

How to predict university performance: a case study from a prestigious Turkish university?

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Abstract

Turkish education system is based on a centralized selection scheme starting from secondary education level. For the post-secondary studies, students are sorted according to scores they obtained from a national competitive exam. By statute, Galatasaray University, which is a French speaking university founded in 1992 by Turkey and France, enrolls one half of its students amongst the very best candidates. The other half comes from French speaking high schools (relatively top-ranked). These students pass a specific competitive exam in French, and must be classified amongst the first 25000 at the national competition. But their national ranking remains lower than the other group. The first batch has to learn French before starting undergraduate studies, whereas French speaking students are entitled to enter directly the first year. Within the public university system where admission is strictly based on national exam scores, differentiated admission scheme of Galatasaray University offers a unique case to test the respective performance of these two groups of students.

Using a special data, we estimate the impact of high school background (public vs. private, types of high school) and national exam score on the university performance of students admitted for the years 1994-2011. We do not have information on family background but public-private distinction can capture some of income effect which is missing in our data. We also use additional controls for selection into graduation (time to complete) and departments. Regional variation is controlled with the location of high school. If we assume that the initial academic level and final grades are correlated, we can measure the trade-off in terms of total academic output linked to the recruitment of French-speaking students through a less-demanding specific competition versus creaming process of the national competition. Finally, we highlight the validity of national exam to sort students according to their abilities.

Keywords: higher education; student performance; standardized tests; evaluation; Turkey

JEL Classification: I23;C21

1 Introduction

The question of admission to universities has been at stake in many countries, numerous evaluations of this process have been carried out. Economic and education literature presents

the multiple faces of this issue. Most of Studies focus on predicting the success of students based on the validity of measurements and admission procedures concerning standardized test scores or academic performance and high school background. One of the main issues deals with the trade-off between various test scores and socio-biographic characteristics in the admission system.

This paper reports the evaluation of a specific admission process used in Galatasaray University (GSU), a high-ranked French speaking public university in Turkey.¹ Public education system is based on a centralized selection system starting from secondary education level with higher ranked students are placed to elite high schools (Anadolu high school or Science high School) according to the scores. Students who are not placed in any high school follow the regular or private high schools. In order to pursue post-secondary studies (two or four year colleges), students are sorted according to scores they obtained from a national competitive exam. Public universities with some exception are among the most preferred universities and private universities adapt an admission policy with less demanding test scores. By its specific legal statute, GSU admits half of its students amongst the very best candidates taking the national exam and the other half are admitted from a pool of French speaking high school (relatively top-ranked) students.² French speaking students pass a specific competitive exam in French, and in order to be enrolled, they must be qualified and they must be ranked amongst the first 25000 at the national competition. Usually these student pools have a relatively lower rank at the national exam compared to the students who are not graduated from a French speaking high-school. In order to take the undergraduate courses, the first batch of students has to follow a full linguistic French preparation year, whereas French speaking students are entitled to enter directly the first year level.

Such a situation requires a deep evaluation, in order to assess to what extent the promotion of the French language is related to a weaker final academic. If we assume that the initial academic

¹Actually, Galatasaray University is a French speaking public university in Turkey, which is not a French speaking country. This characteristic is a heritage of the old relationships between Turkey and France which trace its roots from the sixteenth century and the dissemination of French schools. Later on, at the end of the nineteenth century, the Ottoman sultan asks the French government to found a French-speaking public high school, in order to train the senior executives of the Ottoman Empire. This school will survive after the creation of the Turkish Republic in 1923 and will even train part of the Turkish intellectual and economic elite of the 20th century. At the end of this last century, former graduates make a lobbying to set up a French speaking university, through a bilateral agreement between France and Turkey. Therefore, Galatasaray University will see the light of day in 1992. Around 5,000 graduates have been trained by GSU since then.

²Financial contribution to the university through governmental transfers represents only 10% of the total budget and it mainly provides funding of linguistic teaching staff)

level and final grades are correlated, we can measure the trade-off in terms of total academic output linked to the recruitment of French-speaking students through a less-demanding specific competition versus the creaming process of the national competition. Finally, we highlight the validity of central exam to sort students according to their abilities

In this article, we will use the university data to assess the validity of the dual admission process of GSU in predicting the college graduate point averages (CGPAs). If we assume that the initial academic level and final grades are correlated, we can measure the trade-off in terms of total academic output linked to the recruitment of French-speaking students through a less-demanding specific competition versus the creaming process of the national competition. Taken as a specific case, we highlight the validity of central exam to sort students according to their abilities. First, we review the specific literature on cases where admission rules do not rely solely on standardized test scores and mixed character of admission process is likely to suffer from selectivity bias. We briefly present the data and the estimation strategy in the second section. Our results confirm the validity of the central exam scores to predict CGPAs. We argue that faculty specific academic performance support our main finding that as the test score gap between two types of students gets wider, the better predictor becomes the central exam. At the final section, we conclude with a short discussion of our findings.

2 Literature Review

Central exam in Turkey had started in 1974 and designed to select students according to their aptitude for higher education. The test aims at assessing both reasoning skills and knowledge based on high school curriculum. In this fashion, it can be classified as a combination of SAT and ACT specific to USA. The contemporary priority of higher education policy is to put more weight to reasoning skills rather than measuring, like ACT, mastery of high school curriculum. We have to note that besides exam scores high school academic performance (Cumulative Grade Point Average) is added to balance the over-reliance of central exam scores. There is considerable change regarding the coefficient-factor precision but nevertheless, for students aiming top public universities (like GSU) high school grades have a very marginal contribution to the over-all score.

The admission process of GSU have a dual character. In this respect, GSU case fits into

selective admission system where both standardized test scores and selective submissions with high school background are optional. For GSU case, both admission rules involve test scores however the the pool of students and the nature of test differ in terms of content. Robinson and Monks (2005) discusses the effectiveness of optional SAT score submission policy in university of California regarding the CGPAs. In case of USA, several states preferred to switch to different admission process with the reason that standardized tests such as SAT or ACT are inadequate to predict future academic achievement in college. The admission of students are based optional SAT score reporting and applicants can choose not to declare SAT scores, instead include their high school performance and class ranking. Robinson and Monks (2005) argues that optional SAT policy is partially successful in terms of inclusiveness of wider student pool but in terms of CGPAs, SAT remains a good predictor of success. Nevertheless, admission systems which rely on standardized tests suffer from selection bias. Anther study conducted by Cohn et al. (2004) argues that the SAT scores are still good predictor of CGPAs however scholarship programs can correct for non-selectivity and increases students performance at University of South Carolina. Rothstein (2004) discuss that students background characteristics can largely explain the variance of SAT scores. Similarly, for the Turkish case, Caner and Okten (2013) suggest that parental background (education and family income) leads to a selectivity bias among admitted students for public universities. They conclude that public subsidizing of higher education turns to be equity impeding.

3 Data and estimation strategy

The central exam system in Turkey have a national character and based on rankings of students at the national level. Students rank their most preferred faculties and submit their preferences. The central exam score finally determines which faculty they will be admitted depending on their preferences and the quota specific to the faculty. To be ranked higher among successful students for a university in the previous year sends a signal for the formation of individual choices of students. Each year, highest and lowest scores of admitted students are made public for each faculty in order for prospective students to revise their list.

We use the data provided by GSU for graduated students in a time span including years between 1996-1999, 2001-2003 and 2007. In order to assess the dual admission process, we stan-

standardize all central exam scores³ using annual reports of Measuring, Selection and Placement Center (MSPC). The raw GSU data contain some missing informations or misreports specific to certain years. Due to these limitation, the data cover specific years and faculties (seven out of twelve namely management, economics, law, communication, international relations, computer and industrial engineering). The predictor model we are using estimates the following equation:

$$\ln(\text{grade})_i = \beta_0 + \beta_1 C_i + \beta_2 E_i + \beta_3 X_i + \mu_i \quad (1)$$

where C is the central exam score for specific field of study ⁴ E is a dummy variable indicating the admission type of students. It take the value of 1 if students are admitted through central exam scores, it is 0 if admission is through internal exam. X is the set of controls used in regression including regions fixed effects. Our dependent variable is log of CGPA (4-point GPA scale) adapted bu GSU.⁵ We control factors which might affect CGPA depending on which year students started to follow undergraduate studies or which faculty they are attending due to specific grading practices.

This initial discrepancy of the academic level between both groups is highlighted by Table 1 which also gives the summary statistics for our sample. The standardized central exam score is 0.93 for the group admitted by the central exam against 0.74 for the other. Since the group admitted through the central exam must take a longer preparatory period due to its lack of French language (1.72 year against 0.56 year), their total duration to complete is higher (6.05 year against 5.08). But as already mentioned, their time to complete undergraduate studies is shorter (4.33 years against 4.52). The CGPAs do not oppose the two groups which is striking considered the initial differences of academic level. Due to internal regulations in the distribution of students between faculties, the distribution of both groups is more or less the same. Regarding the high school background, the group admitted through the internal

³The central exam design are subject to various changes through time. Modification on coefficient factors for high school grades and specific high school contribution to overall score requires to a standardization across years. We use the distance to the best performer (maximum score) in each field as a standardized measure. Simply the individual score is divided by the maximum score at the national level for a specific field.

⁴Specif field of study is a choice for student when they are enrolled in high school. High school curriculum includes common courses but specializes according the field of study. These fields fall under broad categories like verbal and quantitative and a mix of both of them. To give an idea, a student must follow the track of quantitative field in order to choose engineering or medicine faculties for their undergraduate studies. Similarly, a law faculty candidate should respond both quantitative and verbal questions in the central exam.

⁵For our sample, selection into graduation is not a serious problem, the drop-out ratio is very low.

exam is composed of 43% of former students of Galatasaray high school and of 57% of alumni of private French speaking high schools of Istanbul. Half of students admitted through the central exam come from Anatolian high schools, which are the elite public high schools. In this group, only 31% of the population come from Istanbul, which provide evidence to the high rankings of Galatasaray university.

Table 2 presents our basic results with nine different specifications. In each specification, we control for faculty and year (class) effects. We do not have any information on income or high school grades. Omitted variable bias such as family income and ethnicity or parental education should be a concern for the model. However, the use of these background variables should work through selection process before admission. Apart from high school dummies, we do not have enough information to measure selection bias emerging from specific admission procedure of GSU.

In all specifications, the central exam score is a valid predictor of students' academic performance. High school background dummies which are significant (except regular high schools), loses its significance once we control for their central exam scores. However, the admission channel have an impact to distinguish student performances. It is worth noting that even controlled for their exam score, students from French schools show better performance although its impact becomes relatively weak. This positive impact might reflect two channels, linguistic advantage or high school quality which helps to adapt to university environment. It seems that regular high school graduates have a clear disadvantage (see m8 and m9). Dayioğlu and Türüt-Aşık (2007) find similar result for Middle East Technical University (METU) regarding the CGPA scores both in terms of high school background and central exam scores.

The positive and significant effect of central exam score on CGPAs needs more discussion. Unless internal exam measures similar skills, one can not argue that admission type and central exam scores are correlated and that there is some selection into admission. We know that internal exam show some dissimilarities with respect to central exam. Internal exam that French students pool are admitted has a dissertation part and the content of questions are less compatible to regular high school curriculum, more comparable to adaptive version of French baccalaureate.⁶

⁶Another specific issue related to the correlation admission types is the endogeneity due to time sequence of admission process. Internal exam predates the central exam. Students who appear on the admission list which become public before the central exam show less enthusiastic effort to achieve a higher score in the central exam

Students prolonging their undergraduate studies have relatively lower grades, this effect remains robust across specifications. The years spent in preparatory class (mostly French language) do not significantly affect CGPAs. For METU, a English speaking university, Dayioğlu and Türüt-Aşık (2007) finds negative effects for semesters spent in linguistic preparation school. In terms of faculty fixed effects, Law faculty has a higher grading practice than all other faculties. One reason might be the competitive character in terms of ranking in both exam type.⁷ Quantitative faculties like Computer and Industrial engineering have remarkably lower grading probably due to different assessment routines.

The fact that faculty fixed effects hardly change across different specifications reflects the faculty preferences. Adding regional information which indicate regional dimension of high school background improves the model. We can argue that regional effects can capture any social adaptation problem due to new university environment. It seems that students who attended high school in northeastern and southeastern provinces perform worse than those who are from Istanbul. Comparing high and low income district background, Cyrenne and Chan (2012) argues that performance in academic performance may be affected by previous social environment area. Similar mechanism might be at work for our results as well.

Although results seem to provide more ground on the validity of central exam score, there are still issues to be solved regarding the admission and orientation procedure particular to GSU. Firstly, unlike other university practices in Turkey, students admitted to GSU should undertake a preparatory class which involve a collection of course in the field of social science and basic quantitative methods.⁸ Students should pass the Social science preparatory (SSP) class and passing grade do not affect the overall graduation grade. This practice has been changed several times by the administration with the consideration that students with a francophone curriculum background (high school) do not need to attend SSP class. The decision to exempt has been reverted in two years time with the argument that francophone students are not well prepared enough and their performance is decreasing in the first class. It seems that this policy change has not produced a catch-up process. Another issue is related to the

since the lower bound score have a moderate level. We can argue that admission information might give lower incentives for Central exam achievement. Nevertheless, there is also contacting effect of being on the waiting list which reinforce efforts. In case admitted internal exam takers prefer other universities if they have higher score in the central exam, those students on the waiting list are admitted.

⁷Law faculty admits students having top 100 highest scores in the field among 500,000 entrants in Turkey.

⁸The students of engineering faculties are exempted

Table 1: Summary Statistics by Admission Type

Variables	Internal Exam		Central Exam	
	Mean	Std. Dev.	Mean	Std. Dev.
Ln (Grade)	4.23	0.16	4.25	0.16
Central Exam Score	0.74	0.19	0.93	0.06
Undergraduate Years	4.52	1.03	4.33	0.81
Preperation Years	0.56	0.52	1.72	0.61
<i>Faculties</i>				
Communication	0.13	0.34	0.13	0.33
Computer Engineering	0.15	0.36	0.14	0.34
Economics	0.12	0.33	0.13	0.34
Industrial Engineering	0.17	0.38	0.15	0.36
International Relations	0.14	0.35	0.19	0.39
Law	0.15	0.36	0.15	0.35
Management	0.13	0.34	0.13	0.33
<i>High School Background</i>				
Anatolian	0.00	0.00	0.50	0.50
French	0.57	0.49	0.05	0.22
Galatasaray	0.43	0.49	0.02	0.12
Private	0.00	0.00	0.16	0.37
Regular	0.00	0.00	0.20	0.40
Science	0.00	0.00	0.07	0.26
<i>Regions</i>				
Aegean	0.06	0.24	0.21	0.41
Central Anatolia	0.00	0.00	0.03	0.18
East Black Sea	0.00	0.00	0.01	0.12
East Marmara	0.00	0.00	0.10	0.31
Mediterranean	0.00	0.00	0.14	0.35
Middle East Anatolia	0.00	0.00	0.02	0.14
Northeast Anatolia	0.00	0.00	0.00	0.05
Southeast Anatolia	0.00	0.00	0.01	0.09
West Anatolia	0.04	0.20	0.06	0.24
West Black Sea	0.00	0.00	0.03	0.18
West Marmara	0.00	0.00	0.07	0.25
Istanbul	0.90	0.31	0.31	0.46
No. Obs.	660		729	

Due to missing and inaccurate information on central exam scores, data include students who are enrolled in years 1996,1997, 1998, 2001, 2002,2003 and 2007. Students who are enrolled in second grade through Transfer Exam are not included due to missing information on Central exam.

advantage of language familiarity with for French speaking student pool. The loose French requirements might be responsible not to reflect this possible advantage. Particularly for Law faculty, courses are mainly delivered in Turkish due to specificities of the curriculum. Another reason for not tracing any advantage of French high school background might be related to the fast adaptation of students. It seems that catch-up process does not take long time for central exam takers.

Table 2: College Performance and Central Exam Score

Dep. var. Ln (Grade)	m1	m2	m3	m4	m5	m6	m7	m8	m9
Central Exam Score	0.061** (0.029)	0.200*** (0.028)	0.130*** (0.033)			0.109** (0.043)	0.038 (0.041)	0.079* (0.044)	0.080* (0.044)
Admission Type (Central=1)					0.047*** (0.013)		0.040*** (0.015)	0.067*** (0.019)	0.071*** (0.019)
Undergraduate Years					-0.069*** (0.005)	-0.068*** (0.005)	-0.069*** (0.005)	-0.068*** (0.005)	-0.068*** (0.005)
Preparation Years					-0.027*** (0.010)	-0.010 (0.011)	-0.027*** (0.010)	-0.016 (0.011)	-0.009 (0.011)
Faculties									
Computer Engineering	-0.181*** (0.014)	-0.178*** (0.014)	-0.189*** (0.015)	-0.190*** (0.015)	-0.164*** (0.016)	-0.145*** (0.017)	-0.163*** (0.016)	-0.152*** (0.017)	-0.144*** (0.017)
Economics	-0.050*** (0.015)	-0.046*** (0.015)	-0.050*** (0.015)	-0.053*** (0.015)	-0.042*** (0.014)	-0.043*** (0.014)	-0.041*** (0.014)	-0.041*** (0.014)	-0.041*** (0.014)
Industrial Engineering	-0.094*** (0.013)	-0.111*** (0.013)	-0.103*** (0.014)	-0.102*** (0.015)	-0.124*** (0.016)	-0.104*** (0.017)	-0.122*** (0.016)	-0.111*** (0.017)	-0.102*** (0.016)
International Relations	-0.048*** (0.013)	-0.048*** (0.012)	-0.051*** (0.012)	-0.050*** (0.012)	-0.052*** (0.011)	-0.048*** (0.011)	-0.051*** (0.011)	-0.051*** (0.011)	-0.053*** (0.011)
Law	0.065*** (0.012)	0.059*** (0.012)	0.063*** (0.012)	0.067*** (0.012)	0.055*** (0.011)	0.055*** (0.011)	0.054*** (0.011)	0.054*** (0.011)	0.051*** (0.012)
Management	0.003 (0.013)	0.003 (0.013)	0.003 (0.013)	0.003 (0.013)	0.009 (0.012)	0.008 (0.012)	0.009 (0.012)	0.010 (0.012)	0.013 (0.012)
<i>High School Background</i>									
Anatolian				0.045*** (0.014)		0.014 (0.021)		-0.036 (0.024)	-0.018 (0.025)
French				0.044*** (0.011)		0.022** (0.010)		0.019* (0.010)	0.021** (0.010)
Private				0.047*** (0.018)		0.014 (0.023)		-0.037 (0.026)	-0.022 (0.027)
Regular				0.016 (0.016)		-0.011 (0.023)		-0.061** (0.026)	-0.048* (0.027)
Science				0.051** (0.023)		0.021 (0.026)		-0.031 (0.029)	-0.006 (0.030)
<i>Regions</i>									
Central Anatolia									0.013 (0.023)
East Black Sea									-0.006 (0.047)
East Marmara									-0.006 (0.019)
Mediterranean									-0.032** (0.015)
Middle East Anatolia									-0.008 (0.030)
Northeast Anatolia									-0.218*** (0.031)
Southeast Anatolia									-0.158*** (0.036)
West Anatolia									0.020 (0.019)
West Black Sea									-0.054** (0.022)
West Marmara									-0.044** (0.018)
Istanbul									0.023** (0.011)
Constant	4.266*** (0.025)	4.323*** (0.053)	4.294*** (0.033)	4.324*** (0.032)	4.702*** (0.036)	4.614*** (0.044)	4.683*** (0.042)	4.635*** (0.044)	4.603*** (0.046)
<i>Controls for Batch Fixed Effects</i>									
Registration Year	+	-	-	-	-	-	-	-	-
Graduation Years	-	+	-	-	-	-	-	-	-
Undergraduate Years	-	-	+	+	+	+	+	+	+
Number of observations	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389	1,389
Adjusted R2	0.216	0.274	0.236	0.238	0.379	0.378	0.379	0.383	0.396

Omitted categories are Galatasaray for school type, Aegean for regions and Communication for faculties.

Students who are enrolled in second grade through Undergraduate Transfer Exam are not included due to missing information on Central Exam.

Regional dummies do not indicate residential information but the city where students graduated from high school.

*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Table 3: College Performance by Faculty

Ln (Grade)	a1 (1)	a2 (2)	a3 (3)	a4 (1)	a5 (2)	a6 (3)	a7 (1)	a8 (2)	a9 (3)	a10 (1)	a11 (2)	a12 (3)
Central Exam Score	0.122** (0.056)	0.412*** (0.080)	0.099** (0.047)							0.153** (0.075)	0.262* (0.136)	0.039 (0.068)
Admission Type (Central=1)							-0.005 (0.019)	0.073*** (0.021)	0.044*** (0.014)	0.023 (0.045)	0.039 (0.036)	0.096*** (0.027)
Undergraduate Years										-0.072*** (0.006)	-0.060*** (0.011)	-0.064*** (0.008)
Preparation Years									(0.043)	-0.004 (0.019)	-0.002 (0.015)	-0.004
<i>High School Background</i>												
Anatolian				0.034 (0.027)	0.046 (0.028)	0.065*** (0.019)				-0.006 (0.060)	-0.012 (0.045)	-0.027 (0.036)
French				0.057*** (0.021)	-0.045** (0.021)	0.066*** (0.016)				0.033* (0.019)	-0.039* (0.021)	0.034*** (0.016)
Private				0.059 (0.044)	0.080** (0.033)	0.053** (0.024)				0.015 (0.065)	0.005 (0.044)	-0.044 (0.039)
Regular				-0.030 (0.030)	-0.004 (0.037)	0.060*** (0.021)				-0.089 (0.065)	-0.058 (0.068)	-0.030 (0.038)
Science				0.019 (0.032)	- (0.036)	0.102*** (0.036)				-0.027 (0.062)	- (0.046)	0.030 (0.046)
Constant	4.114*** (0.037)	4.144*** (0.062)	4.262*** (0.116)	4.130*** (0.033)	4.431*** (0.036)	4.277*** (0.132)	4.165*** (0.030)	4.394*** (0.033)	4.328*** (0.115)	4.447*** (0.065)	4.485*** (0.112)	4.523*** (0.137)
<i>Controls</i>												
Batch (Undergraduate)	+	+	+	+	+	+	+	+	+	+	+	+
Faculty	+	+	+	+	+	+	+	+	+	+	+	+
Regions	-	-	-	-	-	-	-	-	-	-	-	-
No. Obs.	420	208	761	420	208	761	420	208	761	420	208	761
Adjusted R2	0.120	0.127	0.053	0.133	0.088	0.073	0.112	0.082	0.061	0.364	0.187	0.238

(1) Computer and Industrial engineering, (2) Law, (3) Communication, Economics, International Relations and Management
Omitted categories are Galatasaray for school type, Aegean for regions. For Engineering faculties, reference is computer engineering. For Social Sciences, it is communication faculty.
Students who are enrolled in second grade through Undergraduate Transfer Exam are not included due to missing information on Central Exam.
Regional dummies do not indicate residential information but the city where students graduated from high school.
*** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses.

Since the initial academic level, the proportion of students admitted through the internal exam and the assessment process can differ from one faculty to another, results can be different once the model is estimated for each faculty (Table 3). More precisely, if some faculties are more demanding than others, the more, CGPAs reflects the aptitude gap or the gap between admission types. Four specifications are tested, each of them for three faculties or group of faculties: Computer and industrial Engineering, Law and Communication, Economics, International Relations and Management. The first specification confirms the importance of the central exam score for Law studies. Best students at the entry remain best performers for selective undergraduate studies. This result holds less valid for the two other groups of faculties.

According to the second specification, students entering through the central exam perform much better in Law and better in other social sciences fields. The third specification presents a complete picture of the phenomena at stake. For most selective faculty, Law, the central exam is a much better predictor of academic performance in terms of CGPA. Students from French speaking high schools perform poorer than others. The results specific to Law faculty might also reflect the effect of admission process net of linguistic advantage. The negative impact of the time spent to graduate (Table 3) affects also their final grade. For Engineering, students getting a higher grade at the central exam perform better but students from French high schools don't perform lower CGPAs. In Social Sciences, it is interesting to note that when high school background is added, test score does not have a significant impact. Entering through the central exam gives an advantage, as coming from a French high school which is less intuitive compared to other results. Those who spend more time to graduate, whatever the reason (lower academic level, less motivated) get lower undergraduates grades.

For a final remark, we provide a comparison Table 4 of graduation years according to all faculties and for the whole period between 1999-2014 to illustrate the initial academic level. Students admitted through the central exam complete faster their undergraduate studies than the other group, which is a signal of a higher initial academic level of the first group. This difference is particularly significant for some faculties (political science, economics and French literature).

Table 4: University Graduation Performance

Department	Years to complete		Difference
	Central Exam	Internal Exam	
Management	4.26	4.41	0.15*
Economics	4.31	4.55	0.24**
Communication	4.30	4.37	0.07
Computer Eng.	5.12	5.25	0.14
Industrial Eng.	4.45	4.43	0.02
Philosophy	4.29	4.57	0.28*
French Lit.	4.00	4.12	0.12**
Law	4.17	4.25	0.08
Math	4.43	5.00	0.57
Political Sci.	4.34	4.66	0.33***
Sociology	4.25	4.41	0.16
Int. Relations	4.28	4.36	0.08

*** p<0.01, ** p<0.05, * p<0.1.

4 Conclusion

In this paper, we document the validity of national exam score as an academic performance predictor in Turkey using the dual admission process in Galatasaray University. Based on a restricted model with high school grades and family background, our results largely confirms earlier findings that emphasize the importance of standardized test scores. Coming from more Elite high school have a positive impact even when exam scores are controlled for. Peculiar to our case, selective admission mechanism performs poorly where linguistic requirements are less demanding and when there is less catch-up process is fast.

Despite the lower average score of these students at the national exam, raw CGPAs do not show significant difference between the two groups. Although the score at the national exam have a positive impact on CGPAs, this effect remains weak and at the end, French-speaking students can achieve closer performances compared to other group. Finally, the sorting process seems rather effective and we cannot conclude that there is a strict trade-off in terms of total academic output linked to the recruitment of French-speaking students through a less-demanding specific competition versus the creaming process of the national competition.

The dual admission process applied by GSU presents itself as a unique case. For a final remark, we need to mention another dimension which is the governmental cooperation that has mutual benefited both France and Turkey. With a financial contribution to the university representing only 10% of the total budget (mainly through French teaching staff), France is a preeminent partner of a prestigious, French speaking, Turkish university. For Turkey,

supporting a French-speaking university which attracts amongst the best students, it provides better opportunities for its undergraduates to pursue further academic and professional track. Such cooperation helps to develop scientific relations with European universities.

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