Assessment of Equity in Education in Kyrgyzstan:

Affirmative Action

By

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Abstract

Prior to the introduction of the National Standardized Test for admission to higher education universities in 2002, Kyrgyzstan had a major issue of tuition waivers allocation based on personal connections and bribes. With the standardization of the entrance exam procedures, high-school graduates got a chance to be tested and compete for free education transparently and equally. Besides several other policy goals, this reform was also used as an instrument for equity promotion in rural areas. Keeping score tickets anonymous, the organization of the test still allowed for recognizable 3-color differentiation to identify score tickets from rural areas, Bishkek city, and smaller towns. The share of tickets identified as rural-colored in the pool of competition for free education represents a quota for rural students in a given year. This quota introduction ensures that the ratio of rural/urban students funded by the government is representative of the general population ratio. In this regard, this study analyzes the data from annual reports on the test to break down the state scholarship allocation into regions with the purpose of discovering if the vast rural area is affected evenly by the policy. This study uses the data on performance, participation, scholarships distribution in 53 regions for the period of 2006-2020 to i) analyze how the mean scores of the regions and number of participants are associated with the number of scholarships won ii) determine the regions getting the highest/lowest number of scholarships iii) study a change of the gap between them over time.

Keywords: Equity in education; National Standardized Test; Rural area; Kyrgyzstan

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List of Abbreviations

NST – National Scholarship Test

CEATM – Centre for Education Assessment and Teaching Methods

ACCELS – American Council for Collaboration in Education and Language Study

MoES – Ministry of Education and Science

PISA - Programme for International Student Assessment

KSU – Kyrgyz Slavic University

Introduction

Bishkek, the capital of Kyrgyzstan and a few other cities historically have seen more development dating back to the USSR regime, enjoying better learning outcomes as well as more higher levels enrollment. Despite the nearly 100% participation rate for secondary schooling following the universal study plan everywhere in Kyrgyzstan, numerous socio-economic factors led to an uneven distribution of learning outcomes. The gap between Bishkek and the rest of the Kyrgyzstan falling behind was especially vivid and persistent during the soviet era of higher education exclusivity. The capacity of then-existent universities was around 15% of the high school graduates, which defined high level of competition for the scholarships (education was wholly free). To win this competition, many applicants were successful thanks to their personal connections and bribing. Although the number of universities rapidly increased seeing the liberation from the central governance as well as allowance to be collect fees from the students, weak institutions of biased entrance examination remained and unfair means of competing did not change.

In 2002 the education reform substituted all the internal universities' admission exams by universal standardized test which excluded the human factor of evaluation and granted students without useful network a chance for an objective evaluation. This change had an important implication not only for competition for admission but for scholarships (in a new education system where the majority of seats is not free in comparison to the preceding system USSR). Even though NST significantly reduced the corruption in admission process, it also highlights the importance of discount to the test-takers in rural areas because of the systemic underdevelopment. Affirmative action was taken in order to protect the disadvantaged group of

students from the rigorous competition of a historically more privileged urban population, living in Bishkek city in particular.

The quota system was designed in a way to ensure scholarship distribution among three territorial groups of test-takers attempting to catch a pattern of underdevelopment based on the following division: rural area, small towns, and Bishkek city. The policy determined the scholarship distribution to be representative of the shares of the test-takers competing from the respective territorial divisions. Depending on the shares of the applicants from the above mentioned groups each given year, the distribution of the tuition waivers among the same groups changes respectively. Thus, floating quota mechanism reflects the change in the shares of the numbers of the applicants in each territorial division, but does not actively define how many seats to be allocated to the groups falling behind in education. This might be a slippery slope – to rely on the initial action from rural area in the decision-making process of how much support to provide to rural area. In case of low number of the test participants from the villages in any given year, the villages will also end up having lower number of scholarships. Because of this ambiguous nature of the quota instrument, it is important to study the tuition waivers allocation among the regions, trying to analyze what might be responsible for trends in number of participants since it eventually affects the size of support this region receives.

While high-school graduates of Kyrgyz villages are isolated from the competition with the graduates of Bishkek and other cities, they are still left to be in the same pool with each other. Although villages have a common feature of lower education outcomes than those of Bishkek and other cities, diversity within the rural category imposes an importance of understanding how evenly the rural share of state scholarships is scattered across the smaller territorial units. This paper aims to explore the scholarship distribution across 53 regions of Kyrgyzstan to have

a wholesome picture of where the state support is directed the most. Further on, having identified the regions benefitting from this quota policy the most it runs a regression against the mean score to see if it is related to the performance. Otherwise, the preference hypothesis can also be considered since the low-scoring students still may apply for the least demanded programs at the least competitive universities and have a higher chance to win the scholarship. Given the transparent showcasing of the scores competing for each other, meritocracy concept of this testing is assumed to be supporting the first hypothesis of performance. The next question is raised up for discussion in this study is to what factors higher mean scores are likely to be attributed in the successful regions, looking at Emphasizing the details of the historical development of those regions, the discussion will follow the discussion of possible factors as number of schools in the region, proximity of universities, prevailing occupations and the the choice of universities where students win the scholarships, whether those universities are located in the same region as well.

This paper is organized in a typical order and starts from Chapter 1 and presents a literature review on the contextual background of Kyrgyzstan in terms of equity in education. Chapter 2 covers affirmative action in addressing equity issues for rural area in Kyrgyzstan: NST reform in Kyrgyzstan and its quota policy. Chapter 3 describes the data extraction from the annual reports, explaining the organization of the dataset and the research methodology. After clarifying the local peculiarities standing behind the major data trends, the chapter covers the methodology. Chapter 4 discusses the results of the analysis bringing up the factors not easily observable or requiring more sophisticated research as a suggestion for further research. Chapter 5 presents concluding remarks and policy implication.

Chapter 1. Access to Higher Education in Kyrgyzstan

Modern Kyrgyzstan has undergone major education reforms and its education system is still connected to the establishments of the past. This section covers the contextual background of the equitable outcomes in Kyrgyzstan. First, it discusses the switch from a very exclusive higher education system to a high coverage corrupt admission system. Additionally, it discusses the routes of development in rural areas and leadership position of Bishkek.

1.1. Education system during the Soviet Era.

During the era of Soviet administration, the pace of development in the society was dependent on the achievements the country had made in science and education, thus these two were important pillars for the general growth of the country. In USSR, the private cost of education was free and government campaigned massively for all people to have basic levels of education hence a rising literacy rate from 16.5% to 99.8% between 1926 and 1979 (OECD, 2010). This follows an increase in the number of schools that were built in mountain places that were considered as remote. There were 1757 schools in these remote areas with an enrollment of about 854 students served by about 50, 000 teachers (Brück & Esenaliev, 2013). The government has carried on with this legacy of the Soviet of building more schools for the local people. Regarding the same, the government had built 2134 public schools at around 2009. These schools are intended to serve local people of Kyrgyzstan in their local languages though some still used others languages. 1379 out of the total 2134 were Kyrgyz-language schools and 162 were Russian-language schools, 7 were Tajik – language schools, and 137 were Uzbek-language schools (Eaurasianet, 2013).

Although Kyrgyzstan was making a lot of efforts in improving the education infrastructure, there were still challenges associated with this Soviet Education system. During the early days, the system of education accommodated both Kyrgyz and Russian languages as medium of education. The students ended up only exposed to these languages at the expense of other languages in the country because of the way the curriculum was designed in a way that it allowed very little adaptation (Korth, 2005). Although the education system of the Soviet Union fostered equality and also promoted quality education for the learners, scholars argues that it contradicted the official doctrine in that it was not egalitarian or monolithic. They viewed the Soviet Education system as solely promoting internationalism and paying little attention to ethnic and national identity (Stoianova & Angermann, 2018). To enhance this uniformity, the state took full control of the education sector. For example, the state appointed and transferred teachers, they formulated the syllabus as well as the textbooks just to be sure that all students had same attitude, same knowledge, and same outlook (Shadymanova & Amsler, 2018).

In late 1950s, people had freedom to choose the language in which they wanted their children to be instructed. Although they had this freedom, there was still a strong feeling to send their children to the schools that instructed learners in Russian language. They were compelled by ideological pressure and the socioeconomic status that prevailed at that time (Mustajok et al., 2008). People did not like the egalitarian approach and the learning standards as witnessed in the Russian schools but still they find these schools as best given that they performed well. The general assumption that good performance was closely related to speaking Russian language hence those who esteemed success had to neglect schools that used local languages. Since many people including the elites in the Kyrgyzstan opted for the Russian-language Education, it led to increased demand and consequently maintained high quality and performance standards (Gul, 2019). On the other hand, the quality of education and performance standards of Kyrgyz-language schools had deteriorated. This created a big disparity between the Kyrgyz and Russian

medium schools besides the difference in status between rural and urban schools.

1.2. Education evolution in independent Kyrgyzstan

The Russian schools offered quality education in the Kyrgyz. When the Soviet Union broke up, it resulted in serious challenges in the education sector. According to a 2020 report by United Nations Economic and Social Commission for Asia and Pacific, more than 70% of the population in Kyrgyzstan lives in rural areas (UN ESCAP, 2020). In relation to this, a report by the United Nations Children's Fund revealed that most schools, about 80% are located in these areas to serve this big population (UNICEF, 2020). It has already been established that these schools were of low quality in terms of infrastructure and education because of the language used. Because of their location in agricultural areas, most students are frequently out of class to carry out agricultural duties and other family responsibilities (Mertaugh, 2004). In the year 2010, there were over 2500 children who dropped out of school (The OSLO Center, 2014). This large school dropout can be attributed to a collapse in an economy that reduced support initially given to the social sector. This large dropout can be attributed to inadequate learning materials, increased cost of education, and insufficient nutrition.

These signs of education in completion were evident sometime before it happened after the Soviet era. For example, in 1993, 83.6% of the Kyrgyzstan population completed their education (Kyrgyzstan, 2007). Three years after, it reduced to significantly reduced to 76.4% and further to 69% in 1999. The same was witnessed in the number of pre-schools. In 1991, there were 1604 pre-schools and by the beginning of the new millennium, there were 416 schools only with a preschool enrolment of 14% in the whole of Central Asia (UNESCO, 2007). The reduced rate of enrolment, number of preschools was because of high costs of education, low income, and also when the stated reduced subsidies on food and transport. As a result of low enrollment, there was the privatization of many preschools. Some were destroyed during

independence and some sold.

After Kyrgyzstan gained independence, there was a disparity in the quality of education that people received in rural and urban areas. The government came up with a reform strategy called "diversification" which brought in more problems than a solution in education (Amsler & Shadymanova, 2016). New innovative schools sprout under this reform. These were private schools such as gymnasium, lyceum, and also special schools for the gifted students which were located in the urban areas (Abdoubaetova, 2020). Being located in urban places implies that they attracted rich families who could afford to pay the fee. The schools which were located in urban places were metamorphosed into a "New type" that offered advanced coursework on top of the basic curriculum. The urban schools ended up providing quality education compared to those in the rural areas that were funded by the state. As a result, students who schooled in most of the urban schools had a better chance to join higher education levels that were prestigious.

During the USSR, access to higher education was free. Students also enjoyed stipends from the state despite just being there a few institutions that offered higher education. Because of this scarcity, only 15% of the students who graduated from secondary education could secure chances in these institutions. When the USSR disintegrated, 231 00 students could now join these institutions as the number increased from 10 to 50 (Rillley, 1996). Public Universities absorbed about 213 000 students while 17 500 were secured admission in private universities. In relation to the number of the graduates from the secondary school, about 70% continued with their education in the institutes of higher learning around 2000 – 2002. In terms of proportionality, it was an increase from 141 students per 1000 in 1995 to 426 per 1000 between the years 2004 and 2005 (State University, 2021).

Despite the Education system is free in the era of the USSR, there were limited slots in the available institutions. But how was the admission done? There was no standardized way of

admission. Up to the early years after independence, each of the universities had its entrance exams to determine those who qualified to join them. Since each university had its process of application and determining who qualified, their process was engulfed with favoritism and corruption (Drummond et al., 2003).

In the post-Soviet era, the education sector came up with new policies for financing education in higher institutions that were different from the one used in the Soviet era. The Soviets granted free education to all while the new policy was pegged on the 1992 law of "On Education" (Legislation Line, 2021). The law granted higher learning institutions that were public to levy tuition fees. Some students were covered under the basis of "budget-funded." However, one merited to be in this category after taking the Standardized Test. Another category of the students was under the "contract" where they fully paid for their tuition fee. Looking at enrolment in terms of composition based on these two categories, universities realized 76% of their revenues were realized from students who were paying their fee in the year 2005 while the state paid only 24% (Shadymanova et al., 2018). This showed that fees from the students made up a large part of the revenue collected by the universities. Based on this, state universities cannot meet their expenses by only relying on government funding. They have to cast nets wide and compete with other universities for the students with the ability to finance their education expenses. To do this, they are expanding their education scopes by coming up with different programs though they have been accused of duplication and poor quality programs.

Chapter 2. Reform in Access to Higher Education

2.1. National Scholarship Test (NST)

The admission procedure in the Soviet Union includes oral questions, entrance exams, essays, memorized skills, and factual knowledge. Although it was the best metric for establishing those to proceed with their higher learning, it was affected by favoritism, nepotism, and there was no transparency in some cases (Shamatov, 2016). Theoretically, it sounded to be merit-based but there was manipulation of the results which disadvantaged poor students who qualified. Powerful families used their connections to easily secure enrolment chances for their children. Those with the money bribed their way into these learning institutions. However, those from rural areas and poor backgrounds lost their chances to their "masters." Even after the collapse of the USSR, each university was autonomous in terms of selecting the students to join it. The situation was not better than before as bribery, favoritism, and lack of transparency continued. The poor were denied access to the state scholarship which was won by the rich students (Shamatov, 2012).

The Ministry of Education initiated major reforms in the year 2002 by initiating the NST working with the USAID and American Councils for Collaboration in Education and Language Study (ACCELS). The three bodies worked together up to 2004 when the Centre for Educational Assessment and Teaching Methods (CEATM) was created to implement this responsibility independently (Deyoung, 2005).

The Ministry of Education had objectives of achieving equality for all people seeking access to education chances. It hoped that the selection process was only to be merit-based which was mainly to test for the skills and also knowledge that the learner had acquired while in secondary school. Only this was support to be the basis for getting access to the government-funded

scholarship (Shamatov & Stephen, 2020). The government was thus convinced that NST was the best way to reduce corruption that surrounded the whole process. Since the process was administered by an independent body, it would thus be a solution for children from a poor background to have free access to such an important education opportunity like scholarship. Moreover, the NST was to have a regional balance in the allocation of scholarship according to regions through the Quota systems. The quota system was a mandatory equalization mechanism that enforced proportional allotment of government funds between the population in urban and rural areas (Shamatov & Amsler, 2020). Initially, the corruption that was witnessed in the sector meant that the people in rural areas were denied access to quality education.

The NST has been undergoing great transformation since it took a place for entrance exams. There are reflections about the use of NST as a test to benefit from the state-funded opportunities. Like in recent times, some students are applying to other institutions or specialized departments without necessarily going to take the NST. These alternatives include areas like sports, decorative art, and physical training courses. In such cases, one is not allowed to take the NST testing procedures but instead is subjected to the entry procedures of the respective university. There are also cases where a student has to be subjected to further tests in addition to the NST. For example, the Ministry of Internal Affairs as well as the Bishkek Military School still subject students to their internal exams after passing through the NST (OSCEPOLIS, 2021).

Another objective though not main for NST, was to reform reforms in the education sector in Kyrgyzstan. In most secondary schools, teaching and learning are built on memorization. To make education reforms, NST exams target competencies and the development of skills. It achieves this through testing for critical thinking, how the student can apply the learned concepts into real-life situations, and finally their skills in solving existing problems (Deyoung, 2008). It was thought that having these testing areas in NST will influence the way the teaching

and learning process is carried out since teachers will use the testing questions as guidelines in secondary education (De la Sablonnière, 2009).

2.2. Quota system and distribution

After the Soviet era but before the introduction of the NST, schools that were serving impoverished and isolated community villages and also areas that were in the remote mountain places hardly benefitted from budget-funded opportunities in universities. The introduction of NST was thus viewed as a solution towards granting equality in access to these privileges from the state so that the young people from these places stand a fair chance when competing with those from urban areas and well-off families. In the year 2003, the state came up with a quota system aimed at scholarships being distributed so that all regions are given a fair proportion in the country. By the end of 2009, the country was divided into four quotas: village schools, mountain area schools, town and oblast center schools, and Bishkek schools (Asian Development Bank, 2019). Thereafter, there was the addition of the bonus category and target category.

The Bonus category comprises students who were physically challenged or disabled or those whose suffering was as a result of events that happened in April 2010 and also the ethnic violence that erupted between Kyrgyzstan and Uzbek in June the same year. In April, there was overthrowing of then the president Kurmanbek Bakiev (Harding, 2017). The target was a special category that was comprised of those getting into the teaching profession. It was the time when the country witnessed a great shortage of teaching staff. There was an agreement between individual students, universities, and the local governments of the villages which identified eight universities for this quota group.

The distribution of grants based on the quota system was the trickiest aspect of establishing

equality in education. Those who score above the minimum requirements are granted an opportunity to be part of the competition for the scholarship. The quota system is designed in such a way that candidates from a given quota category compete amongst themselves for the budget-funded opportunities in education. Those who score highest are given a chance to proceed with their education. By doing this, the quota approach enforces proportional allocation of the scholarship and thus there is a balance in the number of students regardless of their origin (Shamatov, 2020).

To ensure transparency in the process of selecting students, there is a grant admission committee with members from different sectors including a university rector, a person from both regional and central government, and also a representative from each of the departments that constitute the university. The function of the committee is to determine a student eligible for the scholarship by selecting one that has scored highest in each category. Despite the efforts made by NST in previous categories, the admission sometimes lacks transparency when the procedure is manipulated. To curb this, the Ministry of Education sends independent observers to monitor the whole process.

Chapter 3. Quantitative analysis of NST

3.1. Data

The dataset analyzed in this study was compiled from the tables in annual reports published by the same testing organization which wins the tender every year for the lack of competent testing service offers. All data is available on their website testing, kg, but the follow-up researchers are welcome to approach me for the data spreadsheet, as the website data is introduced in a pdf format in appendices of the annual reports. All the data was acquired from the test-takers and aggregated into the 53 districts observations. The following variables were used for 53 districts in Kyrgyzstan: the total number of participants in the test, their mean score (district mean score), the number of students who won the scholarship, their mean score (district scholarship mean score). The number of test-takers for each district allows this study to track the level of participation across the districts. This is important as the National Scholarship Test is the only way one can get admitted to a higher education institution. While it is the first requirement to be met in access to education, it has also been an innovative way of assessing some districts where students were not accustomed to standardized testing.

The second variable – the overall mean score for the district-shows the learning outcome for a district as a whole compared to a scholarship mean score, which only reflects the average score of the students who got the tuition waivers in a given district. Both mean scores are used in the paper as the district mean score to discuss the possible large gaps between those students who win the scholarship and the rest of the districts. The number of students getting the scholarship is used to measure the state funds allocated to each district as part of this policy and helps to identify the districts falling behind in this program and those benefitting the most. Even though it's still a fair measure of the funds allocation across the districts, it should be mentioned that

some universities significantly differ in the cost of their services, thus a scholarship there should be given more weight. However, in this study, it is all the scholarships equally weighted.

3.2. Research Methodology

This paper bases its analysis on 2006-2020, analyzing the data from the National Scholarship Test. First, it uses descriptive statistics to answer the first cohort of research questions, which target to cover the gap of district-level analysis of state scholarship distribution through the years. The data on the test-taking annually published by CEATM is offering an opportunity to conduct this research. Shamatov also points at this gap in his several works, encouraging the researchers to use the available data and deeper knowledge of the performance and state funds allocation. As the dataset is extensive, this research pursues to answer a narrowly defined scope of questions based on the territorial division. It needs to be stated there is still more space for researchers to explore the data based on languages participants take test in or the gender of the participants that this paper does not cover. CEATM extensively reports the scholarship allocation and broader categorization into cities, remote mountains, and villages.

Quota policy for rural areas is reported to be successful as around 30% of scholarships are annually allocated to the cities. Given that most of Kyrgyzstan's population is rural, this paper raises the question of the even distribution of scholarships among the districts. Even though the policy addresses the equity issues in grant allocation, this paper emphasizes the importance of exploring if the grant distribution is skewed within the rural area as well. The bar charts of scholarship distribution are attached in the annex for all the years and help answer the above-mentioned research question. The methodology of descriptive statistics also helps answer the changes over time by identifying the most and least successful districts and calculating the difference between the two in the number of scholarships allocated and performance at the exam. Additionally, a simple linear regression is used to reveal the associations and patterns in

the dataset available for the districts: performance, number of participants, number of scholarship winners, winners' mean scores.

Chapter 4. Empirical results and discussion

4.1. Differences in Scholarship Distribution

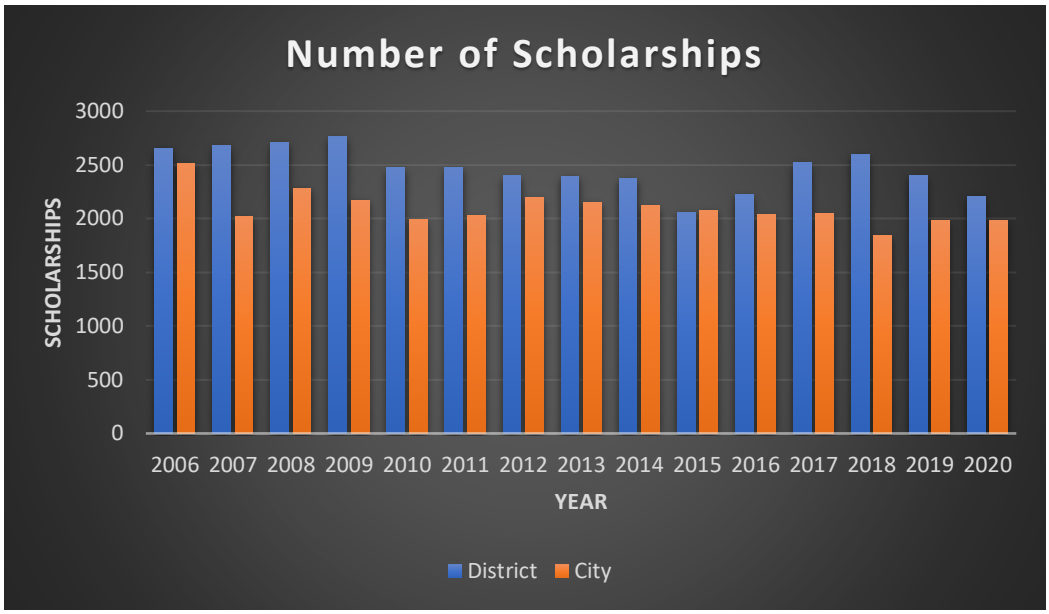
The table below shows the distribution of scholarships between the districts located in the city and those found in rural areas.

Table 1 Allocation of scholarships to urban and rural districts for the period of 2006-2020.

Districts Location	**1-298**
Urban area	31433
Rural area	37066
Total	**68499**

There are 68, 499 scholarships that were awarded between the years 2006 and 2020. In general, the summary table above shows that more districts in rural setup received more scholarships than the districts in the city. For example, 37066 (54.11%) scholarships were awarded to students from the rural high schools in the rural districts compared to 31433 (45.89%) given to students from high school students in the city districts.

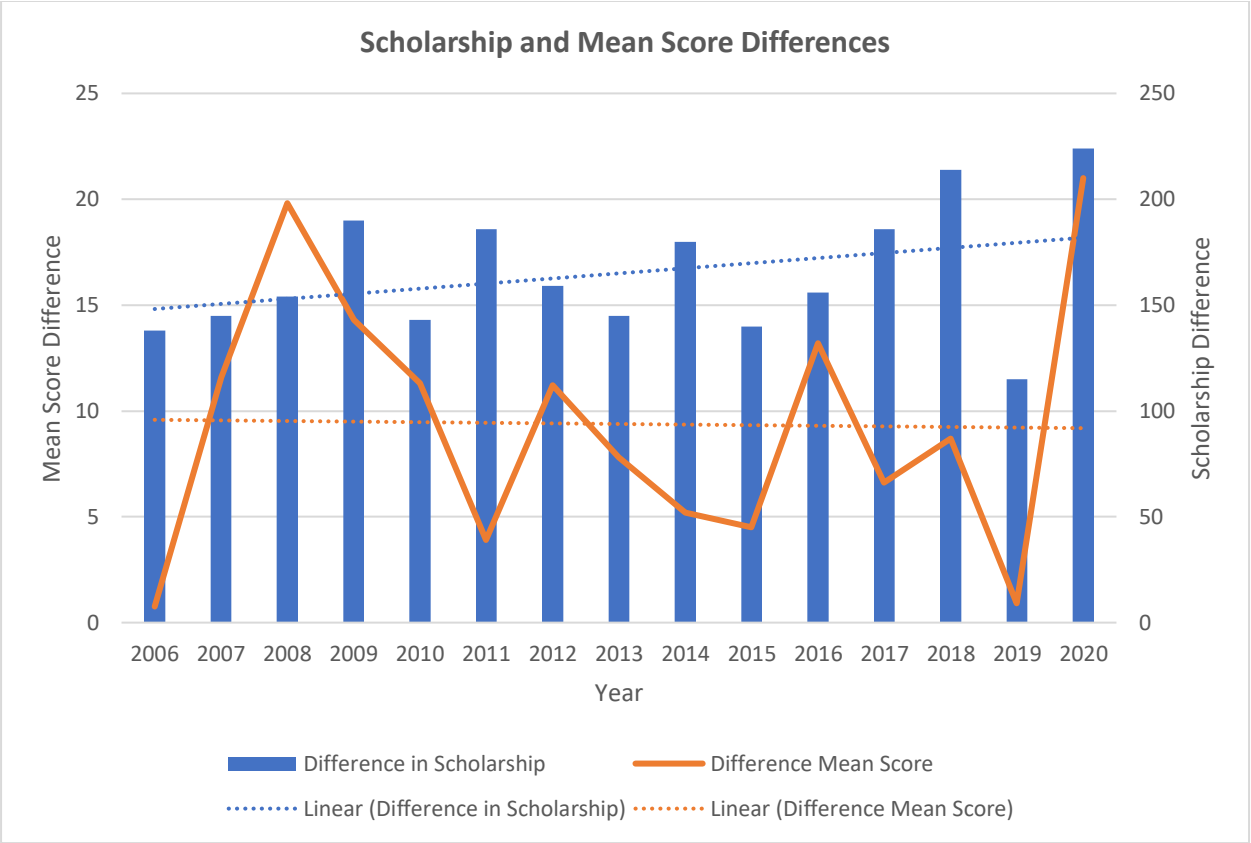
Figure 1 Distribution of scholarships among districts located in a city and all other districts.



The data probably suggests an outstanding achievement of having many students from rural areas access scholarships compared to the case before the year 2002. However, there was the need to establish if all districts in the rural regions received scholarships equally. It was thus essential to test for the effectiveness of the quota system in the rural system. Based on this, a comparison was carried out between a district that received the highest number of scholarships and received the lowest number of scholarships, and a trend was observed putting the Mean Score into consideration. For the five years, Nookat district received the highest number of scholarships of 2861 (7.72%) out of 37, 066 that was awarded to rural districts. On the other hand, Panfilov received 386 (1.04%). Therefore, Nookat received an excess of 2,475 more than the number of scholarships received in the Panfilov District.

The difference in mean score was also calculated to find out the relationship between the mean scored and the number of scholarships awarded between the two districts above from 2006 to 2020. The data is shown in the figure below. It also contains trend lines for showing.

Figure 2 Differences in number of scholarships awarded and mean scores of Nookat and Panfilov districts.

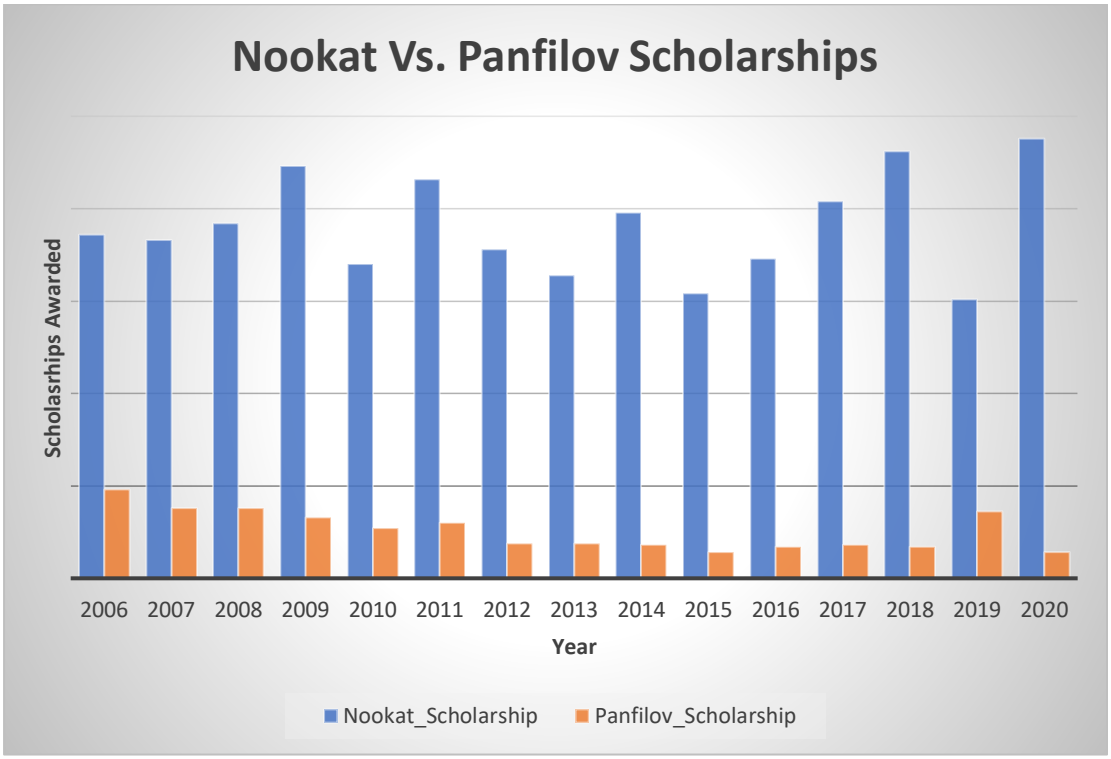


From the figure above, the difference in scholarship has been increasing, as shown by the trend line with a positive gradient. On the contrary, the difference in mean score has been decreasing from 2006 to 2020. This is shown in Appendix 1. The correlation coefficient is -0.087, which implies that as the difference in scholarship allocation reduces, the Difference in the Mean Score increases. Increasing the difference in scholarship between regions means that only the top students from the region with high participation merit in the NST test. Therefore, high probability districts with a high entry will produce a lower mean score than districts with low entry. Calculating the Mean Score is likely to bring about such an inverse relationship as observed in the figure above and table 1 in the appendix hence a negative correlation

Coefficient.

It is noticed that there is a wide difference in the allocation of scholarships in rural districts. The minimum difference was 115, while the highest difference was 224. The reason behind this variation might be because of the difference in population in the rural districts. The population size is indicated by the number of participants in the NST from each district, as shown below. Similarly, there was a significant variation between districts that received the highest and those that received the lowest number of scholarships as compared in Appendix 2. This is because the authorities balanced the number of scholarships proportionally by giving additional scholarships to some districts while reducing those supposed to be received in other places.

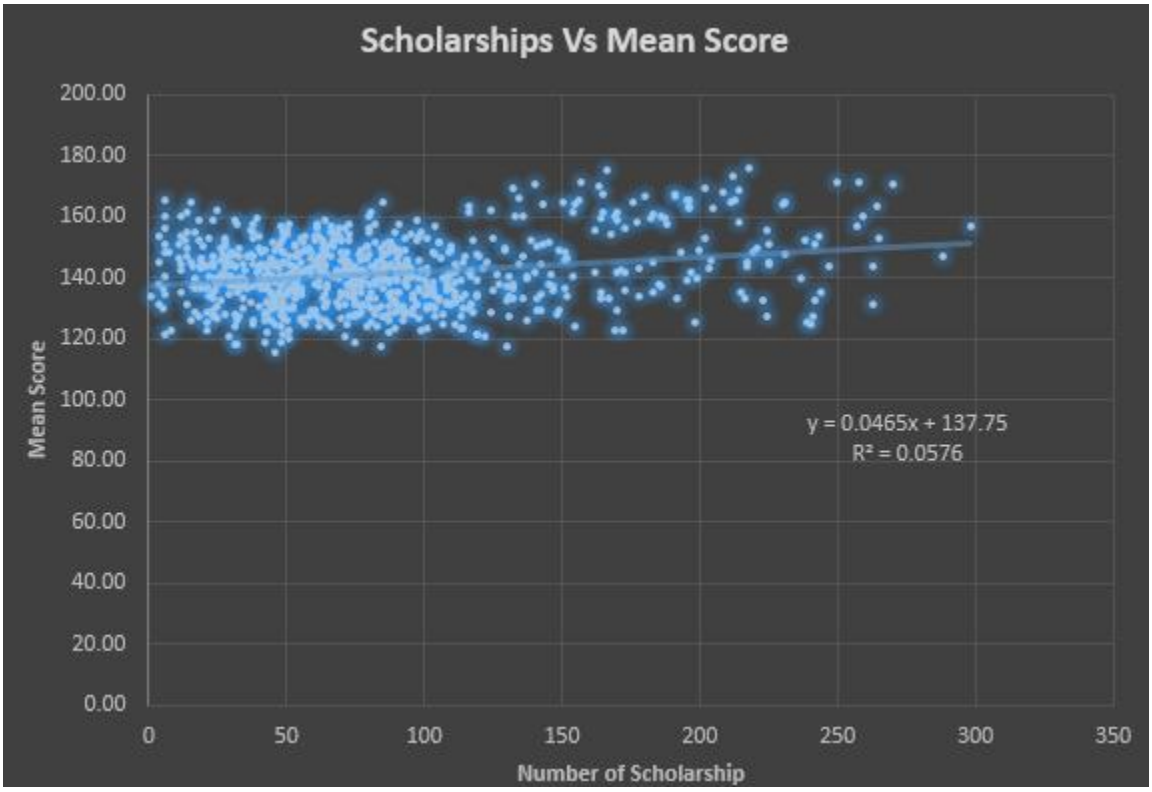
Figure 3 Number of students who received scholarships in Nookat and Panfilov districts.



4.2. Number of Scholarships and Performance

It was also necessary to find out the association that exists on changing the number of

scholarships in an area on students' performance. The number of scholarships was the predictor or explanatory or independent variable, while the mean-score was a dependent variable. The **Figure 4** the graph of mean scores and scholarships and and a linear estimate of their relationship.



From the above Figure 4, the data is linear, as shown by the trend line with a linear equation. It is shown in the form of a linear equation as

$$y = 0.0465x + 137.75$$

Since it was established to be linear, a linear regression was carried out

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	137.75	0.69	199.98	0	136.40	139.10	136.40	139.10
Scholarships	0.0465	0.01	6.97	6.885E-12	0.03	0.06	0.03	0.06

It implies that increasing the number of participants in the urban area will also increase the number of scholarships as follows

For 1000 participants, there will be 99 scholarships.

For 3000 participants, there will be 224 scholarships.

Increasing participants in urban areas by 67%, scholarships increases by 56%

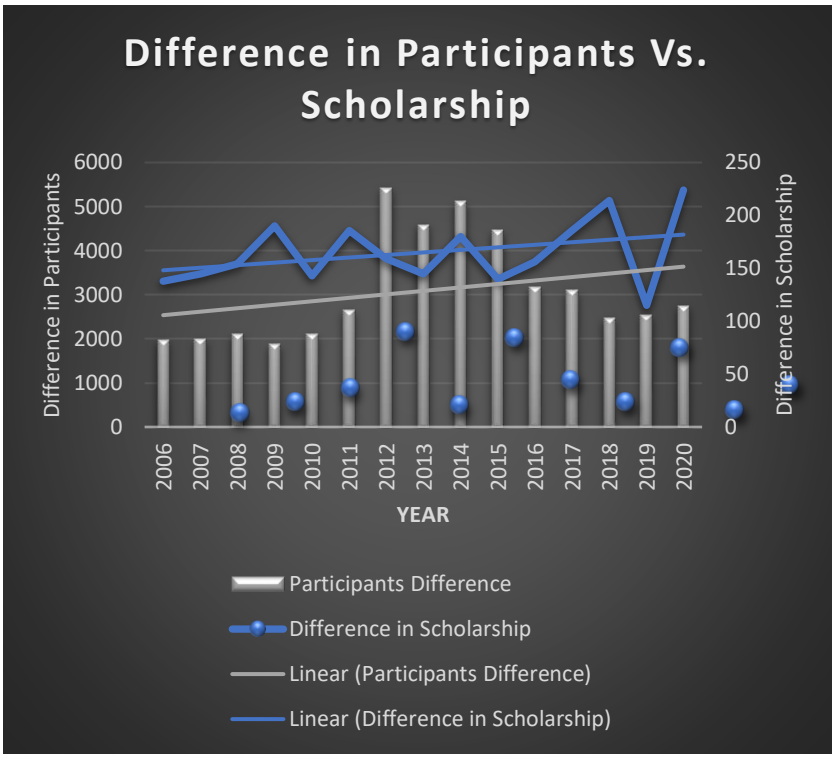
The same comparison was made for rural districts as shown in the table below

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	27.5038	2.474654	11.1142	9.22E-26	22.64163	32.36597	22.64163	32.36597
participants	0.072388	0.003277	22.08656	1.17E-75	0.065949	0.078828	0.065949	0.078828

The regression equation is y=0.072x + 27.5.

For 1000 participants, there will be 100 scholarships. For 3000 participants, there will be 244 scholarships. Increasing participants in rural areas by 67%, scholarships increases by 59%. This shows that the quota system is working successfully to ensure that more scholarships are awarded to students from rural regions proportionate to their number.

Figure 5 Differences in number of participants and scholarships awarded between Nookat and Panfilov Districts.



The chart reveals that as the difference in population increases, there is also a corresponding increase in the difference in the number of scholarships in each year. This might imply that although there was a quota system as an affirmative action to equalize the number of scholarships between urban and rural regions, districts with the highest number of participants were awarded more scholarships. Seemingly, the population was determinant in awarding scholarships where the number of scholarships seems proportional to the population. This was probably done to reduce disadvantaging students from highly populated areas. In the case of equal opportunities in all areas regardless of the size, students from low populated areas will have a high probability of winning scholarships, while those from high populated rural districts like Nookat and Kara-Suu will have a low proportion of students joining higher institutions of

learning.

4.3 Discussion

Districts with the highest population or number of participants are receiving more scholarships. There is no clear explanation for this difference in the allocation of the scholarships. However, the difference might be because of the resource distribution in the rural districts of Kyrgyzstan. Students from impoverished villages and communities are likely to be allocated more scholarships since they rarely had equal opportunities to compete for places in universities that are budget-funded by the government. By NST, the Ministry of Education aims to provide equal opportunities for young people from such districts to compete equally with their counterparts. This supports the literature review section, which is an impact of the quota system that was introduced in the year 2003. This has probably affected the competition rate, as evidenced by the growing difference in performance (Mean Score).

The Quota system is an equalization mechanism in rural districts to ensure that scholarships are distributed based on proportional representation from all the districts in the country, especially those in the mountain and village areas. Another reason for having a difference in the scholarships is the changes made in the year 2010 regarding categories of the quotas. The two quotas were purposeful and bonus quotas. There is the likelihood that districts with the highest number of scholarships in rural areas had learners benefiting because of the privileges granted to them due to physical injuries or being disabled due to events of overthrowing of the president in 2010 and ethnic violence. Similarly, a high difference in the number of the scholarships awarded could also have been due to allocating authorities targeting to award more scholarships to students taking teaching specialties. Awarding target scholarships to students taking these courses was a way of curbing the shortage of teachers in Kyrgyzstan.

Another reason for the inequality in awarding scholarships, as shown in the analysis section above, could be the Triparty Agreements. The Triparty Agreement allowed the administration of the local villages and an individual to make local arrangements to seek budget-funded chances in universities for the "target" students. The districts that had many high school students with the required grade in the NST and a "direction letter" could thus seek more opportunities by collaborating with the identified universities, thus increasing their number of students. The "Direction Letter" was issued by the education department office in the district after confirming the availability of a teaching position in a school within the district. Since schools were being established in the rural and mountain areas after the collapse of the Soviet Union, it created more chances for the teachers in the regions with high population; hence many students from high school went for the teaching course benefitting from the scholarships. Students who took these scholarships in the teaching profession secured jobs easily after their higher education. The education department in the district was tasked with the responsibility of finding a job for students who took teaching tasks after their graduation.

Although the NST's best affirmative action of awarding scholarships seems to be a good solution towards achieving uniformity in the distribution of scholarships across districts, it may conflict with the student's programs. For instance, students from cities or urban districts mostly prefer prestigious courses in specialization and want to join universities of their choice. In such a case, they are likely to turn down offers for government funding to take up higher education in universities or courses they do not want. Instead, such students will opt to pay their fee so long as they get the course of their choice and also study in the universities of their dream. In the past, there were few chances for scholarships in courses such as law, computer science, and economics in higher learning institutions in Kyrgyzstan. Because of the limited chances, students competed stiffly for these courses, and those from the well-off families used the money to bribe their way in getting chances. If this did not work, some parents opted for paying fees

to get these courses. As a result, the courses were filled by self-sponsored students. Although statistics may show that the government sponsors few students to take this course, the course might be filled with students paying their fees in the real sense. Before the advent of the NST, students from the mountain or rural districts learning in the Kyrgyzstan language schools were likely to accept a scholarship to study for the least prestigious university programs because of their low scores compared to the grant winners were from urban schools. Even after the year 2002, their choice is still inevitable unless they win the government scholarships.

The NST is likely to gain popularity across the country, especially from the residents of the rural districts. As shown in the result section, the increasing number of participants reflects the change in the attitudes and faith in people believing that they have a fair opportunity to compete for the funded education scholarships in the country regardless of their origin, history, or social status. An increase in the number of scholarships awarded to districts in rural areas and mountain places is evidence that the quota system is effective in bringing about equality in the country.

Free access to higher education is a real possibility for high school students who are gifted and knowledgeable. Before then, the NST system only served students from wealthy and official backgrounds while disadvantaging students from poor backgrounds. The current system is based on the proportional representation of each district. The NST is shaping the syllabus of the high schools since the test are based on skills and competence rather than mastery of the contents taught in the classroom. It has also changed the school's responsibility from the traditional role of awarding diplomas through any means. With the NST, schools now prepare students to demonstrate through the test the efforts of their teachers while at school hence raising the status of their schools. Due to NST, universities are receiving prospective specialists equipped with improved intellectual and human potential, encouraging the state to invest more in its people. Through NST, Kyrgyzstan is preparing its people for a greater tomorrow.

The results have shown that NST benefits students from rural settings more than those from the urban setting. Districts with a higher participation rate receive more scholarships compared to those with a low participation rate. Even those from cities such as Bishkek receive a number of proportions equivalent to their participation rate. In cases where rural districts receive more than the city districts, the quota policy is affirmative action. Therefore, the quota policy ensures that the number of budget-funded places in any quota category depends on the number of people applying for the faculty.

Students within a given quota can only compete within themselves hence a fair chance of winning and access to the learning opportunities in institutions of higher learning. Sometimes, there can be a change in the way the scholarships are awarded, which is a deviation from the normal allocation by the NST. This is based on the rate of application by students in a quota group. In case no one in a given quota group is applying for a particular faculty, then it implies that there is no person to be awarded budget-funded chances, and these chances are awarded to students in the same quota category but from other districts. When this happens, it may also cause a difference in the distribution of scholarships among districts, as observed in the results. An example is the enrolment of the budget-funded students at Kyrgyz Slavonic University (KSU). In this case, it is easier for students from city districts like Bishkek to make applications to join KSU compared to their counterparts in rural districts. This is because those from the city are not subjected to travel burdens.

Culture also influences the allocation of scholarships in universities. Some people may perceive the KSU as a university for the "elites." Such a belief discourages applicants who are less-informed. At the same time, culture also influences those who are in an urban setup. Such students may not be willing to seek admission in rural universities since they believe they are less prestigious. If cultural factors come into the admission procedures, then the universities situated in the rural setup are likely to enroll most students from rural backgrounds, which might

also be the case with the urban universities.

Ironically, although it is equitable in distributing the scholarships in regions, there has been a great disparity in performance, as shown by the mean score in the result section. In Appendix 3, it was established that city districts recorded a higher mean score compared to districts in rural areas. Students from Bishkek are likely to score higher marks compared to those from rural districts. The difference might because of the teaching languages used as a medium of education and also geographical location. There is a clear variation in the mean score obtained in the NST. This will affect the distribution of programs of courses. Going by the results, high-performing students will be granted quality courses in prestigious courses because of their desires for such quality education. Only the lowest number of students considered performing from the rural districts will be awarded such chances. Historically, the schools now referred to as Russian-medium schools are still enjoying the privileges of quality education. The elite families are still sending their children to these schools despite efforts being made by the state to equalize distribution. The variation and preference to the Kyrgyz medium schools can be attributed to the economic difficulties. In a country with such differences in living standards, it becomes difficult for the government to formulate necessary policies for equality in education, especially in high schools, hence hampering the process. Most of the medium schools in Kyrgyzstan are located in poor regions and rural districts. It has been mentioned that students are educated in Uzbek, Kyrgyz, and Russian.

Chapter 5. Concluding remarks and policy implication.

The study has established that NST fostered equality in the allocation of scholarships in Kyrgyzstan in all regions. Initially, students from urban areas mainly benefitted from the government scholarships at the expense of those from rural areas to study in higher learning institutions. This was due to economic reasons and poor living standards. The rich and those from official backgrounds bribed their ways to getting into scholarships. The objective of the Quota system was to grant equality in access to the scholarship to all districts. It was an equalization mechanism to grant a determined number of scholarships to the rural areas by creating the quota categories. However, the study established that even as the rural areas received scholarships, there was variation in the number of scholarships between districts. Some districts received more scholarships than others. The number of participants that correspond to the population was established as a factor determining the number of scholarships in an area. Regions with a high population received more scholarships compared to those with a low population. Therefore, the population was a determining factor in awarding scholarships in rural districts.

The limitation of this study is that it did not factor in the fact that some students may be awarded the scholarships and still fail to turn up for admission to the university. Instead, the numbers in the analysis were a total of all the students who won scholarships. Since the authority did the placement and choice of the university program, there is a possibility that students will not be pleased with the program they get hence turn down the offer. Similarly, some students could have died before joining the university. The findings from this section could have been used to

measure the effectiveness of the NST in distributing the government education funds on equitable measures. It will be important to find out the proportion of students from a rural district who participated in the test. This could probably have resulted in a recommendation on how well the government may award courses to balance the country's needs and the wishes of the applicants.

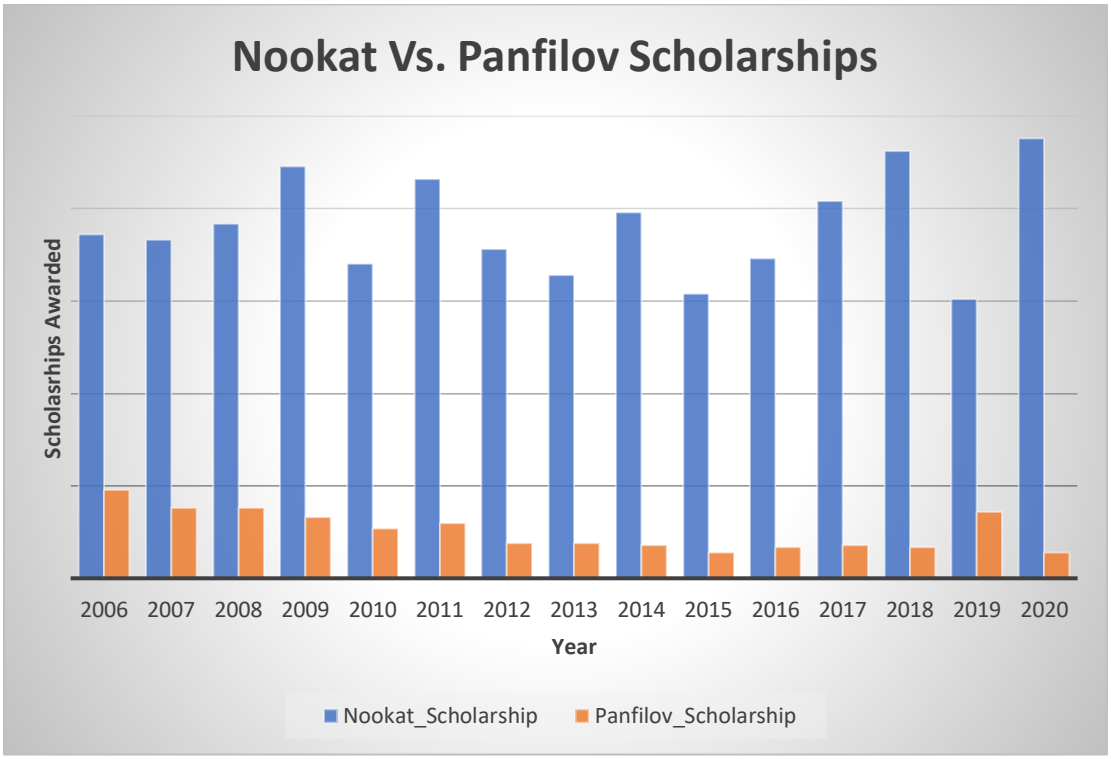
To advance on this research, there is a need to check the distribution of these scholarships based on the gender of the students to establish if there was biasedness in the allocation of the scholarships between men and women. Besides, one can also check the allocation of the scholarships with courses to establish. It will be essential to find out if the government is funding some courses more than others and its reasons. For instance, a government is likely to fund courses tailored towards finding solutions for the existing problems or problems in the future. In terms of pandemics like Covid-19, there is the likelihood that the state will fund health-related courses. With the growing technology, the government will fund most courses related to Information and Technology. Finally, there is a need to carry out further research to establish scholarships for international students. It will be important to develop scholarships for students from rural and city districts seeking studies in the outside countries.

Appendices

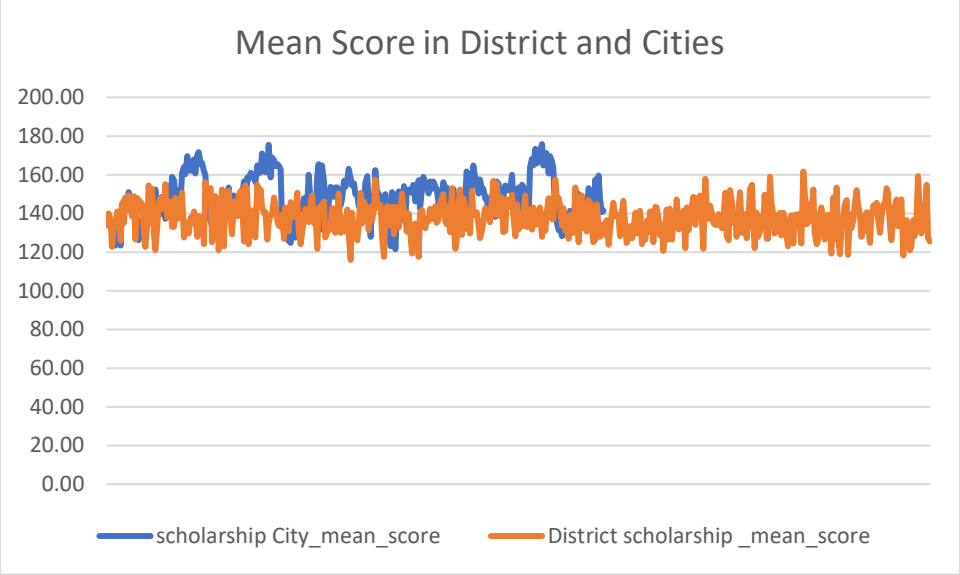
Appendix 1: Correlation between difference in scholarships and difference in mean scores in rural districts.

	Mean Score Difference	*Scholarship Difference*
Mean Score Difference	1	-0.08737
Scholarship Difference	-0.08737	1

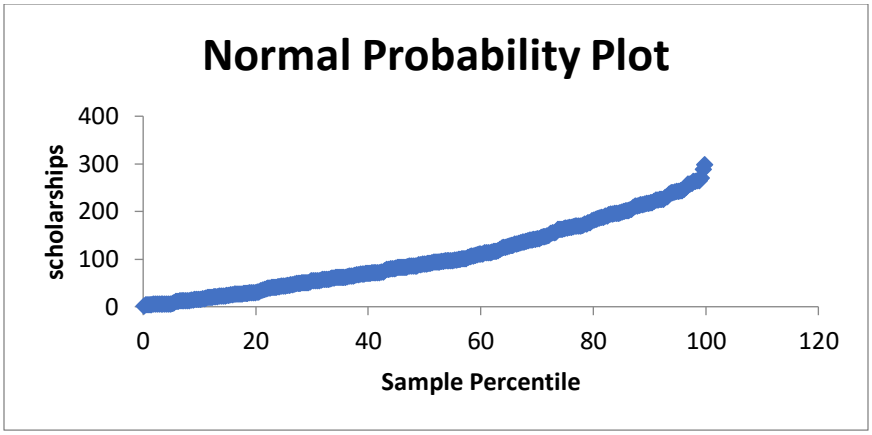
Appendix 2: Comparison of scholarship for highest and lowest district grant reception-wise.



Appendix 3: Comparison of mean scores between rural and urban cities



Appendix 4: Relationship of number of participants and mean scores.



Appendix 5: Regression in rural districts.

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	36.0645	3.965559	9.094431	1.4E-17	28.26035	43.86866	28.26035	43.86866
Participants	0.062687	0.002729	22.97476	7.67E-68	0.057317	0.068056	0.057317	0.068056

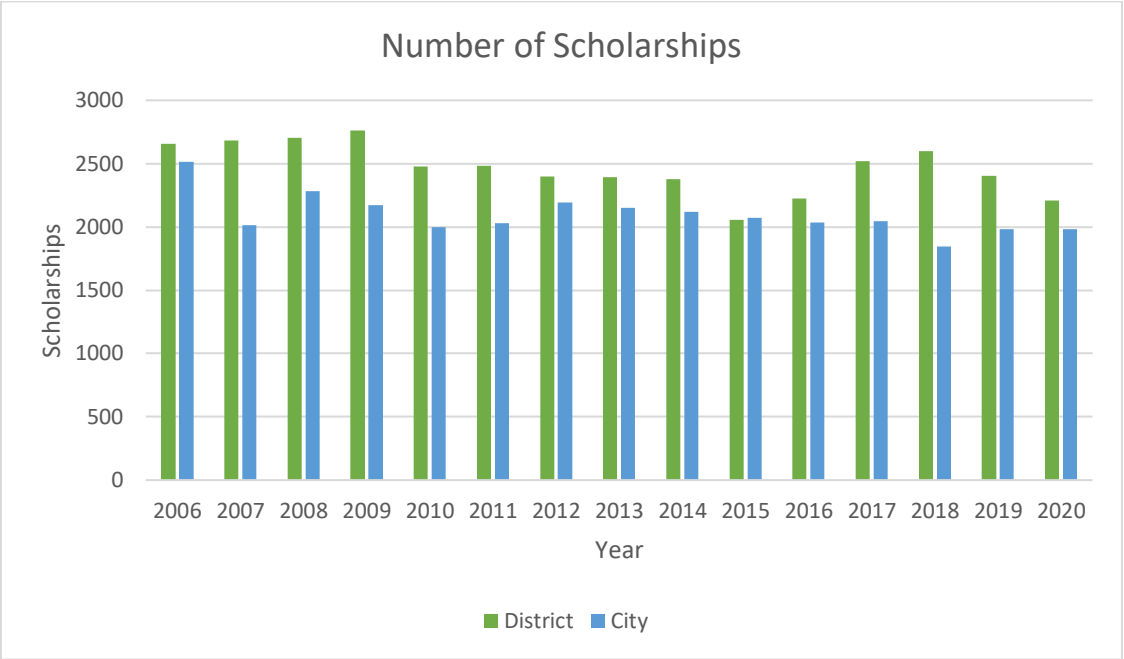
Appendix 6: Regression.

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1063075	1063075	527.8394	7.67E-68
Residual	297	598161.5	2014.012		
Total	298	1661236			

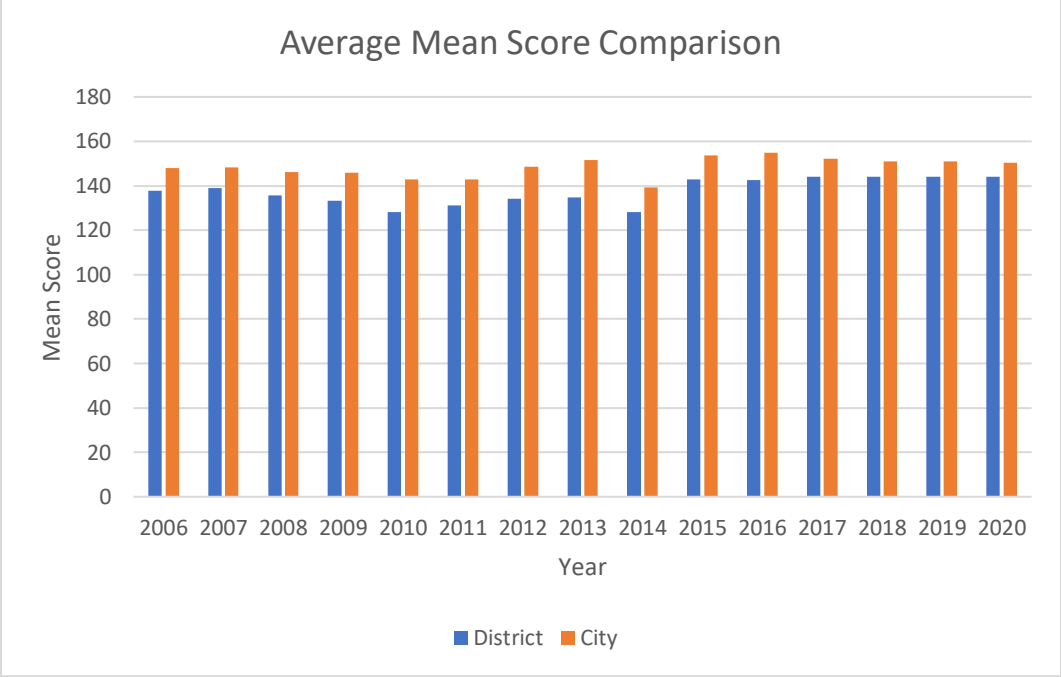
Appendix 7: Regression analysis.

Regression Statistics	
Multiple R	0.799956
R Square	0.63993
Adjusted R Square	0.638718
Standard Error	44.87774
Observations	299

Appendix 8: Comparison of scholarships per year.



Appendix 9: Average mean score over the years.



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