











“Socio-economic inequality in Kazakhstani regions: Assessment and impact on regional development management”

AUTHORS	Umit Sermagambet   Zaira Satpayeva   Gulzhyhan Smagulova   Wieslaw Urban   Raikul Yessenzhigitova 
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Gulzhyhan Smagulova, Wieslaw Urban,
Raikul Yessenzhigitova, 2022

Umit Sermagambet, Ph.D. Student,
Department of Management, Higher
School of Economics and Business,
Al-Farabi Kazakh National University,
Kazakhstan.

Zaira Satpayeva, Ph.D., Leading
Researcher, Head of Department,
Department of the regional economy
and innovation development, Institute
of Economics of the Ministry of
Education and Science, Kazakhstan.
(Corresponding author)

Gulzhyhan Smagulova, Ph.D., Associate
Professor, Higher School of Economics
and Business, Al-Farabi Kazakh
National University, Kazakhstan.

Wieslaw Urban, Ph.D., Associate
Professor, Faculty of Management,
Bialystok University of Technology,
Poland.

Raikul Yessenzhigitova, Senior Lecturer,
Higher School of Economics and
Business, Al-Farabi Kazakh National
University, Kazakhstan.



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Umit Sermagambet (Kazakhstan), Zaira Satpayeva (Kazakhstan),
Gulzhyhan Smagulova (Kazakhstan), Wieslaw Urban (Poland),
Raikul Yessenzhigitova (Kazakhstan)

SOCIO-ECONOMIC INEQUALITY IN KAZAKHSTANI REGIONS: ASSESSMENT AND IMPACT ON REGIONAL DEVELOPMENT MANAGEMENT

Abstract

Excessive differentiation of socio-economic development of regions leads to the collapse of a single socio-economic space and the emergence of socio-economic inequality. This study assessed socio-economic inequality in Kazakhstan and its impact on regional development management. It analyzed interregional disproportion of socio-economic development of regions through the index approach using statistical data from the Bureau of National Statistics for 2011–2019. A comprehensive study of the socio-economic development of Kazakhstan and its regional differences employed the proposed index of social and economic development. It was revealed that Kazakhstan has a high level of interregional differentiation of socio-economic development, which indicates the existing socio-economic inequality, requiring the development of new and improvement of existing mechanisms to create an inclusive economy. There are significant gaps in socio-economic development between Kazakhstani regions. According to the proposed index, Kazakhstan is at the above-average level (42, B). From 2011 to 2019, the index was practically at the same level (39-42). The average social and economic development was shown by Almaty (61.1, B++), Nur-Sultan (59.9, B+), Karaganda (53.1, B+), and East Kazakhstan (51.0, B+). Low social and economic development was shown by Akmola (29.8, C+) and North Kazakhstan (22.4, C+). The difference in the socio-economic development of the regions is directly interconnected with the regional economic and social policy. According to the results, to implement state policy in inclusive development and overcome socio-economic inequality, respective measures should promote economic integration, including the mechanisms of regional, industrial, and research policy, comprising all levels of state regulation.

Keywords

socio-economic development, interregional
differentiation, territorial disproportions

JEL Classification

D63, I14, I24, P48

INTRODUCTION

By setting the strategic goal of Kazakhstan's entry into 30 developed countries of the world, the indicators of the Organization for Economic Cooperation and Development (OECD) became fundamental for the country's development. One of the major concerns faced by OECD countries is socio-economic inequality, which for the last 30 years has increased significantly: 10% of the richest earn almost 10 times more than the poorest 10%. Moreover, economically insecure people often lag in other dimensions of well-being unrelated to income. In this respect, over the last years, OECD has focused on how and to what extent policies can help reduce the gap between leading and lagging regions within a country to minimize productivity and well-being differentials (OECD, 2017). In the era of global development, socio-economic inequality is becoming one of the main sensitive issues that must be addressed and requires the

leveling of inequality by the state (Mareeva, 2020). One of the 17 Sustainable Development Goals is inequality reduction within and between countries, particularly by policy adoption (goal 10.4).

Forecast Scheme of Spatial Development of Kazakhstan until 2030 and the State Program for the Development of Regions for 2020–2025 have been developed and are being implemented. Although regulatory and legal work has been done, current documents mainly focus on planned urbanization but do not provide equal economic growth and distribution of social benefits nationwide. Statistical indicators indicate that the problem of differentiation in the socio-economic development of regions has not yet been resolved. The uneven development of Kazakhstani regions is characterized by the need to improve the management system at the regional level. It also requires an objective assessment of the socio-economic development of the regions. The fundamental issue of public administration is the issue of equalizing the regional development. One of the solutions to these problems is ensuring inclusive development of the economy and society of the country's regions. At this moment, in Kazakhstan, inclusive development is regarded only from the point of view of education.

1. LITERATURE REVIEW

Many global and Kazakhstani economic scientists have studied the problem of socio-economic differentiation. However, it should be noted that there are different approaches to its definition. Thus, Kutscherauer (2008) interprets differentiation broadly as a difference and inequality of features, processes, and events for which identification and comparison have some rational purpose. Egorova and Delakhova (2020) believe that the differentiation of regions at the levels of socio-economic development is determined by the predominance of a positive or negative character. At the same time, Satybalidin and Nurlanova (2017) associate a full definition of the degree of regional inequality with consideration of the economic system of all regions.

Many studies tried explaining the uneven development of regions. First, theories of regional balance prevailed, but later, theories of regional imbalance were used. Some scientists claim that regions must be balanced; others consider that differentiation stimulates regions' growth, while some researchers still discuss the negative aspects of differentiation.

Akhmedyarova and Brimbetova (2015) state that preventing excessive differentiation of regions is necessary to modernize the national economy and ensure sustainable development. In addition, it is necessary to maintain territorial proportions. Mihnenoka and Senfelde (2017) state that the balanced development of regions is significant for

the sustainable development of the country and the well-being of its population. However, they note that each country faces disparities in socio-economic development, which hinders this goal's achievement. According to Yakovenko et al. (2020), differentiation is inevitable in regional development and reflects its results. In their opinion, differentiation is natural and even beneficial since it gives dynamism to the development of the economy, creating some tension. Nikolaev and Tochilkina (2011) also believe that differentiation has its positive aspects, which leads to the involvement of lagging regions in economically powerful regions. This depends on how well the state pursues a smoothing policy.

At the same time, some authors consider that socio-economic differentiation will cause major damage to the development and security of the national economy. Rudenko (2021) states that the dramatical differentiation of regions by a degree of socio-economic development has a negative impact on the state's economic security; therefore, regional development must be less differentiated and ignored. T. Zienkiewicz and E. Zienkiewicz (2021) also argue that inequality in the socio-economic development of regions creates a threat to the economic security and stability of the country. Gryniv (2021) and Ding (2011) share the same point of view. Thus, territorial and socio-economic differentiation of regions leads to social instability and social inequality, including inequality in education (Kireyeva et al., 2022; Tesema & Braeken, 2018) and healthcare (Barton et al., 2021). In turn, it prevents economic development, including in-

creased production costs and decreased population's life (Egorova & Delakhova, 2020). Thus, according to Simionescu et al. (2020), differences between regions, including differentiation in terms of personnel, structural imbalances, and a set of negative trends that generate inequality in socio-economic development, slow down economic growth. It should be noted that these processes are interrelated. Finally, Lübker (2007) discussed that a high level of inequality is associated with low economic growth. Moreover, a high level of inequality causes an increase in demand for redistribution, which leads to a significant redistribution and an increase in taxes, negatively affecting economic growth.

Gubanova and Kleshch (2017) underlined that regional difference interferes significantly with the region's sustainable development, and this results in interregional conflict, where the state must play a key role. Beglova (2008) claims that a high level of differentiation in the socio-economic development of regions challenges the provision of a unified policy of the country, increasing the risk of crises and interregional conflicts. Similarly, Klebanova et al. (2021) argue that internal factors associated with a significant disproportion in socio-economic development and external factors are the leading causes of the crises. Nurlanova et al. (2019) state that a high level of difference between regions leads to the emergence of depressed regions and social conflicts associated with inequality of resources, negatively affecting country's security. At the same time, Egorova and Delakhova (2020) emphasize that most negative regional features are relatively unstable. In the process of economic development and scientific and technological progress, they may change or even disappear.

Glinskiy et al. (2017) believed that socio-economic differentiation is two-sided. The positive one promotes the stability of prosperous regions. But, in addition, regional differentiation has negative sides; as excessive differentiation prevents the economic growth of a region or country as a whole. In their view, high and low level of differentiation has a negative impact on the regions, i.e., high differentiation of regions leads to social shocks. In contrast, low differentiation leads to stagnation in the development of respective territories.

According to Kazakov (2018), the differentiation of regional socio-economic development is stable in different historical periods. However, excessive differentiation of socio-economic development of regions can bring disproportions that will reduce the efficacy of both regional and national economies, including social tension and decrease in the well-being of the population of regions and the country as a whole. As a set of negative consequences accompanies interregional socio-economic disproportion, its reduction and ignorance are becoming a priority direction of state policy. According to Zarkova (2018), differences between the regions affect the quality of life in the country. To reduce it, it is necessary to assist lagging regions and stimulate their economic growth. Kouadio and Gakpa (2022) note that economic growth is a critical factor in poverty reduction, and improving the quality of institutions significantly impacts reducing regional poverty and income disparities. Sichkarenko et al. (2021) assume that the consequence of economic inequality and social classification is, first of all, digital inequality. Dnishev et al. (2022) emphasize the importance of digital development of regions. Therefore, digitalization is vital in reducing socio-economic inequality in the regions. Zheng et al. (2021) underline that to reduce disproportion in regional development, policy development directed at the achievement of national economic goals must consider the regional context in which this policy operates. Moreover, it should be noted that Sun et al. (2019), taking the example of China, proved that the policy of polycentric development failed to effectively eliminate regional differences.

Therefore, the literature review revealed that excessive differentiation of socio-economic development (socio-economic inequality) leads to territorial disproportions in economic and social structures, which implicates the degradation of regional and nationwide economies. Whereas a set of negative consequences follows territorial socio-economic disproportion, its identification and overcoming are essential to regional development policy.

Lebedchenko (2020) believes that economic differentiation is a natural phenomenon, indicating the ineffectiveness of the ongoing budget policy in the country. In his opinion, its objective assessment

is the main task to develop a mechanism to reduce economic differentiation between regions. Syupova (2021) believes that excessive socio-economic differentiation threatens the territorial space, and constant monitoring is necessary to prevent intra-regional inequalities. Therefore, assessing interregional differentiation of socio-economic development for determining socio-economic inequality is important. It allows for finding the depth and causes of the problems determining the ways out of the crisis and developing a mechanism for managing the regions, which will affect the results of state regulation (Amirova & Kutaeva, 2020). Moreover, regional imbalance of living standards (from the wage rate and personal food consumption considering its physical and economic affordability to the possibility of receiving timely medical care and quality education) requires smoothing of territorial differences (city/village, lagging/leading region). Among others, essential are poverty level, basic healthcare services, nutrition, and education through various instruments to promote economic integration: institutions, incentives, and infrastructure (World Bank, 2008).

The experience of the OECD countries in the transition to an inclusive economy demonstrates that there has been a paradigm shift from overcoming interregional differences according to the subsidies for integration through the interaction of regional, industrial, and research policies (horizontally) and the inclusion of all levels of public administration (vertical) (OECD, 2017). Therefore, studying the experience of inequality reduction in these countries allows for identifying effective mechanisms of inclusive development of the country and its regions, as well as the application of best practices in Kazakhstan. At this rate, OECD countries' major public policy in this region is social, industrial, and territorial inclusiveness through innovation.

Each country is building its own politics by integrating various mechanisms, ensuring inclusiveness. For instance, social inclusiveness policy aims to eliminate labor market discrimination and barriers (access to finance, connection to the entrepreneurial network) and stereotypes toward low-income and underrepresented groups of the population (women, youth, migrants, or ethnic

minorities), which often live in deprived areas. On the other hand, industrial inclusiveness policies are directed at solving issues of less innovative and traditional sectors of the economy and the barriers faced by start-ups and SMEs (mobilization of financial resources, attraction of highly qualified personnel, access to new technologies, or access to domestic and foreign markets).

It should be noted that geographical aspects of industrial and social inequality underline the inequality between urban and rural regions within the same city. At the same time, the state policy mechanism can be directed at inclusiveness in one or several directions. All three types of inclusiveness are interrelated, whereas industrial and territorial inclusiveness promote social inclusiveness. Upon implementation of the current type of policy, digital technologies such as the Internet of Things, big data analytics, artificial intelligence, as well as ICT applications (e-commerce, e-government, e-learning, and e-health) are widely used.

For the advancement of territorial inclusiveness, 8 innovative instruments are defined, which identify the type of territorial inclusiveness: business development and provision of innovative support for firms, clusters and centers of expertise, capacity building of the public sector and innovative actors, targeted funding for R&D, involvement of universities in regional development, science and industrial parks, and venture capital funds.

In OECD countries, the priority development trends of lagging regions are the structural transformation of the economies of these regions through the creation and development of new, knowledge-intensive, and creative industries, i.e., based on their competitive advantages. At this point in EU countries, special institutions of administrative authorities deal with regional development. Significant impact on the reduction of socio-economic inequality is provided by institutional and social policy measures in education, health, infrastructure, affordable housing, and social assistance. Effective implementation of the above-mentioned mechanisms determines the success of reducing socio-economic inequality and forming an inclusive economy. Additionally, macroeconomic and financial stability, fairness of institutions, and political incentives in skills

development, labor markets, competition, investment and corporate governance, social protection, infrastructure, and essential services are necessary to reduce the socio-economic disparity of the country's territories.

The issue of socio-economic inequality and inclusive development is widely studied around the world. However, such studies, especially at the regional level, are underrepresented in Kazakhstan. There is a research gap in the study of socio-economic inequality in Kazakhstani regions in order to achieve inclusive development.

This study aims to assess the socio-economic inequality in Kazakhstan and its impact on regional development management. This paper will allow answering the following research questions: What is the level of socio-economic development in Kazakhstan and its regions? Is there an interregional differentiation in the country and, accordingly, socio-economic inequality? What measures to reduce interregional socio-economic inequality are needed to create an inclusive economy in the country?

2. METHODOLOGY

This study proposes an index of the social and economic development. An integral parameter is obtained by summing up the partial characteristics of the regional development, expressed in a

dimensionless index form that will enable ranking the Kazakhstani regions under their social and economic development. It also enables a comparative analysis of the regions. The methodology intended to assess the socio-economic inequality based on the interregional disproportion of Kazakhstani socio-economic development by calculating the social and economic development index (16 indicators). The study used secondary data – statistical data on 16 social and economic development parameters from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan. However, there was a lack of data for 2020 and 2021, as well as for 2011–2017 for Shymkent City and for new regions (Ulytau, Zhetysu and Abay) that appeared in Kazakhstan in May 2022. MS Excel software was used for data processing (Figure 1).

Within the framework of the social and economic development index, it is proposed to calculate the integral parameter by summing up the particular characteristics of the regional development, expressed in a dimensionless index form. Based on these characteristics, a rating score is made at the regional level. The main idea of this rating was taken from Tamenova et al. (2020). The integral parameters of its subsystems, economic and social, are constructed to calculate the social and economic development index. The composite index of the social and economic development is calculated by:

Source: Compiled by the authors.

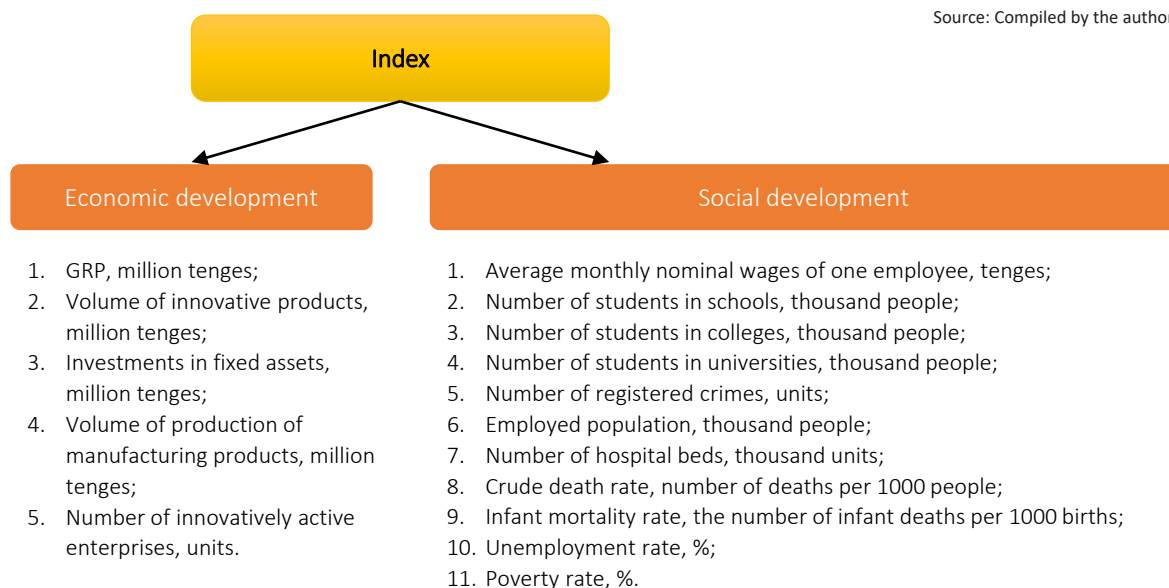


Figure 1. Parameters of social and economic development used to calculate the index

$$I_{SED} = \overline{\tilde{I}_{SED}^{reg}} \cdot 100\%, \tag{1}$$

$$\tilde{I}_{SED}^{reg} = w_{SocD} \tilde{I}_{SocD}^{reg} + w_{EcD} \tilde{I}_{EcD}^{reg}, \tag{2}$$

$$\tilde{I}_{SED}^{reg} = \sum_{i=1}^n w_i \tilde{I}_i^{reg}, \tag{3}$$

$$\tilde{I}_i^{reg} = \frac{1}{m+k} \left[\sum_{j=1}^m I_{ij}^+ + \sum_{j=1}^k I_{ij}^- \right], \tag{4}$$

$$I_j^+ = \frac{I_j^{reg} - I_{min}}{I_{max} - I_{min}}, \tag{5}$$

$$I_j^- = 1 - \frac{I_j^{reg} - I_{min}}{I_{max} - I_{min}}, \tag{6}$$

where I_{SED} – social and economic development index; I_{SocD} – social development index; I_{EcD} – economic development index; w_{SocD} – social subsystem weighting factor; w_{EcD} – economic subsystem weighting factor; \tilde{I}_i^{reg} – integral parameter of the corresponding subsystem (economic, social); w_i – the weighting factor of the corresponding subsystem, satisfying the conditions: $w_i \geq 0, \sum w_i = 1$; m – number of positive parameters; k – number of negative parameters; I_j^+ – the standardized value of the j -th positive parameter, i.e., when increasing, the state of the subsystem improves; I_j^- – the standardized value of the j -th negative parameter, i.e., when increasing, the state of the subsystem worsens; I_{min} – the minimum value of the j -th pa-

parameter for the entire set of regions of the country; I_{max} – the maximum value of the j -th parameter for the entire set of regions of the country.

The index and both sub-indices range from 0 to 100%. The development assessment results were interpreted based on the established limits of permissible values (Table 1).

3. RESULTS

Under the constructed index of social and economic development, Kazakhstan is at the above-average level. From 2011 to 2019, the index was practically at the same level of 39-42% (Table A1, Appendix A). Overall, minor improvements in the socio-economic level can be noted in most regions, excluding Aktobe, East Kazakhstan, and Turkestan regions.

The average social and economic development level is shown in Almaty, Nur-Sultan, Karaganda, and East Kazakhstan regions. Low social and economic developments level are observed in the North Kazakhstan and Akmola regions. It is worth noting that in 2019, Almaty achieved an above-average level of socio-economic development. This metropolis, along with the capital, largely represents regions – the centers of financial and business activity of the country, characterized by a fairly high development of the economy, as well as the population’s level and quality of life.

Table 1. Interpretation of the index of a social and economic development and its sub-indices

Source: Compiled by the authors.

Interpretation of index values		
Class	Rating score	Meaning
Zone A – high level		
A++	90 to 100	Highest level
A+	80 to 90	Very high level
A	70 to 80	High level
Zone B – middle level		
B++	60 to 70	Above-average level
B+	50 to 60	Average level
B	40 to 50	Below average level
Zone C – low level		
C++	30 to 40	Satisfactory level
C+	20 to 30	Low level
C	10 to 20	Very low level
Zone D – unsatisfactory level		
D	0 to 10	Unsatisfactory level

Source: Compiled by the authors.

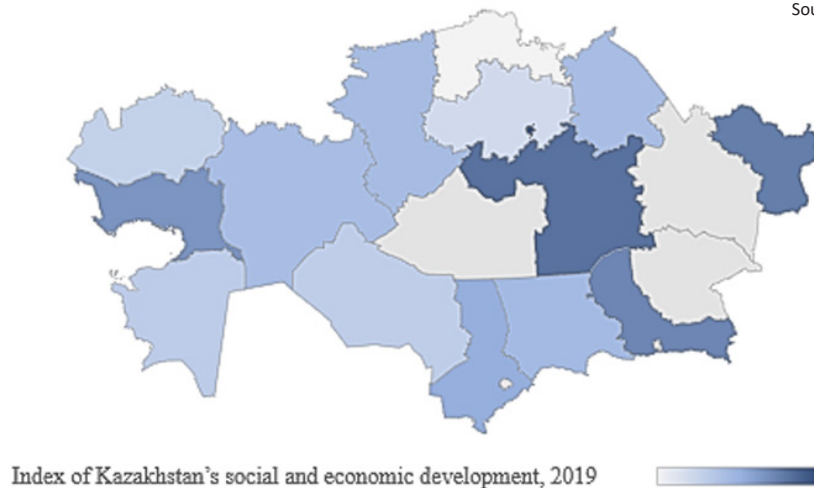


Figure 2. Socio-economic inequality in Kazakhstan, 2019

According to the developed index of socio-economic development, Kazakhstan has a high level of interregional differentiation of socio-economic development, indicating the country's existing socio-economic inequality (Figure 2).

Indeed, based on the data of 2019, these socio-economic development data are observed:

- above average (B++): Almaty c.;
- average (B+): Nur-Sultan c., Karaganda, and West Kazakhstan regions;
- below average (B): Shymkent c., Almaty, Atyrau, and Turkestan regions;
- satisfactory (C++): Aktobe, East Kazakhstan, Zhambyl, Kostanay, Kyzylorda, Mangystau, and Pavlodar regions;
- low (C+): Akmola and North Kazakhstan regions.

Based on the obtained indices, a rating assessment was constructed under the social and economic development level of Kazakhstani regions. The three cities of Almaty, Nur-Sultan, and Karaganda region are at the top of the index ranking. The outsiders are Akmola and North Kazakhstan regions. It must be noted that the position in the ranking of most of the regions for the considered period had insignificant changes, except for Aktobe, Pavlodar, and West Kazakhstan regions. They showed a

marked deterioration of socio-economic development and a decrease in positions in the ranking; in Nur-Sultan c., Zhambyl, and East Kazakhstan regions, the socio-economic position has improved along with the positions in the ranking.

Components of socio-economic index development are to be considered (the social and economic development indices) to identify economic or social factors that have a more significant influence over interregional differentiation in Kazakhstan.

Under the constructed economic development index, Kazakhstan is at a low level. From 2011 to 2019, the index was practically at the same level of 27-30%; only in 2013 and 2014 its values were 37.8% and 33%, respectively (Table A2, Appendix A). In general, it can be said that during 2011–2019, the economic health of the country stayed static. In addition, considerable economic development is observed in the following regions: Nur-Sultan c., Akmola region, Karaganda, Kostanay, North Kazakhstan, and East Kazakhstan regions. While Turkestan, Pavlodar, Mangystau, Aktobe, and West Kazakhstan regions are followed by a deterioration of the economic situation.

Based on the index, the top three regions in 2019 were East Kazakhstan (60.2% – above average), Atyrau, and Karaganda (53.9% and 51% – average). On the other hand, the lowest level of economic development was in the following regions: Mangystau (8.5% – unsatisfactory), West Kazakhstan, and Turkestan (12.7% and 12.8%, respectively – very-

low). Based on the index, economically developed regions are where mining, metallurgical, and oil and gas production enterprises are located.

Associated with the designed economic development index, it is clear that there is an interregional differentiation in Kazakhstan. Thus, based on the 2019 data, the observed economic development levels are:

- above average (B++): East Kazakhstan region;
- average (B+): Nur-Sultan c., Atyrau, and Karaganda regions;
- below average (B): Kostanay region;
- satisfactory (C++): Almaty c., Pavlodar region;
- low (C+): Shymkent c., Aktobe, Almaty, and Zhambyl regions;
- very low (C): Akmola, Kyzylorda, North Kazakhstan, West Kazakhstan, Turkestan regions;
- unsatisfactory (D): Mangistau region.

Under the constructed social development index, Kazakhstan is at a level above the average. From 2011 to 2019, the index was practically at the same level of 45-47% (Table A3, Appendix A). Altogether, it can be noticed that during 2011–2019, the social situation of the country remained on the same level. At the same time, it stands to mention that social development predominates over economic development, including by regions. Thus, Almaty c. is characterized as having high social development standards, which has improved over 2011–2019. In Almaty region and Nur-Sultan c., social development is above average. For the considered period, there are positive social development trends, especially in Almaty c., Nur-Sultan c., East Kazakhstan, and Mangistau regions. In contrast, the social development of Aktobe region is characterized by the deterioration of social development.

The top three regions based on this index in 2019 were Almaty c. (71.4% – high), Nur-Sultan c., and Almaty region (64.1% and 61.8%, respectively – above average). The lowest level of social de-

velopment in the following regions: Akmola and Kostanay (35.7% and 36.8%, respectively – satisfactory), and North Kazakhstan (26.3% – low).

By the developed social development index, it is obvious that in Kazakhstan, there is interregional differentiation. Thus, according to the 2019 data, the observed social development levels are:

- high (A): Almaty c.;
- above average (B++): Nur-Sultan c., Almaty region;
- average (B+): Karaganda and Turkestan regions;
- below average (B): Shymkent c., Aktobe, Atyrau, West Kazakhstan, Zhambyl, Kyzylorda, Pavlodar, Mangystau, and East Kazakhstan regions;
- satisfactory (C++): Akmola and Kostanay regions;
- low (C+): North-Kazakhstan region.

Therefore, an analysis of the index of socio-economic development and its sub-indexes showed that the country has an interregional differentiation of socio-economic development. In Kazakhstan, the socio-economic development of the regions is uneven, and corresponding disproportions are observed, indicating the existing socio-economic inequality. Moreover, the level of existing socio-economic inequality is high. The main task of the Kazakhstani regional police is to equalize regional development. It should be noted that notwithstanding economic development, the regions lag behind social, against the predominance of economic inequality over social. The leaders of socio-economic development are Almaty c., Nur-Sultan c., and Karaganda; the outsiders are Akmola and North Kazakhstan regions.

At the same time, interregional differences are expressed in economic and social development aspects. The capital city and industrial regions are leading in the economic development rating. In contrast, the leaders in social development are two cities of republican significance – Almaty c.

and Nur-Sultan c. Most regions lag significantly in the socio-economic development compared to the cities of republican significance – Almaty c. and Nur-Sultan c.

4. DISCUSSION

The issue of socio-economic inequality and inclusive development are underrepresented in Kazakhstan. There is only one study on socio-economic inequality in Kazakhstan based on regional context. Nurlanova et al. (2019) suggested measuring disproportions between two levels of economic and social development of regions, as well as between republican and regional levels. It was defined that there are economic disparities in Kazakhstani regions. The study recommended the path of inclusive development for regional policy. Thus, according to the World Bank (2019), the annual increase in the average gap between Kazakhstan's richest and poorest regions is growing. The absence of an effective mechanism and implementation of state programs for regional development will further increase the gap between regions. For this reason, it is necessary to look for new methods and approaches to solving the problem of inequality in Kazakhstan.

This study, at a sufficient scientific and methodological level, fills the gap expressed in the absence of domestic papers on the methodology intended to assess the socio-economic inequality of regions. Usually, the primary research method is statistical analysis of socio-economic development by regions or dynamic analysis of the gross regional product. Thus, Sharafutdinov et al. (2018) used the decomposition method for the impact evaluation of gross regional product per capita on specific indicators of the economic sector. Slepneva et al. (2016) also used five indicators of economic development and five indicators of social development, which characterize the current state of the economic and social processes in the region. The proposed development indices of the social and economic development can become a tool to monitor and analyze the development of its economy and society and define socio-economic inequality in regions. The results can be applied by the Ministry of Education and Science of the Republic of

Kazakhstan, the Ministry of National Economy of the Republic of Kazakhstan, the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan, the Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan, as well as other departments and organizations.

It should be noted that several factors could contribute to the current interregional differentiation of the socio-economic development of Kazakhstan. They are: disproportion in budgetary provision (Batrakova, 2021), regional policy, financial opportunities and other macroeconomic conditions, income imbalance between urban and rural areas, natural and climatic conditions, and the geographical location of the regions (Aitova, 2020; Ozherelyev et al., 2021; Chen & Shen, 2021). Therefore, Kazakhstan needs to form its own model of inclusive regional development, considering national characteristics based on a compelling synthesis of the best practices abroad.

The above-mentioned new and improved existing measures and mechanisms for reducing interregional socio-economic inequality are needed to create an inclusive economy in Kazakhstan. It should be marked that in the fight against inequality, current policy consistency, coherence, and integration are required, including different directions: fiscal policy, monetary policy, social policy, scientific and technological policy, innovation policy, industrial policy, trade policy, policy in the field of ecology and agriculture (UN, 2016).

Thus, upon implementation of the state policy in the field of inclusive development in Kazakhstan, it should apply instruments to promote economic integration, including mechanisms for regional, industrial, and research policies through the inclusion of all levels of government regulation. Specifically, inclusiveness must have a particular priority in rural areas (40% of the country's population) and lagging regions.

At the same time, dotation to lagging regions should be changed to programs on the development of their competitiveness and structural transformation of their economy. As production factors in the country come across significant

barriers to relocation, and the target beneficiaries (the unemployed or people living in poverty) are concentrated in certain regions, strategies with a spatial orientation are preferable for the Republic. Further research can assess the socio-economic development of individual regions and identify the features and bottlenecks in the regional development for subsequent scientific substantiation of specific mechanisms for inclusive development.

CONCLUSION

The aim of this study was the assessment of socio-economic inequality in Kazakhstan and its impact on regional development management. Based on the study, the following conclusions were obtained.

Firstly, Kazakhstan has a high level of interregional differentiation of socio-economic development, indicating the existing socio-economic inequality. Moreover, from 2011 to 2019, the problem of differentiation in the socio-economic development of Kazakhstani regions remained unresolved.

Secondly, there are significant gaps in socio-economic development between the cities of republican significance (Almaty c. and Nur-Sultan c.) and other Kazakhstani regions. Thirdly, economic development of the regions lags against the background of economic inequality predominance over social development.

Lastly, the difference in the socio-economic development of the regions is directly interconnected with the regional economic and social policies. Therefore, the absence of a practical mechanism and effective implementation of state programs for regional development leads to an increase in the gap between regions in Kazakhstan.

Thus, socio-economic inequality requires an inclusive policy in the country. Kazakhstan must develop its own inclusive development model, considering national features based on the practical synthesis of best practices abroad, focusing on rural and lagging areas. When implementing state policy in the field of inclusive development, tools should be used to promote economic integration, including the mechanisms of regional, industrial, and scientific policy through the inclusion of all levels of state regulation.

AUTHOR CONTRIBUTIONS

Conceptualization: Umit Sermagambet, Gulzhyhan Smagulova, Wieslaw Urban.

Data curation: Umit Sermagambet, Raikul Yessenzhigitova.

Formal analysis: Zaira Satpayeva, Umit Sermagambet.

Funding acquisition: Zaira Satpayeva, Umit Sermagambet.

Investigation: Umit Sermagambet, Zaira Satpayeva.

Methodology: Zaira Satpayeva.

Project administration: Umit Sermagambet, Gulzhyhan Smagulova.

Resources: Umit Sermagambet, Raikul Yessenzhigitova.

Software: Umit Sermagambet, Zaira Satpayeva.

Supervision: Gulzhyhan Smagulova, Wieslaw Urban.

Validation: Umit Sermagambet, Gulzhyhan Smagulova.

Visualization: Zaira Satpayeva.

Writing – original draft: Umit Sermagambet, Gulzhyhan Smagulova, Wieslaw Urban.

Writing – review & editing: Umit Sermagambet, Zaira Satpayeva.

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APPENDIX A

Table A1. Index and ranking of social and economic development of Kazakhstani regions, 2011–2019

Region	2011		2012		2013		2014		2015		2016		2017		2018		2019	
The Republic of Kazakhstan	39.4	N/A	41.2	N/A	42.3	N/A	42.3	N/A	39.7	N/A	39.9	N/A	41.3	N/A	41.1	N/A	42.0	N/A
Akmola	23.1	15	29.8	15	26.7	15	31.0	15	26.6	15	29.3	14	28.5	15	30.7	16	29.8	16
Aktobe	43.9	7	37.9	9	38.5	10	38.5	10	34.2	10	36.4	8	39.9	8	38.0	11	38.5	11
Almaty	47.1	3	47.8	5	50.6	4	48.9	5	45.8	5	47.1	5	46.0	6	47.3	5	49.5	5
Atyrau	46.7	4	46.4	6	50.4	5	51.4	3	50.1	3	47.3	4	49.9	3	46.7	6	47.0	6
West Kazakhstan	40.0	10	35.6	12	33.5	14	32.9	13	29.8	14	28.9	15	32.7	13	32.7	15	32.7	15
Zhambyl	38.5	11	37.7	10	36.2	11	38.3	11	33.2	11	35.9	9	37.1	10	39.3	9	39.4	9
Karaganda	51.9	2	50.4	2	54.2	3	51.3	4	48.8	4	49.8	3	49.6	4	52.9	3	53.1	3
Kostanay	31.6	12	32.6	13	34.5	12	34.9	12	33.2	12	31.7	12	32.0	14	32.9	14	38.9	10
Kyzylorda	30.2	14	30.4	14	34.5	13	32.1	14	31.5	13	30.7	13	33.3	12	33.2	13	33.7	14
Mangystau	30.8	13	36.7	11	39.2	9	39.8	9	37.3	8	33.9	11	36.9	11	33.9	12	34.1	13
Pavlodar	41.8	8	45.3	8	45.6	7	42.7	7	37.0	9	34.9	10	42.5	7	44.4	7	38.4	12
North Kazakhstan	20.9	16	27.3	16	25.4	16	27.2	16	25.8	16	26.5	16	23.6	16	21.8	17	22.4	17
Turkestan *	44.1	6	46.0	7	43.2	8	42.1	8	39.2	7	38.9	7	38.6	9	39.2	10	42.3	7
East Kazakhstan	41.0	9	48.2	4	45.8	6	47.1	6	43.6	6	46.7	6	49.4	5	48.1	4	51.0	4
Nur-Sultan city	45.5	5	48.5	3	57.7	2	59.3	1	60.8	1	59.7	2	60.3	2	57.4	2	59.9	2
Almaty city	53.7	1	59.3	1	60.1	1	59.0	2	58.9	2	60.2	1	60.7	1	58.0	1	61.1	1
Shymkent city*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	41.5	8	41.7	8

Note: * until 2018, it was included in South Kazakhstan region; the first column is index, the second is ranking; ranking is compiled based on the index of social and economic development of the regions.

Table A2. Index and ranking of economic development of Kazakhstani regions, 2011–2019

Region	2011		2012		2013		2014		2015		2016		2017		2018		2019		
The Republic of Kazakhstan	27.1	N/A	30.0	N/A	34.8	N/A	33.0	N/A	27.3	N/A	27.7	N/A	29.3	N/A	28.2	N/A	30.2	N/A	
Akmola	7.7	15	16.0	15	18.3	14	19.1	14	13.1	15	15.2	14	15.6	13	15.9	14	16.9	13	
Aktobe	31.2	7	22.5	12	26.5	10	25.3	10	16.3	12	22.4	8	26.8	8	26.0	8	27.0	8	
Almaty	20.2	11	25.1	7	33.4	7	30.2	8	21.3	8	20.1	10	19.3	10	19.1	11	22.5	11	
Atyrau	54.9	1	52.3	1	57.5	2	58.4	2	53.8	2	55.1	2	53.1	2	53.3	1	53.9	2	
West Kazakhstan	35.0	5	23.9	9	17.6	15	18.3	15	9.9	16	8.8	16	13.5	14	12.3	15	12.7	16	
Zhambyl	21.5	10	21.2	13	24.9	11	25.8	9	19.4	9	20.8	9	21.4	9	21.4	10	26.8	9	
Karaganda	41.7	3	40.1	5	49.6	4	42.6	5	40.2	3	43.6	4	42.9	5	49.0	3	51.0	3	
Kostanay	15.9	13	24.8	8	32.7	8	36.8	7	33.8	6	25.7	6	29.7	7	30.6	7	43.7	5	
Kyzylorda	18.6	12	16.0	14	30.4	9	19.5	12	19.0	10	16.8	12	16.4	12	17.6	12	19.2	12	
Mangystau	15.9	14	15.2	16	16.6	16	18.3	16	13.3	14	11.4	15	11.8	16	10.4	16	8.5	17	
Pavlodar	46.3	2	49.6	3	50.8	3	43.3	4	22.7	7	25.1	7	48.4	3	47.4	4	31.7	7	
North Kazakhstan	5.2	16	23.0	10	22.9	12	20.9	11	16.9	11	17.4	11	17.6	11	17.0	13	13.6	14	
Turkestan *	22.2	9	23.0	11	20.0	13	19.5	13	15.9	13	15.2	13	12.7	15	7.0	17	12.8	15	
East Kazakhstan	38.1	4	51.8	2	48.4	5	50.0	3	38.0	4	51.0	3	47.8	4	52.8	2	60.2	1	
Nur-Sultan city	25.1	8	35.5	6	62.7	1	61.4	1	66.8	1	59.9	1	57.6	1	46.7	5	50.5	4	
Almaty city	33.8	6	40.6	4	43.7	6	38.1	6	36.9	5	34.7	5	34.0	6	31.4	6	38.5	6	
Shymkent city*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21.9	9	24.2	10

Note: * until 2018, it was included in South Kazakhstan region; the first column is index, the second is ranking; ranking is compiled based on the index of economic development of the regions.

Table A3. Index and ranking of social development of Kazakhstani regions, 2011–2019

Region	2011		2012		2013		2014		2015		2016		2017		2018		2019		
The Republic of Kazakhstan	45.0	N/A	46.3	N/A	45.7	N/A	46.5	N/A	45.4	N/A	45.4	N/A	46.8	N/A	46.9	N/A	47.3	N/A	
Akmola	30.1	15	36.0	15	30.5	15	36.4	14	32.8	15	35.8	14	34.4	14	37.5	15	35.7	16	
Aktobe	49.6	6	44.9	9	43.9	9	44.4	9	42.4	10	42.8	9	45.8	9	43.4	11	43.7	11	
Almaty	59.3	2	58.1	2	58.5	2	57.4	3	56.9	3	59.3	3	58.2	3	60.1	3	61.8	3	
Atyrau	43.0	8	43.7	10	47.1	7	48.2	7	48.4	6	43.7	8	48.4	7	43.8	10	44.0	10	
West Kazakhstan	42.3	9	40.8	12	40.8	12	39.5	12	38.9	12	38.0	12	41.4	11	41.9	13	41.9	12	
Zhambyl	46.3	7	45.3	8	41.3	11	44.0	10	39.5	11	42.7	10	44.2	10	47.5	7	45.2	9	
Karaganda	56.6	3	55.1	4	56.3	3	55.2	4	52.6	4	52.6	4	52.7	4	54.7	4	54.1	5	
Kostanay	38.7	12	36.1	14	35.4	14	34.0	15	32.9	14	34.4	15	33.0	15	33.9	16	36.8	15	
Kyzylorda	35.5	14	37.0	13	36.3	13	37.8	13	37.2	13	37.0	13	41.0	12	40.2	14	40.3	14	
Mangystau	37.6	13	46.4	7	49.5	6	49.6	6	48.2	7	44.1	7	48.4	8	44.5	9	45.7	8	
Pavlodar	39.8	11	43.3	11	43.2	10	42.3	11	43.5	9	39.3	11	39.8	13	43.1	12	41.4	13	
North Kazakhstan	28.0	16	29.3	16	26.5	16	30.1	16	29.8	16	30.6	16	26.4	16	24.1	17	26.3	17	
Turkestan *	54.0	5	56.4	3	53.8	5	52.4	5	49.8	5	49.7	5	50.4	5	53.8	5	55.7	4	
East Kazakhstan	42.3	10	46.5	6	44.6	8	45.8	8	46.2	8	44.8	6	50.1	6	46.0	8	46.8	7	
Nur-Sultan city	54.9	4	54.3	5	55.4	4	58.3	2	58.1	2	59.7	2	61.5	2	62.3	2	64.1	2	
Almaty city	62.8	1	67.8	1	67.5	1	68.4	1	68.8	1	71.9	1	72.7	1	70.1	1	71.4	1	
Shymkent city*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50.5	6	49.6	6

Note: * until 2018, it was included in South Kazakhstan region; the first column is index, the second is ranking; ranking is compiled based on the index of social development of the regions.