

RESEARCH ARTICLE

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Incomes of the Population of Kazakhstan: Differentiation and Forecast

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Abstract

The purpose of the study is to forecast and determine the main factors affecting the growth of per capita income of the population of Kazakhstan. The paper is devoted to an urgent problem – differentiation and forecast of the income level of the population of Kazakhstan. In the study, based on the results of a survey conducted as part of the study in 2021, 4 conditionally defined social groups were formed according to the subjective integral assessment of respondents' own income. Based on the formed decile groups of respondents, the Gini coefficient was calculated and compared with official statistics. The method of statistical forecasting was used in the preparation of the article. With the help of factor forecasting, the system of the interrelation of per capita monetary incomes of the population with other factors is modelled.

In the article, when finding factors affecting the incomes of the population of Kazakhstan, a model was obtained in which six factors turned out to be statistically significant: Three indicators of them, these are the Minimum wage, the Minimum pension and Subsistence minimum, are state minimum social standards. It is obvious that it is necessary to revise the indicators on the value of which the level and quality of life of the population and the economic growth of the country depend. In further studies, based on the results obtained, it is planned to develop recommendations for reducing income inequality in Kazakhstan.

Keywords: Economic, Economic Growth, Income of Population, Income Inequality, Differentiation, Forecast, Kazakhstan

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1. INTRODUCTION

The quality of life and social status of the population is directly related to their income and solvency, which in turn are not only of social importance, but are also factors that determine life expectancy itself. The problem of equitable distribution of income has been relevant for mankind at all times. At different stages of the development of civilization, conflicts arose on the basis of the division of profits, and this emphasizes the importance of income differentiation for the population. In different periods of the development of the state, the incomes of the population are different and the market economy creates many opportunities for the population to earn in accordance with their abilities and knowledge.

The population's income is a complex category reflecting the economic relations that develop in the production, distribution, exchange and consumption of the product between individual parties of society. The level and differentiation of income of the population reflect the differences in earnings and income distribution between the population.

The average salary, pension, social benefits, income from entrepreneurial activity and other sources of income determine the level of income of the population. It is one of the indicators of the country's economic development. The higher the income level of the population, the higher the quality of life of citizens and the level of well-being of society. Differentiation of income of the population means differences between earnings and incomes of different categories of citizens. Differences in the level of education, vocational training, availability or absence of work, employment status and other factors may cause this. It can lead to social tension, as well as inequality in access to goods and services.

The study of the population's data makes it possible better to understand the current socio-economic situation in the country and identify problematic issues that may arise in the future. Also, the study of the population's income level is an essential factor in the development of social programs to support vulnerable groups of the population. According to the population's income level, it is possible to assess the general standard of living of the population in the country and establish appropriate socio-economic measures and standards.

In order to develop a balanced economic policy that takes into account the interests of all population groups, data on the income levels of the country's population is also needed. The analysis of the population's income makes it possible to assess social and economic mobility and determine which of the population groups is moving up or down the social ladder.

Currently, the incomes of the population are changing quantitatively and structurally, and these changes need to be investigated in order to develop theoretical foundations for the formation of incomes of the population according to the level of economic growth of the country.

The purpose of the research is to study the problems of social inequality and income differentiation, as well as to identify factors that affect the population's income when predicting Kazakhstan's socio-economic development.

Research question: What are the main factors affecting the population's income level?

Research hypothesis: To assess the standard of living of the population, it is necessary not only to determine the differentiation of incomes of the population but also factors that significantly affect the standard of living of the population in order to form the main directions of state policy and take specific measures to increase the level of income.

As per capita income increases, people tend to have more opportunities to meet basic living needs, which can help them escape poverty and reduce the proportion of the population living below the subsistence minimum. In addition, a higher income level can allow people to invest in education and vocational training, which can help improve their employment prospects and earning potential in the long run. Therefore, it is crucial to address the root causes of poverty and implement policies and programmes that can contribute to reducing poverty and inequality.

2. LITERATURE REVIEW

The level of income of the population is one of the main characteristics of the economic situation in the country. Studies of the population's income level make it possible to assess the social orientation of the state's economic policy and assess the effectiveness of measures to combat income inequality (Dmitrichenko et al., 2021). Studies of the population's income level can be carried out at various levels: global, national, regional, etc. At the global level, one of the best-known studies is the annual "World Inequality Report." It is based on data collected by economists from various countries of the world and allows you to assess the scale of income inequality at the world level. One of the critical conclusions of reporting is that income inequality is growing in most countries, including in developed (UN, 2020).

The study of income inequality with the participation of experts in various fields is also necessary to determine the state policy in the field of the income distribution, trade, education, labor market, regional management, etc. (Joyce & Xu, 2019). Also key in modern research are objective and subjective definitions of inequality. Scientists believe that developing policies to reduce inequality is necessary, taking into account subjective assessments by people of their living conditions to obtain a complete picture of the phenomenon (Faggian et al., 2023).

Income inequality can have both positive and negative effects on economic growth. On the one hand, inequality can drive economic growth, as more affluent people can invest more money in various projects, including new businesses and technologies that can drive economic growth. Moreover, income inequality can serve as a motivating factor for lower social segments of the population to improve their living conditions and increase their income (Breunig & Majeed, 2020). On the other hand, inequality can limit economic growth because it can lead to limited access to education, health care and other resources that can contribute to human capital growth. This can reduce the number of people who can participate in economic activities and reduce labor productivity. Moreover, income inequality can contribute to the emergence of social protests and instability, which can adversely affect investment and economic growth.

Countries with unequal income distribution are more vulnerable to pandemic threats (Su et al., 2022). Studies from Germany, the UK, and the US show that infection and death rates from COVID-19 are relatively higher in high-poverty or low-income regions or regions with poor socioeconomic status (Hoebel et al., 2021; Plümper & Neumayer, 2020). Thus, the impact of income inequality on economic growth depends on the specific situation and context in each country and can be both positive and negative (Kirton et al., 2012; Barro, 2000; Aiyar & Ebeke, 2020).

At the regional level, the assessment of the causes and factors of inequality is important, as it affects the development and implementation of the country's modernization strategy and directions. Researchers based on using methods of analyzing statistical data by regions of Kazakhstan determined the impact of interregional country income inequality on economic growth (Turkebayeva et al., 2022).

Today, there is a need to revise methodological approaches in assessing the population's standard of living and income of the population, and it is essential to determine the patterns of change in the population's well-being and search for ways to increase it. Experts began to be more inclined to believe that official statistics use a methodology based on indicators of inequality only in consumption. In contrast, inequality in the monetary incomes of the population would reflect the situation with the stratification of society in Kazakhstan more accurately.

Many causes of economic inequality are interconnected. An analysis of foreign and domestic scientific literature showed that the main factors affecting inequality in the income of the population are the labor market and wage policy, sources of cash income, education, gender,

health and access to health care, migration (both foreign and domestic), social policy of the state, taxation system, as well as economic growth, globalization, etc. (Mukhamediev, 2016; Chancel & Piketty, 2021).

To eradicate poverty and form a stable middle class, Kazakhstan needs to develop the potential of institutions, making them open and effective for implementing complementary strategic directions. Strategic priorities should include diversification-based economic management, private sector development, foreign trade expansion, and human capital development (World Bank Group, 2018)

Suppose the economy's current growth does not increase the well-being of the bulk of the population and is distributed highly unevenly. In that case, this may have a negative impact on economic growth in the long term.

Firstly, suppose a significant part of the population is unable to receive high incomes and cannot consume a large number of goods and services. In that case, this can lead to a decrease in market demand and a decrease in production. This could lead to slower economic growth in the long run.

Secondly, the uneven income distribution can lead to social and political tension in society, which can adversely affect the investment climate and loss-making of businesses. It could also lead to worse conditions for entrepreneurship and business development, which could slow economic growth (Abaidullaeva, 2022).

Thus, for sustainable economic growth, it is necessary to strive for a more even income distribution and increase the well-being of the bulk of the population. Recently, many studies have been conducted in Kazakhstan on the population's income level. Most of them were based on official statistics, but there were also studies based on sociological surveys and social data analysis (Jumambayev et al., 2022). One of these studies was conducted by the National Statistical Committee of the Republic of Kazakhstan in 2019. It showed that the average per capita yearly income was about 1.3 million tenge. At the same time, the poverty rate in the country was about 9.1%.

In another study conducted by the World Bank in 2018, it was noted that Kazakhstan is one of the leaders in terms of income in Central Asia. However, the average value of per capita income hides significant differences between regions and social groups. Some studies have shown that many Kazakhstanis face low incomes and cannot afford basic needs such as food and housing. Thus, studies on the income level of the population of Kazakhstan indicate that although the average income in the country is relatively high, many citizens face problems related to poverty and lack of basic needs.

3. METHODOLOGY

Over the past few years, the economies of different countries have been developing in extremely difficult conditions. The geopolitical and geo-economic situation in the region is the reason for the socio-economic restructuring of Kazakhstan. Multiple observations, analysis of a large amount of data and various information are necessary to understand the state of affairs correctly.

During the study of the level of income of the population, various methods and approaches are used. One of the most common methods is the analysis of statistics obtained from various sources. These can be data from national statistical services, surveys of the population or data obtained from employers.

Various general scientific and special methods were used when studying the income level and its differentiation. With the help of analysis and synthesis, the methods of forecasting the population's income level were singled out. The scientific method has provided based on

theoretical knowledge to carry out the systematization of materials, to make accessible the new and to expand available knowledge at the expense of empirical data about the investigated problem. The main tools of the scientific method are observations and experiments, based on which hypotheses are put forward, which are confirmed or rejected, which requires collecting additional data for making an effective management decision.

The article, using a systematic approach, studied and analyzed indicators of assessing the standard of living of the population, their integrity and ensuring their structural elements.

Empirical analysis of the income level of the population in Kazakhstan was carried out using the method of economic statistics, graphical and comparative analysis. The analysis of the dynamics of inequality and income differentiation of the country's population has been carried out over the past 10-20 years.

The study used the results of a questionnaire survey within the framework of a grant financing project conducted in 2021, in which about 7.5 thousand respondents took part. The questionnaire survey was conducted to obtain reliable information about the current socio-economic situation and assess the pandemic's negative impact on the population's income level. Further, based on the information received about the income level of the population, decile groups were formed, and the Gini coefficient was calculated to analyze the dynamics of average income in the country and compare it with official statistics. Autoregressive forecasting is based on a statistical study of the dynamics of per capita monetary incomes of the population.

The methodology of the study differs from the novelty we have studied in terms of determining the income gap using statistical forecasting methods to identify factors that affect the income level of the population. Factor forecasting was used to statistically study and model the relationship of average per capita cash income with determining factors (Vaskina, 2016; Vaskina & Naats, 2017). Data from the Bureau of National Statistics, the results of the survey and other materials were provided as sources of information necessary for the systematic analysis of the study.

4. FINDINGS AND DISCUSSION

The country's economic development in 2021 was under the influence of recovery trends after the pandemic shock of the previous year. The population's average per capita cash income amounted to 136.3 thousand tenge and increased in nominal terms by 7.7%, in real terms - decreased by 0.6%. The average monthly salary increased in real terms by 8.3%, amounting to 248.8 thousand tenge.

According to official data, in 2022 in Kazakhstan, almost 1 million people had incomes below the subsistence level. Ensuring sustainable income growth of the country's population is the main task of the state. In this regard, the development by the Government of Kazakhstan of programs to increase the incomes of the population to improve the well-being of citizens is closely related to the development and use of forecasting methods to obtain planned values of the main indicators of the analyzed processes (Ministry of National Economy of the Republic of Kazakhstan, 2022).

The main goal of developing forecasts of socio-economic development is to increase the people's standard of living by achieving sustainable economic growth, a high degree of employment, and price stabilization. Forecasts of the socio-economic development of the state are used by state bodies in making decisions on socio-economic activities (Rudakov, 2022)

Issues of income growth, poverty and the fight against it should be at the center of any socio-economic development forecast and discussed by the authorized body in the first place.

The problem of profitable differentiation of society during the period of ongoing reforms is a determining factor in the country's social climate. A significant gap in the population's income is associated with ongoing institutional changes and the emergence of new sectors of the economy.

In general, the state policy of recent years has been aimed at improving the well-being of residents of Kazakhstan and reducing income inequality. However, despite all efforts, much work remains to achieve a more even distribution of incomes in society (Centras Securities, 2021).

The Government of the Republic of Kazakhstan approved the Comprehensive Plan "Program for Increasing Incomes of the Population until 2029" dated March 28, 2023, No. 246, which emphasizes that as of the third quarter of 2022, the share of the population having incomes below the subsistence level, amounted to 5.3%, however, in thirteen regions, including in the cities of Astana, Almaty, Shymkent, since 2019 there has been an increase in the population with incomes below the subsistence level. The analysis of the current situation showed a low share of wages of workers in the structure of GDP (30.1%) compared to other countries, a negative trend in incomes of the population (nominal incomes of the population are growing, and real incomes are decreasing), there is regional inequality in terms of GRP per capita, the problem of poverty is increasing (Comprehensive Plan of the Government of the Republic of Kazakhstan, 2023).

A subjective integral assessment by an individual of their own life is an assessment that a person gives their life based on their personal sensations and perceptions. This assessment may include various aspects of life, such as income level, health, social relations, work, personal time, etc. A person can score their life on a scale of 1 to 10, where 1 means very low life satisfaction, and 10 means very high life satisfaction.

Subjective integral assessment of an individual's own life is essential for measuring and understanding the quality of life of the general population. This assessment can be used in social and economic research to determine what factors influence people's well-being and what changes in social policy can improve their quality of life.

It is important to note that an individual's subjective integral assessment of their own life is subjective and can vary depending on personal preferences, values, life experience, and other factors that an individual considers essential to their life. The determination by the individual himself of the degree of satisfaction of his needs, and his position in life gives the most reliable picture.

Figure 1 shows the survey results on the subjective assessment of an individual's income level.

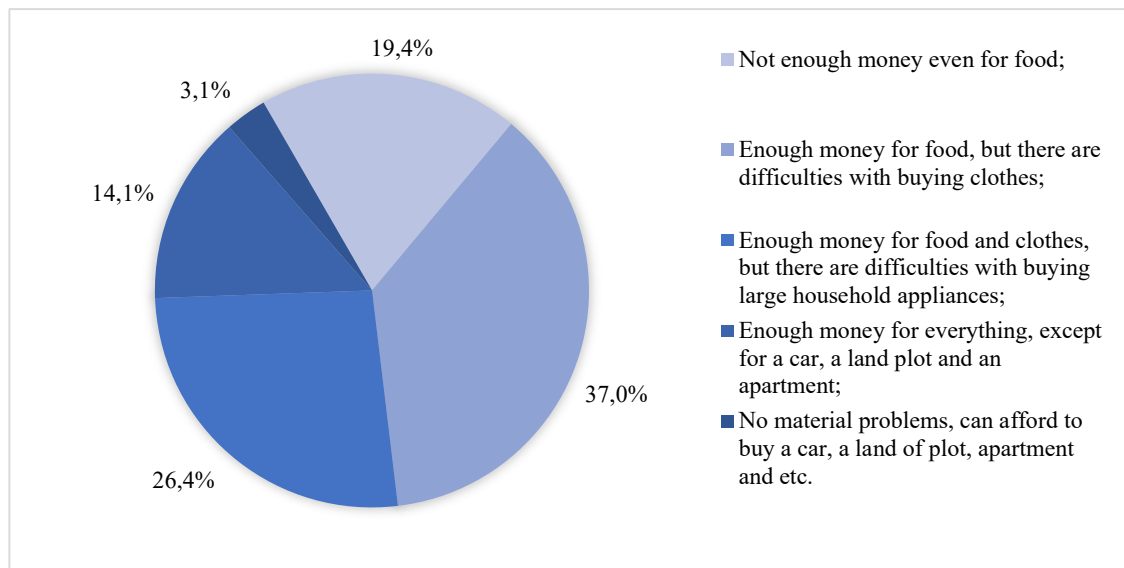


FIGURE 1. Data on the subjective assessment of own income

Note: compiled by the authors

According to the survey results, data on the income level and sources of livelihoods were obtained, and individuals relate to a particular group based on their subjective assessment of material support. As a result of the study, the proposed four conditional social groups were distributed as follows:

- low-income - there are not enough funds for food, clothes and shoes;
- not the poor, but also not the middle class - there are enough funds to buy food and clothes, but there is not enough for durable goods (household appliances, furniture, etc.);
- the middle class - there are enough funds to buy food, clothing and pay for utilities and durable goods. However, difficulties arise in buying new housing or transport;
- the upper class - there are enough funds for a comfortable life and providing yourself with high-quality products, having a job or his own business or property that brings constant income.

According to the survey, 19.4% or 1,452 people noted that there are not enough funds even to purchase food, and 37% or 2,765 respondents noted that they have income to buy food but experience difficulties in buying clothes and shoes. 26.4% or 1971 of respondents experience difficulties only when buying large equipment or durable goods, 14.1% or 1055 respondents noted that the funds are not enough only to purchase new housing and transport, and mainly do not experience problems. Furthermore, only 3.1% or 232 out of 7475 respondents noted that there are enough funds for a comfortable life and do not have material problems. The analysis showed income and expenditure inequality among the respondents.

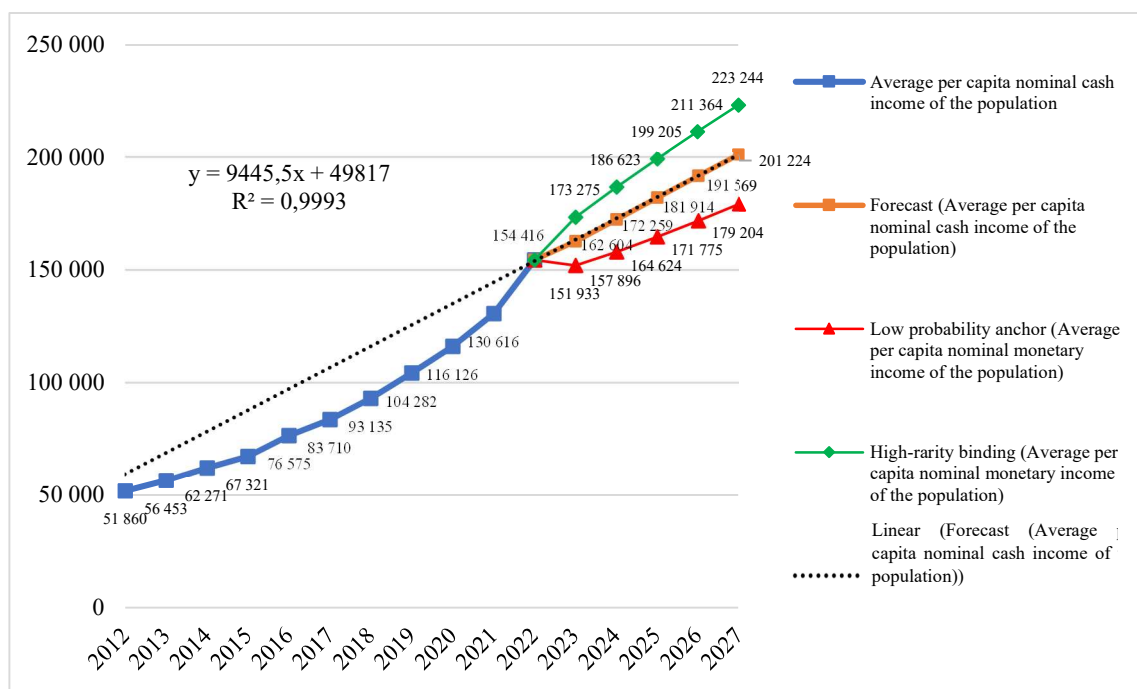


FIGURE 2. Trend model of average per capita nominal cash income of the population

Note: compiled by authors

The most significant shares of the population with income despite the regular efforts of the government to combat income inequality, the differentiation of incomes of the population in Kazakhstan remains one of the main problems of the country's economy.

The source of information on income inequality of the country's population is official statistics. Below the subsistence minimum in the IV quarter of 2022 are observed in Turkestan (8.5%), Mangistau (8.1%) regions, and the smallest - in the city of Astana (2.1%) and in the region of Ulytau (2.2%). There is still a significant differentiation between the share of the population with incomes below the subsistence level in urban and rural areas.

Considering the distribution of households and their population by the amount of income used for consumption, one can note the largest concentration of the population in the range from 40001 to 80000 tenge (54.33% of the population).

According to statistics in Kazakhstan for the 4th quarter of 2022, the average per capita nominal cash income of the population amounted to 172,172 tenge. However, the level of income varies depending on the place of residence, education and employment. For example, in cities, incomes are on average higher than in the countryside. In some regions of Kazakhstan, such as Almaty and Astana, the income level is significantly higher than in other regions of the country (Bureau of National Statistics, 2022).

In addition, there are also other factors affecting income differentiation, such as education and employment. People with high education and highly qualified specialists in the fields of IT, medicine, finance and education, in general, have higher incomes than those who are engaged in unskilled labor.

Substituting the value into the regression equation, we obtain the forecast values in Kazakhstan, shown in Table 1.

TABLE 1. Scenario forecast of the average per capita nominal cash income of the population of the Republic of Kazakhstan for 2023-2026

Year	Options for forecasts of the average per capita cash income of the population, tenge/month		
	Basic	Pessimistic	Optimistic
2023	162 604	151 933	173 275
2024	172 259	157 896	186 623
2025	181 914	164 624	199 205
2026	191 569	171 775	211 364
2027	201 224	179 204	223 244

Note: compiled by authors based on Bureau of National Statistics (2022)

Using the trend models obtained in Excel, the forecast of the average per capita nominal cash income of the population for 2023-2026 was made. The average per capita cash income trend equation is as follows: $y = 9445.5x - 49817$. The approximation factor is 0.9993. From 2012 to 2022, the cash incomes of the population of Kazakhstan tended to increase by 9445.5 tenge per year.

However, it should be borne in mind that this increase (real income growth) will be less by the inflation rate. At the current inflation rate, the number of people living on incomes below the subsistence level is growing, which requires the state to make significant changes to the mechanism for regulating the population's income. For this purpose, it is necessary to identify the factors that dominate the influence on the average per capita income of the population.

The Gini coefficient is the main one according to the differentiation of incomes of the population, this is an indicator of the degree of income inequality in society, which ranges from 0 to 1. The closer this coefficient to one, the more income is concentrated in a separate group of the population, while part of the population is living in poverty.

According to the National Statistical Agency of Kazakhstan for 2022, the Gini coefficient was 0.281.

Figure 3 shows the dynamics of the Gini coefficient from 2000 to 2021 based on the data of official statistics of Kazakhstan. During the analyzed 10-year period, the Gini coefficient increased slightly.

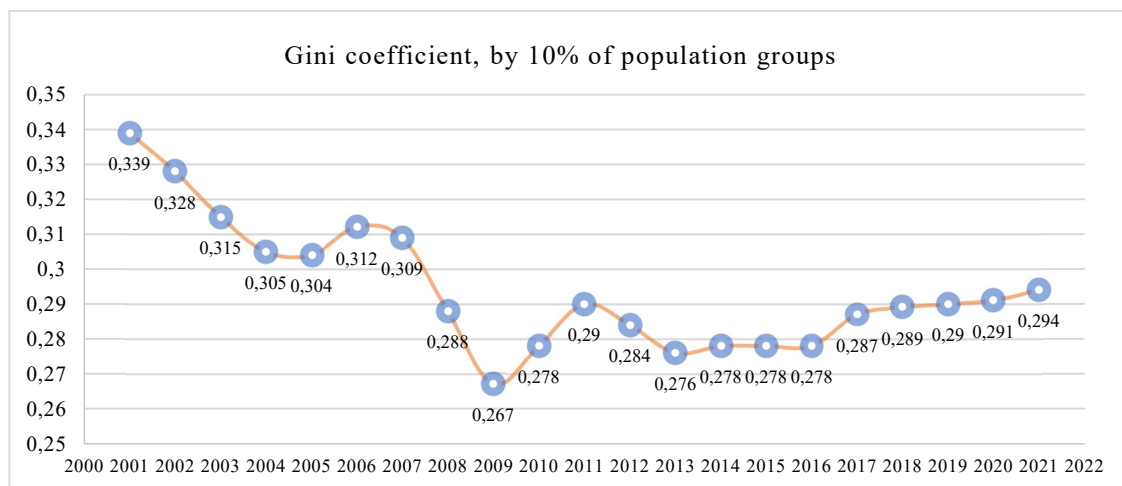


FIGURE 3. Dynamics of the Gini coefficient in Kazakhstan

Note: compiled by authors based on Bureau of National Statistics (2022)

Further, based on surveys on the level of income we surveyed, decile groups were formed to analyze the dynamics of average income and compare with official statistics. The calculation, according to the survey conducted in 2021, made it possible to draw the following conclusions (see Table 2).

TABLE 2. Decile Groups to Determine Gini Ratio by Income of Respondents (Survey Results, 2021)

Decile	Income, tg	Number of respondents	Income share	Cumulative income share	The proportion of the population	Cumulative proportion of the population
1	0	1191	0,00%	0,00%	16,33%	16,33%
2	60000	517	1,93%	1,93%	7,09%	23,42%
3	100000	1284	3,22%	5,14%	17,61%	41,03%
4	150000	1500	4,82%	9,97%	20,57%	61,59%
5	250000	1226	8,04%	18,01%	16,81%	78,40%
6	300000	600	9,65%	27,65%	8,23%	86,63%
7	400000	515	12,86%	40,51%	7,06%	93,69%
8	500000	150	16,08%	56,59%	2,06%	95,75%
9	600000	138	19,29%	75,88%	1,89%	97,64%
10	750000	172	24,12%	100,00%	2,36%	100,00%
Total		7293	100,00%		100,00%	

Note: compiled by authors

7293 respondents were divided into ten decile groups with different incomes. Notably, 16.3% or 1,191 respondents, responded that they had no income. The Gini coefficient for the formed decile groups was 0.735, while according to official statistics for 2021, the coefficient was 0.294.

The Lorenz curve, reflecting inequality in the income distribution in society, is presented in Figure 4.

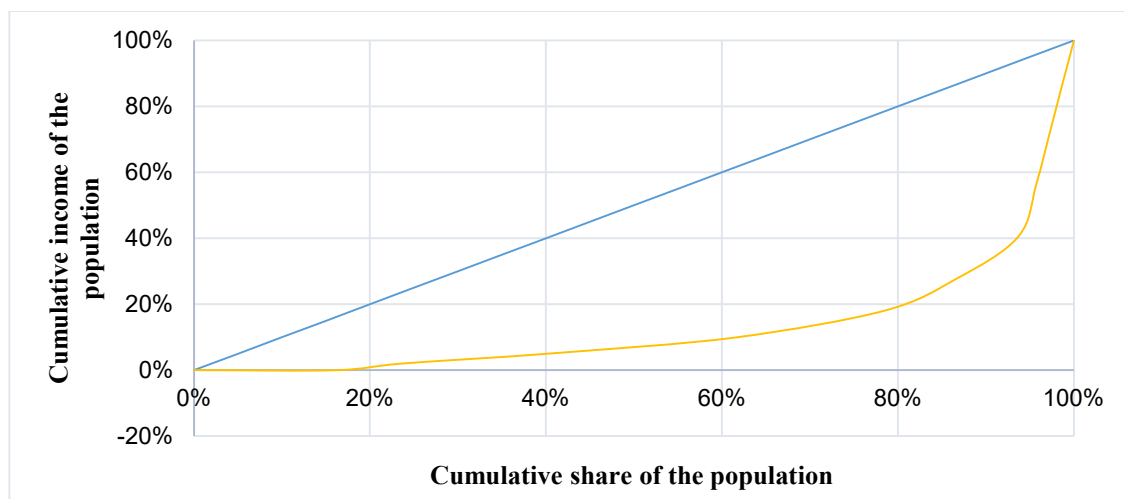


Figure 4: Lorenz Curve

Note: compiled by authors

By bending the line, you can understand the inequality level in respondents' income in 2021. According to the survey results, the largest group of respondents, 1,500 out of 7293 respondents (20.57%), have an income of 150 000 tenge per month.

It is possible to stop this trend in the growth of the number of people with incomes below the subsistence level by amending the mechanism for regulating the population's income. To do this, it is necessary to identify the factors that have the most significant impact on the population's income.

Multiple regression analyses were performed to determine the relationship between the dependent variable and several independent variables using the statistics for 2011-2021 in Table 3.

TABLE 3. Factors for the model of formation of average per capita incomes of the population

No.	Key Figure, Unit of Measure	Designation
1	Average per capita nominal cash incomes of the population, tenge/month	Y
2	Average monthly nominal salary of one employee, tenge/month	x1
3	Value of the subsistence minimum, tenge/month	x2
4	The total population with incomes below the subsistence minimum, people	x3
5	Gini ratio, by 10% of the population groups	x4
6	Minimum wage (Minimum wage), tenge/month	x5
7	Minimum pension, tenge/month	x6
8	Consumer spending of the population, average per capita, tenge/month	x7
9	The life expectancy of the population at birth, years	x8

Note: compiled by authors

In this case, the average per capita nominal cash income of the population ("y") can be considered as a dependent variable, and the average monthly nominal salary of one employee ("x1"), the subsistence minimum ("x2"), the total population with incomes below the subsistence minimum ("x3"), Gini coefficient, by 10% of population groups ("x4"), minimum wage ("x5"), minimum pension ("x6"), consumer spending of the population, average per capita ("x7") and population life expectancy at birth ("x8") - as independent variables.

A multiple regression model can be used to determine which independent variables impact the population's average per capita nominal cash incomes. However, before constructing a model, correlation analysis must be performed to select relevant factors for inclusion in the model. You can use Excel to compute a matrix of pairwise correlation coefficients. Based on this matrix, you can predefine the number of factors that should be included in the model, for example, in this case, these are seven factors for predicting the dynamics of the average per capita cash income of the population.

The matrix of pairwise correlation coefficients shows how strongly each of the independent variables and the dependent variable are related. For example, the correlation coefficient between the average monthly nominal wage of one worker and the average per capita nominal cash income of the population is 0,992888912, indicating a very strong positive correlation between these variables. Also, the correlation coefficient between the subsistence minimum and the average per capita nominal monetary income of the population is 0,996432415, which also indicates a very strong positive correlation. Similarly with the Gini coefficient, 10% of the population groups ("x4" = 0,864248619), minimum wage (MIP) ("x5" = 0,951228347), minimum pension size ("x6" = 0,994999859), average per capita consumer expenditure ("x7" = 0,998253727), indicating a very strong positive correlation with the average per capita nominal cash income of the population.

The average degree of dependence is expressed between the average per capita nominal monetary income of the population and the total population with incomes below the subsistence minimum ("x3" = 0,699544574).

However, it should be noted that the correlation coefficient between the expected life expectancy of the population at birth and the average per capita nominal monetary income of the population is only ("x8" = 0,159239624), which suggests that the two variables are weakly related.

The multiple regression model can be represented in Table 4.

TABLE 4. Results of calculation of regression model parameters

Par.	Coefficient	Standard error	t-statistic	P-Value	Lower 95%	Upper 95%
Y	-139210,0666	16390,1106	-8,493540404	0,013580165	-209731,0207	-68689,11248
X 1	0,750488866	0,073114933	10,26450874	0,009358232	0,435900701	1,06507703
X 2	-5,712208554	0,777724718	-7,344769198	0,018037165	-9,058487936	-2,365929173
X 3	0,018865386	0,010318374	1,828329301	0,209010994	-0,025530995	0,063261766
X 4	522480,1601	63791,48194	8,190437723	0,014581596	248007,5662	796952,7539
X 5	0,242270745	0,034764054	6,969001448	0,019975256	0,092693092	0,391848398
X 6	1,876974821	0,124760043	15,04467922	0,00438902	1,340175683	2,413773959
X 7	0,074016213	0,011556729	6,404598947	0,023522252	0,024291622	0,123740804

Note: compiled by authors

Based on the results of the calculation, it can be seen that all variables except X3 are significant (P-value < 0.05), therefore, the model is suitable for practical use. From the results of the calculations, we get the multiple regression equation without the participation of this variable:

$$Y = -139210,0666 + 0,750488866X1 - 5,712208554X2 + 522480,1601X4 + 0,242270745X5 + 1,876974821X6 + 0,074016213X7$$

Thus, six factors were statistically significant in this model. These are: Average monthly nominal salary of one employee, Subsistence minimum, Gini coefficient for 10% of the population groups, Minimum wage, Minimum pension, Consumer spending of the population on average per capita.

According to the results of the study, 3 out of 6 significant factors are the minimum social standards of the state - the subsistence minimum, the minimum wage, and the minimum pension. Hence the conclusion is that it is necessary to improve the strategic directions of state policy regarding improving the standard of living and income of the population by increasing the size of social standards.

5. CONCLUSIONS

To sum up, the following study has focused on world experience in addressing gender inequality in the labor market and its effective adaptation to the conditions of Kazakhstan.

Based on the study, the following results were obtained.

In recent years, Kazakhstan has seen a deepening of the problem of poverty and income inequality in the country's regions. Of the 7293 respondents who answered the survey questions, 57% of the surveyed citizens do not have the opportunity to spend their income in addition to buying food and clothes.

Tracking the total population with incomes below the subsistence level can help identify trends and inform policy decisions aimed at reducing poverty and promoting fairer income distribution. It is important to note that the living wage is often set at a very low level, and even if the average per capita nominal cash income is above this level, there can still be significant income inequality and poverty in the population.

With rising incomes, consumer spending per capita tends to increase. This is because as people make more money, they tend to have more disposable income to spend on goods and services, which can lead to more overall consumer spending in the economy. In addition, higher incomes can lead to increased confidence and optimism among consumers, which can further increase spending.

The relationship between the average per capita nominal monetary income of the population and the minimum wage can be complex and multifaceted. However, in general, it could be expected that an increase in the minimum wage could have positive consequences for the average per capita nominal cash income of the population. This is because raising the minimum wage is likely to result in higher wages for workers earning at or near the minimum wage, which in turn could lead to overall wage increases across the economy. The same trends apply to pensioners who receive the minimum pension. With the growth of the minimum pension, it will be influenced by various economic factors, such as inflation, changes in the labor market, demographic shifts, which, ultimately, can lead to a decrease in their standard of living. Thus, the three social standards of the state - the size of the subsistence minimum, the minimum wage, and the minimum pension - must be revised as indicators of the size of which the level and quality of life of the population and the economic growth of the country depend.

References

1. Aiyar, S., & Ebeke, C. (2020). Inequality of opportunity, inequality of income and economic growth. ERN: Wealth, 034. <https://doi.org/10.5089/9781484396988.001>
2. Abaidullaeva, M. M. (2022). Modern manifestations of intra-country economic inequality on the

- example of the Republic of Kazakhstan. *Young scientist*, 15 (410), 77-82. (in Russ.)
3. Barro, R. J. (2000). Inequality and Growth in a Panel of Countries. *Journal of Economic Growth*, 5(1), 5-32. <https://doi.org/10.1023/A:1009850119329>
 4. Breunig, R., & Majeed, O. (2020). Inequality, poverty, and economic growth. *International Economics*, 161, 83–89. <https://doi.org/10.1016/j.inteco.2019.11.005>
 5. Bureau of National Statistics (2023). [cited March 20, 2023]. Available: <http://www.stat.gov.kz> (in Russ.)
 6. Chancel, L., & Piketty, T. (2021). Global Income Inequality, 1820–2020: The persistence and mutation of extreme inequality. *Journal of the European Economic Association*, 19(6), 3025–3062. <https://doi.org/10.1093/jeea/jvab047>
 7. Government of the Republic of Kazakhstan. (2022). Comprehensive plan «Program for increasing incomes of the population until 2029». [cited March 10, 2023]. Available: URL: <https://adilet.zan.kz/rus/docs/P2200000218> (in Russ.)
 8. Dmitrichenko, L., Karpukhno, I., & Guchmazova, G. (2021). Fiscal policy of the state in regulating the income of the population. *Bulletin of the Institute of Economic Research*, 2(22), 154-162. (in Russ.)
 9. Faggian, A., Michelangeli, A., & Tkach, K. (2023). Income inequality in Europe: Reality, perceptions, and hopes. *Research in Globalization*, 6, 100118. <https://doi.org/10.1016/j.resglo.2023.100118>
 10. Forecast of socio-economic development of the Republic of Kazakhstan for 2023–2027. Official website of the Ministry of National Economy. [cited March 20, 2023]. Available: <https://www.gov.kz/memleket/entities/economy/documents/details/26451?lang=ru> (in Russ.)
 11. Hoebel, J., Michalski, N., Diercke, M., Hamouda, O., Wahrendorf, M., Dragano, N., & Nowossadeck, E. (2021). Emerging socio-economic disparities in COVID-19-related deaths during the second pandemic wave in Germany. *International Journal of Infectious Diseases*, 113, 344-346. <https://doi.org/10.1016/j.ijid.2021.10.037>
 12. Joyce, R., & Xu, X., (2019). Inequalities in the twenty-first century: introducing the IFS Deaton Review. The Institute for Fiscal Studies, 33. <https://doi.org/10.1920/BN.IFS.2019.IDRBN1>
 13. Jumambayev, S., Dzhulaeva, A., Baimukhanova, S., Ilyashova, G., & Dosmbek, A. (2022). Globalne nierówności dochodów – studium przypadku krajów OECD i Kazachstanu. *Comparative Economic Research. Central and Eastern Europe*, 25(4), 179–203. <https://doi.org/10.18778/1508-2008.25.35>
 14. Kirton, J., & Larionova, M. (2012). To Growing Together from Growing Apart: G20 Governance for More Equitable Economic Growth. G20 Research Group., University of Toronto, International Organizations Research Institute, National Research University Higher School of Economics, 43.
 15. Mukhamediev, B.M. (2016). *Economic stratification and income inequality in Kazakhstan: monograph*. Almaty, Kazakh University. (in Russ.)
 16. Macroeconomic review (2021). Centras Securities. [cited March 30, 2023]. Available: https://cesec.kz/sites/default/files/files_pdf/makro.obzor_rk_za_2021.pdf?ysclid=lh54w344gq194658437
 17. Plümper, T., & Neumayer, E. (2020). The pandemic predominantly hits poor neighbourhoods? SARS-CoV-2 infections and COVID-19 fatalities in German districts. *European Journal of Public Health*, 30(6), 1176-1180. <https://doi.org/10.1093/eurpub/ckaa168>
 18. Rudakov, M. F. (2022). Forecasting the national economy: a course of lectures. Groki, BGSHA. (in Russ.)
 19. Su, D., Alshehri, K., & Pagán, J. (2022). Income inequality and the disease burden of COVID-19: Survival analysis of data from 74 countries. *Preventive Medicine Reports*, 27, 101828. <https://doi.org/10.1016/j.pmedr.2022.101828>
 20. Turkebayeva, K., Bekturganova, M., Sabden, O., Dauliyeva, G., & Kenzhegulova, G. (2022). Assessment of the relationship between inequality, income and economic growth in the regions of Kazakhstan. *Problems and Perspectives in Management*, 20(2), 511-521. [https://doi.org/10.21511/ppm.20\(2\).2022.42](https://doi.org/10.21511/ppm.20(2).2022.42)
 21. Turkebayeva, K.T., & Wolff, C. (2022). The impact of interregional and country inequality on the dynamics of economic growth in Kazakhstan. *Economics: the Strategy and Practice*, 17(2), 6-16. <https://doi.org/10.51176/1997-9967-2022-2-6-16>
 22. Vaskina, A.V. (2016). Vaskina A.B. Multiple regression and some of its applications. *Natural*

- sciences - the basis of the present and the foundation for the future: Materials of the annual scientific and practical conference of the North Caucasus Federal University "University Science - to the region". Stavropol, Publishing House of KFU. (in Russ.)
23. Vaskina, A.V, & Naats, V.I. (2017). Modeling and computational experiment in the problem of forecasting the average per capita income of the population based on the methods of correlation and regression analysis. Physical and mathematical sciences. *Science, innovation, technology, 1*, 39-52. (in Russ.)
 24. UN (2022). World social report 2020 inequality in a rapidly changing world. [cited April 20, 2023]. Available: URL: <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/01/World-Social-Report-2020-Full-Report.pdf>
 25. World Bank Group (2018). A new growth model for the formation of a stable middle class. Comprehensive socio-economic analysis for Kazakhstan. [cited March 10, 2023]. Available: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/664531525455037169/kazakhstan-systematic-country-diagnostic-a-new-growth-model-for-building-a-secure-middle-class>

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