reduce the strain on families, such as marriage grants or child support programmes. These policies can be helpful towards improving human capital development in multi-ethnic regions. Moreover, studies have shown that policies to support marriage are effective [78]. Also, policies to improve education and domestic tourism should be considered in regions with multi-ethnic compositions. However, our research is not without limitations. First, our study must be considered exploratory. It is limited to the socio-cultural contexts of regions within Russia and the results might not be immediately generalisable to other parts of the world. We urge careful interpretation to reflect this. Furthermore, based on findings of previous studies, we used a range of variables which the authors unanimously determined can accurately advance the goals of this research. Since there are not many prior studies specific to our research topic, this paper must be considered exploratory, with a goal towards a more empirically grounded consensus in the future. For instance, we used official HDI figures as our only measure of human capital. Other studies might need to consider additional metrics, as well as additional or limited indicators for socio-cultural factors. In addition, future studies can also use causal methodology in order to investigate not just the influence of socio-cultural factors on human capital development, but also if a reverse relationship exists between these factors. More empirical studies are also needed to examine if this relationship between socio-cultural factors and human capital development influences sustainability indicators in countries and sub-national regions. We call for future studies expanding, confirming, or rebutting the findings of this paper. We hope this paper provides a good foundation for future studies on the topic.

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