FACTORS AFFECTING THE ACADEMIC SUCCESS OF THE PUPILS: MACROECONOMIC EVIDENCE FROM THE ACHIEVEMENT DETERMINATION EXAMINATION RESULTS OF ISTANBUL DISTRICTS

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Abstract

For teachers, Ministry of Education and for academicians working in the field of education there may be many micro factors that can affect the success of the pupil in the school. However, generally these factors are put on with either just experiences or with just narrow surveys on just a few students. However, there is a large number of data that is waiting to be tested in the hands of Ministry of Education, just because of the common examinations performed in Turkey (OYS, SBS, YGS….) at least for the last 50 years. This paper here came out just as a curiosity of the writer for this field. The paper analyzes the average SBS results in different Istanbul districts and relates them to the average wealth, education level, private schooling and some other factors of the districts. The results are straightforward; the most important factor affecting the common examination successes is the education level of the family and the neighborhood. Though income has also some positive effects on SBS success it is not as direct and apparent as the education of the family. The paper shows that also private schooling and Life Quality of the neighborhood has some positive affects on SBS results.

Key Words: Education; Family Income; Achievement Determination Examination; Social Stratification.

ÖĞRENCİLERİN AKADEMİK BAŞARISINI ETKİLEYEN FAKTÖRLER: ISTANBUL İLÇELERİNİN BAŞARI BELİRLEME SINAVI SONUÇLARININ MAKROEKONOMİK KANITI

Özet

Milli Eğitim Bakanlığı'nda çalışan öğretmenler ve eğitim alanında çalışan akademisyenler için okulda öğrenci başarısını etkileyen birçok mikro faktör vardır. Ancak, genel olarak bu faktörler sadece deneyimler veya birkaç öğrenci üzerinde sadece dar anketler ile ortaya koyulur. Bununla birlikte, yalnızca son 50 yıldır (ÖYS, SBS, YGS ....) Türkiye'de yapılan ortak sınavlar nedeniyle, Milli Eğitim Bakanlığı'nda test edilmeyi bekleyen çok sayıda veri bulunmaktadır. Bu makale, yazarın bu alana merakından dolayı ortaya çıkmıştır. Çalışma, İstanbul'un farklı ilçelerindeki ortalama SBS sonuçlarını analiz etmekte ve söz konusu sonuçları ortalama zenginlik, eğitim düzeyi, özel okul ve diğer faktörlerle ilişkilendirmektedir. Sonuçlar açıktır; ortak sınav başarısını etkileyen en önemli faktör ailenin ve mahallenin eğitim düzeyidir. Gelir seviyesinin de SBS başarısı üzerinde bazı olumlu etkileri olsa da bu, aile eğitimi gibi doğrudan ve belirgin değildir. Çalışma ayrıca özel eğitim ve mahallenin yaşam kalitesinin SBS sonuçları üzerinde bazı olumlu etkileri olduğunu göstermektedir.

Anahtar Kelimeler: Eğitim, Aile Geliri, Başarı Belirleme Sınavı, Sosyal Tabakalaşma

1. Introduction

This paper does not argue with the micro factors affecting the school performance of the pupil rather it tries to look from a macro perspective and to verify some macro factors or socio-cultural factors that may be determinant for the Achievement Determination Examination (Seviye Belirleme Sınavı; SBS) results. Though school education targets moral development, politeness and fairness of the pupil beside the academic success there are no definite gauges to measure these values. Sadly the measured property generally is just some knowledge and ability of the students. The micro factors like motivation, intelligence, emotional factors, gender, family culture and school and teacher quality are surely effective for the success of the individual student. Still, here it is assumed that all these variables are distributed normally among all families in all locations. In order to assume this the research has been limited just to the districts of Istanbul. In other words to claim that the children in Bakırköy are more smart than the children in Bağcılar, or to claim that the children in Beykoz are more emotional than their peers in Kadıköy is just absurd if not proved scientifically. However, there are still some data that show wealth, education of the parents, number of private schools and life quality in all these districts differ. In this paper, it is examined whether these differences are effective in determining the success of the pupil among 8th graders SBS results.

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On May 25 2011 in his NY Times column David Leonhardt pointed out the difficulties of low-income individuals to enter the top collages. As the SAT scores of low income individuals are generally lower, the proportion of low-income students in top collages is also lower. More than this, according to Leonhardt even high SAT scores does not stop indifference since because of other factors the top collages generally choose the richer individual to attain the collage. On the same day, Gregory Mankiw wrote in his blog that "it would be a regression he would like to see" to relate the income levels to SAT scores. Such discussions are a lot not just for the US but for a lot of countries. However the regressions are limited maybe just because of the lack of a single exam data or because of the lack of the income levels of the students. Even if they exist generally they are not isolated. There are lots of other factors like distance to the (educational) centrals, quality of education and experience of teachers, cultural differences, educational differences of the family, racial differences and as mentioned above gender differences.

The Turkish Achievement Determination Examination known as SBS (also named as OKS, OYP in the past) is an exam that was applied to the 8th graders at least for the last 20 years to determine their high schools. The exam is done by the Ministry of National Education. Although the exam system is highly changeable[2] and to make a time series analysis is hard, to make a cross sectional or panel data analysis is quite possible. However to work with a countrywide data would underestimate the above mentioned other causalities. For example, when the data between Tekirdağ (a western mid seized city) and Şırnak (a-southeastern small city) are compared, income level is maybe the least important factor to look at. The cultural differences, the experience difference among teachers and the distances to centers are so incomparable that income difference or educational differences among families alone has nothing to say. Therefore instead of working with the country wide data it was preferred to work with the data of the districts of Istanbul where the above mentioned differences are less important: At least most rational mid school teachers would not reject a job in a respectively underdeveloped district of the city and wait for a better location as they do for south-eastern cities. Even the furthest districts have a centre larger than most of the cities in the country. Though the religion and the socio-culture are not same for all districts, the population can be assumed to be distributed quite homogenous among the city. It should be added that this does not mean that the education and income is distributed homogenously along the city and theses differences are the focus of this paper.

The relation between income and high-school graduation has been documented in Manski (1992) for US. Manski (1992) used High School and Beyond Survey data from 1980 to measure the rate of students who graduated from four year collages after five and a half year time from high school graduation. The rate was 11 per cent for the children of low income families 24 per cent for the children of mid income families and 39 per cent for the children of high income families. Jez (2008) takes this research further and claims that family wealth promotes higher levels of academic achievement. Jez (2008) also researches the race differences and their different socio-cultural habits in explaining the collage success differences. He also pointed out some important implications for K-12.

Such researches and differences are also present in developing world countries. Behrman and Knowles (1999) investigate the relation between household income and child schooling in Vietnam and found evidence that the exam scores in last completed grade for the richest quintile is significantly higher than the poorest quintile.

Patrinos (1995) on the other hand focused on a different issue, relation between returns to schooling and father's education. He finds out that there is a small but significant relation between father's education and child's income and father's education and child's schooling years. Restuccia and Urrutia (2004) in a similar fashion build an intertemporal model that underlines the importance of early and collage education in intergenerational persistence of economic status. His findings show that the early education quality differences are more important in explaining the persistence of earnings across generations. So nearly all empirical findings underline a vicious circle of educational and income differences among the public.

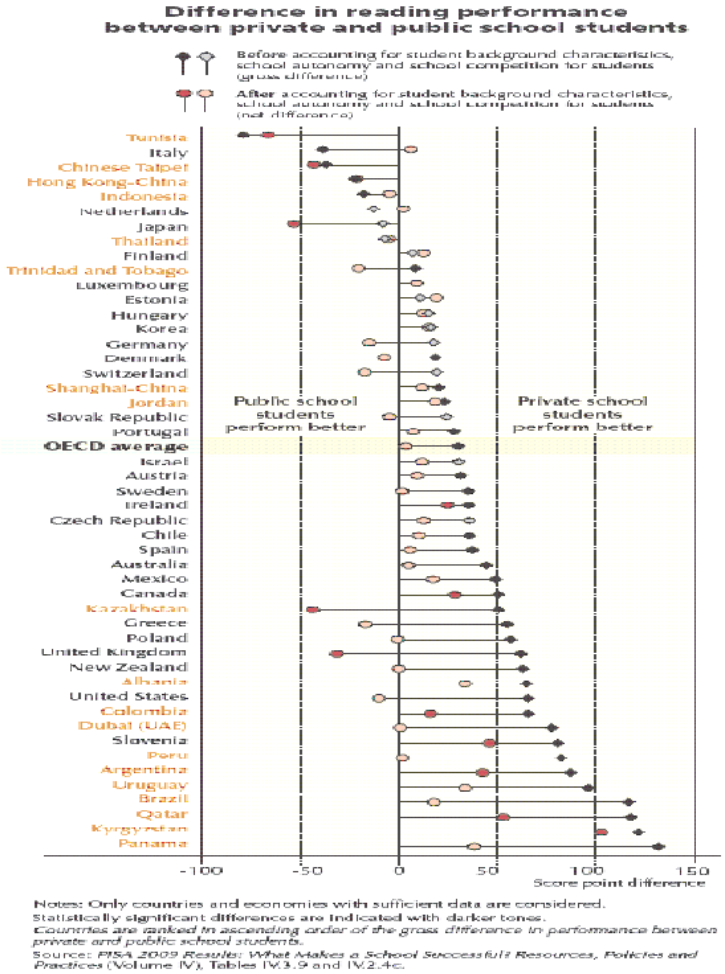
These differences also can be addressed to the quality of schools and the existence of private schools. Patrinos (2011) shows that privately managed schools outperform publicly managed schools in Holland significantly. In Turkey the results are more striking, SBS results of eight grade students in 2010 show that there are just two public schools among the top 100 according to average scores of the students in Istanbul and the average score of the private schools are about 100 points higher than the average score of the public schools (387 points versus 288 points). It should be noted that in Holland the education system gives the parents the freedom to choose and determine the principles of their children's school, so financially all schools depend on

[2] On one hand the official syllabus changes from year to year, on the other hand the level of difficulty of the exam changes from year to year. For example, while during 1980's it was possible to be in the Top 500 with just 85 right answers over 100 questions. However, during 2000's in some SBS exams there has been hundreds of pupils who answered every single question right . For detailed information contact Republic of Turkey Ministry Of National Education.

government but there is autonomy in choosing the education system. So the system is still centralized and private schools are non profit organizations. On the other hand in Turkey most of the private schools can be classified as profit-making entities. Therefore, for these private schools instead of freedom competition is more important. When private school issue turns into competition, then parent charging schools with far better financial resources attract and recruit the better and more experienced teachers and infrastructure opportunities. Therefore the difference among private and public school students in Turkey are far greater than in Holland.

Also Program for International Student Assessment (PISA) "In Focus Report 7" in 2011 also found that students attending private schools generally perform better than students attending to public schools in the PISA.

Although the result changes from country to country, on the OECD average the private schools perform 30 per cent better than the public schools and three quarters of this better performance is related with socio-economic advantages of that student (PISA "In Focus 7", 2011). In other words, even if there were no private schools it could be expected that socio-economically advantage tends to perform the student more than 20 per cent better in OECD assessments. The individual country performance differences can be seen in Graph 1.



Graph 1 / Grafik 1 : Difference in Reading Performance Between Private and Public School Students / Devlet ve Özel Okul Öğrencileri Arasında Okuma Performansı Farklılıkları
Source: PISA "In Focus No.7"

Mueller (2011) in a research where he relates the student performance with teacher experience find out that experienced teacher increases student performance only when the class size is small. In larger classes the difference between inexperienced and experienced teachers vanishes. According to Istanbul Provincial Directorate of National Education average student per class in a Public Primary School is 37,19 while this number drops to 18,52 student for Private Primary Schools. When just this statistic is combined with Mueller's research it can give a motivation to add a private school variable to the regression.

Still there are also some doubts about the income and student performance. In the newly released PISA report "In Focus 13" positive relation between per capita GDP and high reading scores are shown, but again the relation is not strong and there are strong outliers like Shangai-China. Thus income can be expected to be positively correlated with student scores but it does not seem to be the main cause of the difference as expected. In other words, the effect of income is indirect. Its effect can be increased or decreased depending on the cultural, social and educational background of the family. Also there are many researches that show positive education and income correlation[3] and therefore instead of using just income to regress student assessments family education can be used together or as well.

The remaining paper is organized as follows, in the second part a model that relates income to exam results will be derived. In the third part the data that is used for the regression will be explained and the regression method will be developed. In the fourth part the results of the regression will be discussed, some implications and some obvious facts will be revealed. And then in the fifth part it will be concluded.

2. A Simple Model for the Regression

Although the paper is a simple econometric analysis of the SBS results of the different districts in Istanbul, it can have important social and economic implications. Therefore instead of just regressing with the available limited data it would be more appropriate at least to formulate an intuitive model.

In the heart of the model lies to build a mechanism to relate income differences to SBS results. Income difference can lead to educational attributes in many ways. Blanden, Gregg and Machin (2003) group the factors as causal and non-causal. Genetic ability and parental education can be counted as non-causal relations, since they are hard to observe. These factors are especially determinant when they are too low with respect to the average. Causal effects on the other hand are classified as direct and indirect. As it is obvious the direct factors increase the demand for extra educational investments directly as income increases. Quality childcare, after school coaching, private tutoring, extra educational materials, cultural attributes and holidays are some of the important variables that increase directly when income increases. The indirect relations include purchase of a house in a good neighborhood that leads to a better peer group access and to a better school. Also low family income may be the cause of some conflicts inside the family that decreases the student performance (Blanden, Gregg and Machin, 2003).

Different than Blanden, Gregg and Machin (2003) this paper divides the variables to two subsections depending on the causality. For the first "non-causal" group above the causality is from genetics and parental education to income. In other words as education E_{it} and the quality of genetic attributes like IQ_{it} increases it can be expected that the income of the family I_{it} also increases. Some other socio-cultural factors SO_{it} can also be added to the function but they are mostly unobservable and unavailable especially for this macro analysis.

$$I_{it} = f\,(IQ_{it},\, E_{it,}\, SO_{it}) \qquad (1)$$

On the other side, increasing income directly affects the private school demand and a better neighborhood demand of the family. So here the causality is from income to the above mentioned attributes. In Istanbul, the highest house prices are in Beşiktaş, Kadıköy and Bakırköy districts and these three districts have also far and away the highest average SBS scores for years. Simply to observe this difference has been the motivation for the author to make an analysis in this field. As life quality LQ_{it}, private school demand PR_{it} and demand for a better neighborhood H_{it} increase as income increases all of these can be formulated as a function of income:

$$PR_{it} = k\,(I_{it}), \qquad LQ_{it} = l\,(I_{it}), \qquad H_{it} = m\,(I_{it}) \qquad (2)$$

or if income is unobservable all these three indicators can be used as observable attributes of income. With some unobservable attributes matrix X_{it} like private tutor, extra educational materials, cultural development opportunities and holidays, income can be written as an inverse function of all these variables.

$$I_{it} = t^{-1}(PR_{it},\, LQ_{it,}\, H_{it,}\, X_{it}) = g\,(PR_{it},\, LQ_{it,}\, H_{it,}\, X_{it}) \qquad (2)'$$

[3] Babones (2010) is a relatively new paper that found a correlation of 0.465 between the level of education and income for Turkey, this is higher than the average of 80 countries. (r=0.323 of 80 countries that he pooled).

When SBS scores are explained as a function of income, the effect can be divided into to sub-sections depending on the above mentioned causality. Also the model needs another variable Z_{it}, which is the matrix of other variables that directly or indirectly do not depend on income.

$$SBS_{it} = h\ (DI_{it},\ NDI_{it,}\ Z_{it}) \qquad (3)$$

Direct Income Effects (DI_{it}) are shown in equation (2)' and Indirect Income Effects ($NDI_{it)}$ are shown in equation (1).
Thus, when these two functions are brought together,

$$SBS_{it} = h\ (g\ (I_{it}),\ f\ (I_{it}),\ Zit) \qquad (3)'$$

The three functions h, g and f can be additive, multiplicative, logarithmic etc but for simplicity we assume that all variables of all functions just additively affect the SBS results and that they are orthogonal to each other.
Thus Equation (3) turns out to be,

$$SBS_{it} = \theta_0 + \theta_1 DI_{it} + \theta_2\, NDI_{it} + \theta_3\, Z_{it} + u_{it} \qquad (4)$$

where u_{it} is the independent and identically distributed error term and θ's are the coefficients.

The regression in this paper just concentrates on the districts of Istanbul and how their SBS results differ. Therefore to assume a genetic difference among the districts is not quite possible and not supported with data. Also any socio-cultural difference though exists can not be traced among the districts with a direct data. Therefore the only valuable indirect effect is the adult education $E_{it.}$ The direct effects though can be traced though from mixed sources.

Thus the final additive model stands as;

$$SBS_{it} = \beta_0 + \beta_1\, E_{it} + \beta_2\, PR_{it} + \beta_3\, LQ_{it} + \beta_4\, H_{it} + \beta_5\, Y_{it} + v_{it} \qquad (5)$$

Y_{it} is a combined matrix of Z_{it} and X_{it}, in other words it is a matrix of all factors that can not be traced and v_{it} is the independent and identically distributed error term. So the SBS results will be regressed as a function of average adult education, private schooling, life quality index, and house prices.

3. Data and Regression Method

The regression equation similar to (5) is,

$$SBS_{it} = \beta_0 + \beta_1\, E_{it} + \beta_2\, PR_{it} + \beta_3\, LQ_{it} + v_{it} \qquad (6)$$

The endogenous data of average SBS results for the districts of Istanbul were announced for the years 2009 and 2010 by the Istanbul Provincial Directorate of National Education. The adult average education data is obtained from Turkish Statistical Institute's (TÜİK) Formal Education Statistics. Since the SBS examinees are 14-15 years old, it was assumed that the ages of their parents are not less than 30 and not older than 59 and the average education of that age group in a given district is taken. For the group of illiterate the education year was assumed 0, for the group of literate without any school diploma it was assumed 1 year. For the elementary school graduates the average education year was assumed 5 years, for the secondary school graduates 8, for the high school graduates 11 years, for university graduates 15 years and for the master graduates 17 years and for the PhD graduates it was assumed as 21 years. Then the average education was calculated using these assumptions. The life quality index was taken from Istanbul Chamber of Commerce's research project[4]. The private schooling ratio data is also collected from the Istanbul Provincial Directorate of National Education. For every district Istanbul Provincial Directorate of National Education announces the number of private primary schools and public primary schools. The ratio was calculated by dividing the number of private primary schools to total number of primary schools. Still it should be remembered since it is not demanding for the students to visit the private primary school in their district in reality the difference among districts are sharper than the data implies[5]. Finally the house prices or the direct average income are not put in this regression because of three reasons. First,

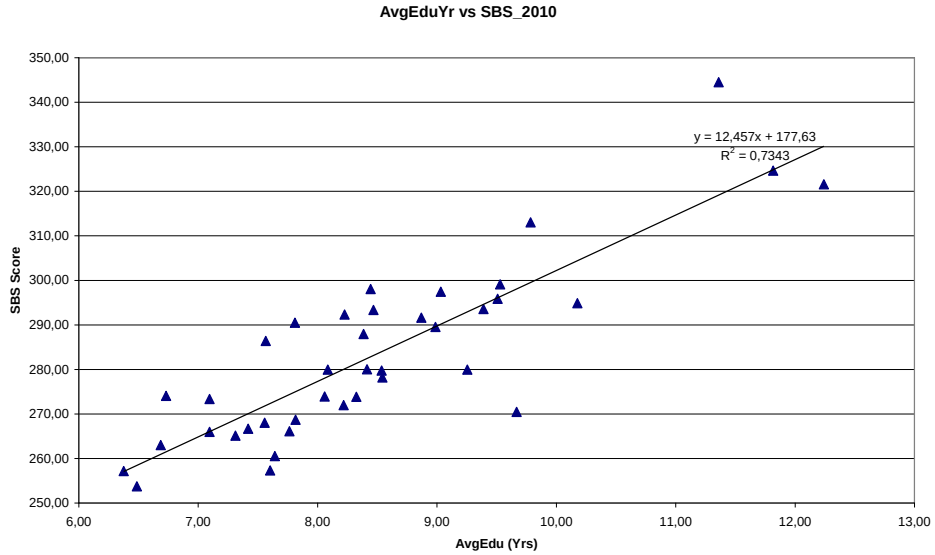
[4] Life Quality Report in Istanbul by Murat Şeker is assambled in 2010. He used 54 variables from 39 districts and made face to face interviews to obtain the data for the index.
[5] Since building land prices are higher in downtown, instead of central districts pricate schools choose peripheral area but the students generally are from the downtown.

there are no officially announced institutional data that is publicly available. There are some data of private real estate companies but because of ethical reasons the author did not use them in this paper. Second, the regrssions with these informal data of average real estate prices in districts showed that these data is statistically insignificant. Still any official research data or statistics can be very helpful for the enhencement. Third the life quality index, and private school index are highly multicolinear with the price of houses in different districts that not much is sacrificed when this data set is dropped[6].

For the regression the data for the SBS was just available for the years 2009 and 2010. Thus there were just 39*2 =78 data. Therefore cross-sectional panel data regression was done using E-Views. The simple pooled regression ignores that the data originates from different districts and different years. It is not very wrong to assume that the life quality, private schooling and adult education affect the SBS results at the same level since all districts are from the same country and even same city. However, the assumption about different years is problematic because as the SBS system changes the average points scored changes from year to year. Therefore a fixed period dummy is added to the model. The average SBS score for 2009 was 313.50 while for 2010 it was 283.13. Econometrically this argument is also supported as Akaike criterion drops from 10.35 to 7.11 when fixed period effect dummy was added[7]. Whether to use period weights or not in the model depends upon the weight parameter θ and for this model θ was round 0.58 which is far grater than 0 and allows regressing with weights as it indicates the heteroscedasticity problem.

4. Results

The econometric analysis is done from the pooled data from the years 2009 and 2010. Therefore the data of the analysis is limited. Still it has been enough to have an implication from this data set. First of all clearly Adult education and SBS scores are positively correlated as Graph 2 implies.



Graph 2 / Şekil 2 : Scatter Data of Adult Education on SBS Results / SBS Sonuçları Üzerine Yetişkin Eğitimi Dağılım Verileri

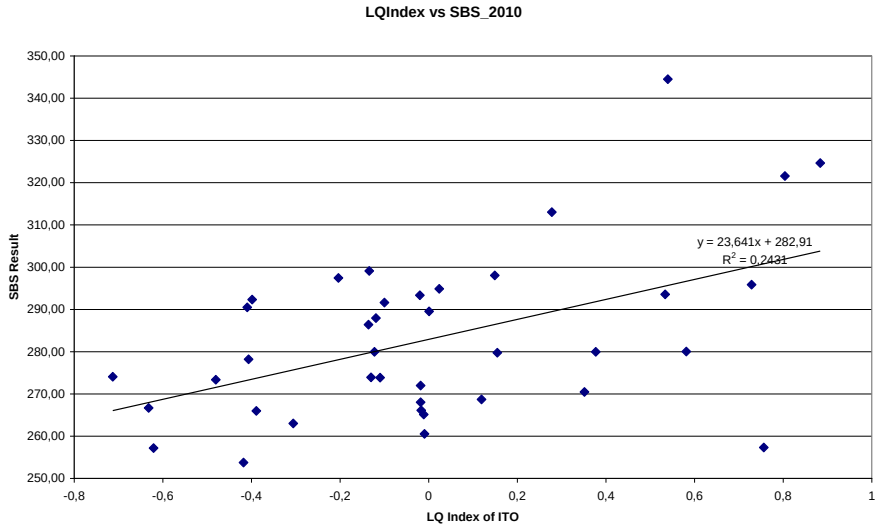
Notes: Scatter plot is done with MS Excels using 2009-2010 Longitudal data.

The R^2 of the simple regression is 0.73 and the indirect effect of income is the most significant factor affecting the SBS results. Also when the regression was taken with income and adult education, the effect of income becomes negative and in some analyses insignificant. This may mean that the level of education of the parents is far more important than the income of the parents when it comes to student success. This also indirectly implies some tradition of the family about education. Better educated parents may guide the children better or may have some plans about the education of the child. The children of more educated parents may also interpret education as some standard, while other children interpret it as something optional or even unnecessary.

[6] Both Akaike and Schwartz criteria are smaller without house price data.
[7] Akaike Information Criterion is a widely used statistic to measure the advantages and disadvantages adding new variables to the model. For more see Akaike (1974).

In Graph 2 it should also be mentioned that the three scatters at the upper right part of the graph are from the districts Bakırköy, Kadıköy and Beşiktaş respectively and there is a large gap with the other districts. Two major underperformer districts according to this regression are Adalar and Beyoğlu. Although these two districts have high education levels the SBS scores are lower than expected. Since the education data here is just an aggregate one it did not differentiate who is parent or not. Adalar is used as a summer resort or as a retirement resort by a group of well educated residents who have no small children. The students in Adalar are generally the children of local families with lover education and income. Similarly, although Beyoğlu is one of the cultural centers of the city, because of its dense population, higher crime rate and respectively polluted environment it does not suit for standard family life. Generally, good educated young singles or couples without children prefer to live there. The periphery of the district on the other hand has lower education and lower income. Thus the young singles at the center increase the education level of the district but in reality their presence do not contribute to the students in the district.

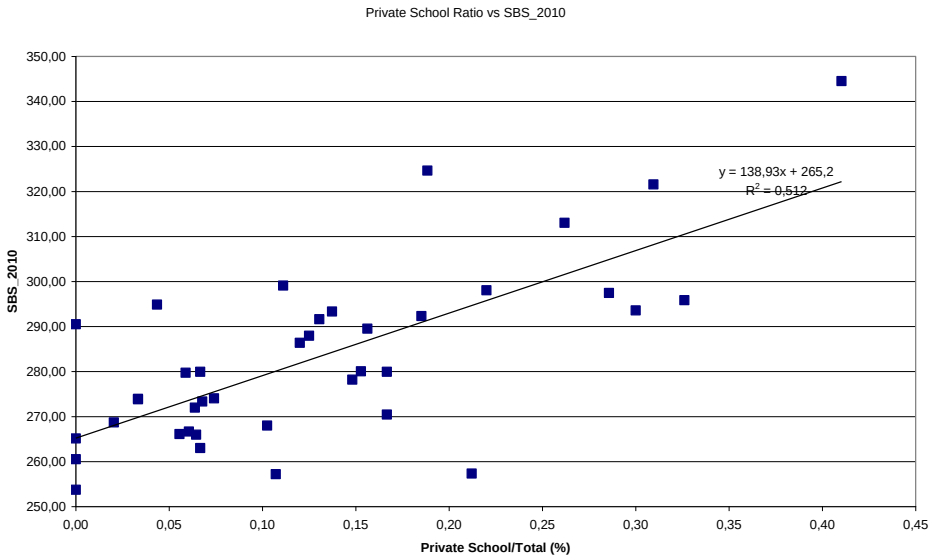
When the Life Quality Index of ITO is regressed on SBS the regression results are weaker but still a positive effect is observable in Graph 3. The Life Quality Index includes a lot of factors including demographic factors, education, health, economics, transportation, social, and natural environment. Highest Life Quality scores are from Kadıköy, Beşiktaş and Beyoğlu districts and thus no big surprises. Although in the model LQ index was categorized as a direct income effect, the demographic factors, health, transportation and social effects also have some indirect contributions to the student success.



Graph 3 / Şekil 3 : Scatter Data of Life Quality Index on SBS Results / SBS Sonuçları Üzerine Yaşam Kalite İndeksi Dağılım Verileri
Notes: Scatter plot is done with MS Excels using 2009-2010 Longitudal data

Still it should be noted that top scoring districts Kadıköy, Beşiktaş, Bakırköy and Üsküdar all score far above the linear predictions of Life Quality Index, thus although this index can be significant it alone can not explain the extra performance of high scoring districts. Here again especially Beyoğlu is the sharpest underachiever, although it has high Life Quality Index the SBS scores are among the lowest just because of the above mentioned problem.

A more direct predictor of income may be the private school ratio, since as income increases parents demand better education and better educational support for their children. In this way they took advantage in entry exams, in foreign language abilities and in general in life. However, this data is also problematic as explained in the third part: The data is just about the ratio of private primary schools in a district, not about the number of students in a district that visit a private school. According to the data, Kadıköy one of the highest income districts has the same ratio of high schools as Güngören one of the below average income district. This is just because of the scarcity of land in Kadıköy. Most private schools from the peripheral districts like Üsküdar, Ümraniye and Maltepe have lots of students from Kadıköy. Vice versa the students in private primary schools of Güngören have a high probability of residing in other higher income districts around. Despite this fact the regression indicates a strong relation between the Private School Ratio and SBS results.



Graph 4 / Şekil 4 : Scatter Data of Private Schools on SBS Results / SBS Sonuçları Üzerine Özel Okullar Dağılım Verileri
Notes: Scatter plot is done with MS Excels using 2009-2010 Longitudal data.

According to Graph 4 as the ratio of private primary schools increase in a district the students perform also better. This relation may have one obvious implication: when higher income of parents turns to an investment on students via private school the result is positive. On the other hand the amount of investment is not measurable in this regression since the prices of private schools, and the quality of private schools are very different from each other. In addition in Turkey there are also private establishments preparing students for various exams called "dershane" and private tutoring that are not inserted to the model. Though it is not a scientific data, from the personel experiences of the author, most of the students that demand tutor are from private schools. Therefore, the success of private school students can not be directly traced to the private school as there are other like "dershane" and private tutor. Still the private school ratio are an indicator of investment on student.
Using these three indicators, multiple regressions are run in E-Views to explain the SBS results. The results are collected in Table 1.

Table 1 / Tablo 1: Regression Results of SBS Results on the Exogenous Variables in Equation 6 / Denklem 6'da Yer Alan Dışsal Değişkenlerde SBS Sonuçlarının Regresyon Sonuçları

Variables	Coefficient	Std.Error	t-stat	Probability
C	200.5090	7.300618	27.46467	0.0000
Life Quality Index	- 12.02189	3.487250	-3.447385	0.0009
Adult Education	11.79228	0.967265	12.19137	0.0000
Private School	26.97925	13.35577	2.020044	0.0470
Adj.R^2	0.975743			
F-Statistics	734.1001			
Prob. (F-Statistics)	0.000000			

Notes: The regression is done with E-Views using 2009-2010 Longitudal data and OLS Method with Fixed Period Effects and Period Weights.

All coefficients and regression are significant at %5 level. The Adult Education (in years) is the most important explanatory variable and is positively related with SBS results and this result is in line with the results in Graph 2 where also a simple regression is added. Even the coefficients of these two regressions are similar (12.457 vs. 11.792). Proportion of private schools are also significant at %5 level but not at 1% level. According to the results of both the regression in Table 1 and Graph 4, as the number of private schools increases in a district the SBS results also increase.

Life Quality Index on the other hand shows mixed results. The positive correlation in Graph 3 turns to a negative one in Table 1. Although, it can be assumed that Life Quality Index is a good indicator of Income Level in a district and thus indirectly a good indicator of SBS results, in a multiple regression it loses its importance. Since life quality indices include social life quality. It can be interpreted that in the districts where social life is better, children are not grown just focused to exam results they also have many sport and entertainment opportunities. Therefore such factors may decrease the scores a bit. However, it should not be forgotten that this decrease is just a side effect of a better life, better education and higher SBS results. Of course this interpretation is not absolutely objective one. It just can be technically assumed that Adult Education includes so many explaining indirect income factors that other variables just repeat what it informs and just because of this multicolinearity LQI gives negative correlation. It should be noted that when the regression is repeated without LQI, Adjusted R^2 does not decrease but both Akaike and Schwartz Criteria increase and that is why LQI was kept in the regression.

5. Conclusion

In this paper, some exogenous factors that can affect the success of the students in SBS exam in Istanbul, Turkey are examined. In the literature and as a public opinion, the income of the family has always been considered as a major factor of student success. Although there is a large literature in this field, the data examined generally are limited to a single school, or to a small area. In this paper, instead of single units the districts of Istanbul are put to the test. This has both some advantages and disadvantages.

The first disadvantage in such an analysis is that you can not create your own data and the existing data limits the frame of your analysis. A second disadvantage also related to the frame drawn by the data is to loose the micro variables that can give valuable information about individuals' performances. A third disadvantage related to the first one is that since the data is not tailor made for the analysis, the results do not give direct facts but imply some results indirectly.

Still there are still motivations to run this regression. Since the data of adult education, private schools, and SBS results are not sample but population averages, the results of the correlation between these factors are hard to falsify. In addition sometimes -though indirectly and with mechanisms- macro factors as in this case can explain more than the micro factors.

All in all, the results of this regression claim that instead of income directly, the factors that affect income and the factors that change with the income are more important in explaining the student success in SBS. Especially, the education level of the family (or in this paper the education level of the neighborhood) is alone the most important factor that affects the SBS success. Since this factor alone includes lots of other factors in, it is not surprising that even the simple regression of adult education on SBS result has quite strong results. As

average adult education increases the average income of the family also increases. As families have more education they value education of the child more. As families have more education the child alone can make more deliberate decisions on studying and can see future opportunities and threats better etc. On the other hand the private school ratio which a direct factor of income is has also been significant in the regression. This ratio – though not necessarily- can be interpreted as a coefficient of family ambition for the success of the child. The other factors like Life Quality Index, rich neighborhood (via house prices) and income level in districts have also been tested but the results of these data are not as sharp as the parent education and private schools imply and also the data are either sampled by individuals or private companies and include many assumptions that do not clarify but blur our vision.

Genişletilmiş Özet

Milli Eğitim Bakanlığı'nda çalışan öğretmenler ve eğitim alanında çalışan akademisyenler için okulda öğrenci başarısını etkileyen birçok mikro faktör vardır. Ancak, genel olarak bu faktörler sadece deneyimler veya birkaç öğrenci üzerinde sadece dar anketler ile ortaya koyulur. Bununla birlikte, yalnızca son 50 yıldır (ÖYS, SBS, YGS ....) Türkiye'de yapılan ortak sınavlar nedeniyle, Milli Eğitim Bakanlığı'nda test edilmeyi bekleyen çok sayıda veri bulunmaktadır. Bu makale, yazarın bu alana merakından dolayı ortaya çıkmıştır. Bu yazı öğrencilerin okul başarısını etkileyen mikro faktörleri değil, bunun yerine olaya makro faktörler açısından yaklaşarak Seviye Belirleme Sınavı (SBS) sonuçlarını etkileyen sosyo-kültürel faktörleri incelerken bazı makro faktörleri doğrulamaya çalışır. Her ne kadar okul eğitimi akademik başarının yanı sıra öğrencinin ahlaki gelişim, nezaket ve adalet anlayışındaki gelişmeyi hedeflese de bu değerleri ölçmek için kesin bir ölçü yoktur.

Bu çalışma İstanbul'un farklı ilçelerindeki ortalama SBS sonuçlarını analiz etmekte ve bunları ortalama zenginlik, eğitim düzeyi, özel eğitim ve ilçelerindeki bazı diğer faktörlerle alakalandırmaktadır. Zenginlik, ebeveynlerin eğitim düzeyi, bölgedeki özel okul sayı ve yaşam kalitesi İstanbul'un farklı ilçeleri için değişiklik göstermektedir. Bu yazıda, bu farklılıkların 8. sınıf SBS sonuçları arasında öğrencinin başarısını belirlemede etkili olup olmadığı incelenmiştir. Bu çalışma, İstanbul'da farklı ilçelerin SBS sonuçlarının basit bir ekonometrik analizi olmasına rağmen, önemli sosyal ve ekonomik sonuçları olabilir. Bu nedenle, eldeki sınırlı verilerle gerilemek yerine en azından sezgisel bir modeli formüle etmek daha uygun olacaktır. Modelin kalbinde SBS sonuçları gelir farklılıkları ilgili bir mekanizma kurmak yatmaktadır. Gelir farklılığı bir çok yönden eğitim niteliklerini değiştirebilir. Öğrenci başarısı söz konusu olduğunda, ebeveynlerin eğitim düzeyinin ebeveynlerin gelirinden çok daha önemli olduğu söylenebilir. Bu ayrıca dolaylı olarak ailelerin sahip oldukları eğitim geleneklerini de yansıtır. Daha iyi eğitimli aileler çocuklarını daha iyi yönlendirebildikleri gibi aynı zamanda çocuklarının eğitimi için farklı planlar da yapabilmektedir. Diğer çocuklar eğitimi isteğe bağlı veya gereksiz olarak nitelendirirken, daha eğitimli ebeveynlerin çocukları eğitimi bir standart olarak yorumlama eğilimindedir.

İTO Yaşam Kalite İndeksi SBS üzerinde azaltıldığında, gerileme sonuçları daha zayıf fakat pozitiftir. Yaşam Kalite İndeksi ; demografik faktörler, eğitim, sağlık, ekonomi, ulaşım, sosyal ve doğal çevre gibi bir sürü faktör içerir. Gelir için daha doğrudan belirleyici olan bir faktör özel okul oranıdır. Çünkü gelirleri arttıkça ebeveyinler çocukları için daha iyi bir eğitim ve daha iyi bir eğitim desteği isterler. Bu şekilde yabancı okullarda okuyanlar giriş sınavlarında, yabancı dil yeteneklerinde ve yaşamın genelinde bir avantaja sahip olurlar.

Bu yazıda, İstanbul'da SBS sınavına giren öğrencilerin başarısını etkileyebilecek bazı dışsal faktörler incelenmiştir. Bu alanda geniş bir literatür olmasına rağmen, veriler genel olarak ya tek bir okulla, ya da küçük bir alanla sınırlıdır. Bu çalışmada, tek tek birimler yerine İstanbul'un ilçeleri araştırmaya dahil edilmiştir. Bunun da bazı avantajları ve dezavantajları vardır.

Böyle bir analizin ilk dezavantajı kendi verilerini yaratamıyor olması ve mevcut verilerin analiz çerçevesini sınırlandırıyor olmasıdır. Yine veriler tarafından çizilen çerçeve ile ilgili ikinci bir dezavantaj ise bireylerin performansları hakkında değerli bilgiler verebilir mikro değişkenlerin gevşekliğidir. İlki ile ilgili üçüncü bir dezavantaj da, veriler yalnızca bu analize özgü hazırlanmadığından, sonuçlar doğrudan gerçekleri vermek yerine dolaylı bazı sonuçlar ortaya koymaktadır.

Bununla birlikte hala bu regresyonu uygulamak için tetikleyici unsurlar vardır. Yetişkin eğitimi, özel okullar, ve SBS sonuçları örnek değil ancak nüfus ortalamaları olduğundan, bu faktörler arasındaki korelasyon sonuçlarını tahrif etmek zordur. Buna ek olarak bazen, dolaylı da olsa, bu davada olduğu gibi makro faktörler mikro faktörlerden daha açıklayıcı olabilmektedir.

Son tahlilde, bu regresyon sonuçları, doğrudan gelir yerine geliri etkileyen ve gelirle birlikte değişen faktörler öğrencilerin SBS başarılarını ölçmekte daha başarılı olduğunu iddia etmektedir. Özellikle, ailenin (ya da bu çalışmaya göre mahallenin eğitim düzeyi) eğitim düzeyi tek başına SBS başarısını etkileyen en önemli faktördür. Sadece bu faktör içerisinde bir çok sayıda faktör içerdiğinden, yalnızca SBS üzerinde yetişkin eğitimi etkisinin basit bir regresyonunun bile sonucu oldukça güçlü sonuçlar vermesi şaşırtıcı değildir. Ortalama yetişkin eğitimi arttıkça, ailenin ortalama geliri de artar. Ailelerin eğitimi arttıkça, onların çocukların eğitimine verdiği

önem de artmaktadır. Ailelerin eğitimi arttıkça, çocuk yalnız başına eğitim, gelecek fırsatları ve tehditler konusunda daha bilinçli kararlar gibi konularda daha bilinçli kararlar verebilmektedir.

Diğer taraftan gelirin doğrudan bir faktörü olan özel okul oranı da regresyon açısından önemlidir. Bu oran – her ne kadar mutlak olarak lazım olmasa da-çocuğun başarısı için ailesinin hırs katsayısı olarak yorumlanabilir. Yaşam Kalite İndeksi, zengin mahalle (ev fiyatları itibariyle) ve ilçelerdeki gelir düzeyi gibi diğer faktörler de test edilmiştir ancak bu verilerin sonuçları ebeveyn eğitimi ve özel okul etkisi gibi keskin değildir. Aynı zamanda veriler ya bireyler ya da özel şirketler tarafından örneklendirildiğinden görüşümüzü açıklığa kavuşturmayan aksine bulandıran çeşitli varsayımlar içerebilir.

Tüm bunlara rağmen bu çalışmadaki sonuçlar açıktır; ortak sınav başarılarını etkileyen en önemli faktör aile içi ve mahalledeki eğitim düzeyidir. Her ne kadar gelirin SBS başarısı üzerine bazı olumlu etkileri olsa da ailenin eğitimi gibi doğrudan ve belirgin değildir. Bu çalışma aynı zamanda özel eğitim ve mahallenin Yaşam Kalitesinin SBS üzerinde bazı olumlu olduğunu göstermektedir. Literatürde ve kamuoyu arasında, aile geliri daima öğrenci başarısını etkileyen önemli bir faktör olarak kabul edilmiştir.

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