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ECONOMETRIC MODELLING OF QUALITY OF SECONDARY EDUCATION IN UZBEKISTAN

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ABSTRACT

The manuscript aims to investigate the key determinants of the quality of education of upper-secondary schools over the regions of Uzbekistan. Among the 10237 schools operating in Uzbekistan are studied under this project. The dependent variable is quality of education rather than quantity of schooling, while the examined independent variables, which are supposed to have significant influence on the quality of learning outcomes, included the economic and labor conditions in the nation, teacher quality, and context measurements. To accurately evaluate the education quality of the students in public schools, enrolment rate of secondary school students to Universities are employed. The results from the regression analysis revealed that among the eight independent variables tested, only teacher quality measured in terms of Category I teachers, female teachers and poverty had a significant impact on education quality in terms of admission rate to Universities, at a 95 % confidence level. First category teachers and poverty explained 17 % and 38% of the total variances for the admission rate, respectively, while female teachers provided 47 % accurate predictions for the student success to be admitted to their chosen Universities. Thus, they can be judged as the key factors for quality of learning outcomes achieved by higher school students. On the other hand, unemployment, retail turnover per person, industry production and student qualified teacher ratio were unexpectedly found to have no statistically-significant relationship with education quality. Nonetheless, the constructed multiple regression analysis for the admission rate, which comprised all three independent variables, could sufficiently illuminate the students' achievement up to a 51.9 percent accuracy. The outcomes indicated to conclude both teacher quality and female teachers, and poverty rate can be considered as the key determinants of education quality in Uzbekistan. Therefore, in order to raise the education quality at this stage, education administrators and related parties should primarily focus on improving teacher quality and educating and hiring more female teachers in secondary schools.

INTRODUCTION

A nation's ability to innovate, advance real purchasing power, and reduce income inequality – is highly connected to the quality of education, therefore, it has been classified as one of the priorities of the United Nations' Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development. It is widely recognized that the purpose of education is to stimulate learning and assist individuals gain knowledge and develop cognitive and reading skills that can consequently enable them acquire better jobs not only to survive, but also to thrive. Hence, skills and intellectual capital are essential to improve productivity, incomes and access to employment opportunities, in turn, it leads nations to be sufficiently integrated with competitive and dynamic markets. Thus, public schools act as main actors in the development of those valuable skills. This study evaluates main determinants of quality of education of secondary schools in Uzbekistan. Evidently, providing high quality of education signify one of the core elements of growth that improve nation's capacity to effectively adapt and catch advanced technology to ensure higher quality of living.

A vast literature has appeared on educational quality in recent years, examining factors that help improve education and proposing ways to promote better learning in schools. In a search for the factors that promote quality, countries' programs as well as the literature increasingly emphasize teachers, schools, and communities as the engines of quality, with teacher quality identified a primary focus.

In accordance to case studies from UNICEF, this study will focus on economic and labor market conditions in the society, teachers, and teacher-student ratio depending on data availability.

To conclude, this study examines the main components of quality of education including teacher quality, poverty, industry production, retail turnover per person, student teacher ratio, number of teachers, that influence the quality of learning outcomes of upper-secondary schools' students

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1.1 Background of Education System in Uzbekistan

Uzbek government has long recognized the necessity of education in the development of nation's living conditions. Shifting from agricultural economy, Uzbekistan now has moved gradually into a knowledge-based economy. As a result, education is necessary to equip Uzbek youths with valuable knowledge to raise their well-beings. Realizing the importance of the quality of education, Uzbek government is strongly dedicated to enhance education system by implementing several significant education reforms since 2017. One of the substantial changes in education system is that General Secondary Education (GSE) has been modernized, which introduces 11 years of compulsory GSE with the choice of three pathways: a) 11 consecutive years of schooling; b) 9 years of study in secondary school followed by 2 years in an academic lyceum; or c) 11 years of study in GSE followed by maximum 2 years in a vocational college (Presidential Decree , 2018). The importance of Vocational education is huge among poverty reduction strategies as this pathway enables people living in lower level of conditions afford and access to training opportunities and skills. The main advantage of that part of the reform is that Secondary Specialized vocational education is more flexible, highly aligned with labor market and network has been optimized based on local economic development, labor market forecasts, and technological growth and trends.

1.2 Problem Statement

Education is a crucial instrument applied in modern societies to prosper, as it alleviates the difficulties which are confronted in life. While recognizing the importance of quality of education, Uzbek government education spending amounted to 5.4% of GPD in 2017 and 5.9% in 2018, more than compared to other OECD nations such as Kazakhstan, Russia and Turkey (World Bank, 2019). Even though approximately a third of government budget is devoted to education, it is difficult to assess whether government spending on education converts into higher learning outcomes. Lack of consistent and regular data on education accomplishments doesn't allow the policymakers to make appropriate link between expenditure and learning outcomes. Predominantly, public spending of government on education sector was US$2.94 billion, where around 56% of total spending was retrieved by GSE. It sounds good that Enrolment Rate in secondary education is almost 100% and completion is also 100%, as there is no "grade repetition" in Uzbekistan, however, admission rate to higher education is very unsatisfactory at about 10%, which constitutes very low shares among regional counterparts. Apart from that there is no any early literacy assessments implemented in the first years of general education. It is true that MoPE (Ministry of Public Education) regularly runs national examinations in Grades 4 and 9, however, exam outcomes are not consistent, transparent and comparable among regions as they are not standardized. Therefore, Extra exams have been conducted by the State Inspection for Supervision of Quality of Education (SISQE), but still assessment results can't be employed by policy makers.

Boosting the efficiency of education leads to enhance the quality of human capital and advance Uzbekistan's prosperity. On this purpose, I am going to develop suitable and unbiased measurement of learning outcomes to evaluate whether favorable learning takes place, and help to determine whether the extensive fiscal funds of government are allocated efficiently.

Research Questions

The purpose of research is to develop indicator that can be used to measure the quality of education in Uzbek schools in accordance to SDG 4 targets. To achieve the aim of study, the following questions will be examined:

a) Which of the variables, i.e., poverty less than 5.5$ per day, unemployment, industry development, retailing, teacher quality, student teacher ratio and female teachers, are the main determinants of quality of learning outcomes in public schools of Uzbekistan.
b) To what extent do economic and labor variables, quality of teachers and input measurement influence the quality of learning outcomes in secondary education.

Research Objectives

The primary objective of this study is to identify the key determinants of education quality in the secondary schools in Uzbekistan. In order to fulfill this objective, several specific objectives are established as follows:

a) To identify the key determinants of education quality of secondary schools in Uzbekistan.
b) To investigate the impact of economic and labor variables, teacher quality, and context measurements on education quality.

Literature Review on Education Quality

Educational quality has always been implanted within nations' policies and programs. A more recently established way of focusing on quality emphasizes the content, conditions and relevance of education. This way to quality concentrates on procedures in school activities and interactions between school and other stakeholders ranging from students to society. The main concentration is given to the process in which inputs cooperate at secondary schools form the quality of learning (UNICEF 2015, World Bank 2015).

Thus, Harvey (1995) developed a framework for quality by inserting five goals for education that form the view of quality within individual systems. Education quality can be regarded as followings:

a) As exceptionality where excellence is the perspective of quality that derives education;
b) As consistency which requires equality in schools and classrooms across the system;

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c) As fitness-for-purpose in which students are taught for determined roles by stressing instructional specialization;
d) As value for money, education has always rewarded individual and nations' investments in knowledge, quality is considered as the extent to which education carries value for money;
e) As transformative power that promotes positive social change in societies.

Emphasizing the nature of quality of education, Hoddinot et al (2007) defined quality of education in terms of student achievement and controllable school inputs that has impact on student learning outcomes. He has shifted the focus from number of years schooling to the complex integration of inputs, processes and outputs related to enhanced model of learning. Author asserted that increased learning time for learners while decreasing workload and size of classroom groups help to achieve higher quality in students' learning outcomes. There are two ways of evaluating quality of education identified by Muskin (1999). First view of evaluating the quality of learning outcomes, predominant in both the research society and governmental authorities, refers the link between 'inputs' and 'outputs'. Here, inputs include several factors ranging from infrastructure, resources of the schools to family and socioeconomic conditions such as quality of school surroundings, textbooks, teacher salaries, curriculum, and learners' health and well-being. While the output comprises students results on assessments and examinations. Under this first approach, it is tend to detect inputs most highly related to favorable learning outcomes. Second focal point of identifying quality of education is evaluation of efficiency of schools. Efficiency of the system can be measured both internally and externally by the rates of graduates and productivity of school graduates, respectively. Efficiency of school graduates itself can be measured based on admission rate in higher education, wages or economic yields accompanying with individuals' skills developed in schools.

Therefore, research outcomes enlighten the causation between education, economic prosperity and poverty. Number of studies show that people with more years of education earn more income compared to those who has less years of education, with the rate of return differing with high level of education (Behrman, 1999). Particularly, the education and skills of individuals in developing nations positively affect the nature of its production and subsequently influence the composition of its growth. If we take a look at another side of coin, we can observe how poverty forms learning outcomes achieved by school pupils. Education is the foremost sector which is highly touched by poverty. Hence, negative relationship between poverty and students' achievements has been justified by number of International Assessment Studies. The Progress in International Reading Literacy Study (PIRLS) evaluated broad literacy skills of grade 4 children in 35 nations, while the Program for International Student Assessment (PISA) cognitive skills (Math and Science) and reading abilities of 15-year-old students in 43 students. These two different studies found out significance link between school outcome and socioeconomic disadvantage in all states. This relationship is considered as a 'socioeconomic gradient'.

Therefore, time series studies conducted in the states have been dynamic in representing some of the key elements in producing and maintaining poor achievement. The study compared the academic development curve of pupils during the academic year and during the summer holiday, and their findings prove that schools or students' fail in their academic life is the only and main guilty, instead, families and school are main factors affect to students' success. This result strongly supports the notion that schools are main actors in developing cognitive skills, but it also requires a constant support of parents and communities for underachieved students (King et al, 2007). Besides that**,** there are several multiple factors that derive favorable learning outcomes, the most important of which is quality of teachers and teaching Levin, 2008, Levin et al, 2003). Quality improvement process depends on how teachers conduct classes, how the deliver the information to students. Hence, policy makers, researchers all focus on teacher quality and learning. Within this subsection, I am going to trace the growing emphasis on teachers in achieving learning outcomes. Nowadays, teachers have to engage in continuous learning and advance in professional development programs in order to become reflective practitioners who create active learning environment where students acquire knowledge via problem solving, critical thinking and higher order thinking skills (Lieberman, 1995; Lucas, 2008). Teachers should be rich in skills and knowledge in a range of teaching methods, able to reflect on teaching practice and students' responses, in turn, able to modify teaching and learning approaches considering learners' abilities, skills and background, must understand the curriculum of the module and its purposes, should be able to provide instructions in a fluent language, should possess the abilities to manage classroom effectively, handle problems smoothly, ability to work with others and could construct rapport with teachers, students and community.

METHODOLOGY

Data and Data Collection

In this research, the data came from secondary sources, namely, data are taken from Ministry from Public Education and Ministry of Finance with the aid of Center for Economic Research and Reforms. All of the independent variable data related to secondary school are taken from Ministry of public Education, while the data related to socioeconomic factors such as individuals with income less than $ 5.5 per day, retail turnover per head, unemployment, and industry production, are taken from Ministry of Finance.

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Dependent Variable
A Measure of Quality of education indicator

I have decided to develop education index using admission rate of secondary school children to universities in 2020.

Figure 1: Admission rate of graduates of Secondary Education to Higher education (HE) between 2019 and 2020

	Number of schools (with graduates of Grade 11)	Schools with 0 enrollment (0%) in HE	%	Schools with up to 10% enrollment in HE	%	Schools with up to 30% enrollment in HE	%	Schools with more than 30% enrollment in HE	%
2019	**8 793**	2 126	**24,2%**	2 768	**31,5%**	3 282	**37,3%**	617	**7,0%**
2020	**9 660**	692	**7,2%**	3 423	**35,4%**	4 555	**47,2%**	990	**10,2%**

It is clearly noticeable that there are 4 categories of admission to higher education. Put it simply, schools are categorized on number students admitted to universities. Higher the admission rate implies that quality of education at those schools are also higher. But, we cannot use category as a proxy for quality of education. I decided to develop an index using all these categories. First, I found out range between lowest admission rate and highest one. After that, I assign value to weigh up each category, accordingly, I give 0.5 for those schools with admission rate between 1% and 10%, assign 1 to rate between 11- 30 %, I give 1.5 max weigh to difference between 0% and more 30 %. Consequently, all categories are weighted and summed up to reach at one single education index.

Independent Variables

1) **Poverty rate** is measured as income below USD 5.5 per day
2) **Pupil-qualified teacher ratio by education level**

To measure qualified teacher workloads and human resource allocations in secondary education and to give a general indication of the average amount of time and individual attention a pupil is likely to receive from qualified teachers. Since well-qualified teachers (A qualified teacher is one who has at least the minimum academic qualifications required for teaching their subjects at the relevant level, all teachers who graduates universities bachelor and master degrees) play a key role in ensuring the quality of education provided, the pupil/qualified teacher ratio is considered an important determinant of learning outcomes and an indicator of the overall quality of an education system. This ratio is calculated as following:
Indicator = (number of pupils)/(number of qualified teachers)
Thus, the growth of the school-age population differs across regions and poses additional challenges to the education system. When considering the current student–teacher ratio in general secondary education (GSE) schools in the city, which at 29:1 is the highest in the country, versus a national average of 18:1 (Based on author's calculation)

3) Female teachers
4) First category teachers
5) Second category teachers
6) Unemployment
7) Retail turnover per head
8) Industrial production

CONCEPTUAL FRAMEWORK FOR EDUCATION QUALITY

Based on the literature review, relationship between regressand, i.e., education quality, and regressors, i.e., teacher quality (categories) pupil-qualified teacher ratio, unemployment, industrial production, retail turnover per head, were created.
Several hypotheses are set based on the given framework:
H_0 = Education quality is neutral: It does not depend on given independent variables
H_1 = Female teachers has significant influence on students' achievement
H_2 = Category of teachers has significant influence on students' achievement
H_3 = Income less than $ 5.5 per day has significant influence on quality of learning outcomes
H_4 = Retail turnover per head in regions has significant influence on quality of education
H_5 = Pupil qualified teacher ratio has significant influence on student's achievement
H_6 = Unemployment has significance influence on education quality

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Thus, six hypotheses were derived and tested for their validation so that behavior, relationships or characteristics of secondary schools in Uzbekistan could be explained reasonably, which will assist local administrators and policy makers in making proper decisions regarding education quality improvement.

METHODS

The quantitative method is used in this cross-sectional research. The intend of the study is to examine the influence of socioeconomic factors and school components on education quality measured in terms of admission rate to higher education.

For this purpose, it is regressed the following equation

$$Education\ Index = \alpha + \beta_1 Poverty + \beta_2 Unemployment + \beta_3 Category\ I + \beta_4 Category\ II + \beta_5 FemaleTeacher + \beta_6 Retail + \beta_7 industry + \frac{\beta_8 Student}{Teacher} + \varepsilon$$

DATA ANALYSIS

In this research, the data analysis was divided into two parts: descriptive and inferential statistical analysis. Details on the data analysis will be discussed further in the following sections.

Descriptive Statistical Analysis

The analytical measure described the main characteristics of the collected data and attempted to summarize the data set in the numerical data for comparison or descriptive purposes. This descriptive statistical analysis is generally used to report, explain, and describe the nature of the sample. Descriptive statistics are commonly used in most scientific and social science research and were employed in this research. The parameters for the descriptive statistical analysis include frequency, percentage, mean, standard deviation, minimum, maximum, skewness, kurtosis, etc.

The descriptive statistics demonstrated the demographic attributes of the teachers, schools and socioeconomic factors, are demonstrated in the form of figures for providing general attributes of the samples and for inferential statistical analysis in the next step.

Inferential Statistical Analysis

The inferential statistics approach allows researchers to use samples to generalize about the population from which the samples were drawn. Statistical measures attempt to infer any information obtained from the samples partially collected to explain the population. Inferential statistical analysis is necessary since errors will always occur unavoidably no matter on how carefully the sampling process is carried out. As a result, any sample cannot absolutely and perfectly represent the population. Inferential statistical analysis is very useful for defining the probability of the characteristics of the population based on the collected samples.

Inferential statistical analysis also assesses the strength of the relationship between the independent(causal)and dependent (effect) variables.

In this research, the inferential statistical analyses to be used were Pearson correlation index and multiple regression analysis. The results from these analyses explain the interactions or influence of the independent variables on education quality, which is the dependent variable in the study.

FINDINGS AND PRESENTATION OF THE RESULTS

This section displays the quantitative results of both dependent and independent variables. The results cover 2 parts: descriptive statistical analysis an inferential statistics analysis, which examines the relationship among the variables and hypothesis testing as well as both direct and indirect effects.

Pearson Correlation

According to Table 1, a soft relationship among predictors was found as follows: the correlation between industry and unemployment and between poverty and industry is at -0.5 and 0.10, respectively. Meanwhile, the correlation between first category teachers and second category teachers is 0.267. It implies that there is no sign of multicollinearity violation.

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Table 1 Correlation Matrix for Endogenous and Exogenous Variables

Correlation Matrix	index	Indusrty	Unemployment	Poverty <5.5$	Retail	Category I	Category II	female Teachers	Pupil/teacher
Education index	1	,252**	-,368**	-0,052	,304**	,325**	,172*	,550**	,164*
Indusrty	,252**	1	-,543**	0,103	,328**	0,054	-0,104	,313**	,300**
Unemployment	-,368**	-,543**	1	-0,135	-,555**	-0,115	,172*	-,528**	-,544**
Poverty <5.5$	-0,052	0,103	-0,135	1	,167*	-0,088	-0,123	0,116	,253**
Retail	,304**	,328**	-,555**	,167*	1	0,133	-,142*	,318**	,443**
Category I	,325**	0,054	-0,115	-0,088	0,133	1	,267**	,212**	0,098
Category II	,172*	-0,104	,172*	-0,123	-,142*	,267**	1	0,127	-,303**
female Teachers	,550**	,313**	-,528**	0,116	,318**	,212**	0,127	1	,392**
Pupil/teacher ratio	,164*	,300**	-,544**	,253**	,443**	0,098	-,303**	,392**	1

Multiple Regression Analysis for Education Quality

In this study, there is a dependent variable, education index developed from admission rate of secondary school graduates to higher education, which can represent the extend of knowledge that pupils gained from school activities.

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Table 2 Result of the Multiple Regression Coefficients for the Education Index

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	,194	,591		,328	,743
	Sanoat	1,156E-5	,000	,138	1,793	,075
	aholi_soni_ming	,000	,001	-,063	-,342	,733
	Ishsizlik_darajasi	-,025	,046	-,056	-,543	,588
	daromad_32_past	1,003	,309	,286	3,245	,001
	daromad_55_past	-,707	,206	-,383	-3,436	,001
	ortacha_past	,459	,317	,131	1,447	,150
	chakana_savdo	3,694E-6	,000	,105	1,362	,175
	O'qituvchilar soni:	-2,505E-5	,000	-,111	-,622	,535
	Nomutaxasis o 'qituvchilar:	,260	3,882	,006	,067	,947
	Oliy ma'lumotli:	-,078	,226	-,026	-,346	,730
	O'rta maxsus ma'lumotli:	-,271	,316	-,077	-,858	,392
	Oliy toifali:	,003	1,903	,000	,002	,999
	I - toifali:	1,566	,797	,170	1,964	,051
	II - toifali:	,332	,499	,056	,665	,507
	Mutaxasis:	-3,366	2,265	-,135	-1,486	,139
	Ayol o'qituvchilar:	1,048	,198	,469	5,301	,000
	O'quvchilar/o'qituvchi	-,013	,011	-,146	-1,213	,227

a. Dependent Variable: index

The results of the analysis pointed out that although unemployment, industry production and retail turnover did not have any significant impact on students' achievement in a nation, poverty rate which is less than 5.5 USD per day has a statistical significance ($p < 0.05$). Poverty rate inversely affected the admission rate at 38 percent. Therefore, first category teachers and female teachers explained 17 % and 47% of the total variances for the admission rate, respectively. Thus, they can be judged as the key factors for quality of learning outcomes achieved by secondary level students. On the other hand, unemployment, retail turnover per person, industry production and student qualified teacher ratio were unexpectedly found to have no statistically-significant relationship with education quality. Nonetheless, the constructed multiple regression analysis for the admission rate, which comprised all three independent variables, could sufficiently illuminate the students' achievement up to a 51.9 percent accuracy. The outcomes indicated to conclude both teacher quality and female teachers, and poverty rate can be considered as the key determinants of education quality in Uzbekistan.

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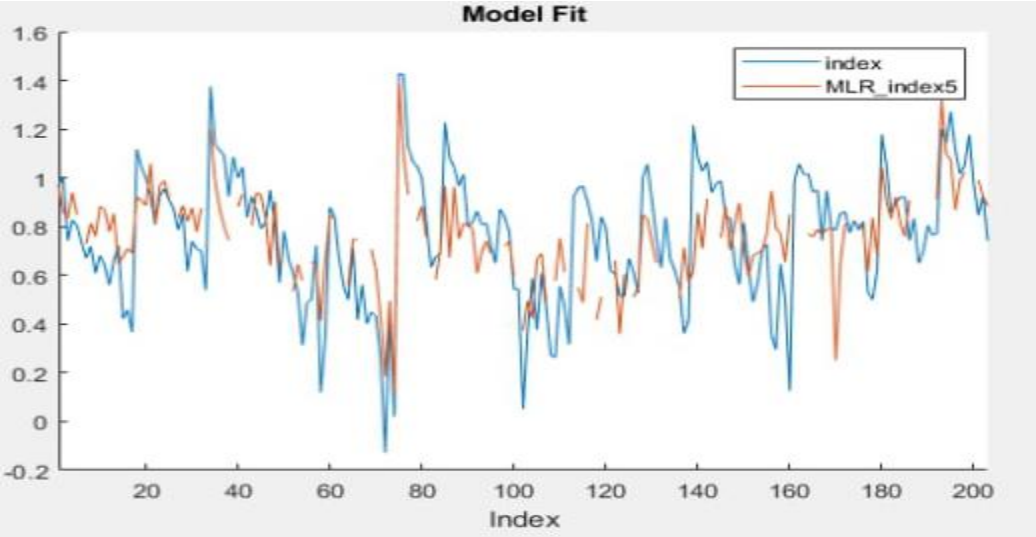
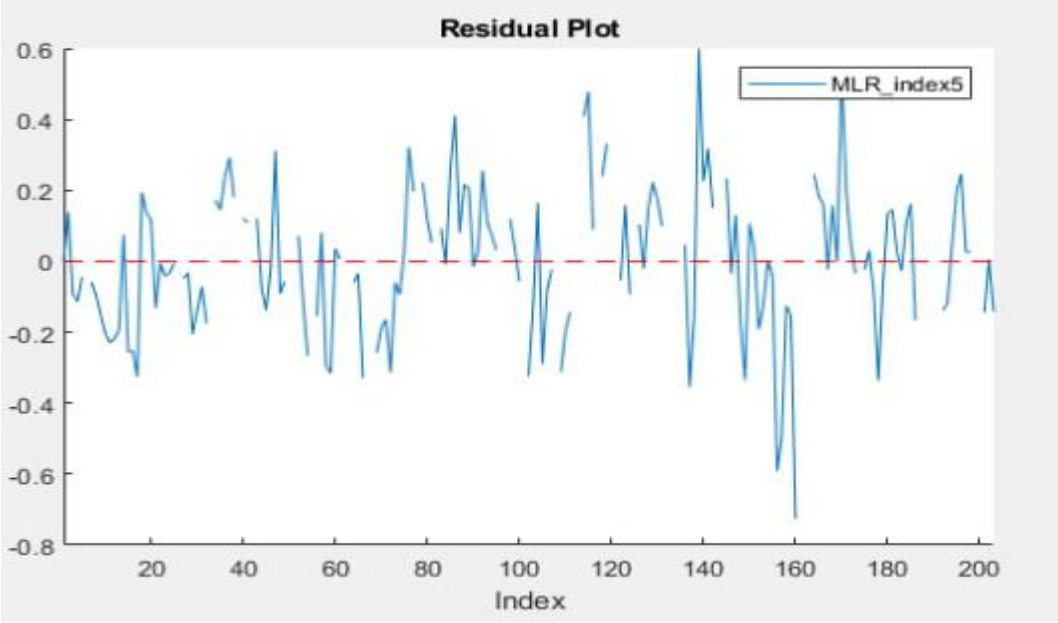
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,721[a]	,519	,463	,20053

a. Predictors: (Constant), O'quvchilar/o'qituvchi, I - toifali:, O 'qituvchilar soni:, daromad_32_past, Sanoat, Mutaxasis: , II - toifali:, chakana_savdo, Ayol o'qituvchilar:, Oliy ma' lumotli:, ortacha_past, O'rta maxsus ma'lumotli:, Oliy toifali:, Nomutaxasis o'qituvchilar:, Ishsizlik_darajasi, daromad_55_past, aholi_soni_ming





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Descriptive Statistical Analysis

Descriptive Statistics	Education Index	Income Less than $5.5	Retailing	Industry	Unemployment	Category I	Category II	Female Teachers	Pupil/Qualified teacher
Mean	0,76	0,38	5088,48	1516,166	9,06	243,64	655,50	1722,68	18,212
Standard Error	0,02	0,01	514,13	250,450	0,04	9,97	24,68	64,13	0,310
Median	0,79	0,37	3078,10	387,200	9,21	225,00	618,00	1683,50	17,369
Mode	1,00	0,17	1674,30	NA	9,00	234,00	603,00	2176,00	NA
Standard Deviatic	0,26	0,15	7234,42	3568,365	0,63	142,44	352,43	915,89	4,431
Sample Variance	0,07	0,02	52336796,29	12733227,210	0,39	20287,95	124208,82	838857,37	19,638
Kurtosis	0,45	-0,09	81,24	53,582	4,58	0,26	0,54	1,21	0,593
Skewness	-0,35	0,38	7,78	6,431	-2,03	0,70	0,69	0,76	0,641
Range	1,56	0,80	85132,50	36827,233	3,60	758,00	1960,00	5035,00	25,798
Minimum	-0,13	0,03	1107,00	NA	6,32	13,00	69,00	170,00	8,040
Maximum	1,43	0,83	86239,50	36827,233	9,92	771,00	2029,00	5205,00	33,839
Sum	154,25	63,96	1007518,13	307781,621	1812,12	49702,00	133723,00	351427,00	3715,158
Count	203,00	168,00	198,00	203,000	200,00	204,00	204,00	204,00	204,000
Largest (2)	1,42	0,74	26938,20	20829,611	9,87	658,00	1621,00	5120,00	29,248
Smallest (2)	0,02	0,09	1112,80	NA	6,52	22,00	83,00	186,00	9,272
Confidence interv	0,04	0,02	1013,90	493,832	0,09	19,66	48,65	126,44	0,612

Summary of the Findings Based on the Research Objectives

a) This section discusses the findings corresponding to 2 research objectives: a) To identify the key determinant(s) of education quality of secondary schools in Uzbekistan; b) To investigate the impact of economic and labor variables, teacher quality, and context measurements on education quality.

Based on the findings, socioeconomic factors except poverty rate less than 5.5$, and student teacher ratio had no influence on education quality. In other words, unemployment, industry production, retailing and student teacher ratio revealed no statistically-significant relationship with education quality accessed via the admission rate of school graduates to higher education at a 95 percent level of confidence. In contrast, both teacher quality and female teachers and one non-school factor – socioeconomic disadvantage were the key determinants of the students 'achievement.

Poverty and Quality of Education

Another important finding of study is that poverty of parents whose income less than USD 5.5 per day, affects school students' academic performances in admission examinations to higher education. The study revealed that poverty establishes in lack of books to read, students over burdened with domestic duties and household tasks, home atmosphere unconducive for learning and inability to afford to pay for extra-session classes. Incapability of parents to buy books for their offspring to read results in serious setback for the students' academic performance. To support above asserted statement, McLoyd (1998) confirmed that "the discrepancy in socio-economic status of parents also produce discrepancy at the rate parents encounter with material and financial necessities for their kids' academic success in school. Also, the children from poor households are often over burdened with domestic drudgery, especially, to help their parents to earn income. Apart from that, most household atmosphere of the poor is not advantageous for learning. Poor Households are not sufficient in terms of income to buy comfortable reading table and chair; the children prepare their home tasks sitting on the ground. Similarly, they cannot afford to pay money for a private teacher to teach their underachieving kids after school. All in all, it negatively influences the child's academic achievement.

Policy recommendations

Based on the findings of the study, the following recommendations were made: - Government should establish social welfare scheme for the poor or needy.

- The various stages of nation should highlight education in their annual budget and ensure quality education is provided for all its citizens;

-Parents should be orientated to know that they are duty bound to sponsor their children's education hence they should bear only the number of children they can train

- Students should be counseled to know that in spite of parents' poverty, they can still excel if they work hard

- Government should launch programs which are oriented to improve teachers' quality

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CONCLUSION

Education has long been considered as an important driving force for economic and social development. Hence, it is crucial to identify main elements of quality of schooling in a state, to improve living conditions of citizens. Among the potential key determinants, i.e., socioeconomic factors, teacher quality, school facilities being tested, it was found that education quality where the admission rate to higher education was used as a proxy for education quality, significantly depended on teacher quality, female teachers and poverty. However, the other key determinant, unemployment rate, industry production, retailing and second category teachers, did not have a significant impact on student achievement, which was unexpected. The results only indicate that at this stage of the country's conditions, it is more effective to promote the education quality in Uzbekistan through the improvement of teacher quality and educating more girls. school facilities. However, after implementing the strategies in this direction for some time, the educational situations and conditions will change as the education quality of the nation moves to a higher level.

It is also important to state that Uzbekistan has made progress for further improvements in measuring quality of education. Hence, SISQE has been engaged in developing national student assessments, including their constructive alignment with international top practices, managing the participation in PISA (Program for International Student Assessment) since 2018 May. While taking solid steps to reform student assessment system to be able to accumulate concrete and reliable information on school pupils learning achievements on a regular basis, Uzbekistan will be implementing PISA at schools in 2021. It enables governments and researchers assess whether government high expenditure on secondary education transfers into high learning outcomes, detect to what extent these investments impact on education quality. PISA assists in constructing nation's capacity to apply valid and consistent assessments of pupils learning outcomes, in turn, it enables us to evaluate the main factors affect to quality of secondary schools over the regions of Uzbekistan.

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