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Students Trapped in the Centralized University Admissions System

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Abstract

The fate of millions of Turkish students depends on the formula for high school performance that is decided by the Central University Admissions Authority. Through the years, two different formulas are being used. We show that the formula which aims to help students with weak socioeconomic backgrounds inadvertently benefits the students from private high schools. We also show that the rankings of some students are affected tremendously by the choice of the formula. Since all the universities are governed by the centralized system, the students who are affected adversely by the decision on the formula are not able to alleviate the burden by applying to a university outside the system.

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1. Introduction

The Central University Admissions Authority ranks millions of Turkish students by their academic performance. The academic performance of a student is computed by adding her achievement from the centralized SAT like test to her high school performance.

Through years, two different formulas for high school performance are being used. The first formula is called the High School Achievement Score (HSAS) and used before 1999 and after 2013. HSAS of a student depends on how her GPA is compared to the average GPA in her high school. This formula gives an advantage to the students from weak high schools. Consider two students who have similar academic ability. The student from the weaker high school probably has a higher HSAS because it is easy for her to outperform her weak classmates. Good students from disadvantaged backgrounds usually end up in weak high schools because of the lack of opportunity. Therefore, HSAS aims at protecting the good students from weak socioeconomic backgrounds who attend weak high schools.

The second formula is called Weighted High School Achievement Score (WHSAS) and used between 1999-2013. WHSAS also compares the student to the average student in her high school but weighs her performance by the quality of her high school. The quality of the high school is measured by using the high school's average performance from the centralized test. WHSAS aims at efficiency by placing the students who are from strong high schools to better universities.

HSAS helps the students who have weak socioeconomic backgrounds in an indirect way. Instead of using HSAS, the Central University Admissions Authority can ask each student's socioeconomic background and use a policy that directly favors the disadvantaged students. However, such a policy is not juristically feasible.

A similar juristical obstacle restricts United States universities to enact their affirmative action policies. Prior to mid 1990's direct affirmative action policies were being freely used. The universities were asking the student's ethnicity and were admitting a certain fraction from each race group. But after mid 1990's this practice was banned for some state universities so they started to use indirect policies. For example, Texas State University system started to use ten percent policy which gives an automatic admission to the student who is at the top ten percent of any high school in Texas. Since, the high schools are highly segregated in Texas, state universities are able to admit many minority students without directly asking for their race. Unfortunately, the indirect affirmative action policies are proved to be highly inefficient. (Chan and Eyster 2003, Fryer et al. 2008) High school ranking is not strongly correlated with university performance if one does not adjust for the high school quality. Therefore, indirect policies achieve minority representation at the cost of getting students with much lower academic backgrounds. On the contrary, the efficiency cost of direct affirmative action policies are much lower.

High school achivement is a very important factor for university achievement. Arcianado and Koedel (2014) shows that the high school rank and high school quality are the two important predictors for university completion rates. Other factors such as the ACT scores are not as important. In the Turkish system, both HSAS and WHSAS contain high school rank of the student but WHSAS also takes the high school quality into account. Therefore, Central University Admissions Authority leaves out an important factor for university achievement when they switch from HSAS to WHSAS.

Apart from efficiency cost, the indirect policies have some unintended consequences. The good students from weak high schools do not always have disadvantaged backgrounds. We show that HSAS gives the students from private high schools an advantage over the students from selective public high schools. The rest of our findings confirm that HSAS helps the disadvantaged students. The students who attend regular and vocational public high schools and students who reside in poorer cities perform better under HSAS.

The fate of the millions of Turkish students depends on the selection of the formula for high school performance. The students whose rank is low under the chosen formula are trapped and affected severely because of the two properties of the Turkish university admissions system. First, the admissions is centralized so all the private and public universities have to comply with the formula for high school performance. Therefore, a student whose rank is low under the chosen formula cannot improve her situation by applying to a university outside the system. This would be different in a decentralized system such as in United States. A student who is not accepted by a Texas state university because of the top ten percent policy can apply to other universities. Second, the placement is done at the department level rather than at university level in Turkey. For example, a student is placed to Istanbul University biology department rather than to Istanbul University. Since the capacity of a specific department is small, even a small change in the rankings make a big difference in a student's placement. If the students were being admitted to a university as in United States, even a major change in the student's rankings might not affect her final placement.

2. Data

We use the university admissions data-set from 2005. All students are required to take the centralized test in order to be placed to any of the Turkish universities. The data-set has the centralized test score, HSAS and WHSAS for each of the 1.8 million students who take the test. Out of four types of centralized test score, we use the quantitative test score which is used when placing the students to science, engineering and medical science departments. These departments are arguably the most prestigious departments in the Turkish university system. We use the location and type of the high schools in order to get the socioeconomic background of the student.

We take the population and GDP data for each city from Turkish Statistical Institute. We rank cities according to their GDP per capita and divide them to four equally populated groups.

3. Analysis

Table 1 gives the distributional effect of the choice of the high school performance formula. We simply add the WHSAS and HSAS to the centralized test scores of the students and rank them according to their total scores. In general, HSAS achieves its equalitarian objective. Girls are favored upon boys. 15 girls replaced 15 boys in the top 1000 and 238 girls replaced 238 boys in the top 10000 when HSAS is used instead of WHSAS. The high schools which have weaker student base such as Vocational, Religious, Teacher Training and Regular High Schools have more students in the top rankings under HSAS. The students from the selective public high schools such as Anatolian and Science high schools lose ground to the students from weaker high schools. The students who are from the cities in the top quartile income group also lose from the equalitarian HSAS formula.

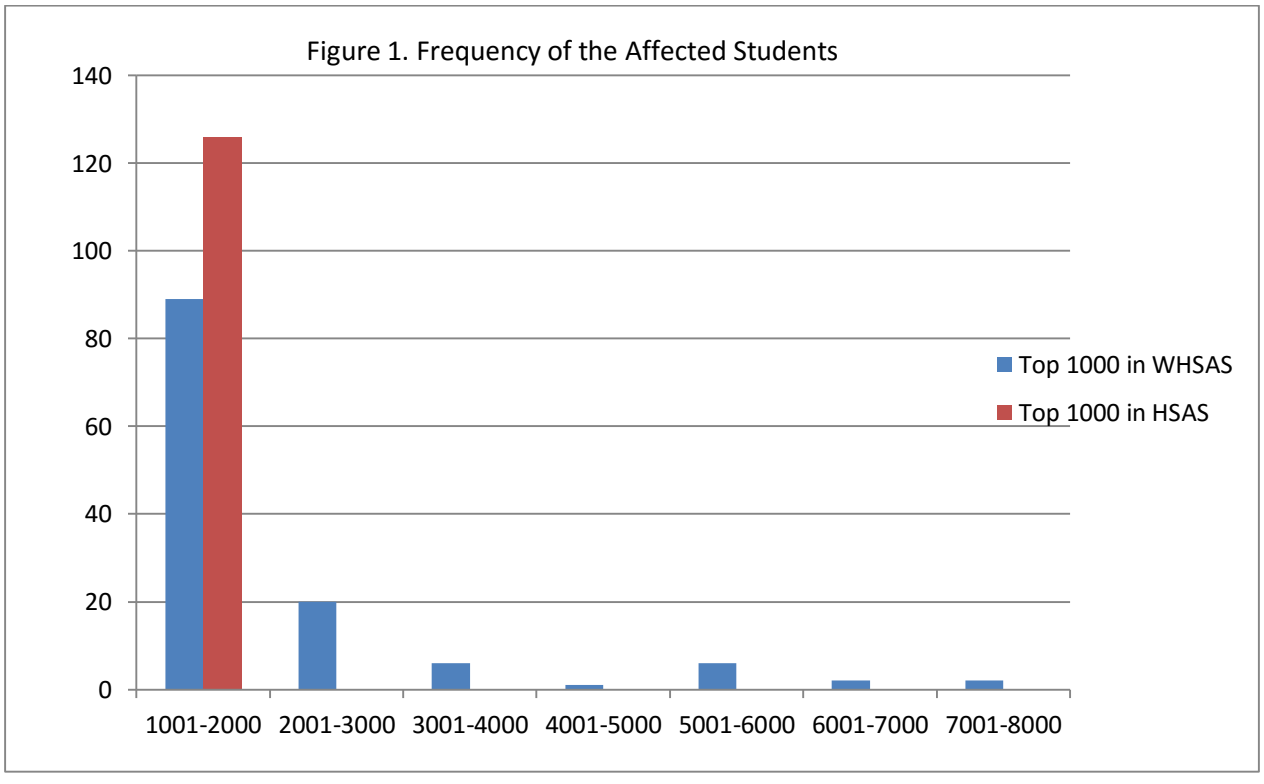
There is an unintentional consequence of the equalitarian HSAS formula. The private high schools also gain from HSAS formula. HSAS does not differentiate between the weak private schools and weak public high schools. Therefore, students who attend weak private high schools also benefit from HSAS formula which aims at favoring underprivileged students.

Table 1. The distributional effect of the high school performance formula

	Top 1000			Top 10000			
	WHSAS	HSAS	% Change	WHSAS	HSAS	% Change	Number of Students
Boy	749	724	-0.03	6679	6441	-0.04	1051909
Girl	251	266	0.06	3321	3559	0.07	799689
Regular Public High Schools	14	18	0.29	605	769	0.27	1033936
Anatolian High Schools	425	431	0.01	5211	5134	-0.01	104239
Science High Schools	330	281	-0.15	1726	1396	-0.19	4584
Private High Schools	196	224	0.14	2026	2218	0.09	164860
Teacher Training High S.	34	45	0.32	420	464	0.10	13198
Vocational & Religious H.S	1	1	0	12	19	0.58	524033
Location Income Bracket:							
First Quarter	248	222	-0.10	2456	2321	-0.05	488931
Second Quarter	409	421	0.03	3576	3557	-0.01	540236
Third Quarter	235	245	0.04	2512	2591	0.03	453756
Fourth Quarter	108	112	0.04	1450	1524	0.05	365236

The choice of HSAS aims at protecting the disadvantaged groups. But at the end of the day, individual students are affected. 874 students are in the top 1000 in both HSAS and WHSAS. The distribution of the remaining 126 students are shown in Figure 1. 89 students who are in top 1000 under WHSAS are between 1001-2000 under HSAS. Ten students who are in the top 1000 under WHSAS fall below 5000 under HSAS. Note that the placement is done at the department level which has a typical size between 50 to 100. Therefore the students who are ranked even slightly lower probably loses a desired option. The students who fall behind thousands of students are at a serious disadvantage. Since all public and private institutions are in the same centralized system, the students cannot mitigate the disadvantage of the system by looking at the alternatives outside the system.

Although there are some students who are significantly disadvantaged due to switch to HSAS, there are no students who benefit to that extent. We see from Figure 1 that all 126 students who move to top 1000 after a switch to HSAS are already in top 2000. In other words, some students from high quality high schools lose a lot when the high school quality is not taken into account, whereas the students from poor quality high schools have only marginal benefits when the high school quality is not taken into account. This asymmetric relation is not confined to students who are in top 1000 but can be seen at all ranking levels.



4. Conclusion

The efficiency dimensions of the high school achievement formula is not emphasized in Turkey. For example, the advocates of the WHSAS formula do not emphasize the role of high school quality and they do not perform studies such as Arcianado and Koedel (2014) to show that high school quality is a vital factor for university success. The policy discussions focus on the distributional effects. Although all public high schools are free of charge, there is an entrance exam to the prestigious public high schools. Those students who have inadequate parental income or reside far away from the prestigious high schools are at a disadvantage to be placed in the prestigious high schools. Moreover, the underprivileged students are unlikely to access resources to prepare for the university entrance exam. HSAS formula aims to give an advantage to these underprivileged students. On the contrary, WHSAS formula aims to protect the prestigious public high school students.

The students know that it is a good strategy to attend lower quality high schools and outperform classmates when the HSAS formula is used. Therefore, there are incentives for the students to act strategically. The students drop out prestigious public high schools in their last years and graduate from weaker high schools to attain a higher HSAS. This strategy clearly harms the prestigious public high schools because they end up having few graduates and the importance to get into a prestigious public high school decreases when the student is unable to get the honor to be its graduate.

HSAS policy is conceptually parallel to indirect affirmative action policies such as the Texas ten percent policy. Both policies are aimed to help the students from disadvantaged background. Both policies harm the incentives to become a student in a prestigious high school. If it is sufficient to be in the top ten percent in any high school, there would not be any incentive to go to a prestigious high school and study hard to outperform good students. Likewise, HSAS kills the incentives to be in a prestigious high school by giving the same high school achivement score to the students with the same high school rank irrespective of the quality of the high school that they graduate.

If the central authority is able to detect the underprivileged students and gives an advantage directly to them, then this policy would be conceptually parallel to the direct affirmative action policies where the university are able to admit the black students directly. As we mentioned in the introduction, a direct policy is shown to be more efficient than an indirect policy. The distributional objectives is an additional constraint and decrease the university success of the entering class whether the policy is direct or indirect. However, the efficiency cost for the indirect policy is much higher.

The Turkish University entrance examination is considered to be fair because the students who have better academic performance are given priority in the placement. However, there are many different ways to measure academic performance and each method produces a different result for

the students. We show that a simple formula change for the high school performance affect the lives of some students dramatically. In a decentralized system, such big changes of evaluation would not take place because each university forms its own decision. For example, the students from United States can always apply to a private university or a public university in a different state, if they have a disadvantage in their own state. However, in the centalized systems such as in Turkey all the universities are governed by the same rules and the students have no buffer to the shocks when the rules change abruptly.

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