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Master's Thesis of Public Administration

The Impact of Poverty on Education System

Analyzing the contemporary education in Kyrgyzstan

**빈곤이 교육 시스템에 미치는 영향
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The Impact of Poverty on Education System

Analyzing the contemporary education in Kyrgyzstan

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Abstract

The Impact of Poverty on Education System

Analyzing the contemporary education in Kyrgyzstan

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Recently, the problem of increasing the number of poor people due to the global political crisis, the impact of the coronavirus, as well as climate change in the world is one of the most urgent. This study aims to gain an understanding of poverty and education, as well as the nature of the relationship, using the example of the Kyrgyz Republic. The main purpose of this thesis is to determine the impact of poverty on the quality of the educational system in the Kyrgyz Republic and to find out what is the relationship between the mentioned indicators.

The analysis had been conducted basing on the Demographic and Health Survey in the Kyrgyz Republic. This survey was conducted by the National Statistical Committee of the Kyrgyz Republic. In this study the following important variables were tested, such as: Education attainment, Wealth, Place of living, Household Head. In order to obtain reliable results that show the feasibility of the analysis, as well as the real relationship between the variables, several types of analysis were carried out: Pearson correlation analysis, Linear regression analysis.

The most important thing was found out - poverty is a significant barrier to education for the population and there is a negative correlation between poverty and education attainment.

This study can serve as a useful source in order to get an idea of the current situation in the Kyrgyz Republic, in particular on the main factors influencing the rate of

school attendance of children, the impact of income on this process. At the end of the work, recommendations were formulated to improve the current situation in the field of research, which can be used in carrying out reforms in the field of social protection of the population of the Kyrgyz Republic.

Keyword: poverty, education, wealth, household, school drop out.

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Chapter 1.

Introduction

The Context:

In today's world, in the era of globalization, states often resort to joint efforts to solve large-scale both short-term and long-term problems as well as. There are many international platforms for discussing and making decisions on global issues. Based on the principles of mutual respect and mutual assistance, world leaders have invented various solutions to achieve livelihoods favorable to all. One such solution is the 2030 Sustainable Development Goals. In September 2015, at the World Summit on Sustainable Development under the auspices of the United Nations in New York, member states formally adopted the 2030 Agenda for Sustainable Development. The Sustainable Development Goals are designed to give an incentive for development to all nations involved, to take preventive measures to preserve as well as restore the planet--thereby doing everything possible to create decent living conditions for future generations. There are 17 goals on the agenda, including a new global education goal (SDG 4). This goal - achieving inclusive and equitable quality education and promoting lifelong learning opportunities for all.

Background

In my dissertation, for the beginning, it is necessary to initially understand the situation of the education sector in the Kyrgyz Republic, which gained independence in 1991 and embarked on the path of democratic development of the state.

To this end, I would like to pay more attention and give a clear and complete picture of what state officials were confronted with after the collapse of the Soviet education system.

In the center of Central Asia, there is a landlocked country known as the Kyrgyzstan. Its borders with Kazakhstan to the north, Uzbekistan to the west, Tajikistan to the southwest, and the People's Republic of China to the east are all massive mountains. Kyrgyzstan, a country in Central Asia with stunning beautiful landscapes and a proud nomadic culture, was conquered by Russia in 1864 and gained independence from the Soviet Union in 1991. Having more than 90 ethnic groups the Kyrgyz Republic consists of 6 millions peoples, a lower middle-income country who's economy are in a risk of external shocks since having heavy dependency on remittances (almost 25% of GDP) and gold production (10% of GDP – source: world bank). It is eminent that institutional strengthening and policies to develop the private sector, spur international trade, and encourage fiscally sustainable energy production are all necessary for strong and sustainable economic growth.

Following independence in 1991, a shortage of resources led to a decrease in both the quantity and quality of educational offerings. The gross domestic product (GDP) dropped by 50% between 1991 and 1995, and so did government revenue. From 8–9% of GDP in the early 1990s, the education budget dropped precipitously before slowly rising again from 4% of GDP in 1999 to 6% of GDP in 2010. A large boost in education system financing over the next five years was unlikely given the severe financial position.

At that time, school enrollment declined. Therefore, the government has focused its efforts on primary and lower secondary education, increasing the number of institutions from 1,759 in 1990 to 2,204 in 2010 and maintaining high gross enrollment rates (97% in 2010) in basic education (grades 1-9). In urban settings, the gender balance is about the same, although there are slightly more boys out of school than girls (Koichuev, 2006).

In the education system, there were problems with the quality of education. The Kyrgyz Republic in 2006 and 2009 took part in an international program to assess the educational achievements of 15-year-old students.

The Kyrgyz Republic ranked last among the participating countries. The results showed that 80-85% of 15 year old students did not even have the basic knowledge of math, science and reading skills (PISA, 2010). The low quality of learning at school was due to several factors. They include the low qualifications of teachers, outdated curricula, insufficient number of textbooks, and a shortage of teaching and learning materials (ADB, 2013).

The poor quality of schooling was due to several factors, including the low qualifications of teachers, outdated curricula, the shortage of textbooks, and the poor relevance of the content of the textbooks to the requirements of the curriculum (Mambetaliev, 2002).

Apart from these economic perspectives there are some concerns also underlying as a barrier of the development of the country such as privatization of state-owned enterprises, expansion of democracy and political freedoms, inter-ethnic relations, and terrorism¹. In 1992, Kyrgyz Republic joined the UN and committed to the implementation of the 2030 Agenda for Sustainable Development. Despite several obstacles, the Kyrgyz Republic made outstanding progress in eradicating poverty. Since the early stages of implementing the Sustainable Development Goals as a framework for transformation, the Kyrgyz Republic has ratified a number of significant international agreements, including the United Nations Convention on the Rights of Persons with Disabilities and the Paris Agreement on Climate Change,

¹ CIA - The World Factbook

providing complementary opportunities to accelerate progress across the Sustainable Development Goals. In terms of education over the last six years, school enrollment has reached 99 percent, with over 1,268,000 students enrolled. Gender disparities in school attendance rates do not emerge until nearly grade 9, with the gender equality index at 1.00 in elementary schools, 1.01 in primary schools, and 0.97 in high schools (Government of KR, UN, 2020). But in the other hand net enrollment ratio declined an average of 87%. The reason behind is the number of adolescent forced to proceed to professional education at an earlier age due to material incentives. The share of pupils not attending schools remained same, but the composition have changed over time and the number of non-going pupils have increased where family financial difficulties and circumstances are playing vital role as a barrier. The government have already taken multiple initiatives to address issues related to education sector, such as adoption of inclusive education, homebased schooling and digitalizing and multilingual education platform, Teachers training and salary equality etc. But despite of government's willingness and numbers of initiatives Quality Education seems far way to go since its still facing numerous challenges such as unequal opportunity for the children who comes from low-income family, lack of functional literacy among school children specially a huge gap could be seen between general education institutions of rural versus urban school in terms of quality education.

The Purpose of Research

The main purpose of this thesis is to determine the impact of poverty on the quality of the educational system in the Kyrgyz Republic and to find out what is the relationship between the mentioned indicators. Before further explaining let us have a quick look at the education system of Kyrgyz Republic.

- Pre-primary education, which includes both pre-school and preparatory school

classes preceding primary schooling, is available to children aged 3 to 6 (this is further discussed below).

- In the Kyrgyz Republic, primary education is required and typically lasts from 7 to 10 years (covering grades 1 to 4).
- In the Kyrgyz Republic, lower secondary education is also required and typically lasts from 11 to 15 years (covering grades 5 to 9).
- General education schools, lyceums, vocational schools, and specialized technical schools all offer upper secondary education, which is optional.
- Universities, specialized technical institutions, and vocational schools all offer postsecondary education in the Kyrgyz Republic.

The secondary purpose of this thesis is to ensure that a clear understanding of the policies and strategies and alignment with international standards and guidance that can help improve education in Kyrgyz Republic. The justification for seeking improvement in education in Kyrgyz Republic is that most of the schools do not perform well and that is attributable to many factors but includes the poor standards of education offered to most students. Many strategies and policies used globally can be applied to the task of improving education in Kyrgyzstan. This thesis would analyze the how far the MDGs intervention worked for the education sector and what kinds of changes so far after SDGs came into action specially in education sector. The country has adopted a new comprehensive education development strategy for 2012–2020 with the aim of creating a quality and effective education system as a main tool for promoting the social political development of the country, according to the "Global Initiative on Out-of-School Children (OOSCI)". This thesis also be focusing on the progress of that initiative as a whole.

Conceptual framework

The accountability theory served as the study's theoretical framework. According to this theory, a person can be held accountable by justifying their actions toward others (Jamal, et al., 2014). In this case, the Kyrgyz Republic's government can be held accountable for its involvement in SDG 4 initiatives aimed at improving education quality. The government is responsible to the electorate and must demonstrate this. As a result, the accountability theory is an important tool in this research, because the government has a responsibility to the country's students.

Push-Pull Factors:

Poor quality education, a lack of relevance in lessons, the language used, physical accessibility issues, and the no desire to study all factors that "push" children out of school.

Economic and other issues associated with poverty and mainly family are pull factors that "pull" children out of school. Although government of Kyrgyzstan has taken multiple initiatives to address these issues, like homeschooling support for children with disabilities, profession development of the schoolteachers, digitalization of the education platform seems impressive but deep down inside address extreme poverty is somehow missing. It is also mentionable that no matter how much incentive government offer (free schooling, stipend etc) with this kinds of initiatives some "opportunity cost" also stay underlyingly related to which most of the time is impossible to carry the cost of the poor household. Therefore, not only schooling but also helping people who are living under extreme poverty line is also necessary to get the children into the mainstream schooling.

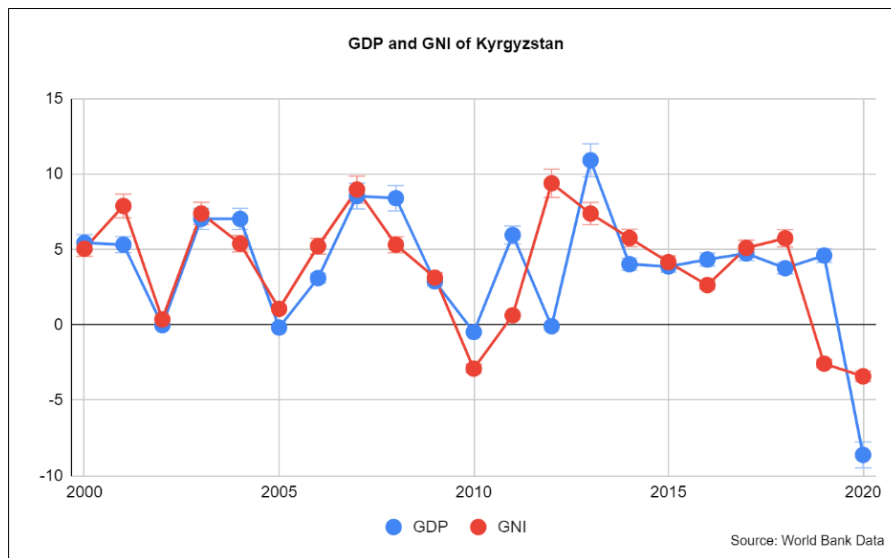
Research Methodology

"Descriptive studies," according to Bickman and Rog (Bickman & Rog, 1998), can answer questions like "what is" or "what was." Descriptive studies are often the most effective methods for gathering data that demonstrates relationships and describes the world as it is. Because the topic of study is one in which many scholars have previously participated in order to contribute to the solutions to Kyrgyzstan's educational problems, the study primarily focused on obtaining qualitative data. The methodology of a study is the process by which a researcher gathers data that is necessary for developing solutions and making recommendations for future action in order to effect change (Leatherdale, 2019). A literature review of previous work on education improvement in Kyrgyzstan was carried out. The goal of a literature search is to gather information about the topic at hand by utilizing and compiling data from previous scholars who have conducted research in the same field or topic.

Research subject (Research Hypothesis) and Research Method

With the trend of GDP and GNI it apparent that Kyrgyz Republic has already been stumbled a lot and recently has gone to below standard line. No doubt economy has a direct impact on the socio-economic life of the citizen of the country. Moreover, like every country of the world the impact of the Covid19 has created a lot of chaos on the economic progress of the country. However, it is assertive without proper recovery plan and procedure the country would face lots of difficulties to achieve its' desired goal by 2030 although the government is fully committed to the achievement of SDGs target, but recent trend shows that the achievement is far away to be achieved.

Graph 1. GDP and GNI of Kyrgyzstan



Objective: The most decisive objective of this thesis is to focus on the exact role of the government especially analyzing government policies and governance to enhance the conditions of the poor people so that to ensure quality education in Kyrgyzstan.

Hypothesis (H) = Poverty has the direct negative relationship with education, and it is one of the main barrier on achieving SDG4 target in Kyrgyzstan.

Data Description and Sample Selection:

The secondary data set would be used in this study mainly comes from Multiple Indicator cluster Survey (Praslova, 2020) 2019 was carried out in 2019 by UNICEF co-funded by European Union. Moreover, Voluntary National Review (Government of KR, UN, 2020) on SDG 2020 would also be used to cross check the data along with the Monitoring of the Sustainable Development Goal Indicators in the Kyrgyz Republic 2014-2018 by UNICEF (NSC, 2020).

The National Statistical Committee of the Kyrgyz Republic and the Ministry of

Health of the Kyrgyz Republic performed the Demographic and Health Survey of the Kyrgyz Republic 2012 (DHS) from August to December 2012. Under the MEASURE DHS project, the United States Agency for International Development (USAID) sponsored DHS 2012. Through the USAID-funded MEASURE DHS program, ICF International offers financial and technical support for the global application of population and health research. The United Nations Population Fund provided further funding and assistance for the DHS's implementation (UNFPA).

Table 1. Population of the Kyrgyz Republic

Population:	Number	Year
Population living there (estimates at the beginning of the year, persons)	6,389,500	2019
Out of this number:	3,042,510	
• Men	3,097,690	
• Women	1,218,778	
• Children under 18 years of age		
Life expectancy at birth (number of years)	71,5	2018
Out of which:		
• Men	67,4	
• Women	75,6	
External migration (people)		2018
• Number of arrivals	1,687	
• Number of departures	7,077	

• Migration gain	-5,390	
Internal migration (people)		
• Number of arrivals	39 801	2017
• Number of departures	36 977	
• Migration gain	2 824	

Source: National Statistical Committee of the Kyrgyz Republic

Correlation analysis using interval/ratio variables (Demographic and Health survey in the Kyrgyz Republic).

To analyze and determine result I will use coefficient of correlation method. As we know the precise measure that determines the strength of the linear link between two variables is the correlation coefficient. The answer would provide me a clear grasp of where our nation is now standing in terms of high-quality education because it is calculated as the ratio between the covariance of two variables and the product of their standard deviation. In this analysis value X will be polytomous variable with multiple unordered categories represented by X_1 for child characteristics, X_2 for parent characteristics and X_3 for household characteristics where Y would be represented number of dropout children. The equation will be as follows

$$r = \frac{\sum (x_i - \bar{x}) (y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

r = correlation coefficient

x_i = values of the x-variable in a sample (x_1, x_2, x_3)

\bar{x} = mean of the values of the x-variable

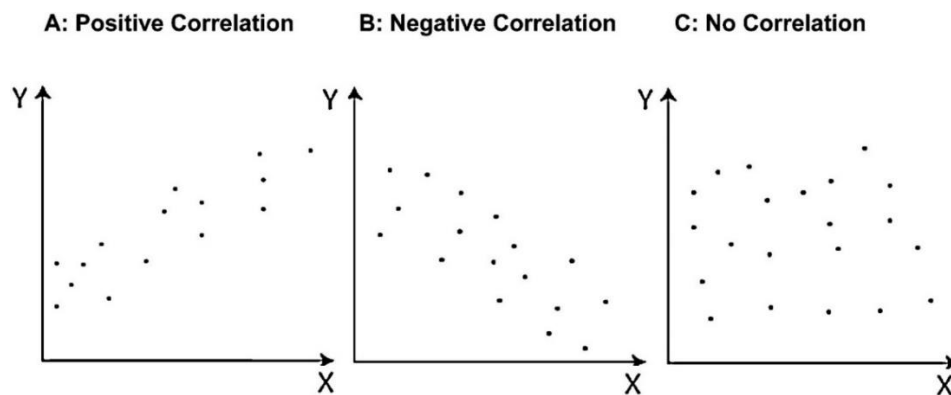
y_i = values of the y-variable in a sample

\bar{y} mean of the values of the y-variable

According to Figure 1A, X and Y have a positive linear relationship in which as X rises, Y goes ahead. According to Figure 1B, there is a negative linear relationship whereby as X rises, Y falls. Figure 1C demonstrates that the graph's dots are randomly dispersed and don't appear to represent any linear relationships. In this thesis the similar secondary data's from three main sources would be analyzed to see whether there is any relation among the variables or not (e.g., poverty vs education, parents education vs children education, family size vs education etc).

Software of analysis to be used are the followings: STATA, SAS ODA

Figure 1. Correlation types



Chapter 2.

Literature review

The issue of poverty in Kyrgyzstan

One of the main problems of sustainable development is a poverty in all its forms. Poverty is a chronic problem, which is almost impossible to completely eradicate, but at the same time, the task of the state is to reduce them as much as possible (National State Committee, 2020).

The transformational processes that took place in the 1990s led to changes in the incomes of the population, leading to the most sad consequences - the stratification of society into rich and poor (Orozbaeva, 2001). The specifics of the economic of that period is that most of the population, mainly its socially vulnerable strata, from a relatively normal state for a short period, found themselves in a position of poverty, when the satisfaction of minimal needs becomes problematic.

The high level of poverty among the majority of the population is the result and expression of a deep crisis in which the economy of the republic found itself. And at the same time, this poverty is one of the main factors hindering the recovery and development of the economy. Low incomes severely limit the population's access to basic needs as well as other essential services such as healthcare, education and development.

General data on the incomes of the population cannot hide the fact that poverty embraces the broadest masses of the republic's population. Extreme poverty extends not only to disabled elderly people, disabled people and children, but even to the working part of the population. The low level of income is a direct consequence of the unfavorable state of the economy, its inability to provide sufficient and full-

fledged employment, the necessary level of earnings and incomes of the population (Orozbaeva, 2001).

Poverty in modern Kyrgyzstan is determined by political, economic and ideological reasons. It is characterized by the originality of social differentiation with demographic, regional, ethnic and other features. At the same time, it should be emphasized that Kyrgyzstan, in terms of its economic and social indicators, was poor even before gaining independence.

The first poverty survey in Kyrgyzstan was conducted by the World Bank in 1993. The National Statistical Committee of the Kyrgyz Republic began to implement the "Poverty Monitoring" component, within which four surveys were conducted (World Bank, 2003). The survey collected household consumption data needed to classify families by poverty level in order to obtain a database for poverty analysis (indicators of employment, wages and incomes, social expenditures, nutrition, health, family planning, education, housing conditions in as a whole for the republic), as well as determining its causes.

The high level of unemployment in Kyrgyzstan has a special impact on the growth of the number of poor people. At the same time, cyclical unemployment associated with a decline in production leads to a decrease in demand for goods and services, making it difficult for the republic's economy to emerge from a long economic decline. The main reasons for the increase in the unemployment rate are changes in the demographic composition of the labor force (the share of women and youth has increased, the share of which in the total number of unemployed is traditionally high). Thus, unemployment has had a particularly painful impact on socially vulnerable groups.

Also, in this study, attention was paid to the National Program for Overcoming

Poverty "Araket" for 1998-2005, which was approved by the President of the Kyrgyz Republic in 1998 (Ministry of Justice of KR, 1998). In this program, the main provisions, the structure of poverty in the country were determined, and the concept and extent of poverty, categories were also reflected for the first time. The main part of the Program is occupied by ways and measures to overcome poverty, as well as the socio-economic efficiency of the Program.

Also, my attention was paid to how the categories and causes of poverty in the Kyrgyz Republic were formulated in the Program. According to this Program (Ministry of Justice of KR, 1998), two categories can be conditionally distinguished among the poor citizens of the republic - disabled and able-bodied. The first category consists of disabled citizens and other socially vulnerable groups of the population: large families and single-parent families, the disabled and single pensioners. In conditions of high inflation, accompanied by a drop in the real cost of social payments and benefits, as well as in connection with the reduction in the availability of preschool institutions, the difficulties of finding suitable work for large and single mothers, the difficulties of such families have increased even more and poverty among them has expanded.

Disabled people at that time made up 3% of all the poor, but the prevalence of poverty among this most vulnerable category exceeded 70%. The main reason for their poverty is the insufficient amount of pensions paid and the difficulty in finding employment for disabled people who retain the ability to work. A special category of disabled citizens are former employees who have lost the opportunity to work as a result of an occupational disease or work injury.

Also, high-altitude, remote and hard-to-reach settlements also represented a zone of mass poverty. Opportunities for productive agriculture there were extremely limited.

The economic potential of these regions has been undermined in recent years by a significant reduction in the number of livestock. The situation was seriously aggravated by the extremely low level of development of the industrial and social infrastructure. The movement of the population from many of these regions took on a massive character, with the youngest and most economically active part of the population leaving first of all.

National educational programs and strategies:

As in many states, the Government of the Kyrgyz Republic at the initial stage developed several fundamental documents in order to develop the country at the national level. Among them there are country development strategies, concepts, strategies for the development of the education sector and other programs. I would like to focus on a few of them in order to get acquainted with the main priorities of the Government in the field of development of the educational sector.

The Country Development Strategy, which outlines the main areas of the Kyrgyz Republic's development and operations for the years 2007 to 2010, is the most significant conceptual document representing the country's medium-term vision. By ensuring sustainable economic growth, fostering conditions for full-time work, attaining high and steady wages, gaining access to a variety of social services, and upholding high living standards in a healthy environment, the CDS seeks to improve the level and quality of life of residents (Ministry of Justice of KR, 2008).

Without any doubt, in this strategy, attention was paid to one of the important areas as education. Given the constitutional guarantees to ensure basic general education, the need of the country's economy for qualified workers with sufficient general education and the ability for further training/retraining, limited budget state budget, the need to achieve the Millennium Development Goals, ensuring accessibility and

improving the quality of basic secondary education, primary and vocational education are the main strategy priorities.

According to this document the main goal of the Country Development Strategy in the field of education is to create a self-developing, effective education system that will contribute to the economic recovery of the Kyrgyz Republic improving human resources, providing qualified personnel and meeting the educational needs of a developing personality.

To achieve this goal of the CDS, it is necessary to solve the following tasks in the field of education:

- expanding the availability of preschool education;
- improving policy and improving the quality of secondary education;
- improving the efficiency and quality of secondary education;
- mobilization of market resources and support of initiatives to provide assistance to educational institutions;
- improvement of the vocational education system
- creation of conditions for the export of educational services.

At that time, the Sustainable Development Goals had not yet been presented to the world community, and for this reason the state was based on the Millennium Development Goals.

Also, in this research, much attention will be paid to the Education Development Strategy in the Kyrgyz Republic for 2012-2020, developed by the Government of the Kyrgyz Republic.

Education Development Strategy in the Kyrgyz Republic for 2012-2020 is based on the vision and development goals of the country, and is also aimed at achieving the

goals of global programs, such as Millennium Development Goals and Education for All (Ministry of Education of KR, 2012).

The authorized state executive authorities in the field of education formed an educational policy based on the priorities laid down in the systematic implementation of national measures designed to improve the quality of education in the Kyrgyz Republic in the period 2012-2020. Donor coordination and complementary investments formed the basis for further reforms in the education sector.

This Strategy has been developed taking into account external financial assistance to the education sector in Kyrgyzstan, based on the principles of the Paris Declaration and the Accra Agenda for Action, according to which all types of donor support, including Swap, will be provided taking into account the promotion of human rights and equal opportunities for women and men.

The implementation of the Strategy was designed for three three-year periods in accordance with the three-year principle of budget forecasting in the Kyrgyz Republic: Stage 1 - 2012-2014, Stage 2 - 2015-2017, Stage 3 - 2018-2020.

Tasks of the education system by 2020 according to the Strategy mentioned above:

- 1) Coverage of development and education programs for the majority of children preschool age;
- 2) Access to high-quality basic general and secondary general education for everyone, regardless of age, gender, ethnicity, religion, place of residence, mental and physical development, socio-economic status, etc.;
- 3) Transition to a specialized upper secondary school (grades 10 and 11) and the possibility of choosing a field of specialization for each student who has received a basic general education.
- 4) Development of labor skills in accordance with modern the requirements of the

labor market and the demands of the population in meeting their own needs and interests;

- 5) Creation of conditions for lifelong education;
- 6) Development of social partnership at all levels of the system education and the active participation of employers in the educational process;
- 7) Implementation of a competency-based approach to learning, aimed at the formation of: the ability to learn; navigate in a situation of uncertainty and make decisions based on the analysis of information; communication skills; analytical skills and critical thinking;
- 8) Transition to a credit system of education, providing flexibility and mobility of students, allowing to combine work and study in a higher educational institution (in accordance with the provisions of the Bologna and Lisbon agreements);
- 9) Preservation of cultural and linguistic diversity and tolerance for a multilingual educational environment;
- 10) Support for multi-channel financing of the sector education and fair distribution of financial resources;
- 11) Creation of a system of strategic planning and management in the education sector, based on technologies for collecting and analyzing information, including on the basis of gender-disaggregated statistical data;
- 12) Effective personnel policy. System implementation monitoring and evaluation for the systematic improvement of the education system.

International papers:

According to the World Bank Report 2020² The Kyrgyz Republic going to receive

² <https://www.worldbank.org/en/news/press-release/2020/06/11/kyrgyz-republic-to-enhance-quality-of-education-with-world-bank-financing>

\$50 million in World Bank financing for the *Learning for the Future Project*, with extremely favorable terms. The first \$25 million is given as a grant with no repayment requirements, while the second \$25 million is given as a credit with a 0.75 percent interest rate, repayments spread out over 38 years, and a six-year grace period. "Through improving school readiness and teacher effectiveness, the Learning for the Future Project aims to help raise the Kyrgyz Republic's human capital," says Bolormaa Amgaabazar, World Bank Country Manager for the Kyrgyz Republic. "The project focuses on distance and online learning, as well as improving digital literacy and teacher capacity for best teaching-learning practices. Such assistance will enable the country's education system to better respond to learning at home during the current school closures and COVID-19 pandemic recovery period. This approach will, in the long run, help children better prepare for learning and adapting to a rapidly changing future economy." But according to the 'Vocational Education And Training In The Kyrgyz Republic'³ emphasized on taking Vocation Education System (VET) into the project with the argument that it is not redundant to recommend that young people consider VET as part of their educational journey and as an important component of lifelong competence and professional development that leads to job security and productivity.

Since "during this period the education system as part of the crisis society was exposed to crises phenomena, which led to a significant slowdown in the pace of development," Abdyrakhmanov T.A. divided the post-Soviet Kyrgyz Republic's educational policy into two periods: "positive" (1991-1999) and "stagnation" (2000-2005 (Abdyrakhmanov, 2010). Additionally, the author conducted a comparison of

³ https://www.ctf.europa.eu/sites/default/files/m/C12578310056925BC125783100317044_NOTE8DVFLS.pdf

the high school funding system from 1991 to 2013. He explained that while the state budget fully funded Kyrgyzstan's high school in 1991 and the country's student training was also paid by the state, the percentage of students enrolled in the state budget in 2013 was just 12.1% of the total number of students in the nation. A huge trends of degradation have also been reflected within this period (Kaldybaev, 2018).

The World Data on Education (WDE) 6th edition 2006/2007⁴ emphasized on the economic crises of Kyrgyz Republic and its' consequences that directly affected education system of the country. Joint ventures emerged as a result of the privatization of numerous state-owned businesses during this time, and the nation simultaneously underwent a challenging post-independence economic phase that was characterized by a recession and a widespread decline in industrial indexes. Additionally, the economic crisis has had an impact on society, particularly the field of education. Preschool enrollment has fallen as a result of decreased funding for education. The administration proposed connecting secondary and professional institutions to address this crisis.

The same issue was discussed in "Education Development in Kyrgyzstan, Tajikistan, and Uzbekistan: Challenges and Ways Forward" by the Open Society Institute's Education Support Program. The success of state-funded education during the Soviet period crumbles, and maintaining the same rate at which the program had succeeded was nearly impossible. Additionally, it states that "The Central Asian countries have some of the lowest student enrolment rates in secondary school and

4

https://planipolis.iiep.unesco.org/sites/default/files/ressources/kyrgyzstan_education_development_strategy_2007-2010.pdf

are just slightly ahead of the Caucasus (UNICEF, 2000)" when compared to the rest of the former Soviet Union and Eastern and Central Europe.

Michael Mertaugh by his research Education in Central Asia, With Particular Reference to the Kyrgyz Republic conducted in 200 (Mertaugh, 2004) 4, found that in both absolute and relative terms, teacher salaries in the Kyrgyz Republic, which averaged 857 soms per month in 2001, were very low. In absolute terms, they were just half the minimal consumption criterion for people, much alone households. Teachers were consequently obliged to work other professions to support themselves and their families since they were unhappy with their careers. Students routinely pay for admission and grades, which has led to a serious corruption issue in higher education caused by low professor wages. The standard of schooling has significantly decreased as a result. Furthermore, he stated that "Except for the few institutions that have been able to prevent or regulate corruption," it has caused employers and the general public to lose faith in the value of higher education degrees'. Teachers bear the burden of the education sector's resource limitations. Teachers' salaries were lower than average in all Central Asian countries at the start of the transition. Since independence, average earnings have declined across the board, but teacher pay have fallen significantly more than the average wage. Due to extremely low teacher pay, most teachers are forced to work other jobs to make ends meet. It also causes major issues with teacher morale, as well as perverse incentives for detrimental educational practices like delivering higher marks or enrolling in the most desirable programs in exchange for payment from students. Furthermore, educational corruption has become pervasive across the region. It has severely harmed public trust in educational programs.

Additionally, according to Michael Mertaugh, the huge proportion of the population living in rural areas is one of the major problems for education delivery. In all, 65 percent of Kyrgyzstan's population lives in rural areas, the majority of which are hilly (Mertaugh, 2004). More than 80% of the population in the oblasts of Naryn and Chui lives in rural areas. The rural population's majority poses a problem for education delivery, both in terms of delivery and demand for education. Because of the larger dispersion of population in rural locations, smaller class sizes, smaller school sizes, and often lower teacher utilization rates complicate education delivery and boost education expenses. Rural location also has an impact on education demand and quality because:

- a) Rural locations tend to have higher rates of poverty, and many families there struggle to pay rent for textbooks, school supplies, and decent clothing for their kids;
- b) In rural locations, the public revenue base is substantially less, and many local governments cannot afford to pay for educational expenses above the modest amounts covered by the republican budget;
- c) Generally speaking, rural schools are less well-equipped and maintained than metropolitan schools;
- d) Compared to urban parents, rural parents are less interested in their children's schooling;
- e) In many rural households, school-age children miss a portion of the academic year to help support the family financially by working seasonally in agriculture.

It is also mentionable that according to UNESCO reports⁵ that only 14% of eligible secondary school graduates in Kyrgyzstan were enrolled in tertiary institutions in 1991.

⁵ <http://stats.uis.unesco.org/unesco/TableViewer/>

For 2005 Kyrgyzstan had 41% enrollment therefore, despite of severe economic crisis a trend of uprising in secondary schools to tertiary had been notified here. According to the report, it can be concluded that because of the initiative of blending secondary and professional schools.

Dr. Alan J. DeYong on his multiple clusters survey where he studied ‘social culture, parents, friends and universities, analyzing Paradoxes of parental support and peer networks, Preparation and Difficulties of University Study’ emphasized on the corruption as an important matter of Kyrgyzstan. The sentiment created in the society could be considered as the key factor that caused ‘The high enrollment in primary education and relatively low continuation for the high school to higher education, but he also conclude that further research is necessary to come to a concrete arguments. Moreover, he also cited ‘Discussion in the UNDP report, Corruption in Kyrgyzstan, op. cit. to show how the language of instruction debate is involved in how students and their parents think about university entrance.

Chapter 3.

Poverty in Kyrgyzstan as a factor influencing the level of literacy of the population.

Overview of the change in the level of poverty in Kyrgyzstan

The Kyrgyz Republic, being small, has no access to the sea. The country is within reach of the vast markets of China, Russia, and South Asia, bordering Kazakhstan, Tajikistan, and Uzbekistan, as well as China. Due to the peculiarities of elevation and topography, only 7 percent of the territory of the Kyrgyz Republic is arable, while the rest is covered by glaciers, mountains, forests and pastures or steppes used for grazing. The country's natural resources include minerals - mainly gold - and colossal water resources used to generate electricity in hydroelectric power plants.

One of the main problems of sustainable development is the fight against poverty and inequality in all forms of their manifestation. Poverty and inequality are chronic problems that are almost impossible to completely eradicate, but at the same time, the task of the state is to reduce them as much as possible.

One of the goals of sustainable development by 2030 is to reduce global poverty to 3% with stable economic growth. A key feature of the population living below and near the poverty line is its high sensitivity to various shocks.

Relatively small fluctuations in the income levels of such populations can lead to the emergence of the so-called poverty trap, affecting the well-being of subsequent generations (World Bank, 2020).

The transformational processes that took place in the 1990s led to changes in the incomes of the population, leading to the most sad consequences - the stratification of society into rich and poor.

The specifics of the current economic situation is that most of the population, mainly its socially vulnerable strata, from a relatively normal state for a short period, found themselves in a position of poverty, when the satisfaction of minimal needs becomes problematic. The impoverished state of the majority of the population is an undoubted result and expression of the deepest failure in which the economy of the republic has found itself. But, on the other hand, this poverty is one of the main factors hindering the recovery and development of the economy. Low incomes of the population extremely limit the demand for consumer products, and with them for other goods. This kills incentives for the development of production and the entire economy. A kind of vicious circle has arisen in which the economy and the social welfare of the people destroy each other and do not give way to the path of progressive stable development.

Poverty embraces the broadest masses of the republic's population. Extreme poverty extends not only to disabled elderly people, disabled people and children, but even to the working part of the population. The low level of income is a direct consequence of the unfavorable state of the economy, its inability to provide sufficient and full-fledged employment, the necessary level of earnings and incomes of the population.

Poverty and destitution, of course, cannot be considered the result of only the ongoing reforms in Kyrgyzstan. Previously, this phenomenon was camouflaged, and poverty was more or less uniform. The expansion of the scale of poverty sharply reduces social stability in society under destabilizing external influences. Poverty creates the prerequisites for the growth and mutual provocation of several social threats at once - from the growth of crime to the worsening of the epidemiological situation. The problem of the emergence of large disadvantaged sections of the

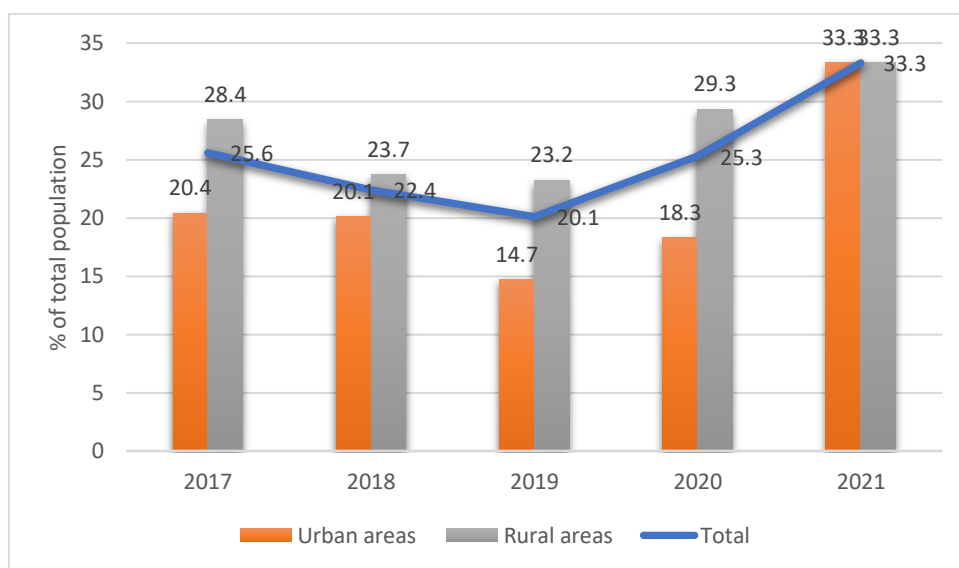
population in the early years of the reforms was not taken into account at all, although their presence sharply destabilizes society and is unworthy from the point of view of the current level of civilization. Starting from 1995, the state began to actively use various economic mechanisms to support the most needy people. However, the economic crisis has sharply narrowed its opportunities, and above all in relation to the disabled part of the population.

Poverty in modern Kyrgyzstan is determined by political, economic and ideological reasons, and, figuratively speaking, has blossomed with all the colors of the rainbow. It is characterized by the originality of social differentiation with demographic, regional, ethnic and other features (Orozbaeva, 2001). At the same time, it should be emphasized that Kyrgyzstan, in terms of its economic and social indicators, was poor even before gaining independence.

According to the results of assessments (NSC, 2021) of the well-being of the population in the Kyrgyz Republic, which were carried out by the National Statistical Committee of the Kyrgyz Republic, it was revealed that in 2021 the poverty rate in the country amounted to 33.3 percent of the total population of the country and increased by 8.0 percent compared to the previous year. The poverty rate in rural areas increased by 4.0 percentage points, and in urban areas - by 15.0 percentage points. In 2021, 2 million 244 thousand people lived below the poverty line, of which 62.7 percent were residents of rural areas. At the same time, 40.5 percent of children aged 0-17, or 1 million 72 thousand people, lived in poverty.

According to the administrative-territorial division, Kyrgyzstan consists of 7 oblasts (regions): Baken oblast, Jalal-Abad oblast, Issyk-Kul oblast, Naryn oblast, Osh oblast, Talas oblast and Chui oblast, and also two of the largest cities are distinguished among them - Bishkek (capital) and Osh.

Graph 2. Poverty rate by areas (percentage of total population)



Source: National Statistical Committee of the Kyrgyz Republic

Due to the climatic and geographical features of the territory of Kyrgyzstan, the level of well-being of the population also varies greatly among themselves, thus the level of poverty also depends on the place of residence of the population.

So, in 2021, compared to the previous year, an increase in the level of poverty was noted in all regions, including in Bishkek city - by 19.0 percentage points, Osh city - by 13.9, Talas region - by 11.0, Issyk - Kul - by 10.2, Jalal-Abad and Batken regions - by 6.0, Osh - by 5.0, Naryn - by 2.4 and Chui region - by 1.6 percentage points (NSC, 2021).

Table 2. Poverty rate by territory (percentage of total population)

	2017	2018	2019	2020	2021
Kyrgyz Republic	25.6	22.4	20.1	25.3	33.3

Batken oblast	40.5	33.8	32.6	34.7	40.7
Jalal-Abat oblast	32.6	32.2	26.9	37.2	43.2
Yssyk-Kul oblast	24.2	21.5	24.4	27.9	38.1
Naryn oblast	29.2	30.6	28.1	36.8	39.2
Osh oblast	14.3	14.8	14.0	18.8	23.8
Talas oblast	20.7	22.1	13.3	12.5	23.5
Chui oblast	33.3	15.6	19.1	25.4	27.0
Bishkek city	15.9	15.4	11.9	16.8	35.8
Osh city	33.5	35.5	20.7	14.7	28.6

Source: National Statistical Committee of the Kyrgyz Republic **oblast – region*

The level of extreme poverty in 2021 was 6.0 percent and increased by 5.1 percentage points compared to the previous year. 407.1 thousand people lived below the extreme poverty line, of which 54.9 percent were residents of rural areas (NSC, 2021).

An increase in extreme poverty was observed in all regions of the republic, with the exception of urban settlements in the Talas region. Extreme poverty increased in Bishkek city by 9.2 percentage points, Batken region - by 8.5, Issyk-Kul - by 7.6, Jalal-Abad - by 6.0, Naryn region - by 3.7, in Osh city - by 3.1, Chui region - by 2.7 percentage points, Talas - by 2.6 and Osh region - by 2.1 percentage points.

Table 3. Extreme poverty rate by territory (percentage of total population)

	2017	2018	2019	2020	2021
Kyrgyz Republic	0,8	0,6	0,5	0,9	6,0

Batken oblast	3,4	0,9	0,3	1,6	10,1
Jalal-Abat oblast	0,0	1,0	0,6	1,5	7,5
Yssyk-Kul oblast	1,0	0,9	1,3	0,4	8,0
Naryn oblast	2,0	2,2	2,5	4,5	8,2
Osh oblast	0,0	0,0	0,9	0,0	2,1
Talas oblast	0,0	0,0	0,0	0,0	2,6
Chui oblast	1,7	0,3	0,2	1,3	4,0
Bishkek city	0,0	0,3	0,0	0,3	9,5
Osh city	1,2	0,6	0,0	0,0	3,1

Source: National Statistical Committee of the Kyrgyz Republic *oblast – region*

The level of extreme poverty in urban areas in 2021 increased by 7.0 percentage points compared to the previous year, in rural areas - by 4.1 percentage points.

As you can see, in recent years, the statistics are disappointing, given the global political crisis, the impact of the coronavirus, which has not yet been eliminated, but rather continues to damage the global economy.

In this regard, the level of poverty affects all spheres of human life, and in this case, education is no exception. A population living even below the national poverty line is experiencing enormous difficulties in obtaining an education and ensuring a decent education for their children. Due to the difficult financial situation in the family, parents of school-aged children do not have the opportunity to send their children to schools, and given the insufficient amount of income, they prefer to involve their children in agriculture from an early age, which is a traditional approach in remote regions where there is an increased level of unemployment.

Barriers to children's participation in the school system

There are many children in Kyrgyzstan who work in adverse conditions and violate the law. Independence for Kyrgyzstan turned out to be a difficult test, and economic instability led to delays in the payment of wages, mass unemployment, and poverty. The presence of children in the family is seen as a factor that is directly related to poverty, since children are usually dependents with no income. Under such conditions, child labor is common.

The Kyrgyz Republic's laws specify the age at which children can begin working, the kind of labor they are allowed to do, and the length of the workday. However, because child labor is a component of the underground economy and is not recorded in official records, contracts are not created when minors are hired. Kyrgyzstan has four main industries in which children are employed: agriculture, heavy industry and manual labor, household, and services. Due to the agrarian orientation of our nation's economy, children have historically been drawn to the agricultural sector to help with watering, weeding, and harvesting. With the rise of the shuttle and the expansion of the unregulated, wild market, child labor in the marketplace became feasible. Children are frequently employed to carry things to markets, load and unload products and luggage, sell small items at booths, on the street, and in bazaars, and collect aluminum and bottles. There are also young people working as servants while they are occupied with chores. They work in the garden, clean homes, wash clothes, prepare meals, set tables, and organize firewood. A distinctive feature of the work of children engaged in home work is the combination of the relationship between the employer and the employee with consanguineous relations. Parents themselves often offer to place their children in the care of relatives living in urban areas in order to protect children from the harsh conditions of life in rural areas. As

a rule, such work is not paid, but servants and nannies are provided with food, clothing, and also pay for their studies. Children also work in repair shops, bakeries, cafes and restaurants (ILO, 2001).

It should be noted that the right to receive compulsory and free primary and basic education in the republic is enshrined in the Constitution of the Kyrgyz Republic and the Law of the Kyrgyz Republic "On Education". School entry age for children from 6-7 years old, and the duration of education for children in each class is at least one academic year. School attendance among children and young people remains generally quite high. According to the Report of the National Statistical Committee of the Kyrgyz Republic At the beginning of the 2019/2020 academic year, there were 2,283 daytime general education organizations in the republic, and the number of students in them amounted to 1.3 million people (NCS, 2020).

Table 4. Attendance of general educational organizations by children and youth by territory (at the beginning of the 2019/2020 academic year, people)

	Total	The number of children out of schools	The share of children who have not started classes, in%
Kyrgyz Republic	1 311 478	2 834	0,2
Batken oblast	113 836	226	0.2
Jalal-Abat oblast	250 087	332	0.2
Yssyk-Kul oblast	103 971	399	0.4
Naryn oblast	64 453	344	0.5
Osh oblast	255 063	870	0.3

Talas oblast	58 789	132	0.2
Chui oblast	203 824	412	0.2
Bishkek city	186 393	115	0.1
Osh city	75 062	4	0.0

Source: National Statistical Committee of the Kyrgyz Republic **oblast – region*

As can be seen from the Table 5, at the beginning of the 2019/2020 academic year, 2,834 students, or 0.2 percent of their total number, did not start classes in general educational organizations. The largest share of such children (344 children, or 0.5 percent) fell on the Naryn region. This is due to the fact that children during this period were with their parents on pastures, helping to take care of livestock, and many of them start classes only in October or November (NSC, 2021).

Of the total number of children who did not start classes at the beginning of the 2019/2020 academic year, 1.5 thousand were children with disabilities, among them about 69 percent are children with mental deficiencies and 25 percent with physical deficiencies. Most of these children (over 70 percent) live in rural areas. One of the main reasons why these children do not attend school is that most specialized schools for children with disabilities are located in Bishkek and Chui oblast and are not accessible to children living in rural areas.

Table 5. The number of children who did not start classes, for reasons
(*at the beginning of the 2019/2020 academic year*)

	Number of people
Total	2834

Children with disabilities	1521
material difficulties	896
job availability	237
unwillingness to learn	79
other reasons	101

In addition, for almost 900 children, or about a third of them, one of the reasons for not attending school was financial difficulties in the family (lack of shoes, clothes and necessary school supplies), as well as family circumstances or dysfunctional families. Another reason for children not attending school is working children, whose share in the total number of children who did not start school was more than 8 percent.

Moreover, poverty has an impact on the physical health of children (for example, being underweight birth, stunting), on the ability to learn about the world around, school enrollment and on learning achievement (e.g. number of years of study, completion of studies in secondary school and test scores) and emotional behavioral outcomes. The results of this influence have a long-term effect and affect not only achievements in school education, but also success in life.

Due to poverty and the need to pay for preschool education, many parents prefer do not take children to preschool and send them to school when the children reach six years of age to cut costs, since the cost of primary education less than preschool. Although enrollment in elementary school at an earlier age is not always problematic, children who missed the preparatory phase, it can be difficult to adapt to the school environment,

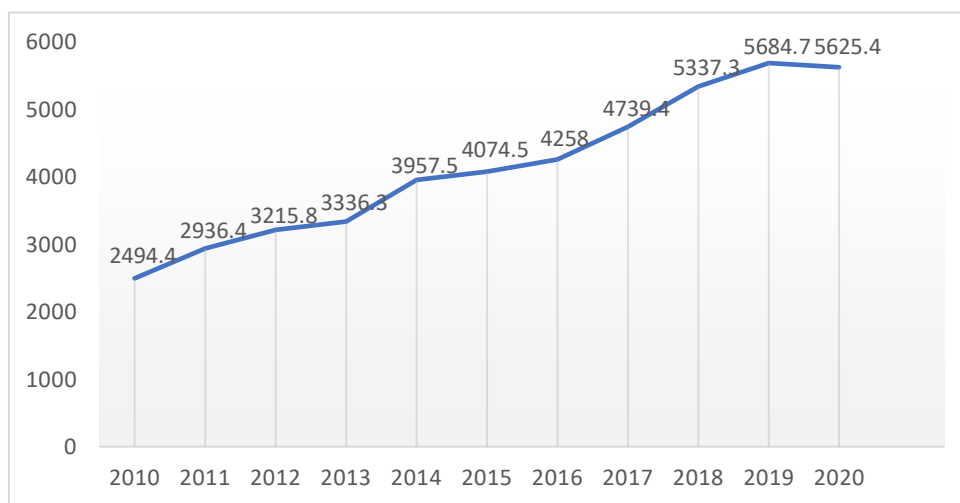
and there is a sharp increase in the risk of dropping out of the educational process of such children.

As we can see, from the data of the National Statistical Committee of the Kyrgyz Republic, it follows that the proportion of poverty according to the national poverty line (Table 2) has been increasing in recent years, due to various reasons, especially due to the financial crisis and the spread of coronavirus since 2020.

This is one of the key factors influencing the education of students in school, because with the ever-increasing costs of everyday life, rising food prices, families take forced measures, such as saving on the education of their children.

As shown in Graph 3, the average household income has been gradually increasing over the past 10 years, which, in fact, should have a positive effect on the level of school attendance of children, but the previously mentioned economic factors again reduce the ability of families to provide children with school education.

Graph 3. Average household income, per capita (soms per month)

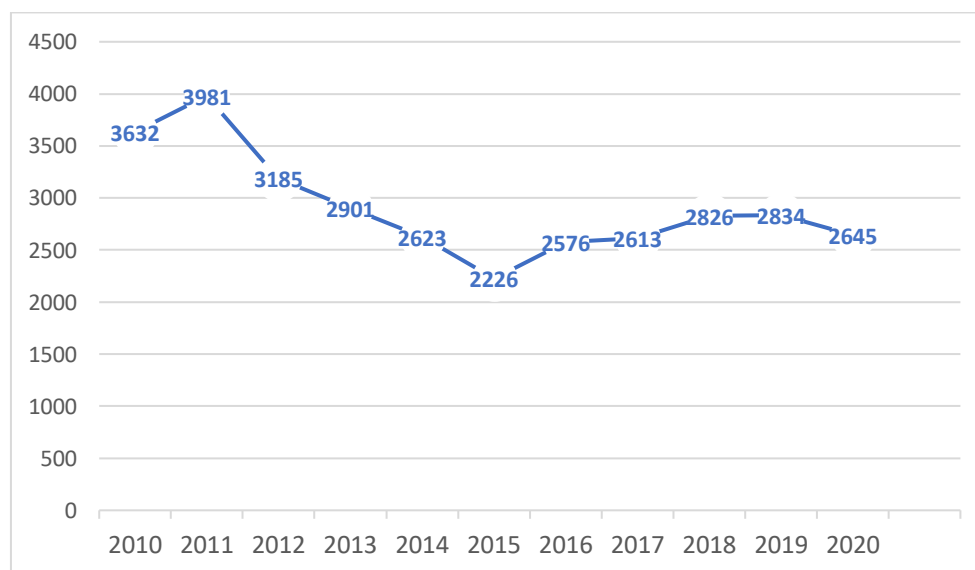


Source: National State Committee of the Kyrgyz Republic

According to National statistical Committee of the Kyrgyz Republic school enrollment rates were near-perfect for the last 10 years and even earlier, around 99.4% for the last 10 years with barely visible difference between each other. The figures are equal to almost 100% enrollment of children in schools. However, we can see on the Graph 4 that the school out-of-school rate has started to decrease since 2010, but since the middle of the last decade, the indicators have been changing in a negative direction, hinting at a relationship with an increasing increase in poverty at the national level.

Given the available data, one could assume that there is a relationship between the studied variables, however, without a scientific approach, reliable results cannot be obtained. Based on this, in the next section, I conduct a quantitative analysis of the data, where the presence of a correlation between the studied variables and the degree of their relationship, if any, will be examined.

Graph 4. The number of children out of schools



Source: National State Committee of the Kyrgyz Republic

Data sampling

Taking into account the above information, one can get a preliminary idea of the impact of poverty on the education sector. However. In order to obtain reliable data, confirmed by a scientific approach, data sampling was performed in my work. Due to the insufficient number of studies in this area, as well as the lack of relevant reliable material for analysis, it was decided to conduct an analysis based on the Demographic and Health Survey in the Kyrgyz Republic. This survey was conducted in 2012 by the National Statistical Committee of the Kyrgyz Republic in cooperation with the Ministry of Education of the Kyrgyz Republic and USAID (NSC & USAID, 2013).

This report provides information in areas of life of the population, such as mortality, maternal and child nutrition, child mortality, domestic violence against women, as well as on their health in Kyrgyzstan. It is the second report in the history of the country and requires sufficient financial support for its full and high-quality implementation, which the Government of the country received with the support of the Measure DHS project and USAID.

The sampling was carried out in two stages. At the first stage, 316 clusters were selected from the existing list of enumeration areas, which were part of the basic sample, based on the 2009 Population and Housing Census. At the second stage, before the start of the main study, for each selected cluster, a complete list (listing) of households was compiled, which were then randomly selected from the newly updated list for participation in the study.

The study interviewed women aged 15 to 49 who are either permanent residents of the household in the sample or guests who spent the previous night in this house. Overall, 8,208 women were interviewed in the 2012 DHS. In addition, in a

subsample of one-third of all households selected for the study, 2,413 males aged 15-49 were interviewed, who are either permanent residents of the household or guests who had spent the previous night in this house.

The survey itself consisted of 3 parts: a household survey, a survey of men and a survey of women. For my analysis, important items from this survey are Surveys on the socio-economic status of households. Also important are individual interviews on the basis of sex, age and level of education of family members.

The percentage of the 8,208 houses and people who participated in the survey is shown in the table below. These households house 8,286 women between the ages of 15 and 49. Ninety-nine percent of these women were questioned. 97 percent of the 2,495 suitable men that were identified were questioned.

Table 6. Number of households

	Residence		
Result	Urban	Rural	Total
households chosen	2.886	5.322	8.208
households in occupied	2.833	5.250	8.083
the households surveyed	2.820	5.220	8.040
rate of household response	99.5	99.4	99.5
Women (15-49 y.o)			
number of women who are eligible	2.757	5.529	8.286
number of qualified women questioned	2.732	5.476	8.208

female applicants' response rate	99.1	99.0	99.1
Men (15-49 y.o)			
number of men who are eligible	706	1.789	2.495
number of qualified men questioned	690	1.723	2.413
male applicants' response rate	97.7	96.3	96.7

Source: DHS

Key findings

This part of my paper presents the result of my analysis, in which the following important variables were tested, such as: Education attainment, Wealth, Place of living, Household Head. In order to obtain reliable results that show the feasibility of the analysis, as well as the real relationship between the variables, several types of analysis were carried out: Pearson correlation analysis, Linear regression analysis. Summary statistics were calculated for each interval and ratio variable. Frequencies and percentages were calculated for each nominal variable.

Descriptive Statistics

Frequencies and Percentages

In this analysis the most frequently observed category of Education attainment was ‘**higher**’ ($n = 3437$, 41.87%) among *higher, incomplete, complete and missing*. The most frequently observed category of Region was ‘**Talas region**’ ($n = 1316$, 16.03%) among 7 regions and 2 large cities of the country. And ‘**Rural**’ is the most frequently observed the Place of living category among ‘*Rural*’ and ‘*Urban*’. Frequencies and percentages are presented in Table 7.

Table 7. Frequency Table for Nominal Variables

Variable	<i>n</i>	%
Total	8208	100
Region		
Issyk-Kul	932	11.35
Jalal-Abad	1122	13.67

Naryn	842	10.26
Batken	1168	14.23
Osh	1262	15.38
Talas	1316	16.03
Chui	786	9.58
Bishkek city	493	6.01
Osh city	287	3.50
Missing	0	0.00
Place of living		
urban	2732	33.28
rural	5476	66.72
Missing	0	0.00
Education attainment		
higher	3437	41.87
incomplete	1484	18.08
complete	3287	40.05
Missing	0	0.00
<i>Note.</i> Due to rounding errors, percentages may not equal 100%.		

Summary Statistics

As we can see, the observations for Wealth richer had an average of 0.40 ($SD = 0.49$, $SE_M = 0.005$, Min = 0.00, Max = 1.00, Skewness = 0.43, Kurtosis = -1.82). The

observations for Wealth Poor had an average of 0.20 ($SD = 0.40$, $SE_M = 0.004$, Min = 0.00, Max = 1.00, Skewness = 1.48, Kurtosis = 0.18). The observations for Wealth Middle had an average of 0.20 ($SD = 0.40$, $SE_M = 0.004$, Min = 0.00, Max = 1.00, Skewness = 1.50, Kurtosis = 0.25). Skewness is a statistician's measure of a variable's asymmetrical distribution. The variable is regarded as asymmetrical about its mean when the skewness is more than 2 in absolute value. The measure of a distribution's tail behavior is called kurtosis. The tendency of the variable's distribution to produce outliers differs noticeably from that of a normal distribution when the kurtosis is greater than or equal to 3. (Westfall & Henning, 2013). The following Table 8 presents summary statistics for interval and ratio variables.

Table 8. Summary Statistics Table for Interval and Ratio Variables

Variable	M	SD	n	SE_M	Min	Max	Skewness	Kurtosis
Wealth richer	0.40	0.49	8208	0.005	0.00	1.00	0.43	-1.82
Wealth Poor	0.20	0.40	8208	0.004	0.00	1.00	1.48	0.18
Wealth Middle	0.20	0.40	8208	0.004	0.00	1.00	1.50	0.25
<i>Note.</i> '-' indicates the statistic is undefined due to constant data or an insufficient sample size.								

Statistics Software: SAS ODA

Pearson Correlation Analysis

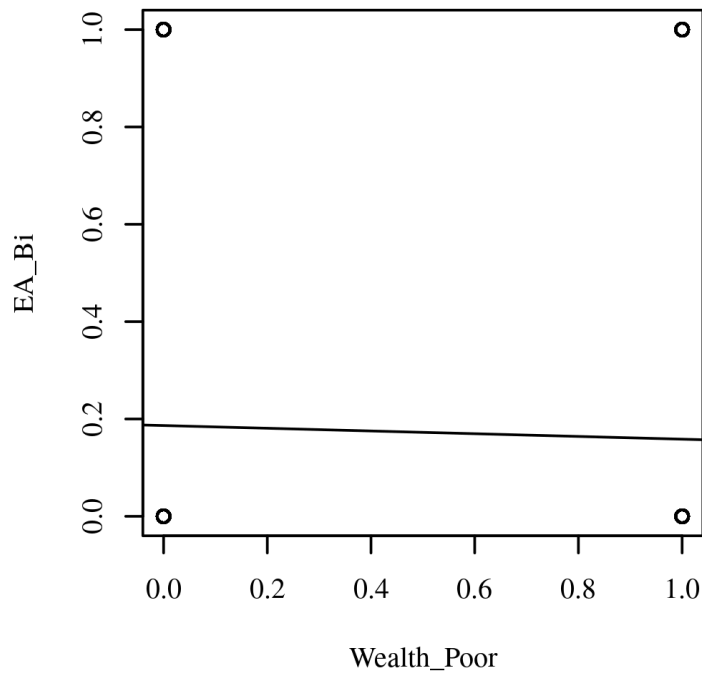
As I have studied, The Pearson correlation (Freedman, et al., 2007) expresses the

strength of linkage or co-occurrence between two variables in a single value between -1 and +1. Correlation coefficient is the term used to describe the quantity that measures how strongly two variables are related. The Pearson's r or Pearson product-moment correlation coefficient is another name for the correlation coefficient between two continuous-level variables. The greater A becomes, the bigger B gets; a positive r value represents a positive relationship between the two variables; a negative r value expresses a negative association (the larger A becomes, the smaller B becomes). There is no association between the variables, as indicated by a correlation coefficient of 0.

A Pearson correlation analysis was performed to determine the relationship between Wealth Poor, Wealth Middle, Wealth Rich and level of education. The strength of the correlations was assessed using Cohen's standard, with coefficients between .10 and .29 denoting a minor impact size, .30 to .49 denoting a moderate effect size, and coefficients above .50 denoting a big effect size. (Cohen, 1988).

Linearity. A Pearson correlation requires that the relationship between each pair of variables is linear (Conover & Iman, 1981). This assumption is violated if there is curvature among the points on the scatterplot between any pair of variables. Figure 1 - presents the scatterplot of the correlations.

Figure 2. Scatterplots with the regression line added for Wealth poor (Wealth_Poor) and Education attainment (EA_Bi)



Used Software: SAS Viya

Results of Pearson correlation analysis

The result of the correlations was examined using the Holm correction to adjust for multiple comparisons based on an alpha value of .05.

At first, significant negative correlation was found between Wealth Poor and Wealth Middle, with a correlation of $-.25$, indicating a small effect size ($p < .001$, 95.00% CI = $[-.27, -.23]$). And it means that as Wealth Poor increases, Wealth Middle tends to decrease.

A significant negative correlation was observed between Wealth Poor and Wealth richer, with a correlation of $-.41$, indicating a moderate effect size ($p < .001$, 95.00% CI = $[-.43, -.39]$). And it is logically right and this suggests that as Wealth of poor people increases, Wealth of richer tends to decrease.

The most important observation was found for more important variables in this research. So, **significant negative correlation** was observed between **poor people** and **education attainment**, with a correlation of -.03, indicating a small effect size ($p = .016$, 95.00% CI = [-.05, -.01]). This result is underlining the hypothesis of this research and proves that as Wealth of Poor people increases, Education attainment tends to decrease.

Additionally, significant negative correlation was observed between Wealth Middle and Wealth richer, with a correlation of -.40, indicating a moderate effect size ($p < .001$, 95.00% CI = [-.42, -.39]). This suggests that as the variable Wealth Middle increases, variable Wealth richer tends to decrease.

A significant positive correlation was observed between Wealth Middle and Education attainment, with a correlation of .05, indicating a small effect size ($p < .001$, 95.00% CI = [.02, .07]). This suggests that as Wealth Middle increases, Education attainment tends to increase.

Table 9. Pearson Correlation Results Among Wealth of Poor, Wealth of Middle, Wealth of richer, and Education attainment

Combination	<i>r</i>	95.00% CI	<i>n</i>	<i>p</i>
Wealth Poor - Wealth Middle	-.25	[-.27, -.23]	8208	< .001
Wealth Poor - Wealth richer	-.41	[-.43, -.39]	8208	< .001
Wealth Poor - Education attainment	-.03	[-.05, -.01]	8208	.016

Wealth Middle - Wealth richer	-.40	[-.42, -.39]	8208	< .001
Wealth Middle - Education attainment	.05	[.02, .07]	8208	< .001
Wealth richer - Education attainment	-.03	[-.05, -.00]	8208	.018
<i>Note.</i> <i>p</i> -values adjusted using the Holm correction.				

Statistics Software: SAS ODA

Multinomial logistic regression

Finally, Multinomial logistic regression was applied in the analysis to obtain a complete picture of the direct impact of poverty on the e level of education in the Kyrgyz Republic. In this case, the analysis was carried out to assess the significance of the impact of Independent variable ‘Wealth’ poor, middle or richer on the Education attainment in 3 categories (higher, complete, incomplete) of the interviewed households.

Table 10. Results for Multinomial Logistic regression with observed variables ‘Wealth’ (richer, middle, poor) and response variable ‘Education attainment’ (where categories are higher = 1, complete = 2 and incomplete = 3)

Log likelihood = -7923.4492 Number of obs = 8208 Prob > Chi ² = 0 Pseudo R ² = 0.1198						
Education attainment	Coef	Std.err	Z	P> z 	95% Conf.	Interval
Higher						

Regions						
Bishkek	0.802	0.116	6.93	< .001	0.575	1.028
Chui	-1.136	0.126	-9.03	< .001	-1.383	-0.890
Djalal-abad	-0.761	0.147	-5.18	< .001	-1.048	-0.473
Issyk-kull	-0.078	0.131	-0.6	0.5480	-0.334	0.177
Naryn	0.052	0.115	0.45	0.6500	-0.173	0.276
Osh city	-1.509	0.235	-6.42	< .001	-1.970	-1.049
Osh	-0.039	0.110	-0.35	0.7240	-0.253	0.176
Talas	-0.775	0.106	-7.33	< .001	-0.983	-0.568
Wealth						
Poor	-1.142	0.086	-13.260	< .001	-1.311	-0.974
Middle	0.581	0.085	6.850	< .001	0.415	0.748
Richer	1.545	0.094	16.520	< .001	1.362	1.728
Complete	(base outcome)					
Incomplete						
Regions						
Bishkek	0.106	0.125	0.840	0.399	-0.140	0.351
Chui	-0.430	0.116	-3.690	< .001	-0.658	-0.201
Djalal-abad	0.758	0.105	7.230	< .001	0.553	0.964
Issyk-kull	0.598	0.103	5.780	< .001	0.395	0.801
Naryn	-0.143	0.112	-1.270	0.203	-0.363	0.077

Osh city	0.012	0.144	0.080	0.936	-0.270	0.293
Osh	-0.099	0.107	-0.920	0.355	-0.309	0.111
Talas	-0.716	0.108	-6.640	< .001	-0.927	-0.505
Wealth						
Poor	0.541	0.074	7.290	< .001	0.395	0.686
Middle	0.083	0.094	0.890	0.376	-0.101	0.267
Richer	0.378	0.108	3.510	< .001	0.166	0.589

Statistics Software: Stata

Results of Multinomial Logistics regression

In this final part of analysis I got the most valuable result in my dissertation. The results of the Multinomial logistic regression were significant, indicating that Education attainment is explainable by independent variable **Wealth** (in 3 categories: richer, middle and poor). For my dissertation I was interested only in 1 category 'poor', but the others also can add some value. Out of this decision I have done the analysis with 3 before mentioned categories. So, what we got is the following:

Wealth richer significantly predicted Higher Education attainment, *Coef* = 1.545, $p < .001$. This indicates that on average, a one-unit increase of Wealth richer will increase the value of Higher Education attainment by 1.545 units. **Wealth Poor significantly predicted Higher Education attainment, *Coef* = -1.142, $p < .001$. This indicates that on average, a one-unit increase of Wealth Poor will decrease the value of Higher Education attainment by 1.142 units.**

Wealth Middle did not significantly predict Higher Education attainment, $Coef = 0.581$,

$p < .001$. Based on this sample, a one-unit increase in Wealth Middle does not have a significant effect on Education attainment.

Moreover, additional result came after the analysis, that also underlines my hypothesis. **Wealth Poor significantly predicted Incomplete Education attainment, $Coef = 0.541$, $p < .001$. This indicates that on average, a one-unit increase of Wealth Poor will increase the value of Incomplete Education attainment by 0.541 units.** It means that if the people become poorer, the chance of not completing the current education is getting higher. These results absolutely support my hypothesis.

Discussion of the results

Based on the Linear regression analysis table, it can be argued that there is a significant negative relationship between the independent variable Wealth Poor, which is an indicator for the poor population, and the dependent variable Education attainment, which in turn reflects the level of education in the country, there is a significant negative relationship. It states that when the level of poverty in the country increases, it negatively reflects achievements in the field of education. That is, families that live below the poverty line in the country will not be able to afford to place more emphasis on gaining knowledge, thereby maintaining barriers to exit from the number of poor.

The reliability of this result is confirmed by Pearson correlation analysis, which proves that the relationship between all the studied variables exists and between the

main variables, such as Wealth Poor and Education attainment, it is negative, which was the purpose of this study.

Study Limitations

Of course, it is necessary to take into account the fact that there are limitations of the study. First, data sampling. The survey on which my analysis was based is the result of a field study conducted by a government agency, the National Statistical Committee of the Kyrgyz Republic. Despite the fact that this survey was conducted with the support of international organizations, it still has financial limitations. This was reflected in the number of households surveyed, we have 8208 of them. For a population with almost 7 million people, this source cannot give a 100% “picture” of the socio-economic situation in the country, even considering that the survey was conducted in all 7 administrative-territorial units and two major cities. Therefore, this fact rightly limits the results of the study.

Secondly, in the Kyrgyz Republic, qualitative research is extremely rare, because due to the limited state budget, state institutions cannot afford to conduct a lot of research, which is often done with the financial support of international development partners. For this reason, it was extremely difficult to find material for my research, given the lack of up-to-date meta-data. Therefore, in my study, the material for 2013 was used, reflected in the Demographic and Health Survey in the Kyrgyz Republic. This fact may limit the results of my research, since today the situation may differ, especially if we take into account the impact of the coronavirus on the country's economy, as well as the global political crisis. However, this material was chosen due to the lack of other meta-data available to me suitable for analysis and a hopeless situation.

At the same time, I would like to note that there is a negative correlation between the level of poverty and education, which, if a larger number of households were sampled, could show an even more significant and qualitative relationship.

Chapter 4.

Conclusion

In this study, the most important thing was found out - poverty is a significant barrier to education for the population. Education in itself is one of the mandatory stages in the life of every inhabitant, which should form in a person the foundation for a full and promising life in the future. It is at the initial stages of education that a person develops views, logical thinking, and the ability to make his own decisions. The future of a person depends on this, therefore education should be accessible to everyone. However, unfortunately, in reality, the situation is such that, using the example of the Kyrgyz Republic, one can observe that education is not provided for every inhabitant of the country.

Given the insufficient level of development of the state economy, the population of the country does not have the opportunity to receive a full-fledged education due to employment in the labor process from an early age. The study showed that the level of poverty is interconnected with education, which means that until the state eliminates poverty, a certain part of the population will always be at risk of being illiterate and continue to do hard agricultural work or resort to other low-paid ways of earning. In this situation, the unfortunate fact is that children are involved in the majority. They do not receive knowledge and cannot make a significant contribution to their development, and even further to the development of the state.

From Chapter 3 it follows that the number of children not attending educational institutions has a noticeable downward trend, but the figure is still high. This is happening despite the fact that household incomes are increasing. The Kyrgyz Republic, as previously mentioned, is a mountainous country and its regions have

different climates and landscapes. For this reason, many continue to farm, as this is still the only source of income for families. Almost all able-bodied family members are involved in this process, so in most cases parents are forced to involve their children in the work process or leave children to look after their younger brothers or sisters while parents earn money. As we can see, priority is always given in favor of generating income, since for people in the category of the poor, there is no other alternative. Children simply do not have the opportunity to go to school, they help their parents from an early age to support the family business of any kind in order to survive.

Often the cause of children dropping out of school is not a single factor, but a combination of interrelated factors – such as poverty, late entry into school, lack of pre-school experience, attending a low-quality school, absenteeism from school, and falling behind in the program due to the need to work.

More than a quarter of kids between the ages of 5 and 14 work as children in the Kyrgyz Republic, which has a relatively high child labor rate. Children who work may miss a lot of school days and have less time for homework. They run the danger of falling behind academically and leaving school early as a result. It is abundantly obvious that there is a connection between frequent absence and children's participation in agricultural activity because frequent absenteeism is more prevalent in rural schools throughout the agricultural seasons of autumn and spring.

There are currently insufficient mechanisms in supply-side policies and strategies to encourage children from disadvantaged and vulnerable homes to attend school.

Today, the National Development Program of the Kyrgyz Republic until 2026 is in force in Kyrgyzstan. This program is aimed at improving the well-being of citizens, developed as part of the National Development Strategy of the Kyrgyz Republic until

2040, while maintaining the principle of continuity based on the long-term strategic goals of the country's development with a focus on people and an emphasis on the fundamental obligation to “leave no one behind” of the Sustainable Development Goals. It includes multiple aspects of the development of the state, as well as poverty and education as well. This program states that “...education is one of the most effective tools for poverty reduction and economic growth. The state must provide conditions for the development of the education system, which must meet the needs of the time and be of high quality and accessible to everyone. The issues of inclusive and lifelong education should be considered at all levels of the educational process and cover different stages of a person’s life.”⁶

However, this is a very complex issue, because in order to reduce poverty it is necessary to get a literate population, but if the population is poor, then they do not have access to education.

Also, this study is relevant as a source reflecting the problems of the vulnerable part of the population of Kyrgyzstan. People living below the poverty line and their children need support from the political leadership and international partners. This study carefully reveals the problem of vulnerable families from the inside, as it provides a large amount of information on household income, the reasons for children not attending school. The study also focuses on the difference in the well-being of the population depending on the region of residence, since the survey on the basis of which the analysis was carried out affects all the main 7 regions of the country. In particular, in chapter 3 of this paper, one can trace a significant difference in population between rural and urban areas. This fact, along with other equally

⁶ National Development Program of the Kyrgyz Republic 2026
<http://cbd.minjust.gov.kg/act/view/ru-ru/430700>

important key results, shows that when investing in human potential, it is necessary to focus on rural areas. This study should be paid attention to when drawing up long-term development programs or when redirecting funds from the republican budget and funds from grant international assistance.

Also, the significance of this study lies in the fact that it reflects information about the involvement of children in labor from an early age, which should draw the attention of society or researchers to the problem of child labor. State bodies in the field of social protection can be involved in the process of raising the level of literacy of the children's part of the population by taking measures to protect children from a forced way of earning. This work can get an idea of the average level of wealth in the family and make proposals for changing the amount of social payments for the vulnerable part of the population.

For a country with a small population, 18% of the population does not have a completed education, in my opinion, is a justification that research in this area should not stop, as how they can make a tangible contribution to the development of the educational system in the medium term, and also set the direction for making the right decisions for the benefit of the development of the state.

Also, in conclusion, I would like to point out that more research should be done in this area, within the test variables of this dissertation, since, as previously mentioned in the limitations of the study, information in these aspects is very difficult to find. For this reason, another significant feature of this dissertation is that it has created a "ground" in solving the problem of increasing the literacy of the population, and at the same time leaves a window for future research in this direction, which in the long term will completely solve the problems of providing the population with access to education.

After conducting the analysis and obtaining the results, as well as studying a lot of material in the field of education, poverty, the actions of the Government of the Kyrgyz Republic, I would like to formulate recommendations in order to contribute to the development of the state and improve the socio-economic situation in the country in the future.

Recommendations

This work led to the conclusion that increasing the level of literacy of the population of the Kyrgyz Republic is possible by reducing the level of poverty, especially in rural regions of the country. The results showed that the lower the poverty, the higher the chances for people to receive a quality education and secure a successful future. In this regard, the state undertakes multiple development programs and strategies.

As I noted earlier in my paper, this study is limited, and does not show results for widespread use and active practical application. However, the data obtained as a result of the analysis can become a starting point for further research in this area, since there are almost no scientific works in this area. At the same time, the importance of this topic is still there. Therefore, as the significance of this study, we can designate its value for further research, since this work can serve as a "pointer" for the political leadership of the country in the field of social protection of the population. If it is possible to bring the vulnerable part of the population out of this category into a more prosperous one, then the state, in turn, can benefit from its literate and qualified population. In this case, this work will help to attract the attention of researchers and push them to further research.

Also, based on my personal findings that emerged during the writing of this paper, I would like to make policy recommendations of a more ambitious nature.

In this regard, it is necessary to attract public, private and foreign investments in the sphere of production: the construction of factories, factories. New businesses can create jobs so migrants don't have to leave their homes and work away from their families. From this we can conclude that the children of a working parent will not have to be constantly alone with their younger brothers or sisters and there will be an opportunity to devote time to education, focus on self-development by reading additional literature, and so on. Also, if there is a permanent place of work in their region, parents can take more part in the upbringing and education of their children, since in most cases the guardians who leave other people's children have their own children, that is, priority in education will automatically be given to their own children. In this case, this will increase the child's performance in school and will certainly motivate him for further success, since the absence of a parent in the family for a long time negatively affects the psychological mood of the child.

Of course, since we say that education is the engine of the state's economy, it is necessary to invest in the educational sector as well. The education system should remain one of the priorities in the context of public investment. Speaking about the direction of investment, you need to understand that there are many directions, for example, the development of new entertainment facilities, establishments of a commercial nature, which should generate income. However, it is necessary to prioritize correctly and choose between the future of the country or the development of the commercial sector of the economy. Therefore, if you choose education among the listed items, you can improve the educational infrastructure in all regions of the country.

In the coming years, the main attention should be directed to the efficiency of the use of funds allocated for it. Ensure children have equal access to educational

resources. How does this compare to poverty? The answer is quite simple. If you send cash benefits in the form of cash payments to support children in poor families so that they can send the child to school, there is no guarantee that these payments will not be embezzled by the parents, since this family is in the poor category. The child will continue to miss school. However, if we create the right infrastructure, provide children with public transportation to and from school, and provide good meals at school during the day, then children from poor families will have a much better chance of being in school. Emphasis on this issue can be effective in those regions where the climate, geographical features of the region are a problem for children from poor families to attend schools. In rural areas of Kyrgyzstan, this problem is quite common.

The following recommendation comes from my experience in finding reliable sources as well as research. It is necessary to strengthen research activities in the country. In Kyrgyzstan, in my opinion, the research potential of various institutions is underdeveloped. Research allows us to find out significant problems among the population, to find out the reasons for certain processes, in our case, the reasons for children not attending schools or identifying the causes of poverty in the regions. It is necessary to establish a permanent monitoring center for residents who are classified as poor in order to provide timely assistance in the event of critical situations. This center, in my opinion, should have its own research potential for further risk prediction for the study groups.

Also, the spread of coronavirus in 2020 made it possible to assess the level of readiness of the country to switch to a remote mode in case of emergency. In this regard, it is necessary to develop and implement new requirements that provide for innovative approaches in the educational process management system. Conduct

training for teaching staff on the features of online lessons and create an open free online platform for students of all forms of education with the formation of a database of the best lecture materials and practical exercises, since the education system in the Kyrgyz Republic, unfortunately, is still based on material that remained since the days of the Union of Soviet Socialist Republics.

In conclusion, I would like to note that this study will help to get a detailed understanding of the impact of poverty on the educational system of the Kyrgyz Republic and can serve as a useful source in case of conducting your own further research in related topics.

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Abstract

빈곤이 교육 시스템에 미치는 영향

키르기스스탄의 현대 교육 분석

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글로벌행정전공

최근 글로벌 정치위기, 코로나19 질병 확산, 기후변화로 인한 빈곤인구 증가 문제 등은 전 세계적으로 가장 시급한 문제 중 하나다. 따라서 본 연구는 키르기스스탄의 사례를 통해 빈곤과 교육, 그리고 그 관계의 본질을 이해하는 것을 목적으로 한다. 특히, 키르기스스탄의 교육 시스템의 질(quality)에 대한 부족의 영향을 확인하고 본 논문에서 언급된 지표들 사이에 어떤 관계가 있는지 알아내는데 그 목적이 있다.

본 논문의 분석은 키르기스스탄의 인구 및 건강 조사를 기반으로 수행되었다. 설문조사는 키르기스스탄 통계위원회에서 수행하였으며, 교육 수준, 부(wealth), 거주지, 가장(Household Head)과 같은 중요한 변수를 기반으로 분석하였다. 본 논문의 분석의 타당성과 변수 간의 실제 관계를 보여주는 신뢰할 수 있는 결과를 얻기 위하여 Pearson 상관 분석, 선형 회귀 분석과 같은 여러 유형의 분석이 수행되었다. 분석의 결과는 빈곤은 인구의 교육에 상당한 장벽이며 빈곤과 교육 성취도 사이에는 음의 상관 관계가 있었다.

본 연구는 아동의 취학률에 영향을 미치는 주요 요인과 이러한 과정에서 소득의 영향에 대한 키르기스스탄의 현황을 파악하는 데 유용한 자료가 될 것이라 사료된다. 그리고 본 연구는 키르기스스탄 인구의 사회 보호 분야

에서 개혁을 수행하는 데 활용될 것이며, 연구 분야의 현재 상황을 개선하기 위한 권장 사항이 공식화 되었음을 알린다.

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