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Socioeconomic Status and Its Effects on Higher Education Opportunity: The Case of Greece

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Abstract

Gaining access to higher education theoretically enables social mobility for students from lower socioeconomic classes but students from lower-income, working class families are much less likely to attend university. Data from a sample survey of over 2000 Greek university freshmen were analyzed using multiple linear regression analysis to identify factors influencing the affordability of a first-year university education in Greece. Results showed that family income is the strongest predictor of the affordability of higher education in Greece and that a university education is substantially more affordable for the upper socioeconomic or management classes in Greece compared to that for working class families. This finding partially explains why families from the upper socioeconomic strata in Greece invest the most in preparing their children for university admission. This also helps explain why approximately 80% of the first-year university slots are occupied by "management class" families. While the average Greek family invests almost half of their annual income to support a child's university education, the families of working class families sacrifice almost 60% of their annual income to achieve the same goal, something they can much less afford to do. It should come as no surprise then that the children of working class families occupy only one in five classroom seats in the Greek system of higher education. More research is needed to understand the underlying causes of this disparity. Alternatively, more can be done from a social policy perspective to help promising low-income secondary students become better prepared academically for pursuing and applying to institutions of higher education in Greece.

Keywords

University Costs, Family Income and Expenditures, Social Mobility

1. Introduction

While participation in higher education in Greece has increased in recent years, this has been shaped to a large degree by the widening socioeconomic disparities in Greek society which favor the privileged social classes [1] [2]. Gaining access to higher education enables social mobility for students from lower socioeconomic classes but the irony is that students from lower-income families are much less likely to attend college [3]. This is true in much of the developed world as well as in Greece. In the United States, England, and Australia, for example, higher education participation rates are generally much higher for children of professional and upper income families compared with those of working class and lower income homes [4] [5] [6]. In short, participation in higher education is more concentrated among upper socioeconomic families.

Merit also plays a role in determining access to higher education. In Greece, university admission is determined by scores on the nationwide Panhellenic exams. While a university education is tuition-free in Greece, there are substantial private costs associated with preparing secondary students for the university entrance exams. Greece has an ancillary system of secondary education that families use to help prepare their children for the Panhellenic exams. This system involves a network of private prep schools (referred to as frontisteria), private tutors, and private Lyceum at the upper secondary level [7] [8]. The ancillary education system tends to benefit the students of the privileged social classes more than the children of lower socioeconomic families, thus perpetuating the preexisting social inequities in Greece [1]. Additionally, families must cover their children's living expenses while enrolled in higher education.

2. Study Focus and Methodology

This paper uses data from a sample survey of Greek university freshmen that measured family costs associated with preparing their children for the university entrance examinations as well as the costs of living associated with first-year university attendance. The analysis reported in this paper shows how entrance examination preparation costs and university attendance costs tend to be stratified by socioeconomic factors such as family income, father's occupation and father's education. A key feature of the analysis is an indicator of "financial sacrifice" that shows the percentage of a family's annual income necessary for covering the total costs of a first-year university education in Greece. Tables are presented showing the breakdown of entrance exam preparation costs and university attendance costs by father's occupation. A similar set of tables are presented showing how family *sacrifice* varies by fathers' occupation and education levels. Finally, the results of a multiple linear regression analysis show how five factors affect the affordability of a first-year university education in Greece.

The survey was randomly distributed to 2.370 freshmen students in 58 departments across seven major Greek universities in the spring of 2014. On average, 18% of the students in each department returned the survey for a total anal-

ysis sample of 2235 students (see Table S1 in **Appendix**). The survey achieved a return rate of 94% (in the majority of the questions). Key variable definitions can be found in Table S2.

3. The Costs of Higher Education in Greece

Secondary school students in Greece start preparing for the university entrance exams years in advance. Families do this by sending their children to private prep schools and private Lyceums and/or by hiring private tutors. These costs are shown in Table 1. Almost half the sample (48.9%) attended the "frontisteria" prep schools, 14.2% of the sample engaged private tutors, and approximately one third of the sample did both. Approximately 10% of the sample attended a private Lyceum. Most often (48% of the time), students were enrolled in the "frontisteria" private prep schools for two years before taking the national university entrance exams. Private tutors were most often (39% of the time) hired for one year.

The data in Table 1 suggest that families with the highest incomes (fathers with executive occupations) invest the most in preparing their children for the university entrance exams. They do so by availing themselves of all three means of university preparation: prep schools, private tutors, and private schools. Overall, it is the executive and white-collar families that spend the most in preparing their children for the national Panhellenic exams.

Once a student enters the Greek higher education system, tuition is free but the costs of attending university must be borne by the student and his/her family. These costs are shown in Table 2. The total annualized cost of university attendance paid by students and their families is approximately equal to the per-pupil cost for tuition paid by the state [8]. A major cost component of university attendance is paying rent.

4. Family Economic Sacrifice

Greek families at all levels of society invest a substantial portion of their income

Table 1. Annualized Mean Costs (in Euros) for University Preparation by Father's Occupation.

Father's Occupation	Sample Size N	Cost (€) of Frontisteria Private Prep Schools	Cost (€) of Private Lessons/ Tutoring	Cost (€) of Private Lyceum Schools	Total Preparation Costs (€)
Executive	402	2359	3234	7090	12,683
White Collar	1476	2807	1754	3036	7597
Farmer - Fisher	124	2926	1681	0	4607
Blue Collar	119	2473	1183	1573	5229
Unskilled	69	2868	996	0	3864
Total	2190	(2686)[a]	(1770)	(2340)	(6796)

a. In parenthesis: mean cost for each category.

Table 2. Annualized Mean Costs (in Euros) of University Attendance by Father's Occupation.

Father's Occupation	Sample Size N	Rent Costs (€)	Food Costs (€)	Local Transportation Costs (€)	Book Costs (€)	Personal Expenses (€)	Travel Home (€)	Total Costs (€)
Executive	402	1424	858	252	230	827	162	3753
White Collar	1476	1412	739	246	180	763	155	3495
Farmer - Fisher	124	2230	954	253	174	826	328	4765
Blue Collar	119	1368	725	281	144	731	138	3387
Unskilled	69	1365	718	193	175	583	168	3202
Total	2190	(1560)[a]	(798)	(245)	(181)	(746)	(190)	(3720)

a. In parenthesis: mean cost for each category.

Table 3. Percent of Family Income to Cover Higher Education Costs by Father's Occupation.

Father's Occupation	Sample Size N	Total Costs per Year (€)	Family Income per Year (€)	Family Sacrifice % [b]
Executive	402	16,436	38,774	42.39
White Collar	1476	11,092	25,543	43.42
Farmer - Fisher	124	9372	14,510	64.59
Blue Collar	119	8616	16,471	52.31
Unskilled	69	7066	11,168	63.27
Total	2190	(10,516)[a]	(21,293)	49.38

a. In parenthesis: mean cost for each category; b. Sacrifice = (Total Annual Costs/Annual Family Income) × 100.

in supporting their children's aspirations for a university education. As shown by the total "sacrifice" estimate in **Table 3**, the average Greek family in the study sample invested nearly 50% of their annual family income to cover the total costs of a university education for their child. This includes both the cost of preparing for the nationwide university entrance exams as well as living and study expenses once admitted to a university.

An important take-away from the data in **Table 3** is that a university education is more affordable for the higher income segments of Greek society. Specifically, the executive and white-collar families in the sample spent approximately 43% of their income to support their children's efforts to attain a university education whereas the working-class families[1] in the sample spent approximately 60% of their income to achieve the same objective.

A similar analysis was carried out with father's education, as shown in **Table 4**. In this analysis, it is clear that higher education in Greece is most affordable

[1]Working-class families, fathers' occupations category included: farmers and fishermen, blue-collar workers, and unskilled laborers.

Table 4. Percent of Family Income to Cover Higher Education Costs by Father's Education.

Father's Education	Sample Size N	Total Costs per Year (€)	Family Income per Year (€)	Family Sacrifice %[b]
University	719	12,670	31,651	40.03
Technical School	298	11,383	21,692	52.48
Lyceum	405	11,515	23,592	48.81
High School	144	10,570	18,184	58.13
Primary School	142	8785	16,550	53.08
Total	1708[2]	(10,985)[a]	(22,334)	49.18

a. In parenthesis: mean cost for each category; b. Sacrifice = (Total Annual Costs/Annual Family Income) × 100.

Table 5. Summary of Regression Analysis: Variables Predicting Affordability of Higher Education in Greece (N = 1741).

Variable	B	SE B	Beta	Zero-order Correlations	Partial Correlations
Constant	1.82	0.02			
Family Income	−8.08	0.00	−0.54**	−0.53	−0.53
Management Class	−0.07	0.02	−0.09**	−0.20	−0.10
University Educated	−0.05	0.01	−0.08**	−0.18	−0.09
Science Major	0.03	0.01	0.05*	0.02	0.06
Private School	0.26	0.02	0.23**	0.10	0.26

Note. Adjusted $R^2 = 0.33$; **$p < 0.01$; *$p < 0.05$.

for families of a university-educated father and less so otherwise. The fact that access to higher education in Greece is easier for the socioeconomically privileged, raises issues of social justice and inequalities [9].

5. The Affordability of Higher Education in Greece

We viewed the "sacrifice" metric as an indicator of the affordability of higher education in Greece. Our interest was in determining the predictors of higher education affordability and multiple linear regression analysis was used toward this end. A log transformation of the response variable "sacrifice" was conducted to remedy a degree of non-constant variance in the data [10]. The improved model is shown in **Table 5**.

The data in **Table 5** show that annual family income is the strongest predictor of the affordability of higher education in Greece. The greater the family's income, the more affordable higher education is in Greece. Correspondingly, higher education is more affordable for the upper socio-economic classes in Greece. For example, the data in **Table 5** suggest that, on the average, higher education is about 7% more affordable for families from executive and white

[2]The sample distribution and the total No differs from that reported in other tables due to limited replied in the related questions.

collar occupations compared to working class families. Similarly, higher education tends to be about 5% more affordable for families with university-educated fathers compared to families whose fathers have lower levels of education. As a related matter, the results of the nationwide university entrance exam favor the children of management class families (d = 675 points) and university-educated fathers (d = 440 points) compared to the children of working class families and non-university educated fathers.

Alternatively, higher education in Greece is about 3% more expensive for families whose children pursue science majors compared to the humanities or technology fields of study. Additionally, the data in Table 5 suggest that Greek families who send their children to private secondary schools (Lyceum) to prepare them for college adds about 26% to the cost of a university education. While the test score sample is limited (N = 132), this investment apparently pays off since university entrance exam results substantially favor the graduates of private secondary schools in Greece over public school graduates (mean difference = 836 points; $t = 5.99$, $df = 100.46$, $p < 0.01$).

6. Discussion and Conclusions

The study's overall survey sample (N = 2370) suggests that approximately 79% of the students in the 2013-2014 Greek university freshman class came from management class families whereas only about 21% came from working class families[3]. This demographic profile fits the main findings of the study, which is that management class families—those with the highest incomes—tend to invest the most in preparing their children for university admission. By virtue of their higher incomes, these families are also the ones who can most easily afford to invest in their children's educational future.

Since Greek working class families sacrifice more than half of their income (actually about 60% on the average) when choosing to pursue a university education, is it any wonder that only about 20% of lower SES families in Greece pursue higher education? The Western ideal is that higher education promotes social mobility. However, some would argue that this is a myth since college attendance is largely pre-determined by socioeconomic factors like family income and parental education.

Bruenig [11] assessed the degree of educational mobility among the 28 OECD countries by asking "How much more likely is a child of highly educated parents to attend college than a child of lowly educated parents?" Results showed that Greece was one of the lowest in educational mobility, ranking 23rd of 28 OECD countries. Specifically, Bruenig found that Greek children of highly educated parents are over five times more likely to attend college than children of lowly educated parents [11].

Why is there such a disparity in how high and low socioeconomic status (SES) families are represented in the Greek system of higher education? Two hypo-

[3]This statistic varies somewhat depending on the specific analysis sample.

theses have been suggested in the United States to explain the concentration of high SES students in American universities, particularly the more selective ones. First, it has been suggested that low-income students are underprepared academically [12], and second, that low-income students are not applying to selective universities for which they are qualified [13].

The present study has limited data to support the first hypothesis, which is that university entrance exam results favor:

- the graduates of private Greek secondary schools over public schools;
- the children of management class families over working class families; and
- the children of university-educated fathers over non-college graduates.

We also showed that it is the higher income, management class families that invest the most in preparing their children for university entrance. However, we have no data on the second hypothesis, but it is certainly possible that many high-achieving students from working class families in Greece simply do not apply to universities they are qualified for. In the United States, Koffman and Tienda [14] found that students from affluent secondary schools were more likely to apply for university admission than the graduates of low to moderate SES secondary schools.

Policy implications from the Koffman and Tienda [14] study include:

- the need to make college prep programs and tutoring more available to working class families through government subsidies and grant awards to high achieving, low-income students, and
- the need to target university recruitment of talented students from resource poor secondary schools.

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Appendix

Table S1. Sample Distribution.

University	Number of Students in the Sample
National Kapodistrian University of Athens	471
University of Thessaloniki	447
National Technical University of Athens	139
University of Patras	389
University of Ioannina	428
University of Crete	318
University of the Aegean	43
Total	2235

Table S2. Key Variable Definitions.

Variables	Definitions
Total Education Costs [a]	University Preparation Costs + University Attendance Costs
Annual Family Income	Monthly Family Income × 12
Management Class	Father Occupation = Executive or White Collar vs Working Class
Working Class	Father Occupation = Farmer/Fisher, Blue Collar or Unskilled vs Management Class
University Educated	Father = University Graduate vs. Less Educated
Science Major	Science Program of Study vs. Humanities or Technology
Private School	Private Lyceum vs. Public Lyceum
Family Sacrifice %	(Total Annual Costs/Annual Family Income) × 100

a. Education costs were computed on a 10-month basis.