STUDENTS, SCHOOLS, AND POST-SECONDARY ENROLLMENT: A

CONTEXTUAL APPROACH

Hanna Ayalon and Audrey Addi-Raccah

Tel Aviv University

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Abstract

The expansion of higher education, following the establishment of degree-granting colleges that operate alongside the veteran universities, is one of the salient phenomena in Israeli education in the last decade. One major issue in recent research on higher education is the contribution of its expansion to the equalization of educational opportunities. According to theoretical approaches and previous research, expansion is not expected to promote equality. Even when an expanded system absorbs underprivileged students, they are more likely to enroll in the less prestigious higher education institutions, thus preserving the advantages of the privileged groups.

Previous research concentrated on students' individual characteristics. Our study tests the hypothesis that enrollment in post-secondary education, and the effects of students' characteristics on this enrollment are affected by characteristics of their high schools, such as the socioeconomic, ethnic, and academic composition of the students, educational level of the teachers, structural arrangements (comprehensive versus academic or vocational) and sector (general versus religious). The empirical analysis is based on a 6-years follow-up study of all Israeli students who completed high school in 1991, performed by the Israeli Central Bureau of Statistics and the Ministry of Education. We conducted non-linear hierarchical analyses of post-secondary attendance and destination on 42,142 students, distributed among 384 schools. The main findings are as follows: students originating from higher-status families, members of privileged ethnic groups, and graduates of the academic track have higher odds of post-secondary attendance. Higher social and academic

compositions increase the odds of all students in a school to enroll in post-secondary education. Higher social composition is particularly effective in increasing the enrollment odds of more able graduates. Higher status students, females, academic track graduates, and members of privileged ethnic groups have higher odds of university versus college enrollment, and lower odds of non-academic post-secondary versus college enrollment. Higher percent of academic teachers and Jewish non-religious sector increase the odds of enrollment in an academic college versus all other types of post- secondary institutions. The findings support to the differentiation perspective, but they also show that differentiation in post-secondary destination is context bound.

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The expansion of higher education, following the establishment of degree-granting colleges that operate alongside the veteran universities, is one of the salient phenomena in Israeli education in the last decade. Data of the Israeli Central Bureau of Statistics (ICBS) show that between 1991-1999 the number of undergraduate students rose from 56,000 to 128,000 (Ayalon & Yogev 2002). These students study at six veteran universities, one Open University, 40 various types of newly established colleges and 15 branches of foreign universities (Ayalon & Yogev 2002). Who are the clients of the new institutions? Are they members of underprivileged groups that till now did not receive any higher education, or are they members of privileged groups that are using the new educational opportunities to increase their participation in higher education? Our study refers to these questions, but contrary to previous research that concentrated on students' characteristics (e.g. Guri 1993; Ayalon & Yogev 2002; Bolotin, Shavit & Ayalon 2002; Sherman 1995), we add the school dimension to the analysis.

Main Approaches in the Research on Social Outcomes of the Expansion of Higher Education

One central issue in the analysis of the expansion of higher education is the social and educational profile of the students of the new institutions. The implications of this social profile on inequality in accessibility to higher education are straightforward. If the students of the new institutions belong to a "new" population

that was not represented in the veteran universities, the expansion of higher education contributes to the decrease of social gaps. If, on the other hand, the new institutions are exploited by members of privileged groups, the expansion may preserve, or even increase social gaps.

MMI (Maximum Maintained Inequality) hypothesis, a theoretical approach that was widely used in the research on the expansion of education (Raftery and Hout 1992), negates the assumption that the expansion of educational systems decreases social gaps. MMI claims that new educational opportunities are exploited first and foremost by less able students from privileged groups and not by members of underprivileged strata. Members of privileged groups, who have more material, cultural and cognitive resources take better advantage of new educational opportunities. According to this approach, the advantage of dominant groups in enrollment to a certain educational level is retained till the participation of its members at this level reaches saturation. Only then will an additional expansion of that educational level contribute to the decrease of social inequality in enrollment.

The MMI hypothesis was supported by studies that analyzed the expansion of various educational levels. For example, the expansion of secondary education in several countries (Shavit and Blossfeld 1993), the establishment of community colleges in the USA (Brint and Karabel 1989; Dougherty 1994), and of second change frameworks in Israel (Inbar and Sever 1989; Ayalon 1990). The findings showed that new frameworks were better utilized by students with superior resources, especially by less able members of privileged groups. Based on the logic of MMI, we can hypothesize that the expansion of higher education would be exploited by members of the traditional clientele of this system, who could not enroll in the veteran

institutions because of their low academic achievements. According to this approach, the new institutions do not decrease and may even increase existing gaps.

Recently, the MMI approach has been criticized for two reasons. First, there is evidence that shows that underprivileged groups entered institutions of higher education even when the stronger groups had not reached saturation. Second, MMI assumes that educational levels are one-dimensional, while, in fact, educational levels are often differentiated (Breen and Jonsson 2000; Lucas 2001). Lucas suggested that in the absence of saturation, privileged groups look for both qualitative and quantitative advantages. Stratification can than occur in the levels of educational attainment and in the type of education attained within a particular level. According to this logic, we may hypothesize that even if inequality in accessibility to post secondary education decreases, horizontal inequality will remain stable or even increase. In that case, qualitative inequality within educational levels may replace inequality in enrollment rates (Ayalon and Shavit 2001; Shavit and Kraus 1990). The research on higher education indeed shows that privileged groups enter more prestigious institutions and more prestigious fields of study, while members of underprivileged groups are more likely to enroll in institutions that belong to the second tier of higher education (Davies and Guppy 1997; Karen 2002).

Several studies that examined the outcomes of the expansion of higher education in Israel supported these approaches. First, the Israeli findings showed that the expansion of higher education increased the enrollment rates of all social groups. However, the most significant increase was found in the stronger ethnic groups (Bolotin, Shavit, and Ayalon 2002). Second, although the new colleges absorbed students from "new" groups, such as Mizrachim (Jews of Middle-Eastern of North African origin, the Jewish disadvantaged ethnic groups) and Arabs they are far from

being one-dimensional and they differ in the fields of study they offer. Colleges offering prestigious and selective fields of study absorbed mainly students from privileged groups with low academic achievements. Colleges that offer less prestigious fields of study were more likely to absorb students from the underprivileged groups (Sherman 1995; Ayalon and Yogev 2002). The Israeli findings reveal both quantitative and qualitative inequality in the expanded system of higher education: the enrollment rates of members of privileged groups increased more rapidly than those of members of underprivileged groups and horizontal inequality exists in addition to inequality in enrollment rates.

The research on the consequences of the expansion of educational levels, in Israel and elsewhere, referred to the better social, economic, and educational resources of students of privileged groups (Lareau 1989: Karen 2002); to their ability to make better educational choices (Lucas 1999); to the rationality of their decision to base their social mobility on educational credentials (Breen and Jonsson 2000; Raftery and Hout 1993). The research provides little attention to the structural mechanisms that help privileged groups to take better advantage of new opportunities. One such mechanism is high school. Incorporating the school into the process of attending post secondary education is straightforward as education is a commutative process in which schools affect the prerequisites for transition to tertiary education (e.g. achievement and motivation). Breen and Jonsson (2000) notified that "A model of educational transitions that can take into account the institutional structure of the school system is better able in explaining why educational choices differ according to social origin, sex, ethnicity and other exogenous variables…. (p. 759). In this context, school, as an organizational environment, can hinder or encourage the desire of students from various social strata to enroll in further education (McDonough 1997),

thus affecting the conversion of personal resources into educational advantages. School context may affect the decision to enroll in post-secondary education, the choice of an institution, and the pattern of inequality in enrolling in tertiary education. The role of school may be particularly relevant when an expanded system of higher education is offering new opportunities to high school graduates. The ability to get information about the new educational opportunities and to decode the new educational options and make better choices is affected, according to McDonough (1998), by a combination of the student's social status and school's college-choice policy. Schools differ in the messages they convey to their students concerning their chances of enrolling in higher education, in the degree they encourage them to apply to this system, and in the nature of the information they supply about the various types of institutions of post secondary education (McDonough 1997, 1998; Perna 2000). Thus, schools can affect post-secondary attendance and destination of the students, as well as the link between social origin and post-secondary behavior.

High School and Enrollment in Higher Education

School effects on enrollment in higher education have not been studied extensively, but there is a large body of research that shows that school's context affects various academic outcomes. The discourse on the effects of school on educational outcomes focuses on the social, demographic and economic characteristics of the school as structuring a normative environment that can hinder or advance the individual's achievements (Raudenbush and Willms 1995). Research findings show that the messages that students receive at school, the norms according to which they are expected to act, the support they receive from their teachers, and their social relations with their peers are all related to the students' achievements and expectations. School

characteristics, such as size, ethnic composition, structure of learning opportunities, curricular tracks, socioeconomic composition, and the characteristics of the school staff, influence ethnic, class and gender inequality in course taking, in scholastic achievements and in educational and occupational aspirations of the students)Ayalon and Gamoran 2000; Gamoran 1990; Lee, Bryk and Holland 1993; Shavit, 1984; Yogev 1981).

The few studies that did examine the link between the school context and post-secondary enrollment found significant influence of various school characteristics on enrollment. Research has been done on the influence of the educational sector (public vs. Catholic/private) on the decision of high school graduates to enroll in post secondary education in general, and in prestigious institutions of higher education in particular (Falsey and Heyns 1984). Other studies focused on the social composition of the school (McDonough 1997). A relatively large number of studies (summed by Wells and Crain 1994) focused on the racial composition of American schools and showed that racially desegregated schools encouraged black students to enroll in non-black colleges and to choose more prestigious fields of study. Research also reports on a link between two organizational features of the school, curricular tracking and college counseling, and post-secondary enrollment. The academic track has been found to increases the likelihood of post-secondary attendance of high school graduates in general (Ownigs, Medigan and Daniel 1998; Lucas 1999; Ono 2001), and of students with low academic performance in particular (Alexander et al. 1987). McDounough (1998), who focused on college-choice counseling, distinguished between college-choice organizational culture and climate of schools. College-choice organizational culture refers to whether the curriculum and the mission of the school are college preparatory, whereas college-choice organizational climate refers to "the

organizational mediation of student's aspirations" (p. 187), mainly by college counseling. In a study of four high schools in California, she found that the college-choice organizational culture and climate of schools affected both college attendance and destination.

Each of these studies focused either on a single school characteristic or on a small number of characteristics and they made no attempt to carry out a comprehensive study with a variety of school variables. Following these studies, and attempting to broaden their perspective, the present research would examine post-secondary attendance and destination of high school graduates as a function of their scholastic and social characteristics, the compositional and structural characteristics of their schools, and interactions between the two factors.

At first glance, the examination of the influence of school on the patterns of enrollment in higher education in Israel might look problematic. Notwithstanding the American findings indicating that such an influence does indeed exist, we should recall that in Israel, in contrast with the USA, the decision to enroll in further education is made by most high school graduates a few years after graduation. This fact might reduce the influence of the school context. Nevertheless, in a survey conducted lately among freshmen at universities and colleges, most of them said that school was a main source of information about the system of higher education (Ayalon & Yogev 2002). This finding suggests that high school might have long lasting influences on decisions concerning post secondary education.

Research questions

Based on previous research on the expansion of higher education and on school's effect on students' achievements and behavior, our study is guided by two questions:

1. Do school characteristics affect the decision of high school graduates
   to enroll in higher education, and their institutional choice?

2. 2. Do school characteristics affect social inequality in rates and pattern
   of enrollment in higher education?

Multilevel Analysis of Post-Secondary Attendance and Destination

<u>Data</u>

The research is based on a seven years follow-up survey of the 42,142 high school

students who studied in 384 high schools and graduated in 1991, conducted by the

Israeli Central Bureau of Statistics (ICBS 2000). Nearly half of the graduates (46.8%)

enrolled in post secondary institutions until 1998. Data were not available for students

who studies in small localities.

<u>Variables</u>

The analysis refers to two dependent variables:

<u>Post secondary attendance</u>: a dummy variable coded 1 if the respondent enrolled in

any post-secondary institution until 1998, 0 otherwise. We are aware that our sample

is censored as graduates might have enrolled in higher education after 1998. In 1998,

however, most graduates (98%) were 25-26 years old, and as most undergraduate

students in Israeli higher education enroll by that age, the right censoring is not

expected to have a significant effect on the findings.

<u>Post secondary destination</u>: 1. University (six veteran institutions, the most

prestigious institutions in the Israeli higher education system); 2. Academic college

(about 19 newly established institutions); 3. Teachers' training institution supervised

by the Ministry of Education. Following the expansion of higher education many teachers' training institutions were upgraded to academic colleges that award an academic degree (B.Ed). At the time of the survey most, but not all institutions were upgraded. However, the data do not distinguish between the two kinds. 4. Non-academic post secondary institution, mainly institutions for technological training supervised by the Ministry of Labor. The data do not include students who enrolled in the Open University or in Israeli branches of foreign universities, which were establish only after 1998.

The independent variables were measured at the individual (student) level and the school level.

Individual level variables

Sex: Female (1); Male (0)

Father's Education: In the multivariate analysis it is categorized to the four categories used by the Central Bureau of Statistics, as follows: 1. 1-8 years of schooling; 2. 9-12 years; 3. 12-15 years, and 4. 16 years or more. In the descriptive statistics father's education is represented by a dummy variable coded 1 if father has at least 16 years of schooling, 0 otherwise.

Ethnic Origin: A dummy variable coded 1 for Mizrachim -father originated from the Middle East or North Africa (generally regarded as the disadvantaged Jewish ethnic group in Israel)0 , for all others (Ashkenazim - father originated from Europe or America, and second generation Israeli Jews). This variable is relevant only to Jews.

Matriculation Eligibility: Eligible (1); Not eligible (0). The matriculation certificate is differentiated into university qualifying diploma and regular diploma, which is not accepted by the university and part of the academic colleges (Ayalon and Shavit 2001). However, the data do not distinguish between these two kinds.

High School Track: Academic (1); Technological (0).

Nationality: Arab (1); Jewish (0)

School level variables

A. School affiliation and type:

Sector: Originally included three categories: Hebrew State; Hebrew State-Religious; and Arab. Based on these categories we constructed two dummy variables: Religious, coded 1 for state religious schools, 0 otherwise; and Arab, coded 1 for Arab schools, 0 otherwise. In the multivariate analysis, the Hebrew state schools serve as the reference category.

School Type: Consists of three categories: technological, academic, comprehensive. This variable was computed on the basis of the percentage of students learning in the academic track. If the percentage was 0% – 10% the school was defined as technological, if the percentage was 90% - 100% the school was defined as academic and if the percentage was 11% - 89%, the school was defined as comprehensive. In the multivariate analyses school track is defined by two dummy variables: Academic, coded - 1 for academic high schools, 0 otherwise; and Technological, coded 1 for technological schools, 0 otherwise. Comprehensive schools serve as the reference category.

B. School social and academic composition:

Mean Father's Years of Schooling. This variable was aggregated from the student level data. We use it as a proxy to the school's social composition.

Percentage of Teachers with Academic Degree. This variable was computed for each school by the CBS.

<u>Percentage of Students Eligible to the Matriculation Diploma</u>. This variable was aggregated from the student level data. We use it as a proxy to school's academic composition.

C. School structure:

 <u>School Size</u> – the number of students in the 12th grade.

Method

We analyzed the data by non-Linear Hierarchical modeling (Byrk and Roudenbush 1993) using HLM software. This method allows the incorporation of various levels in the same statistical analysis. In our study we combine characteristics of the high school graduates and characteristics of their schools. This method allows a simultaneous estimation of the effect of the characteristics of the graduates and the characteristics of their high schools on post-secondary attendance and destination.

The analysis consists of two models. In the first model the dependent variable is post-secondary attendance. In this analysis we examined the effect of individual characteristics, of school characteristics, and of interaction between both, on the likelihood to enroll in any kind of post-secondary institution.

The student level equation for this outcome looks as follows:

$$\text{Log } [p/(1-p)]_{ij} = \beta_{0j} + \Sigma\beta_m(X_{mi})$$

The log odds of student i in school j to enroll in post-secondary education is a function of the average odds of enrollment in school j and the student's *m* personal characteristics. In some analyses we allowed the slopes of father's education and matriculation eligibility to vary between schools. Among the variables indicating social background or academic achievement, they are the only slopes whose between school variance is statistically significant. All other slopes were fixed.

In the school level equations β_{0j} and the slopes of father's education and matriculation eligibility serve as dependent variable and are modeled as a function of school's characteristics. We centered father's education and matriculation eligibility around the school means, and the other continuous individual variables around their grand means. School continuous variables were centered around the grand mean. All dummy variables, except matriculation eligibility, retain their original form. Thus, the intercept expresses the log-odds of an average non-Mizrachi male student, in an average state school to enroll in post-secondary education.

In the second model the dependent variable is post-secondary destination. It refers only to graduates that continued their studies up until 1998. This model is based on multinomial hierarchical analysis. In this analysis we examined the effect of individual and school characteristics on the likelihood of enrolling in a university, a teachers' training institution, or a post- secondary non-academic institution compared to enrollment in an academic college. Academic colleges serve as the reference category because we expect school characteristics to be particularly effective in contrasting academic colleges with all other options. As noted, academic colleges were newly established at the time of the survey and the role of school in providing information on the new educational options may be critical.

The student-level equations are as follows:

$$\text{Log } [p(1)/p(4)]_{ij} = \beta_{0j}(1) + \Sigma\beta_{1m}(X_{mi})$$

The log odds of student i in school j to enroll in a university (1) versus academic college (4) is a function of the average log-odds in school j and the *m* characteristics of the student. Similar equations expressed the two other contrasts. In the school-level model the various β_{0j} were modeled as a function of school characteristics. Due to their low and insignificant between-school variation, all slopes were fixed.

Results

<u>Characteristics of the graduates and their schools</u>

Table 1 presents the characteristics of the high school graduates according to post-
secondary destination. About 50% of the graduates enrolled in post-secondary
education. Most of the enrollees (53.5%) attended a university, about 15% enrolled in
non-academic post secondary institutions, 12.6% enrolled in academic colleges and
19.3% in teachers' training institutions.

Post-secondary destination is linked to social and economic background. The
enrollees in universities or academic colleges belong to socially advantaged groups
(non-Mizrachi Jews, fathers with academic degree), and have better academic
achievements (studied in the academic track and are eligible to the matriculation
certificate). The graduates that enrolled in non- academic institutions or did not
continue studying are socially and academically disadvantaged. The graduates who
enrolled in teachers' training colleges are characterized by over-representation of
women and Arabs.

Table 2 crosstabulates high school characteristics and post-secondary
destination of the graduates. Post-secondary destination is related to school sector.
Graduates of Arab schools are significantly less likely than graduates of Hebrew
schools to enroll in post secondary institutions (29% compared with 49%); graduates
of state-religious and Arab schools are relatively likely to enroll in teachers' training
institutions, while graduates of state schools enroll in academic colleges more than
graduated of the remaining two sectors. School Size, the educational level of its
teachers, and the social and academic composition of its students are all related to
post-secondary destination. Graduates that enrolled in universities and academic
colleges came more often from larger schools, from well-established schools, from

academic schools, and from schools with high rates of matriculation eligibility.

Graduates that did not enroll in tertiary education or enrolled in non-academic

institutions usually come from smaller and less academically and socially established

schools, many of them technological or comprehensive ones.

Multivariate Analysis

Post-secondary attendance

Table 3 presents the findings of three non-linear multilevel analyses of post secondary

attendance. Theses analyses examined the effects of individual and school

characteristics on the odds of attending any post-secondary institution.

The first analysis presented in the table, includes individual variables. The

intercept and the slope of father's education were allowed to vary between schools.

Because father's education was centered around the school mean, school means were

introduced to the model via the equation of the intercept (Bryk and Raudenbush

1992). We learn from this analysis that all individual characteristics, except gender

and Arab nationality, affect the likelihood of enrollment in further education.

Mizrachi origin reduces the likelihood of enrollment in post-secondary education

whereas father's better education increases it. High school track affects post-

secondary enrollment in the expected direction - graduates of the academic track

were about 2.6 (e $^{.948}$=2.58)   times as likely as graduates of the technological track

to enroll in tertiary education.

In Model 2, the intercept and the slope of father's education were modeled as

a function of school's characteristics.   Studying in schools with better social

composition, in schools with higher rates of matriculation eligibility, and in larger

schools, increase the likelihood of enrollment in post secondary institutions. Studying

in state religious versus state public schools also increases that likelihood, whereas studying in Arab schools versus state public school decreases it. The percentage of academic teachers has a negative effect on the likelihood, but it does not reach statistical significance. *Ceteris paribus*, compared with comprehensive schools, technological high schools increase the likelihood of post-secondary enrollment, while academic schools decrease it. This finding suggests that the advantage of studying in academic schools for post-secondary enrollment (see Table 2) stems, at least partly, from the better social and academic composition of these schools and not from a college-oriented policy.

These findings indicate that post-secondary institutions absorb graduates of various school types. They absorb graduates of socially and academically established schools, but also graduates of technological schools, which are usually perceived as socially and academically disadvantaged institutions (e.g. Shavit 1984). As we shall see later, this pattern is related to the variability of post secondary education, which offers a variety of programs that cater to different populations.

Three school variables have significant effects on social inequality in enrolling in post-secondary institutions: Technological School, Size, and social composition. Post-secondary attendance is more egalitarian (i.e., less dependent on father's education) in technological compared to comprehensive schools. Technological schools probably moderate social inequality in post-secondary enrollment because of the appeal that non-academic institutions have for their graduates (see Table 2). Non-academic institutions, which are not demanding academically, cater to students of various social groups, including offspring of less educated fathers. The negative effect of school's social composition suggests that a better social environment in school moderates the link between the student's social background and post-secondary

attendance. In other words, a better social environment encourages students of lower background to enroll in post-secondary education. Larger schools increase social inequality in enrollment. This may be due to the less personal student/teacher relations in larger schools (Lee et al. 2000), which probably create more dependence of the students on their families in deciding whether to enroll in post-secondary education.

Adding matriculation eligibility to the equation caused the slope of father's education to lose its between-school variance. This implies that the variability of the link between social background and post-secondary attendance is mediate by academic achievements. In other words, between-school variance in social inequality in post-secondary attendance is completely captured by between-school variation in the link between matriculation eligibility and post-secondary attendance. Subsequently, in the 3rd model we fixed the slope of father's education and added matriculation eligibility as a random individual variable.

Model 3 shows that in an average state school matriculation eligibility increases the chances to attend post- secondary education by 7.82 times (e $^{2.057}$=7.822). The inclusion of matriculation eligibility caused the effect of gender to get greater and statistically significant. The negative effect shows that after taking matriculation eligibility into account, women are less likely than men to continue studying. The control for academic achievements decreased the effect of academic track (from .979 to .169), but the coefficient retained its statistical significance. The reduction implies that the advantage of academic track graduates in post-secondary enrollment stems, to a large degree, from their matriculation eligibility.

The inclusion of matriculation eligibility and the fixing of the slope of father's education caused only two significant changes in the effect of the school variables on the intercept. The effects of Academic Schools and Technological Schools got smaller

and the first (but not the second) lost its statistical significance. This finding underscores the centrality of matriculation eligibility in shaping the link between school type and post-secondary attendance. In other words, the relative advantage of graduates of academic schools over graduates of comprehensive schools in post-secondary enrollment stems mainly from differences in matriculation eligibility.

Several school variables affect significantly the link between matriculation eligibility and post-secondary attendance. In the Arab and the religious sectors the link between matriculation eligiliby and post-secondary attendance is stronger than in the public Jewish sector. This implies that in Jewish public schools post- secondary attendance is less dependent on matriculation eligibility than in the other sectors. This suggests that graduate of the public Jewish sector may be using more extensively the various post-secondary options, which vary in their academic demands. We will refer to this issue in the next section.

The link between matriculation eligibility and post-secondary attendance is stronger among graduates of academic compared to comprehensive schools, and among graduates of schools with better social composition. These two findings suggest that among graduates of academic schools and of schools with higher educational environment the major reason for not attending post-secondary education is the absence of a matriculation certificate. When the educational milieu is less favorable, graduates who are eligible to the diploma may not attend higher education either because the diploma is not admissible (as noted, some matriculation certificates are not accepted by the universities and by part of the academic colleges), or because they are not interested in further education. This, of course, is a hypothesis, which has to be examined in further research. Size is another school variable that enhances the link between matriculation eligibility and post-secondary enrollment. This may also

stem from the less personal teacher-student relations in larger schools, which may deprive students of knowledge on the variety of the post-secondary options. We can also assume that larger schools, which usually have more differentiated curriculum, offer different learning opportunities to students with different abilities (Lee et al. 2000). This may eventually affect the future educational plans of the students.

Post-secondary destination

Table 4 presents multinomial hierarchical analysis of post-secondary destination conditioned on enrollment in any higher-education institution. The analysis consists of three contrasts: university, teachers' training institution, and non-academic institution were contrasted with academic colleges.

The first contrast, between university and academic college, shows that women are about 1.6 times as likely as men to attend a university rather than academic college, father's better education increases the likelihood of university versus college attendance, and Mizrachi origin slightly decreases it (by 1.13 times). As to the educational variables: studying in the academic track increases the likelihood of university enrollment by 1.68 times, and matriculation eligibility by 1.34 times.

The most impressive effect in the contrast between teachers' training institution and academic college is that of gender: women are about 11 times as likely as men to enroll in teachers' training institutions. This demonstrates the "feminine" composition of teachers' training institutions, a well-known fact in Israel. More educated fathers and matriculation eligibility decrease the odds of enrolling in teachers' training institutions versus academic colleges. These findings express the relatively low social and academic background of the students of the teachers' training

institutions. The negative effect of matriculation eligibility can be attributed to the fact that a small percentage of the teachers' training institutions had not yet been approved as academic institutions at the time of the survey and students could enroll in them without a matriculation diploma, (this was quite common before the upgrading of the teacher training institutions).

Compared to enrollees in the academic colleges, graduates who enrolled in non-academic institutions are more often males, Mizrachim, graduates of technological tracks, and not eligible to the matriculation diploma. As noted, non-academic institutions are both technologically oriented and undemanding academically. These features make them attractive to male graduates of technological education.

Based on the individual level, we can conclude that the post secondary institutions are socially and academically stratified. The most socially and academically advantageous students enroll in the universities while the least advantageous students enroll in the non-academic institutions, followed by the teachers training institution. The profile of the students who enrolled in academic colleges is between that of university students and students of the non-academic and teachers' training institutions.

Are school characteristics related to the stratification of the post-secondary institutions? We turn now to the lower part of the table, which presents the effect of the school variables on the intercept. The findings show several effects that are common to all three contrasts. 1. The higher the percentage of teachers with academic degrees, the greater the chances that the graduates will enroll in an academic college rather than any other post-secondary institution. 2. Graduates of religious schools and of Arab schools are less likely than graduates of Jewish state schools to enroll in an

academic college rather than in any other post-secondary institution. 4. Academic Schools and its social composition do not have significant effects in any contrast.

Other school characteristics have different effects in the various contrasts. Technological School has a significant negative effect in the contrast between University and Academic College, indicating the disadvantage of graduates of technological schools regarding enrollment in the prestigious universities. Rate of matriculation eligibility in school has a positive but statistically insignificant effect in the first contrast, and negative and significant effects in the remaining two. This implies that graduates of schools that are characterized by higher average ability, and probably more academic orientation, are more likely to attend the better educational options – universities rather than academic colleges, and academic colleges rather than teachers' training or non-academic institutions, beyond their personal characteristics. School Size has negative effect in all contrasts, but it reaches statistical significance only in the contrast between teachers' training institutions and academic colleges.

The findings show that both individual and school characteristics affect the post-secondary destination of the high school graduates. However, while the individual characteristics differentiate mainly between university applicants and applicants to all the other post secondary institutions, the school characteristics differentiate mainly between students of academic colleges and students of other institutions. Academic colleges were a new phenomenon in the nineties, when the data were collected. We can assume that the information that the schools provided about the new options was particularly significant at that time. This can explain the effects of the percentage of academic teachers in school, school social composition, and educational sector. More educated teachers might have more knowledge about the

higher education system, thus providing their students with more information and encouraging them to apply to the new academic institutions. It is also probable that information on the new institutions, which cater mainly to the Jewish non-religious population, was more available in the public Jewish schools. Graduates of state-religious and Arab schools are more likely than graduates of state schools to enroll in either the most prestigious or the least prestigious institutions rather than in the academic colleges. This suggests that between-sector differences in post-secondary destination stem from differential information or different tastes, but not from social or academic differences among the three sectors. Similarly, educated parents have better knowledge on educational options (McDonough 1998). This probably causes all students in schools with better-established environments to be exposed to information about the new post-secondary options.

Discussion

The post- secondary education system in Israel has been undergoing a rapid expansion during the last few years. Nearly 50% of the high school students who graduated in 1991 enrolled in post-secondary education between 1992-1998. Most of them enrolled in the universities, but a non-negligible percentage enrolled in the newly established academic colleges.

As already shown in previous studies, the present study indicates that personal and educational characteristics are related to post secondary attendance and destination. The graduates that take the best advantage of the educational opportunities provided by the expanded system belong to the privileged social groups (the privileged Jewish ethnic group, and students with better educated fathers), who are the traditional clientele of higher education, as expected according to the MMI

approach. The advantage of these groups persists after controlling for high school track and matriculation eligibility. At the same time, there is a significant presence of a "new" population of students in the higher education institutions. However, the various social groups enrolled in different types of post secondary institutions. Socially advantageous high school graduates tend to enroll in universities and academic colleges, whereas socially disadvantaged graduates enrolled more often in non-academic post-secondary or in teachers' training institutions. Thus, post-secondary education is both qualitatively and quantitatively stratified.

Unlike previous studies that focused primarily on personal characteristics, we incorporated the school context in the analysis of post secondary enrollment. We found that school context is related to both post-secondary attendance and destination. Students who graduated form Hebrew, academic, and affluent schools have better chances to enroll in post secondary institutions, beyond their personal characteristics. These schools probably supply their students with more resources relevant to post-secondary attendance (e.g. information, advice, support, skills etc). The combination of advantageous social background and socially and academically established schools provides the highest likelihood of post-secondary enrollment. Because socially advantageous students attend more often more established schools, schools reinforce the advantage of the already advantaged group. However, more affluent schools moderate social inequality in post-secondary enrollment, implying that students of all socioeconomic strata benefit from studying in a socially advantaged environment.

We should note, however, that graduates of technological schools, usually perceived as socially and academically disadvantaged educational institutions, are more likely than graduates of academic or comprehensive schools to enroll in tertiary education. Moreover, the link between social origin and post-secondary enrollment is

moderated in technological school. This pattern is mainly due to the technological orientation of most post-secondary non-academic frameworks, which makes them attractive to graduates of technological high schools.

School characteristics affect also post secondary destination. School effects are particularly salient in contrasting the newly established academic colleges with all other institution types. Two characteristics distinguish between schools whose students make "new" and those whose students make "traditional" choices: sector and the academic composition of the teaching force. Graduates of the Hebrew state schools are more likely to enroll in the "new" colleges than graduates of the state-religious or the Arab schools. Although the present findings do not provide an unequivocal explanation to the link between educational sector and post secondary destination, we suggest some directions.

From a cultural point of view, it is possible that the secular nature of most academic colleges might have inhibited the graduates of the state-religious and Arab sectors from enrolling in them. The fields of study in some of the academic colleges, which are related to leisure culture (such as fashion designing, arts, theatre) are less attractive to the graduates of the state-religious sector who were socialized to combine religious lifestyle with productive jobs (see Ayalon and Yogev, 1996; Resh and Benavot, 2001, on the curriculum of schools in the different sectors). These fields of study may be similarly non-attractive to the Arab population, who is more conservative than the Jewish non-religious one.

In schools with high rates of academic teachers, students may have been exposed to more information on the higher education system, both through their teachers' personal experience and knowledge, and by the very fact that teachers are role models and academic teachers encourage the attainment of academic degrees.

This may be particularly true for students who could not be admitted to the universities, but did meet the demands of the academic colleges. In this context, teachers seem to play an important role by providing their students with information on the variety of post-secondary institutions, and particularly on the fact that academic colleges, and not only universities, can award an academic degree. School sector and the academic composition of the teaching force convey different school social and cultural capitals that affect students' aspirations and future educational plans (McDonough 1997). Schools, hence, have an impact on the qualitative stratification of the tertiary education institutions.

Post-secondary attendance, and stratification in post-secondary destination are maintained mainly through matriculation eligibility. Several school characteristics affect significantly the link between matriculation eligibility and post-secondary attendance, whereas the effect of matriculation eligibility on post-secondary stratification is stable across schools. This implies that school's matriculation policy and its messages on the role of matriculation eligibility for post-secondary opportunities are effective only regarding the decision whether to enroll in higher education. The matriculation requirements of the various higher education frameworks are so straightforward that once a high school graduate has decided to continue studying, the choice of an institution is largely pre-determined by matriculation eligibility and the type of the matriculation certificate.

Our study showed that in addition to the personal characteristics of the students, high school makes a difference and shapes post secondary educational opportunities. Graduates from different schools have different chances to exploit the educational opportunities of the expanded higher education system. Overall, schools seem to contribute to the stratification of post secondary education. Students with

more advantageous social background, who often study in schools with better social and educational compositions, are taking the best advantage of the establishment of the new academic colleges.

The present research may have some theoretical implications regarding school long-term effects on the achievements and social mobility of students. Previous models of status attainment included teachers as social agents that had a strong influence on the shaping of educational expectations and aspirations (Anoch, Yogev and Shapira, 1992). This research points at additional school characteristics that are related to the social mobility and educational achievements of their graduates and as such it highlights the cumulative effect of educational process.

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Table 1: Student Background Characteristics by Post-Secondary Destination

	Post Secondary Education Destination					
	Did not Continue	University	Academic College	Teachers Training Institution	Non-Academic Institution	Total
Number	22480	10524	2866	2494	3778	42142
%	53.3	25.0	6.8	5.9	9.0	100.0
Gender - females [1]	53.7	57.7	44.2	85.6	25.2	53.4
Arab [1]	17.2	7.3	2.2	19.7	12.4	13.4
Ethnicity - Mizrachi[1,2]	50.5	27.0	31.2	42.3	48.6	42.0
Academic father [1]	16.3	51.5	42.9	27.9	16.4	27.8
Academic track [1]	48.0	84.4	73.1	80.4	26.9	59.0
Eligible to matriculation certification[1]	37.2	97.7	95.5	93. 4	61.4	59.0

1-Each cell is 100%.
2- Only for Jews

Table 2: School Characteristics by Post Secondary Destination (N=384 schools)

		Post Secondary Destination					
		Did not Continue	University	Academic Colleges	Teachers Training Institutions	Non-Academic Institutions	Total
Hebrew State school	%	50.7	27.2	8.4	4.4	9.4	221
Hebrew Religious School	%	49.6	26.4	3.6	12.0	8.4	103
Arab school	%	70.9	12.4	1.0	8.2	7.5	60
Academic high school	%	42.6	36.9	8.7	7.9	3.8	153
Technological high school	%	62.8	10.8	5.4	2.8	18.4	88
Comprehensive High School	%	57.4	22.0	5.9	5.7	9.0	143
School size	Mean (S.D.)	181.52 (105.01)	219.62 (112.02)	234.54 (104.11)	171.88 (171.88)	197.31 (110.688)	195.49* (108.03)
Percent of Academic fathers	Mean (S.D.)	21.37 (17.87)	40.37 (19.75)	37.76 (17.54)	30.25 (22.01)	21.47 (14.85)	27.77* (20.23)
Percent of academic teachers	Mean (S.D.)	70.08 (16.41)	79.65 (12.15)	79.12 (12.81)	74.95 (14.84)	67.19 (14.98)	73.11* (15.69)
Percent of matriculation eligible	Mean (S.D.)	51.00 (28.31)	79.12 (19.99)	77.15 (21.26)	68.15 (24.84)	53.49 (25.17)	61.04* (28.50)

$*p<0.05$

Table 3: Higher Education Attendance: Results of Non Linear Hierarchical models

	Model 1	Model 2	Model 3
Intercept	-.826*	-1.574*	-1.428*
Gender – female	-.006	-.002	-.095*
Ethnicity-mizrachi	-.178*	-.188*	-.131*
Arab	-.088	.310*	.411*
Father's years of schooling	.325*	.341*	.252*
Academic track	.948*	.979*	.169*
Matriculation eligibility			2.057*
Intercept as outcome:			
Arab school		-.507*	-.709*
Religious school		.317*	.273*
Average father's years of schooling	1.107*	.472*	.395*
% of academic teachers		-.490*	-.276
Technological schools		.556*	.202*
Academic schools		-.307*	.031
School size		.182*	.165*
Percent of matriculation eligible		2.326*	2.433 *
Father's education slope as outcome:			
Arab school		.033	
Religious school		.008	
Average father's years of schooling		-.099*	
Percent of academic teachers		.004	
Technological school		-.125*	
Academic School		-.029	
School size		.062*	

Table 3 (cont.)			
Percent of matriculation eligible		.009	
Matriculation eligibility slope as outcome			
Arab schools			1.040*
Religious schools			.366*
Average father's years of schooling			.379*
Percent of academic teachers			-.088
Technological school			-.102
Academic School			.306*
School size			.205*
Percent of matriculation eligible			-.235

*p<0.05

Table 4: Post Secondary Destination: Result of Multinomial Hierarchical Model

	University vs. Academic colleges	Teachers training Institution vs. Academic colleges	Non-Academic Institution vs. Academic colleges
Intercept	.396*	-1.514*	2.597*
Gender	.481*	2.375*	-.393*
Ethnicity-Mizrachi	-.125*	.095	.154*
Arab	.265	.310	.458
Father's years of schooling	.169*	-.160*	-.380*
Academic track	.521*	.075	-1.411*
Matriculation eligible	.296*	-.481*	-1.985*
Intercept as outcome:			
Arab schools	1.272*	2.178*	1.407*
Religious schools	.583*	1.616*	.761*
Average father's years of schooling	.081	.035	-.376
Percent of academic teachers	-.928*	-1.572*	-1.865*
Technological schools	-.326*	-.207	-.185
Academic Schools	-.163	.176	.115
School size	-.080	-.291*	-.110
Percent of matriculation eligible	.406	-.744*	-.625*
Variance	.309	.432	.543
d.f.	347	347	347
Chi square	2511.152	3071.416	5168.83
Sig.	.000	.000	.000

*P<0.05

Appendix

Pearson Correlations - Individual Level

	1	2	3	4	5	6
1. Post secondary attendance						
2. Sex	-.006					
3. Mizrachim	-.110	.045				
4. Arab	-.138	-.009	-.312			
5. Father's years of schooling	.308	-.035	-.209	-.317		
6. Tracking	.230	.104	-.229	.387	.230	
7. Matriculation eligibility	.548	.055	-.150	-.110	.329	.387

All correlations are significant due the large sample size.

Pearson Correlations- School Level

	1	2	3	4	5	6	7
1. % of academic teachers							
2. Arab school	.111*						
3. State religious schools	-.054	-.283*					
4. Technological school	-.452*	-.181*	-.109*				
5. Academic school	.532*	.151*	.123*	-.451*			
6. Average father's years of schooling	.375*	-.545*	.218*	-.197*	.326*		
7. School size	.256*	-.025	-.246*	-.186*	-.091*	.201*	
8. % of matriculation eligibility	.510*	-.034	.017	-.326*	.294*	.573*	.393*

*P<0.05