

Kazakhstan's Society Modernization in Response to the 21st Century Global Challenges: The Material Aspect and the Shifting Discourse Issue

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Abstract: The purpose of this study is to examine the current aspects of former Soviet society modernization in the context of global challenges of the 21st century. The study uses Kazakhstan as an example. The primary focus of this paper is on the comparative analysis of the global dynamics of economic development trends regarding OECD and Kazakhstan. The study's methodology entails a historiographical analysis of recent works on modernization issues in contemporary societies. Modernization is seen as a part of the complicated process of the world becoming more global as the capitalist system changes. Modernization phenomena are analyzed quantitatively and phenomenologically within the framework of the research methodology. The study used a combination of quantitative and qualitative methods to analyze statistical data on economic development in Kazakhstan. The applied quantitative analysis techniques constructed a regression model of modernization prospects based on the factor of labour productivity and gross savings. Qualitative interpretations in this study were based on phenomenological and analytical approaches in the philosophical sciences. This study focused on a new theory of modernization that views it from the perspective of social acceleration and the pursuit of sustainability in the protection of traditional spirituality within the context of modernization. In practice, this model enables the exploration of various modernization trajectories. It will be useful in the creation of the corresponding state development programmes of Kazakhstan. In this way, the spiritual modernization of society will help build a work ethic, an economy based on knowledge and innovation, a social consensus, and a space where people from different backgrounds can live together.

Keywords: acceleration, capital, innovation, material and spiritual modernization, model.

The industrialisation and modernization of traditional societies have frequently been linked to the global issues facing humanity, such as poverty, economic inequality, climate change, and environmental pollution. Modernization implies abandoning traditional values and worldviews, especially religious ones, secularising and establishing the dominant discourse of personal freedom, the highest value of the individual, the concept of evolution as a means to continuously improve society, and "the best" as the objective to strive for (Bičevskis, 2022; Delanty, 2019). Many countries that modernized and transitioned from traditional to industrial society in the 20th century used various models of modernization. The options ranged from

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catching up to “westernization” to the transitional and combined forms of modernization. Nevertheless, the content of the changes in social discourse and the accompanying social transformations remains the same or close to it. It is founded on several philosophical concepts shared by all societies undergoing modernization (Bičevskis, 2022). In the 21st century, however, many of these concepts no longer adhere to the principles of sustainable development and are not appropriate for all planetary regions due to the socio-cultural transformation of society brought on by the digital revolution and the emergence of new global challenges. As such, the modern era has ended due to the digital revolution and globalization of the information space. This process has also produced a new, highly unstable global space construct in which everyone is still trying to find their place (Rozin, 2020). This is especially true for the former Soviet countries. They have already been modernizing at a catch-up pace throughout the 20th century. The possibility of failure can be explained by the fact that a significant portion of former Soviet countries has not accepted the consensus of a modernity discourse and ethic based on the dominance of pragmatism, individualism, and “success” as an absolute value. The dominant elites maintained a discussion and model of attitudes that differed from those developed in 18th and 20th-century European and American modern societies (Mezhuev, 2021). In the 1990s, attempts to apply the model of liberal modernization based on the borrowing of Western institutions and “Westernisation” failed in many former Soviet countries.

For several decades, a fierce and in-depth academic debate has continued to focus on the acceleration of processes and specific aspects of modernization trends in various parts of the world (Delanty, 2019). This phenomenon is attributable primarily to efforts to identify effective methods and measures, social aspects, underlying causes, and mechanisms. Another reason is the use of unique tools and solutions along the “progressive” and “accelerated” modernization path of development (Feofanov, 2019).

The proposed research makes an effort to understand the core of modernization, its sociocultural possibilities, and the peculiarities of its application in today's world. The immediate objective of the study is to investigate current aspects of a potential new modernization of the former Soviet countries in light of the global challenges that the 21st century has brought about. Kazakhstan serves as an example in this study.

Literature Review

The Historical Background and Characteristics of Modernization

The industrial revolution and the associated social, economic, and demographic transitions profoundly altered the environment and people's lives (Corbett et al., 2018). Over the past 100 years, the growth of capitalism has changed traditional world society and given it a new industrial form on a global scale. This change resulted from the reorganization of the international division of labor. The latter is a consequence brought about by the export of capital and the relocation of production to areas with inexpensive work in other nations (Berberoglu, 2019). The dominance of “development” as the central concept in modern European discourse facilitated the evolution of the means of production, legitimized the concentration of capital, and sparked the scientific and technological revolution (Delanty, 2019; Rozin, 2020). The notion of modernization is defined as an interconnected set of technological, economic, cultural, and political changes (Vodolazskaya, 2019). Modernization refers to the general trend of progress in the development of civilization that occurs in human societies (Li et al., 2019).

Industrialization primarily aimed to eradicate poverty and underdevelopment on all nations' social and economic fronts. The process was accompanied by the deconstruction of traditional society's social foundation and the ways of thinking that supported it (local religions, traditional patrimonialism, and values associated with the reproduction of the life cycle as

opposed to progress understood in linear terms that aimed at continuous improvement) (Coleman, 2019). A profound transformation of traditional life and reducing the secularisation of many aspects of life were crucial in this case. However, these factors escalated social tensions. Modernization is intrinsically geared toward constant transformation; hence, it exacerbates tensions and accelerates the emergence of contradictions between various social groups (Luckmann, 2019; Mezhuev, 2021).

These contradictions stemmed from the fact that religious traditions have historically taken the lead in providing services and spiritual support (guidance, teaching work ethics, passing down moral norms) aimed at constructing specific sustainability mechanisms at both the individual and societal levels. Nonetheless, religion is viewed as sustaining societal structures and practices that contribute to inequality and conflict. Accordingly, religious traditions play a significant role in fostering poverty. While post-World War II Western institutions of global development tended to be secular, there has been a noticeable “turn to religion” among them during the past ten or so years, and in academic research on the topic (Luckmann, 2019). This fact confirms that modernization and secularisation do not always move in tandem. At the same time, religious beliefs and figures are essential determinants in the drive to alleviate inequality and poverty, and in the structures and practices that sustain it (Tomalin, 2018). As societies modernized, social life and secularism concepts arose and evolved, simultaneously with each society's historical, social, economic, and cultural development (Sikhimbayeva et al., 2021). According to many studies, numerous advanced Western countries' economic progress and sociopolitical structure, particularly the United States, are built on the ethical discourse and worldview of Protestant churches (Kirby, 2019; Koerner, 2019; Luckmann, 2019).

Modern societies frequently become more multicultural and multireligious as a result of globalization. In this context, effective modernization is only possible by attaining a spiritual consensus. The latter is vital in understanding how to ensure the state's and society's continued sustainable development (Yerzhanova et al., 2022).

In general, the shift from an agrarian to an industrial society was at the heart of the original definition of modernization (Berberoglu, 2019). Its essence shifted in the 20th century towards achieving societal sustainability and equitable development opportunities in a digital world and information globalization (Kenesheva & Alimbayev, 2018; Mokyr, 2017). Modernization entailed moving Western institutions and organizational frameworks for economic, social, and political activities to a new cultural setting in part or whole.

Innovative digital technologies, including, a global communications system and powerful artificial intelligence, represent the latest long wave of socio-economic modernization. The earliest technological revolutions date back to the Stone, Bronze, and Iron Ages, when the transformation of material was the driving force behind Schumpeter's creative destruction. The next stage of social modernization was associated with the transformation of energy, including water, steam, electricity, and combustion energy. This stage was later referred to as the first industrial revolution. The current concept of modernization focuses on the transformation of information (Hilbert, 2020).

The modern world-system approach to understanding the theory of modernization has been recently considered by Agnew (2021), Evers (2022), Grinin (2022), and Wallerstein (2013). According to Wallerstein's (2013) theory, five elements of the modern world-system distinguish it from the previously existing ones. Firstly, there is a single world market at its center. At the same time, the main goal of production is the exchange and not the utilization as such. Prices for products and goods depend on the competition between producers. More efficient producers can potentially achieve monopoly control by displacing other producers. This feature is inherent in capitalist exchange (Agnew, 2021).

In the 21st century, there is a movement towards more open and flexible approaches to understanding development and modernization issues. This fact is reflected in the concept of "reflexive development" and the theoretical approach to it. As a result, there is a growing awareness of the need to address development issues not only in the Global South but also in the Global North (Sage, 2022).

The Theoretical Basis of the Modern Idea of Modernization

Over the past three decades, sustainability has become a guiding principle for states, organizations, companies, and social movements, as well as a common ideal of social change and modernization (Adloff & Neckel, 2019). Recent studies discuss the theory of a new industrialization type. The foundations of the theory are the priority development of organic agriculture and environmentally safe agriculture, the spread of technologies and electronic equipment with low power dissipation, the intensive construction of cities with low carbon emissions, and the rapid transition of civilization to sustainable environmental standards through the oriented transformation of the modernization model (Li et al., 2019).

A Global Effect of the Capitalist System's Transformation

Many believe that the period of modernity is more prosperous than any other historical time. A sizable body of literature that covers every conceivable facet of recent economic growth since the nineteenth century. Analyzing the available sources, one can learn about the economic changes that have led to this. Previous events are common knowledge today; people know how and where everything took place. Nevertheless, the question of why everything happened and what made it happen is still fundamental (Mokyr, 2017).

In the West, the industrial economic system finally took shape in the first half of the 20th century. It depended on new technologies, fast economic growth, and ideas that included the freedom to be yourself, the rejection of rules and individualism, and the primacy of private property (Delanty, 2019). The establishment of a rationalized industrial society and capitalism's transition into a new monopolistic stage of development was the primary effects of this modernity discourse's predominance and the technological advancements it favored in the late 19th century. This form of Western society resulted from accelerated technological progress and the new technological revolution, recognized in modern historical writing as the Second Industrial Revolution (Pozdnyakova et al., 2019).

Today, however, the trust, law, and fundamental institutions formed during the era of the initial modernization are steadily eroding (Veresha, 2016). This applies to the nation-state, social communities, such as the class and nuclear family, the traditional gendered division of labor, the concept of full employment, work and production in a factory or business, science's monopoly on truth and rationality, and the view of nature as something external and separate from society and other aspects of life (Sørensen & Christiansen, 2013). The entire category of ideas that underpin modernity practices is being called into question. Gender equality and polygenderism are being promoted; the nuclear family is being abandoned in favor of personal freedom and gender change; labor market flexibility and career change are replacing full-time employment; environmental discourse and climate control, as well as feminism, are replacing the above category of well-established ideas (Koerner, 2019).

Modern society, therefore, requires both a tangible modernization and a philosophical and spiritual renewal. Indeed, the global digital revolution has created a new social, digital environment where traditional society cannot flourish, and modernity has devalued its unique practices (Koerner, 2019). Traditional society is dominated by a single set of ideas, which is impossible in a world where each thought competes equally for attention in a single information

space and has no evidential advantage over the others (Delanty, 2019). The major crises of the 20th and 21st centuries — global wars, revolutions, the demise of communist, nationalist, and liberal ideologies, the devastation of nature, climate catastrophes, and the dissolution of a bipolar and then multipolar world order — have cast doubt on modernity's principles (Koerner, 2019; Mezhuev, 2021).

Current processes of informatization and digitalization in the world enable effective interaction between the state, business, and society. Sustainable development relies considerably on information technology to keep the economy up to date (Agumbayeva et al., 2019). Some philosophers believe that the ideal way for society and humanity to move forward is to share and create new network-based solutions (Stewart-Weeks, 2020). Now, at the start of a century that saw how the Fourth Industrial Revolution began, society is in one of those historical transitional periods. The future hangs in the balance between the old world that is vanishing and the new world that has yet to be created, envisioned, and comprehended (Grillo & Nanetti, 2018; Schwab, 2017).

The Current Contradictions Associated with the Capitalist System's Development

The success of globalization depends on the continued integration of markets for capital, labor, goods, and services and structural changes in the economy and technology. However, currently, political and economic interests have very different objectives. Market liberalism often calls for more openness, free trade, and less government control to keep global growth and increase demand. Strong domestic protectionism is required when promoting national interests to safeguard citizens against spontaneous market forces that do not always follow societally set laws and collective duty. In this case, it is crucial to utilize public policy instruments (Diamond, 2019).

Modernization has been primarily driven by advances in science and technology for millennia. However, the 20th century was full of signs and opinions that modernity was in a deep crisis. Current discussions about the limitations to growth, pollution, and climate change point to a severe and alarming lack of sustainability in the so-called “first modernization” world. This problem of modernity has inspired scholars to propose contemporary notions of modernization, the most prominent of which is “reflexive modernization” (Diamond, 2019).

The global Sustainable Development Goals and the Paris Agreement on climate change call for profound reform and modernization in every nation, necessitating responsible and concerted efforts at the government, civil society, science, and business levels (Sachs et al., 2019). The current trajectory of modernization is also connected to the Global Green New Deal. The latter arose in response to the global economic and climate crisis. At its core, it can be interpreted as a strategy for lowering the global economy's carbon footprint and making it sustainable through cooperation on a national and worldwide scale to protect the environment (Johnstone, 2022).

Kazakhstan and the Global Challenges of the 21st Century

Modernization and the associated intensive economic growth increase the consumption of fossil fuels, thereby leading to an increase in CO² emissions in Kazakhstan. However, the increasing use of renewable energy sources and technological innovations contribute to environmental sustainability by reducing harmful emissions. Therefore, the country faces challenges related to the required switch to a low-carbon economy, the promotion of renewable energy sources, financing technological progress, and the development based on the environmental sustainability concept (Raihan & Tuspekova, 2022).

In the future, Kazakhstan may need to abandon traditional models of linear development and adopt harmonious innovative principles of sustainable development based on the modern concept of modernization of Industry 4.0. In modern world practice, new knowledge has become a key commodity in intellectual production and an important resource for innovation and entrepreneurship development in the economy of Industry 4.0. At the same time, leading global innovative companies create competitive advantages for themselves and their countries through the development of scientific research, and the use, knowledge, and creation of new technologies (Tsakalerou & Abilez, 2023).

Challenges to Kazakhstan Society's Modernization

Real potential and prospects for Kazakhstan's sustained economic development are primarily contingent on the country's capacity to use the conditions generated by modern scientific and technological advancements for qualitative shifts in developing productive forces. Without modernization, the country's economy will continue to rely on imports, be dominated by exports of raw materials, and be subject to global market circumstances (Kenesheva & Alimbayev, 2018).

Kazakhstan has a long history of adopting administrative planning and regulation mechanisms. The country has continually witnessed unsustainable economic growth while having the highest gross domestic product (GDP) per capita in the Central Asian region. The primary causes of this trend are excessive reliance on natural resources and failed efforts to encourage economic diversification (Toimbek, 2022). Kazakhstan's public discourse is distinguished by a synthesis of traditional religious and ethnic patriarchal beliefs and social practices from the Soviet era with the pressures of modernity and post-modernity notions (gender equality, human capital development, and private property development) (Adilkhanov, 2019; Toimbek, 2022; Tomalin, 2018).

It is crucial to understand the role that innovation plays as the foundation of a sovereign economy and as a strategic factor in ensuring competitiveness in the modern setting of dynamic competitive processes and scientific and technological progress. Concurrently, innovation transforms society and drives change toward the Euro-American modernity tradition (Kirby, 2019; Koerner, 2019). Furthermore, Kazakhstan's current economy is capable of successfully competing in the market. The country is improving the goods and services that are produced and creating new areas of focus. Therefore, new product creation, innovation, and exceptional support measures are essential economic performance indicators at all levels and underlie the understanding of the problem. The analysis of these factors shows that the innovation path of socio-economic development is the most critical challenge (Sadyrova et al., 2021).

Kazakhstan strives to modernize its economy. Simultaneously, the government and new elites maintain and promote the state-wide discourse of old society and values. In a social and everyday context, this idea may contradict the structure of social interactions exemplified by the established practices of modernity (Adilkhanov, 2019; Luckmann, 2019). Consequently, the country faces a variety of challenges in the reform process. Although Kazakhstan is the most developed and stable nation in Central Asia, issues with the creation of the rule of law, the gradual development of a service-oriented economy, and the development of a professional bureaucracy have prevented the country from achieving sustainable economic growth (Sullivan, 2018).

Case and Methodology

Research Design

The research consists of two parts: a historiographical investigation of recent publications on modernization issues in contemporary societies and a cultural-historical and phenomenological analysis of modern social practices. Particular emphasis is placed on the historical antecedents and characteristics of the interpretation and comprehension of modernization in its various epochs. Furthermore, modernization must be considered part of the global world's complicated processes of capitalist transformation. The quantitative research findings serve as an inductive basis for the conceptual analysis used to make further generalizations. The statistical stage of the research employed a mix of quantitative analysis and qualitative study of statistical data on the leading indicators of development in Kazakhstan. Forecasting was also used. This method looks at both current trends and possible ways the economy could change in the future. This study rests on a new theory of modernization that looks at it from the social acceleration perspective. Hartmut Rosa first put forward this idea in a research paper. The essence of modernization is social acceleration, which includes the acceleration of technology development, social change, and life pace (Rosa, 2013).

Limitations

This study makes it possible to examine some characteristics of the modernization phenomena as a particular type of social transformation. However, the scope of the results does not let them reveal the essence of this phenomenon fully. Therefore there is a need for future research on this topic.

Statistical Analysis

The experimental data in the paper cover 2000-2021, using the Republic of Kazakhstan as an example, and do not include the transition era of the 1990s. Data for the entire Organization for Economic Co-Operation and Development (OECD) member group were also used for comparison. The World Bank Development Indicators database served as the primary source of information (World Development Indicators, 2023). A linear projection approach of trends in individual economic variables for Kazakhstan and OECD up to 2030, until 2040, and until 2050 was applied to analyze the data. Microsoft Excel was used for all calculations. Gretl, a specialized econometric calculating application, was used for the model's regression analysis. The development of this model depended on the methodology for constructing econometric models proposed by Adkins (2018), Stock and Watson (2020).

Results

In the 21st century, many countries will face the challenge of modernising their societies. This issue addresses not only economic or social problems but also environmental concerns, a spiritual crisis, and a general lack of innovation compared to leading nations and worldwide regional associations. Let us consider Kazakhstan. In the 21st century, the country has already made significant progress toward catching up with the world's developed countries in terms of GDP per capita. A comparative analysis of GDP per capita serves as a universal metric to evaluate the development level that individual countries have attained (Table 1).

Table 1
GDP Per Capita (Current US\$)

	Kazakhstan	World	OECD members	% to OECD members
2000	1229.0	5507.4	23026.1	5.3
2001	1490.9	5400.3	22637.5	6.6
2002	1658.0	5535.4	23442.9	7.1
2003	2068.1	6127.7	26030.5	7.9
2004	2874.3	6818.9	28768.3	10.0
2005	3771.3	7292.5	30196.6	12.5
2006	5291.6	7804.2	31620.6	16.7
2007	6771.4	8686.0	34356.8	19.7
2008	8458.0	9427.5	36204.8	23.4
2009	7165.2	8830.7	33635.0	21.3
2010	9070.5	9556.5	35053.0	25.9
2011	11634.0	10471.0	37510.5	31.0
2012	12386.7	10573.0	37238.6	33.3
2013	13890.6	10735.1	37492.0	37.0
2014	12807.3	10896.1	38000.9	33.7
2015	10510.8	10153.6	35599.1	29.5
2016	7714.8	10206.9	36049.4	21.4
2017	9247.6	10742.7	37403.4	24.7
2018	9812.6	11285.5	39348.3	24.9
2019	9812.6	11320.9	39531.7	24.8
2020	9121.6	10883.1	38326.9	23.8
2021	10373.8	12236.6	42446.9	24.4
2030 forecast	16986.7	15208.5	49635.5	34.2
2040 forecast	21319.5	18215.5	56916.6	37.5
2050 forecast	24951.3	20845.7	62529.0	39.9

Note. Adapted from World Development Indicators (2023).

According to this metric, Kazakhstan closed the gap with OECD countries by a factor of nearly five between 2000 and 2021. At the same time, in 2013, Kazakhstan came very close to reaching the maximum level of GDP (37%) per capita from its average for the group of most developed OECD countries. This number continued to decrease over the subsequent years, reaching a low of 24.4% in 2021. The GDP per capita difference between Kazakhstan and OECD countries is anticipated to diminish to 34.2% by 2030, 37.5% by 2040, and 39.9% by 2050 if development continues at the same rate since the beginning of the 21st century.

Labor productivity has undergone a fundamental shift. Until recently, low labour productivity was thought to be one of the reasons the former Soviet Union's countries lagged. This problem was due to a lack of investment, insufficient capital, and technical backwardness. However, the experience of Kazakhstan demonstrates that all of these issues are solvable if comprehensive reforms and modernization are conducted with the collaboration of government and business. The state's active engagement and control of modernization processes is a prominent approach of Soviet practises. This method is one way in which existing elites try to maintain the stability and sustainability of society in the face of the pressures brought on by modernization (Karimov & Bekbaev, 2022; Moldagaliev et al., 2015). This approach is typical of many developing countries characterised by traditionally oriented societies and significant religious influences (Adilkhanov, 2019; Koerner, 2019; Rozin, 2020). The economic data below clearly demonstrate how successful this strategy has been.

According to an analysis of data on GDP per person employed, Kazakhstan has significantly narrowed the labor productivity gap between 2000 and 2021. Kazakhstan's labor productivity, as measured by GDP per person employed (constant 2017 PPP \$), was 23076.2 in 2000, 56288.1 in 2021, or 58.2% of the average for the group of most developed OECD countries (Table 2). Forecasting indicates that if current labor productivity growth rates are maintained, their lag behind the average OECD group level will decrease to 70.9% by 2030, 80.1% by 2040, and 88% by 2050. The achievement of these indicators will significantly depend on the government's investment policy, the state of capital accumulation, the level of innovation, and the country's overall scientific and technological development. Today, these factors are critical, if not decisive, in modernizing the economy and overcoming the general trend of lagging behind global leaders.

Table 2
GDP Per Person Employed (Constant 2017 PPP \$)

	Kazakhstan	World	OECD members	% to OECD members
2000	23076.2	26425.4	80573.9	28.6
2001	25463.7	26699.3	80981.7	31.4
2002	27444.8	27110.5	82035.6	33.5
2003	29462.3	27750.6	83052.0	35.5
2004	31741.8	28693.4	85114.5	37.3
2005	34395.1	29524.1	86009.4	40.0
2006	37253.3	30472.3	87161.9	42.7
2007	39402.9	31487.6	88220.2	44.7
2008	39289.4	31941.7	87927.4	44.7
2009	39081.7	31540.6	86278.7	45.3
2010	41193.7	32756.0	88570.6	46.5
2011	43700.1	33582.8	89459.4	48.8
2012	45444.5	34279.0	89747.4	50.6
2013	47822.1	35108.7	90392.8	52.9
2014	49453.9	35949.7	91097.2	54.3
2015	49696.9	36794.6	92039.4	54.0
2016	49995.1	37640.2	92329.1	54.1
2017	51743.5	38665.5	93268.0	55.5
2018	53541.1	39642.6	94074.2	56.9
2019	55545.7	39989.4	94641.0	58.7
2020	54460.7	39950.4	93951.4	58.0
2021	56288.1	41367.9	96663.8	58.2
2030 forecast	72518.4	47773.7	102310.9	70.9
2040 forecast	87182.4	55299.5	108891.4	80.1
2050 forecast	101164.2	62827.8	114894.3	88.0

Note. Adapted from World Development Indicators (2023).

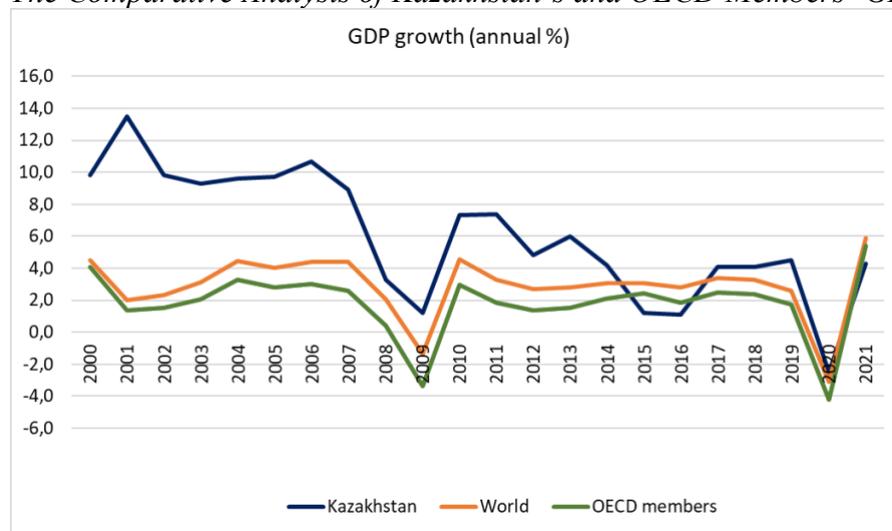
In general, the analysis of Table 2 shows a certain discrepancy between the achieved level of labor productivity in Kazakhstan in relation to the developed countries of OECD (58.2%) and the level of GDP per capita (24.4%). Therefore, for Kazakhstan, as well as for many other countries, it is important to move from a linear model of economic development to a new model of innovative development. The former has traditionally dominated and depended on resource rent, however, the latter will bridge the gap between labor productivity and income.

The primary issue with falling behind is the buildup of potential conflict between the traditional discourse and the modernity discourse. The latter seeks isolationism, autonomy, autarky, collectivism, and the cyclical reproduction of social relations in favor of modernity's individualistic values and aspirations for globalization, as well as the erasure of borders and the equating of ideas (Bičevskis, 2022; Coleman, 2019). Kazakhstan and several other countries with similar problems need to solve this conflict. If they fail, faster economic and technological development and more investment from “victorious modernity” countries will lead to a more radical change in society. This change may cause instability and slow economic growth (Berberoglu, 2019; Diamond, 2019; Grunwald, 2021). The increase in labor productivity does not happen in and of itself; instead, it alters the mentality of those who work, who earn significantly more money, are less reliant on society and the clan system, and may no longer adhere to traditional values (Koerner, 2019; Stewart-Weeks, 2020). To maintain the sustainability of the community and the achieved rate of development acceleration, they require a new discourse and a new vision of meaning. Phenomenologically speaking, this process is not solely connected to modernity or the question of how to overcome it; however, it stands in striking contrast to the problems associated with modernity as the triumph over traditional societies.

A confluence of events has had a positive effect on Kazakhstan's ability to close the productivity gap. As a result, the country managed to progress. First, in the 2000s, the government and businesses capitalized on successful market conditions in global commodity markets, foreign and domestic investment, and the benefits of globalization. Between 2000 and 2006, this factor led to record GDP growth rates higher than the OECD average (Figure 1).

Figure 1

The Comparative Analysis of Kazakhstan's and OECD Members' GDP Growth Rates



Note. Adapted from World Development Indicators (2023).

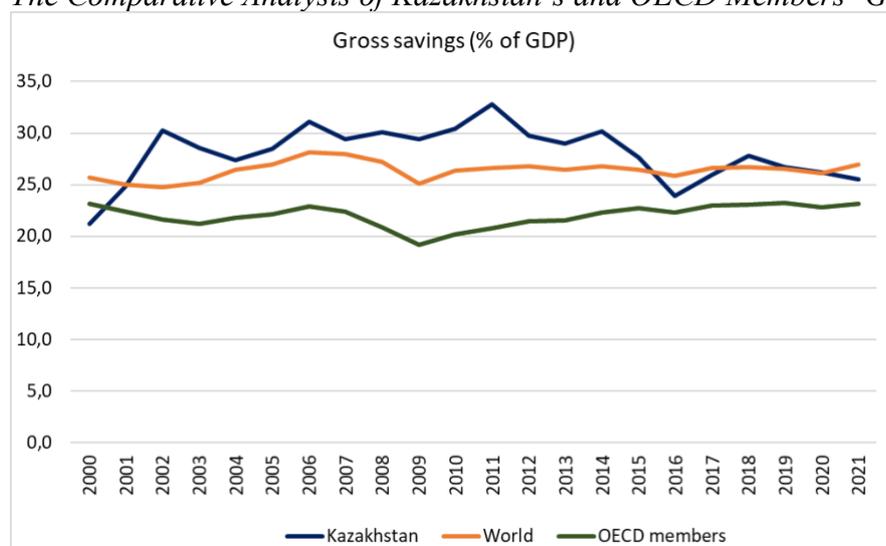
Meanwhile, since 2007 there has been a trend of slowing economic growth. This process was also facilitated by the financial and economic crises of 2008. However, during all years of observation, except 2015, 2016, and 2021, Kazakhstan's economic development rates have exceeded similar OECD member averages.

Higher gross savings and capital levels are two of the main factors that account for Kazakhstan's economic growth rate, which is faster than that of OECD members. According to several studies, these traits are typical of traditionalist societies with their values of preservation, accumulation, and patrimonial/family structures of management of development tools, particularly capital (Karimov & Bekbaev, 2022). The shift from the individual to social

and family institutions is essential in value discourse. What matters is not the individual and their needs but how the more extensive group reacts to the individual's actions and how well the individual and their family keep the circle of accepted values. This conclusion reflects the benefit of preserving traditional public discourse. Nonetheless, it carries the most significant risks for future development. The achievement of sustainable development is linked to the formation of the internal market and personal spending, as well as to the desire to become self-sufficient and individualistic (Karimov & Bekbaev, 2022; Moldagaliyev et al., 2015). This distinction is illustrated by comparative data on the proportion of gross savings to total gross domestic product (Figure 2).

Figure 2

The Comparative Analysis of Kazakhstan's and OECD Members' Gross Savings Rates



Note. Adapted from World Development Indicators (2023).

The difference between one's disposable income and total consumption is the amount of gross savings. These take the place of gross domestic savings, a concept the World Bank used before 2006 to figure out world development indicators. Gross savings are found by subtracting total consumption from gross national income and adding net transfers. High gross savings rates are, as a general rule, indicative of nations that are actively working to modernize their economies. For instance, the so-called "Asian tiger" countries (South Korea, Singapore, and others) of the 1970s and 1980s, which industrialized and modernized their societies, had very high levels of gross savings at the time. This feature ensured high economic development indicators for these countries.

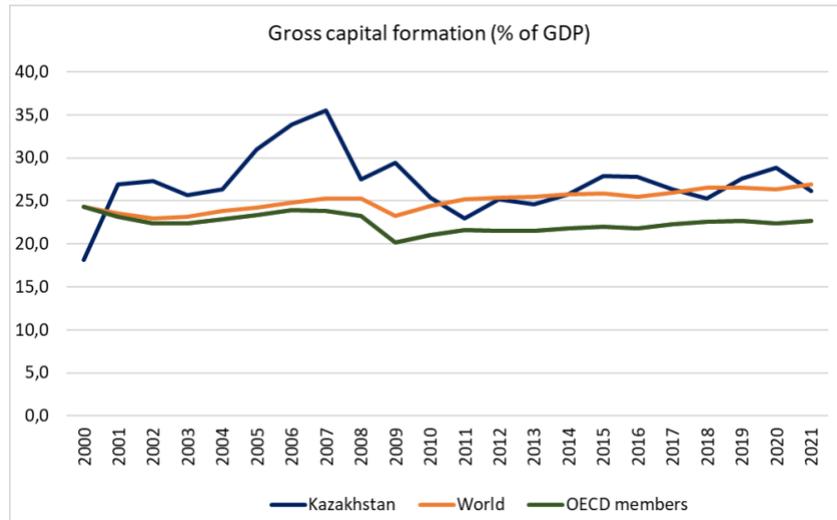
Kazakhstan had a higher gross saving rate than the OECD members did for the entire study period (2000 may be the lone exception). It helped the country keep its high economic growth rate for the most part. However, beginning in 2016, the gap between gross savings rates and OECD members began to close, resulting in lower economic growth rates.

Gross capital formation is another important indicator of economic development. It was previously known as gross domestic investment. This indicator is vital for economic modernization because it collects money to renew assets. These assets include fixed assets of businesses, different types of production and social infrastructure, buildings and inventories, and land plots. In reality, the above is the primary resource for modernization that strengthens any other efforts to bring about change. Capital is essential in both its tangible (financial) and intangible (human, intellectual) forms.

Between 2001 and 2010, Kazakhstan also significantly outperformed the OECD members in this indicator. The gap began to close rapidly in the following years, generally coinciding with Kazakhstan’s general trend of slowing economic development. The difference has been most pronounced since 2012, with the sharpest decline occurring during the 2008-2009 global financial crisis (Figure 3).

Figure 3

The Comparative Analysis of Kazakhstan’s and OECD Members’ Gross Capital Formation Rates



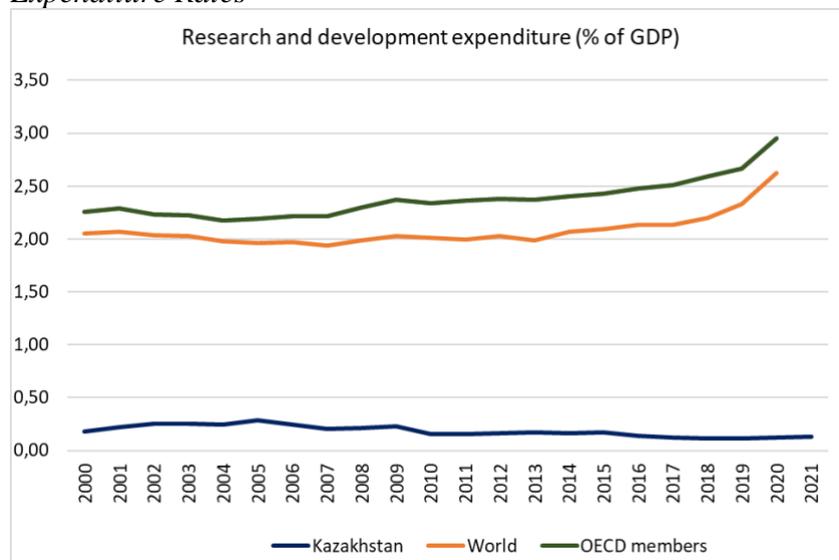
Note. Adapted from World Development Indicators (2023).

Research and development expenditures play a more significant role in modernization due to the impending digital revolution and the shift to a new technological paradigm. The mentioned processes refer to the concept of the Fourth Industrial Revolution. These expenditures constitute society’s intellectual and, to a lesser extent, spiritual capital. From a discursive standpoint, and based on the phenomenology of this process, one can say that knowledge accumulation has replaced traditional forms of knowledge and spiritual achievement as symbols of power. Knowledge accumulation impacts technology and, as a result, one’s position in the world of the Fourth Industrial Revolution. Knowledge may not be disseminated as a form of symbolic power but sold as a commodity (Mezhuev, 2021). Spiritual capital is becoming less important as a way to pass on behavior and attitude experience than knowledge accumulation. This process is changing people's attitudes in a way that cannot be reversed. Nonetheless, it cannot be abandoned because investments in knowledge and technology ensure a society’s place in the regional and global competitive race. According to international data analysis, the level and size of research and development expenditures largely determine a country’s national competitiveness and ability to respond more adequately to current global challenges. A potential future barrier to Kazakhstan’s modernization and closing of the economic development gap is that it performs significantly worse on this indicator than the OECD members. From 2000 to 2020, the gap between Kazakhstan and OECD members in research and development expenditure (% of GDP) continued to widen (Figure 4).

By 2020, the difference in research and development expenditure (% of GDP) between Kazakhstan and OECD members had increased to 2.8% from 2.1% in 2000. Kazakhstan allocated 0.13% of its GDP to research and development in 2020, compared to the OECD members’ average of 2.96%.

Figure 4

The Comparative Analysis of Kazakhstan's and OECD Members' Research and Development Expenditure Rates

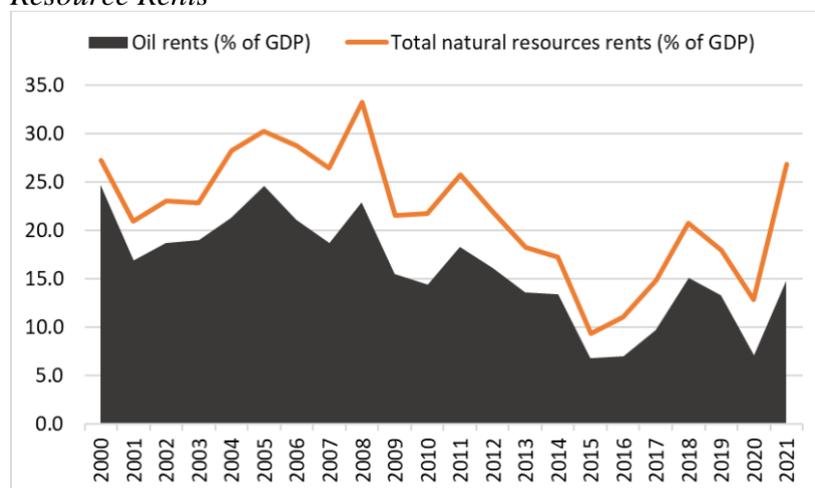


Note. Adapted from World Development Indicators (2022).

For modernization, it is essential to diversify the economy and reduce its reliance on resource exports. Kazakhstan heavily relied on natural resource exports in the early 2000s (Figure 5).

Figure 5

A Comparison of Kazakhstan's Economy's Reliance on Oil Revenues and Total Natural Resource Rents



Note. Adapted from World Development Indicators (2023).

Kazakhstan's economy's reliance on natural resources peaked in 2008. At the time, natural resource rent contributed 33.2% to GDP formation. Although less pronounced now, the dependence still exists and is significantly influenced by the price situation in global markets. It is impossible to eliminate in the short term. Still, in the medium and long term, as Kazakhstan moves toward a new innovative and socially accelerated modernization strategy, the country will be able to cope with this issue by using two essential tools: labor productivity and gross savings. A two-factor modernization model based on a linear multiple regression function was developed to estimate the potential of future economic development (1):

$$y = a + b_1 \cdot x_1 + b_2 \cdot x_2 \quad (1)$$

Using the data from Tables 1 and 2 and Appendix 1, the Gretl econometric software was used to calculate the regression model's key parameters and evaluate its reliability (Table 3).

Table 3

Model OLS, Using Observations 2000-2021 (T = 22)

Dependent Variable: GDP Per Capita Current US

	Coefficient	Std. Error	t-ratio	p-value	
const	-18212.8	4496.87	-4.050	0.0007	***
GDP per person employed consta	0.321690	0.0392127	8.204	<0.0001	***
Gross savings of GDP	438.239	150.521	2.911	0.0090	***
Mean dependent var	7598.218	S.D. dependent var	3944.783		
Sum squared resid	64436562	S.E. of regression	1841.575		
R-squared	0.802818	Adjusted R-squared	0.782062		
F(2, 19)	38.67888	P-value(F)	2.00e-07		
Log-likelihood	-195.0083	Akaike criterion	396.0166		
Schwarz criterion	399.2897	Hannan-Quinn	396.7876		
Rho	0.688980	Durbin-Watson	0.508491		

The data show that the model is highly reliable (p-value). Therefore, it is appropriate for modeling the labor productivity to gross savings ratio. According to the calculations, Kazakhstan will be able to reach the current OECD level of GDP per capita if it nearly doubles labor productivity and gross savings (Table 4).

Table 4

A Model for Evaluating Kazakhstan's Economic Modernization Prospects through Increased Labor Productivity and Gross Savings

GDP per person employed (constant 2017 PPP \$)	Gross savings (% of GDP)				
	20	25	30	35	40
56000	8566.7	10757.9	12949.1	15140.3	17331.5
60000	9853.4	12044.6	14235.8	16427.0	18618.2
70000	13070.3	15261.5	17452.7	19643.9	21835.1
80000	16287.3	18478.4	20669.6	22860.8	25052.0
90000	19504.2	21695.4	23886.5	26077.7	28268.9
100000	22721.1	24912.3	27103.4	29294.6	31485.8
110000	25938.0	28129.2	30320.4	32511.5	34702.7
120000	29154.9	31346.1	33537.3	35728.5	37919.6

The Government of Kazakhstan established the accelerated social modernization program in response to the global challenges of the 21st century. The success of the program will be a critical factor in whether Kazakhstan achieves its goals of becoming one of the world's leading states. The accelerated social modernization program's three pillars—technological acceleration, social change, and pace of life—must be in place for it to be implemented successfully. Therefore, society should be prepared for such a rapid change at the institutional level. At the same time, economic policy should prioritize technical re-equipment and capital

asset renewal. The spiritual modernization of society is the process of incorporating not just a modern discourse but one that is more modern. It implies overcoming the adverse effects of current practices. Thus, the spiritual also requires special attention. In this case, a focus should be on a modern institute of high work ethics, life management, environmental awareness, and intellectual capital development within the context of the innovative paradigm of the knowledge-driven society.

Thus, the successful increase in labor productivity to the level of developed OECD countries requires the introduction of measures based on technical re-equipment and modernization of production, improving working conditions and quality by creating effective remuneration systems, as well as high personnel motivation. In addition, other factors play an important role in increasing labor productivity. These factors include socio-cultural and organizational-psychological ones that imply the introduction of modern industrial technologies along with industrial culture and work ethic.

Discussion

The study used the example of Kazakhstan to investigate the features and effectiveness of the modernization of post-Soviet society in the context of the global challenges of the XXI century. The analysis revealed the lag in terms of GDP per capita from its global average level, which occurred in the period 2000-2010. From 2011 to 2015, the indicator of GDP per capita exceeded the same global average, but since 2016 it has been lagging again. At the same time, the modernization of the country made it possible to increase the relative level of GDP per capita in comparison with OECD countries from 5.3% in 2000 to 24.4% in 2021. The greatest success was achieved in reducing the productivity gap between Kazakhstan and OECD countries. Moreover, another positive result of modernization is the emerging tendency to gradually solve a significant problem of many transit countries – the dependence of the national economy on resource rents. This problem tends to occur due to the priority development of the extractive economy sectors and the weak development of manufacturing industries and other spheres of activity.

The results of this study are largely consistent with the existing approaches. According to the previously proposed approaches, modernization theory is still an essential part of much political and economic research. It combines questions about the distribution of political power with political culture and the dominant philosophical discourse that shapes that culture (Delanty, 2019; Rozin, 2020). These core cultural components are known as ‘attributes’ and can be combined to form larger cultural configurations. Three distinct paths of political development with very different relationships between the state and society, institutions, and economic structures result from these configurations' interactions with power distribution (Rozin, 2020).

Contemporary studies of modernization perspectives place a strong emphasis on commodity-exporting countries. These economic development studies frequently employ Kaldor's concept to investigate the effects of modernization on the absorption of surplus labor. Studies of this kind aim to understand the process of economic modernization better. To this end, these authors add the extractive sector to the Lewis dualistic model of the economy. Hence it becomes possible to investigate three distinct scenarios for the management of natural resource revenues. In the first scenario, an altruistic regime that involves a net income redistribution to the underprivileged delays economic modernization necessitates more fixed capital and increases the risk that the nation will fall into a poverty trap. In another scenario, this effect is less pronounced if the modern sector is more capital-intensive. In the third scenario, a manufacturing regime that necessitates the complete reinvestment of commodity revenues accelerates economic modernization. The study also determines whether modernization has a net positive (or negative) impact by considering a more realistic scenario

and coordinating all aspects. One might agree here. However, technological development is, alongside capital accumulation, a crucial driver of economic modernization (Sadik-Zada, 2020).

As evidenced by its global spread, capitalism is widely acknowledged as an effective economic development system. It is primarily based on a liberal approach to government management. Therefore, the use of free market mechanisms, individual entrepreneurial initiative, flexibility and adaptability of economic actors, the social environment, and prevalent public discourse all play significant roles in this system (Delanty, 2019; Tomalin, 2018). The digital economy and the fourth industrial revolution have created a new social environment: the digital society. The most valuable commodities in this society are knowledge and information, which call for the support and use of cutting-edge technologies (Bičevskis, 2022; Popkova et al., 2021).

Foreign countries' successful practices for increasing innovative development rely on organizational, economic, and financial tools. These methods are shaped by a particular flow of ideas, the established discourse of modernity, and the history of overcoming it, according to a more global phenomenological perspective (Coleman, 2019; Delanty, 2019; Kirby, 2019). Like many developing countries, Kazakhstan is going through a challenging period. The country transitions from a traditional civilization to one that is inventive and heavily reliant on contemporary methods (Adilkhanov, 2019; Moldagaliyev et al., 2015). Nevertheless, innovation structures are emerging in Kazakhstan today. The existing conditions are suitable to ensure the balanced development of all innovation system components as part of the society modernization program for the ensuing decade and until 2050. It is possible despite the challenges associated with the rapid development of a workable national innovation economic model and the difficulty of fusing science, business, and education (Sadyrova et al., 2021).

Kazakhstan currently adheres to the worldwide trends of advancing the development of socio-economic and political systems (Adilkhanov, 2019). Since gaining its independence, the country has altered and enhanced its economic and management structure. At the same time, it has employed the most cutting-edge developments in science and technology. Kazakhstan has completed two major modernization initiatives and is adjusting to a third. The country is a part of the global community. It consistently takes part in international rankings to allow public authorities to evaluate the current state of the world's socio-economic, political, and innovation environments (Stavbunik & Pěluča, 2019). Nonetheless, throughout its independence, while sustaining modernized economic methods, Kazakhstan has emphasized the preservation of the old society's values and principles and the adaptation of those to new conditions (Adilkhanov, 2019).

There are global problems and constant modernization in today's world. The production of social wealth is always linked to the emergence of social and technical issues. Furthermore, due to the rising complexity of the development paradigm and society's contingent approach to problem solutions, inconsistencies emerge regarding the ideal growth path (Carmouze & Sandry, 2020). Modernization often leads to changes in the traditional family structure as an essential subject of socialization and transmission of spiritual values. As a result, subsequent transformations occur in society. These changes are accompanied by the implantation of ideas from another culture into the traditional national culture (Mezhuev, 2021). In this case, a particular society's forms of perception, thinking, and values change while trying to adapt to these borrowings (Abdulaeva, 2019). Therefore, it is vital to consider the above aspects in justifying a new model of material and essential modernization in Kazakhstan. The key to the success of modernization is its focus on adapting national characteristics and ethical traditions to the digital environment and creating a tolerant, multicultural space. It would allow societies to encourage innovation, build international scientific and technical cooperation, and reach the Sustainable Development Goals (Delanty, 2019; Stewart-Weeks, 2020).

Conclusion

This study revealed the essence of modernization as a certain method of developing the country and society, its socio-cultural possibilities and its specific application in the modern world, which is facing a new stage of the Fourth Industrial Revolution. In the future, Kazakhstan, like many other countries, will eventually move from traditional models of linear development to modern innovative principles of sustainable development. The latter is currently emerging based on the concept of Industry 4.0 modernization. Accordingly, as the comparative analysis in this study showed, the levels of GDP per capita and labor productivity do not fully reflect real economic achievements. This conclusion was illustrated in the example of Kazakhstan, where there is more than a twofold difference in inequality between the indicators – 24.4% and 58.2%, respectively.

Modern philosophical, sociological, and economic theories view modernization as a crucial stage in the complex process of globalization. This stage takes place when the capitalist system alters and the world advances toward the Fourth Industrial Revolution. Many countries worldwide are looking for solutions to overcome failed modernism practices and integrate social discourse to achieve societal stability and sustainability in the post-industrial digital economy. However, the global digital revolution has produced a new social environment incompatible with traditional and established liberal contemporary societies. Therefore, the spiritual modernization of modern society is a primary key to the success of material modernization.

According to studies, if the current model of economic development and trends in the key economic indicators continue, Kazakhstan will not be able to attain the per capita GDP level of OECD members. In terms of GDP, Kazakhstan closed the gap with the OECD members by nearly five times between 2000 and 2021. At the same time, Kazakhstan approached the maximum level of 37% GDP per capita for the OECD group of the world's most developed countries in 2013. In subsequent years, this percentage fell to 24.4% by 2021. At the current rate of development, which has been observed since the turn of the 21st century, the GDP per capita gap between Kazakhstan and OECD members will decrease to 34.2% by 2030, 37.5% by 2040, and 39.9% by 2050. Nonetheless, modeling demonstrates that the same indicators as those of OECD members can be attained by implementing a new modernization in combination with a social acceleration concept. To achieve this objective, the economy will require a nearly twofold increase in labor productivity and gross savings over the medium and long term. Supporting traditional social discourse and upholding conventional values, Kazakhstan has accelerated capital accumulation and productivity growth. Simultaneously, this practice becomes a significant impediment to the "second modernization," which requires the integration of values and philosophical discourses developed in response to the discredited practices of modernity throughout the 20th and 21st centuries.

Many countries, including such developed ones as the USA and Germany, have to make the transition to the Fourth Industrial Model of Economic Development. The effectiveness of the transition will depend on the optimal choice of the ratio between gross capital accumulation and labor productivity. This study proposed the use of econometric modeling with various options for combining these factors. It would determine the most promising way to choose the economic path of modernization. The main focus of modernization should be on adapting Kazakhstan's cultural and moral traditions to the digital world and creating a tolerant, multicultural space. In this case, it would be possible to encourage innovation, improve international scientific and technical cooperation, and reach the Sustainable Development Goals.

Funding Details

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Disclosure Statement

The authors declare that there are no conflicts of interest related to this article.

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