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Field of Study and Students' Stratification in an Expanded System of Higher Education: The Case of Israel

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The paper examines the hypothesis that the opportunities that the expansion and diversification of higher education open to members of disadvantaged groups depend on field of study. The study is based on a survey conducted in 1999 on a sample of 4061 Israeli freshmen in the research universities and the academic colleges, which are often perceived as the second tier of higher education. Using multinomial logistic regression we compared socio-demographic characteristics and academic ability of university and college students within seven major fields of study. The main findings are as follows: The colleges increase the relative odds of disadvantaged groups of studying less selective fields, or selective fields that get different curricula and academic degrees at the colleges. College and university students who study the selective fields where both institutional types offer equivalent programmes carry a similar social profile. Control for academic ability does not change that pattern. We conclude that the expansion of higher education in Israel reduces inequality in enrolment mainly in the fields that carry limited social advantages. Our findings are consistent with Lucas's (2001) claim that privileged groups look for qualitative advantages in differentiated educational systems.

Since World War II, systems of higher education have expanded rapidly and have been transforming organizationally. This expansion involves both a tremendous growth in the number of students and a diversification of institutions of higher learning (e.g. Trow, 1984). The latter often include a variety of institutions that differ in selectivity, curriculum, administration, cost, academic versus practical orientation, and prestige (Meek *et al.*, 1996; Shavit *et al.*, 2004). The less prestigious institutions are often perceived as the second tier of tertiary education.

In Israel, the focus of this paper, the major expansion started at the beginning of the 1990s, increasing the number of undergraduate students from 56,000 in 1991 to 170,000 in 2002. The expansion in Israel is due mainly to the establishment of new higher education institutions, degree-granting colleges (*michlalot*), which concentrate on undergraduate programmes and, unlike the veteran universities, are not research-oriented.

The diversification of higher education is expected to equalize educational opportunities (e.g. Ambler and Neathery, 1999). Second-tier institutions are usually less selective than the first-tier ones, thus potentially opening higher education to new social groups. However, this does not necessarily decrease educational inequality.

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New educational opportunities are opened to all social groups. Privileged groups, who are better acquainted with higher education, may take better advantage of the new opportunities. This may stabilize or even increase existing inequalities in post-secondary enrolment. If this happens, the social profile of students of the second-tier institutions would be similar to that of the traditional clients of higher education. We claim, however, that this prediction would not hold for all fields of study, and hypothesize that the resemblance between students in the different layers of higher education would vary according to field. We test this hypothesis by comparing socio-demographic characteristics of university and college students in the expanded Israeli higher education system within various fields of study.

We shall proceed as follows: first, we shall discuss theoretical approaches and previous research on expansion of educational systems, inequality, and field of study. Then we shall briefly describe the Israeli system of higher education and its expansion. This will be followed by a discussion of fields of study in the Israeli system of higher education, description of the data, an analysis and the findings. We shall conclude by discussing some general implications of the study.

Expansion, Inequality and Field of Study

Previous research shows that the expansion and diversification of educational systems do not necessarily decrease inequalities in attainment. When an educational system expands, new opportunities are opened for all social groups. Privileged groups, who usually do better in school, can make better use of the new opportunities, thus increasing their relative advantage. As Raftery and Hout (1993) point out in their Maximally Maintained Inequality (MMI) hypothesis, only when the enrolment rates of the privileged groups in an educational level reach saturation, will expansion reduce inequality. The MMI hypothesis explains various research results. A well-known example is the comparative analysis of changing educational inequalities, conducted by Shavit and Blossfeld (1993) and their associates, which showed that despite the expansion of secondary education, educational inequality between strata did not decline in 11of the 13 countries that they analysed.

MMI hypothesis may be particularly true for higher education. Privileged groups are capable of taking better advantage of the expansion of higher education for several reasons: they have better preparatory education, they score better on standardized tests (Davies and Guppy, 1997) and parents are ready and able to invest in their children's education (Steelman and Powell, 1991). The better knowledge of privileged groups about higher education further increases their advantage. Members of different classes and different ethnic groups differ considerably in their understanding of the system, its requirements, and its stratification (Bourdieu, 1984; McDonough, 1997). Knowledge about the system helps in making the right choices and acquiring advantages. MMI leads, thus, to the prediction that the expansion of higher education would not be followed by a significant reduction in socio-economic and ethnic inequality in enrolment in higher education.

MMI has been recently criticized for disregarding qualitative differences within educational levels (Breen and Jonsson, 2000; Lucas, 2001). Most systems maintain some form of qualitative differentiation (i.e. different programmes and tracks that usually vary in prestige and in educational rewards) at the secondary, tertiary and sometimes even at the primary level. Lucas (2001) proposed a revision of MMI, which he labelled Effectively Maintained Inequality (EMI). Lucas argued that when attendance at a given level of schooling reaches saturation, privileged groups would look for qualitative differences at that level to secure qualitative differences within the quantitative equality. Lucas also suggested that in the absence of saturation (which is usually the case in higher education), privileged groups would look for both quantitative and qualitative advantages. Ayalon and Shavit (2004) supported this claim by showing, in Israeli secondary education, that when a given level of education is tracked, socio-economic inequalities in the odds of its attainment could decline before privileged groups have reached saturation.

Differentiation within higher education has two major sources: institutional diversity and fields of study. Previous research concentrated on institutional diversity and showed its significance for the understanding of the social consequences of the expansion of higher education. Karen (2002) and Alon (2001) who analysed racial, ethnic and socio-economic disparities in college destinations in the U.S. found that inequality in enrolment varies according to type of institution. Ambler and Neathery (1999) who summarized findings on Sweden, France, Britain and Germany reported that reduction of inequality in access to higher education has been limited, but even when it existed, children of manual workers enroled in the less prestigious and less selective institutions. Ambler and Neathery concluded that the diversification of

higher education creates 'a new status hierarchy within higher education' (p. 454).

The research on differentiation within expanded higher education systems seems to have overlooked the second major source of qualitative differentiation – the field of study. Fields of study, which affect occupational opportunities (Marini and Fann, 1997), economic pay-off (Davies and Guppy, 1997; Gerber and Schaefer, 2004; Gill and Leigh, 2000) and even affect marriage markets (Van de Werfhorst *et al*., 2001), vary in their prestige, selectivity, and attractiveness (Clark, 1983). The more prestigious and attractive fields are usually those that are expected to carry a significant economic pay-off in the labour market (Gerber and Schaefer, 2004).

Previous research shows that the hierarchy of fields of study affects the profile of their students. Davies and Guppy, who performed one of the few studies on the socio-economic and ethnic composition of students in various fields of study, found that students with a higher socio-economic background were more likely to enter selective universities and lucrative fields of study within these universities. These inequalities persisted net of ability. Van de Werfhorst *et al*. (2001), who studied intergeneration resemblances of fields of study in the Netherlands, found that children with a lower-class background were over represented in engineering and economics, which carry favourable market opportunities, whereas children of the economic and cultural elite preferred fields where they could reproduce their family capital.

The logic of EMI suggests that field may play a central role in shaping inequality in diversified higher education systems. In addition to the advantages provided by institutional enrolment, members of privileged groups may further enhance their opportunities by studying the more rewarding fields offered by the second-tier institutions. The differentiation between fields regarding the expected rewards in the labour market is well documented: engineering, computer sciences, business, and health professions are usually economically rewarding, while education, social sciences, and the humanities produce lower returns (Gerber and Schaefer, 2004). This is true for various countries (see, for example, Gerber and Schaefer, 2004, for Russia; Kalmijn and van der Lippe, 1997, for the Netherlands; Gill and Liegh, 2000, for the US; Tamir, 2002, for Israel). This classification in not necessarily applicable, however, to lucrative fields that have been acquired in second-tier institutions. The labour market tends to react differently to degrees obtained in different institutions (e.g. Bowen and Bock, 1998), and it may devalue degrees awarded by second-tier institutions. To increase the probability of a positive reaction of the labour market and hence attract more applicants, the second-tier institutions need to provide signals indicating at least some degree of equivalence between the programmes offered by the various layers of higher education. Previous findings show that similar curricula and, particularly, identical academic degrees operate as signals that affect the demand for these fields in second-tier institutions (Tamir, 2002). We can hypothesize, thus, that social inequality in institutional enrolment in a diversified system of higher education would vary along fields of study. In their attempt to enhance their advantages, members of privileged groups would compete over positions in the second-tier institutions that offer rewarding fields of study, given that the programmes that they offer are 'equivalent', or at least close to those offered by the first tier of higher education. They would be less interested in enrolling in a college for studying less rewarding fields, or rewarding fields, which get new meaning in the colleges.

The Israeli system of higher education provides an appropriate setting for testing the hypothesis due to several characteristics of its expansion. In Israel, as in many other countries, the newly established colleges, which are considered as the second tier of higher education (Israeli Council for Higher Education, 1997), were expected to equalize educational opportunities. The Israeli political system as well as educational practitioners and researchers expressed the belief that the colleges would increase the educational opportunities of groups that were under-represented in the traditional universities: lower socio-economic strata, disadvantaged ethnic groups (Jews of North African or Middle-Eastern origin, the disadvantage Jewish ethnic group, and Arabs), and residents of the geographic periphery (Guri-Rosenblit, 1999). In Israel, as elsewhere, members of privileged groups have an advantage in the competition for positions in the newly established colleges (Bolotin-Chachashvili *et al*., 2002). The Israeli colleges offer fields of study that vary in the expected rewards in the labour market. All colleges offer academic degrees, but the various fields vary in the resemblance between university and college programmes (Tamir, 2002). Following our hypothesis we predict less socio-economic and ethnic differences between college and university students of the rewarding and 'equivalent' fields of study than between students of less rewarding or less 'equivalent' ones. Academic ability is expected to be the major factor differentiating between university and college students in the rewarding and 'equivalent' fields of study, and only one of several factors in the less rewarding or less 'equivalent' ones.

Israeli Higher Education System and its Expansion

Until its expansion in the 1990s, the Israeli system of higher education was composed mainly of research-oriented publicly supported universities. The decision to expand the colleges and give academic accreditation to their undergraduate programmes was made by the Israeli Council for Higher Education (CHE) during the early 1990s, in response to the growing demand for higher education that followed demographic changes (such as massive immigration), a significant increase in the number of high school matriculants and the credentialing trends of the labour market (Guri-Rosenblit, 1999). The colleges are either publicly supported or privately owned. The CHE, however, accredits the programmes of all higher education institutions, public and private.

The present system of higher education consists of six universities, one scientific institution for graduate studies, one Open University, and about 50 colleges, which can be divided into five major categories according to public or private ownership and major fields of study (Ayalon and Yogev, 2000). The public colleges can be divided into three categories: (1) Specialized colleges, divided into colleges of visual and performing arts and architecture, and technological colleges, which provide Bachelor of Technology (B.Tech) studies in technology and computers. (2) Regional academic colleges, which are located in peripheral geographic areas. They largely concentrate on social sciences (Horowitz and Volansky, 1999); and (3) Teacher training colleges, which currently provide Bachelor of Education (B.Ed.) programmes for teaching trainees. The private colleges consist of: (1) Israeli private colleges, which mainly concentrate on the lucrative fields of law and business, but also provide various programmes in social sciences and computer studies. Due to the high tuition fees, these institutions cater mainly to economically established populations (Lavie, 2002); and (2) Branches of foreign universities, mainly American, British, and Eastern European. They concentrate on business and social sciences and attract mainly adult civil servants and teachers who wish to upgrade their work position and salary at the cost of minimal academic efforts (Kadosh and Menahem, 2000).

Fields of Study in Israeli Colleges and Universities

Unlike the US, and similar to many European countries, post-secondary students in Israel apply for specific fields of study, and their studies concentrate on these fields from the very beginning. This is true for both universities and colleges. The universities are quite similar to each other in their admission policy. Admission criteria vary according to fields of study, based on supply and demand. The sought after fields are the most selective ones. With a few exceptions, admission to the universities is based almost exclusively on test scores: high school matriculation grades and a psychometric score. The matriculation exams are standardized tests mostly taken at the end of high school. The psychometric test is a general aptitude test required by all universities and most colleges. The admission criteria to the colleges are more flexible, but also depend, to a large degree, on test scores. Students can apply to more than one institution (university and college, different universities or different colleges) and to different departments within the same institution. Usually, the majority of students study in the field and institution of their first choice (Ayalon and Yogev, 2000).

Israeli colleges provide undergraduate studies in seven major fields of study: education and teaching, social sciences, engineering and computer studies (hereafter, technology), business and economics (hereafter, business), law, architecture, and arts. These fields can also be studied at the universities. Due to the expansion of the colleges, enrolment in these fields has grown significantly in recent years. The seven fields differ in student selectivity and in the equivalence between university and college programmes.

In Israel, the selectivity of fields of study is evaluated by using the admission policies of the universities. Admission cut-off points of fields of study are based on supply and demand. The demand for the various fields depends, to a large degree, on their expected economic rewards in the labour market (Tamir, 2002). Admission is based on a combination of the average score of the matriculation certificate and the psychometric test, which ranges between 200 and 800. The minimal score required by the universities is 450. Departments whose cut-off point is close to the minimal requirement are considered as non-selective. Departments whose cut-off point significantly exceed the minimal score (usually over 600), are considered selective. The admission cut-off points for 1999 at Tel Aviv University (which represents other universities) indicated high selectivity in fields that lead to economically rewarding professions: business and economics (665 and 635, respectively), law (653), and technology (engineering, 656, computer studies, 660).[1] Official statistics report that privileged students are over-represented among university students

in these fields (ICBS, 2001). Lower selectivity points were evident in the less economically rewarding fields of social sciences (583), education (517), and the arts (530). Tel Aviv University does not publicize the admission criteria for architecture, since it is based, to a large degree, on specific artistic talents. However, judging by the high rejection rates of architecture, we can assume that it is a sought after and selective field of study.[2]

As noted, not all fields studied at the colleges can be considered equivalent to similar fields of study at the universities. The colleges offer curricula and academic degrees similar to those offered by the universities in business, law, architecture, and social sciences. The colleges offer curricula and academic degrees different than those offered by the universities in two fields of study: technology and education. Technology programmes in colleges are more practical and less academically orientated than those offered by the universities (Tamir, 2002). The colleges grant graduates of technology the degrees B.Tech and Bachelor or Arts (B.A.). Only the universities grant the prestigious Bachelor of Sciences (B.Sc.). Education programmes at the universities are theoretical and research oriented, whereas the colleges offer practical teacher training programmes. Teacher training colleges grant a unique academic degree, B.Ed, whereas graduates of education in universities receive a B.A., the degree given to all graduates of humanities and social sciences. In the arts, the colleges also offer more practical and less academically orientated curricula than the universities. However, for students who wish to become film-makers, visual artists, directors or actors the curricula offered by the colleges is more attractive.[3] Arts programmes in some colleges, particularly *Betzalel*, a veteran college that specializes in the visual arts, are highly regarded and are quite selective. However, this selectivity is based on artistic talents and not on the usual criteria of test scores.

Table 1 presents the categorization of the fields of study according to the two dimensions, selectivity (which represents expected economic pay-off in the labour market), and equivalence. Based on this typology we refer to education as *non-selective non-equivalent*; to social sciences as *non-selective equivalent*; to technology as *selective non-equivalent*; to business, law, and architecture as *selective equivalent*. Being more selective in colleges than in universities, arts only partly fit into this categorization and we refer to it as *non-equivalent*.

Following our hypotheses, we expect to find maximal socio-demographic resemblance between university and college students in the *selective equivalent* fields of study – business, law, and architecture. We expect minimal resemblance in the *non-selective non-equivalent* field, education. We expect the resemblance between university and college students in the *selective non-equivalent* field, technology, and the *non-selective equivalent* field, social sciences, to be between the two extremes. Based on the general prestige of the universities, and the special prestige of arts in colleges, we can predict a resemblance between university and college students of arts, or even some advantage of college over university students.

The Study

The study is based on a survey conducted in 1999 by the authors for the Israeli Ministry of Education on a stratified-clustered representative sample of freshmen in 24 colleges and the six major universities. The survey data include the socio-demographic characteristics of the students; details on their current education, and their achievements in the tests that serve as acceptance criteria for higher education.

The sampling of students is based on their stratification by college or university type, place of abode, and field of study. We started by listing all colleges that offer at least one of the seven fields analysed in our study. Within each field of study, we conducted an internal

Table 1 Categorization of the fields of study according to degree of selectivity and equivalence between university and college programmes and academic degrees

	Selectivity	
Equivalence between University and College Programmes	**Selective (admission cutting-point over 600)**	**Non-selective (admission cutting-point under 600)**
Equivalent curricula and same academic degree	Business, Law, Architecture	Social sciences
Non-equivalent curricula and a different academic degree	Technology, Arts (in colleges)	Education, Arts (in universities)

sampling according to college type and geographic location (north, centre, and south), so that all types of colleges and the different geographic areas are represented in the sample. Within each of the 24 sampled colleges, we randomly selected first-year compulsory courses in the selected fields of study. We included a sample of students from comparable fields of study from the six major universities. This is not, therefore, a representative sample of university students in general, but rather a representative sample of university undergraduate students that are studying the fields that are offered by both universities and colleges. The survey was based on an anonymous questionnaire composed mainly of closed items. The respondents answered the questionnaire during classes in one of the first-year compulsory courses. Response rates were close to 100 per cent. After excluding the few non-completed questionnaires and inappropriate respondents (e.g. second-year students participating in first-year courses), the final sample includes 4061 students, of whom 57 per cent were enrolled in colleges and 43 per cent in universities. These proportions are similar to those obtained for the population of first year students in the seven fields of study: According to the ICBS (2000, 2001), 60 per cent of these students enrolled in a college and 40 per cent in a university.

Analysis and Variables

Method and Dependent Variable

The analysis is based on multinomial logit regression. It compares university and college students within each field of study. The causal order between choosing a field of study and an institution is not straightforward. Most students in our survey (94 per cent) reported that the field of study was a major reason in their decision to enrol in higher education. About 80 per cent of the respondents reported choosing their institution of higher education because of the programme it offered in their preferred field of study. About 70 per cent of the respondents reported that they had chosen an institution according to the chances of being accepted to their preferred field of study.[4] This suggests that most students chose a field of study and then enrolled in the institution whose demands they met. The minority that did not attribute their institutional choice to field of study probably had institutional preferences and the choice of field of study followed institutional choice. Subsequently, instead of defining field of study as one of the variables explaining institutional enrolment, we incorporated it in the dependent variable. The dependent variable is, thus, a combination of field and institutional type. To demonstrate, students of education are categorized as studying 'education in college' and 'education in university'. This structure of the dependent variable has an additional advantage – it follows our sampling procedure, which, as noted, was based on sampling institutions within fields of study.

We conducted separate analyses for the various fields of study. To illustrate, the analysis for law includes three categories: law in college, law in university, and all other fields of study. Law in university serves as the reference category. We thus confront college students of law with university students of law, while including all other students in the equation. We performed similar analyses for all other six fields of study. The analyses estimate the effect of student characteristics on the log-odds of college versus university enrolment in each field of study.

Recall that we categorized the colleges into five college types. Still, in creating the dependent variable, we did not distinguish between the various college types. This decision was based on several reasons. First, field of study partly controls for college type: education is offered only in teacher training colleges and arts only in specialized colleges. The major inter-college distinction is between private and public colleges. This distinction is not relevant for education and arts, which are offered only in public colleges, and for law, which is offered only in private colleges. The private/public distinction is relevant for social sciences, technology, business, and architecture.[5] We performed additional multinomial analyses (not reported), separating students of public and private colleges, and confronting them with university students, for the first three fields (the number of architecture students in private colleges was too small to enable an analysis). Since these analyses did not yield any significant changes in the results, we decided to present the college/university dichotomy for all fields of study, for simplicity and clarity of the models and tables. We will refer to the single significant result of the private/public distinction in the text.

Explanatory Variables

The explanatory variables include measures of socio-demographic characteristics, and academic ability.

Socio-demographic characteristics: age, gender (1 for females), nationality, and ethnic origin. Nationality is classified as *Arab* (coded 1) or Jewish (0). Among the Jewish students ethnic origin is classified as *Mizrachi*

(Jews of Middle-Eastern or North-African origin, the Jewish disadvantaged ethnic group, coded 1), or other (Ashkenazi, Jews of European or American origin, and second generation Israeli Jews, all coded 0). Other socio-demographic characteristics refer to the student's parents. Information on the parents was reported by the student in the questionnaire. *Parental education* is defined as the mean of father and mother's years of schooling. Parental *income* is measured according to the evaluation of the respondents of their family's position relative to the national income average. The variable ranges from 1 – much below national average, to 5 – much above national average. Students also gave information on their place of abode, which was classified as *periphery*, for the northern and the southern parts of Israel (1), and *centre* (0). In Israel, the periphery is usually disadvantaged in terms of resources in general and in educational opportunities in particular (Yogev, 1997).

Academic ability: We used the scores of the students on the matriculation diploma and the psychometric test, which, as noted, are utilized as selection criteria by all universities and most colleges. We calculated the composed score of the two tests according to the formula used by the universities, and used the composed variable (hereafter *academic ability*) in the analyses.

Treatment of missing values: In the multivariate analyses, missing values were substituted by the means for the quantitative variables, and by the mode for the nominal ones. For each variable, dummy variables that are coded 1 for missing values were introduced in the equation (according to the strategy offered by Cohen and Cohen, 1983). However, most dummies did not reach statistical significance and they had no effect on the results. To gain degrees of freedom, we omitted the dummies that had no effect on the results from the analysis. In the final equations we included two dummies that reached statistical significance in some categories – *incmis*, which represents the missing values of income, and *abilitymis*, which represents the missing values of academic ability. Income and academic ability are the variables with the highest proportion of missing data (income – 5 per cent, academic ability – about 3 per cent). The proportion of missing values for the other variables is lower, usually less than 1 per cent.

Results

The first part of Table 2 presents the descriptive statistics for the quantitative variables. Compared with university students, college students originate from less educated and less economically established families, and they have lower academic ability. The picture varies according to field of study. The relative disadvantage of college students in parental education is statistically significant in all fields of study, except arts. However, although lower when compared with university students, mean parental education of college students of all fields, except education, cannot be considered as low in absolute terms. On average, the parents of these students have some post-secondary education. It is different for college students of education. The average, 11.79, implies less than full secondary education. In Israel, where the median years of schooling of the population aged 45–54 (the age group of the parents of the respondents) in 1999 were 12.7 (ICBS, 2000), this average (and the corresponding median, 11.88) can be considered as relatively low. The relative advantage of university students in parental income is statistically significant only for education, technology, business, and law. The advantage of university students in academic ability sustains for all fields, except arts.

The second part of the table presents institutional enrolment according to field of study and the socio-demographic characteristics that are represented by categorical variables. The percentages for the whole sample, presented in the first column, show that members of disadvantaged groups – Arabs, Jews of Mizrachi origin, and residents of the periphery tend to enrol in colleges rather than universities more than non-Mizrachi Jews and residents of the *centre*. The advantage of non-Mizrachi versus Mizrachi Jewish students in university versus college enrolment is statistically significant in all fields, except arts and architecture (the latter is probably due to the small number of students). For Arabs, the discrepancy between college and university enrolment is substantial among students of education, social sciences, and law. Residents of the periphery enrol in colleges versus universities more than residents of the centre particularly when they study education and arts.

Multivariate analysis

Table 3 presents the results of the multinomial logit analyses. The table presents the effect of students' characteristics on the log-odds of enrolment in college versus university for each field of study. Two models were estimated for each field of study – the first includes the socio-demographic characteristics of the students and in the second ability is added to the equation. The first model estimates the socio-demographic differences between college and university students. The second

Table 2 Descriptive statistics according to institutional enrolment and field of study

a. Means and standard deviations (in parentheses) of quantitative variable

	Total	Education	Social sciences	Technology	Business	Law	Architecture	Arts
Age								
College	24.01	22.57	23.37	23.48	26.74	24.03	23.85	23.15
	(5.03)	(3.55)	(3.61)	(3.14)	(7.87)	(5.68)	(2.11)	(1.92)
University	22.75	22.61	22.58	22.91	22.69	22.31	23.09	23.49
	(2.34)	(3.46)	(1.68)	(2.42)	(2.03)	(2.47)	(2.29)	(2.74)
P (t-test)	0.000	0.623	0.000	0.001	0.000	0.000	0.019	0.177
Parental education								
College	12.81	11.79	13.06	12.71	12.71	13.02	13.71	14.19
	(2.73)	(2.67)	(2.48)	(2.93)	(2.61)	(2.61)	(2.55)	(2.36)
University	13.98	13.51	13.94	14.24	13.43	14.16	14.74	14.26
	(2.62)	(2.60)	(2.55)	(2.61)	(2.65)	(2.56)	(2.65)	(2.57)
P (t-test)	0.000	0.000	0.000	0.000	0.000	0.000	0.008	0.780
Parental income								
College	3.17	2.81	3.40	3.06	3.17	3.41	3.36	3.30
	(1.04)	(1.00)	(1.04)	(1.06)	(1.01)	(0.95)	(1.04)	(1.03)
University	3.42	3.23	3.43	3.39	3.36	3.63	3.59	3.49
	(1.00)	(1.02)	(0.94)	(1.08)	(1.03)	(0.97)	(0.84)	(0.95)
P (t-test)	0.000	0.000	0.650	0.000	0.012	0.016	0.096	0.088
Ability								
College	546.07	495.36	549.02	557.29	541.64	574.36	583.31	569.12
	(64.09)	(68.88)	(55.04)	(57.03)	(55.92)	(47.73)	(60.71)	(63.07)
University	622.19	572.00	603.92	649.40	616.09	659.61	636.50	577.89
	(59.7)	(50.17)	(51.53)	(61.40)	(43.60)	(38.66)	(56.51)	(61.35)
P (t-test)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.215

b. Per cent attending a college (versus university) according to field of study

Gender								
Women								
N	2290	505	594	205	389	278	97	222
% in college	56.99	74.06	45.62	35.61	61.18	61.87	47.42	59.01
Men								
N	1771	45	165	779	396	185	84	117
% in college	57.48	82.22	49.09	54.69	59.85	57.30	51.19	75.21
P (χ^2)	0.014	0.227	0.392	0.000	0.702	0.325	0.613	0.003
Ethnicity								
Mizrachi Jews								
N	1156	208	163	298	251	155	33	48
% in college	65.31	83.17	46.01	60.74	68.92	64.52	60.61	68.75
Non-Mizrachi Jews								
N	2738	279	571	664	506	282	147	289
% in college	52.56	64.16	44.83	45.63	58.30	53.90	46.26	64.36
P (χ^2)[1]	0.000	0.000	0.738	0.000	0.006	0.031	0.104	0.496
Arabs								
N	167	63	25	22	28	26	1	2
% in college	77.25	93.65	84.00	68.18	25.00	100.00	100.00	0.00
P (χ^2)[2]	0.000	0.000	0.001	0.000	0.000	0.000	[3]	[3]

continued

Table 2 (*Continued*)

Geographic location								
Periphery								
N	992	214	172	240	209	81	29	47
% in college	62.20	86.45	44.77	52.92	58.37	62.96	62.07	78.72
Centre								
N	3069	336	587	744	576	382	152	292
% in college	55.59	67.26	46.85	50.00	61.28	59.42	46.71	62.33
$P(\chi^2)$	0.000	0.000	0.666	0.317	0.356	0.549	0.139	0.025
Total								
N	4061	550	759	984	785	463	181	339
% in college	57.20	74.73	46.38	50.71	60.51	60.04	49.17	64.60

[1]*Computed for the two jewish groups.* [2]*Computed for the three ethnic groups.* [3]*Not computed due to the small N of Arabs.*

Table 3 Log-odds of college versus university enrolment in different fields of study

	Total		**Education**		**Social sciences**		**Technology**	
	1	**2**	**1**	**2**	**1**	**2**	**1**	**2**
Age	0.10***	0.05***	−0.01	0.04	0.07**	0.04	0.04	0.05**
Female	0.07	−0.15***	−0.31	−0.33	−0.10	−0.22	−0.74***	−0.82***
Mizrachi	0.19***	0.19***	0.54**	0.55**	−0.23	−0.26	0.08	0.08
Arab	0.99***	1.14***	1.27**	1.51**	1.87***	1.87***	0.39	0.60
Periphery	0.13*	−0.09	0.86***	0.67**	−0.21	−0.43**	0.04	−0.17
Parental education	−0.11***	−0.04***	−0.17***	−0.10**	−0.13***	−0.07**	−0.18***	−0.11***
Income	−0.09***	0.05	−0.10	−0.02	0.12	0.22**	−0.13**	0.07
Income missing	0.08	0.25	0.71	1.04	−0.39	−0.24	−0.46	−0.36
Ability		−0.02***		−0.01***		−0.01***		−0.02***
Ability missing		0.20		−0.16		−0.20		0.06
Constant	−0.35	11.32***	3.46***	10.88	−0.13	5.45***	2.03**	17.18
Pseudo R^2	0.05	0.25	0.18	0.30	0.06	0.08	0.15	0.25
	Business		**Law**		**Architecture**		**Arts**	
	1	**2**	**1**	**2**	**1**	**2**	**1**	**2**
Age	0.19***	0.13***	0.20***	0.11***	0.02	−0.01	−0.05*	−0.07**
Female	0.21	−0.02	0.39**	0.07	−0.16	−0.25	−0.79**	−0.82**
Mizrachi	0.31	0.28	0.18	0.18	0.25	0.27	0.17	0.16
Arab	−1.09**	−1.16**	–	–	–	–	–	–
Periphery	−0.06	−0.25	−0.15	−0.30	0.49	0.38	0.76**	0.76**
Parental education	0.00	0.07**	−0.08*	0.03	−0.11*	−0.05	−0.01	−0.01
Income	−0.14*	−0.01	−0.07	0.05	−0.08	0.01	−0.21*	−0.18
Income missing	0.41	0.50	−0.16	0.14	1.93*	2.13**	1.21	1.02
Ability		−0.01***		−0.02***		−0.01***		−0.00
Ability missing		–		−2.30***		−0.81		1.90
Constant	−3.72***	4.85***	−3.33**	10.71	1.14	7.52	2.98**	4.12**
Pseudo R^2	0.05	0.09	0.04	0.11	0.03	0.06	0.05	0.06

*$P < 0.10$ **$P < 0.05$ ***$P < 0.001$.

examines whether these differences are sustained beyond academic ability.

The first two columns, which refer to the total sample, show that older, Mizrachi, Arab, and lower-status students are relatively more likely to enrol in colleges than in universities, before and after controlling for academic ability. After the control, men are more likely than women to enrol in colleges versus universities.

Periphery does not have significant effects on the odds of college versus university enrolment. Higher income increases the odds of university versus college enrolment prior to the control for ability. After the control, the coefficient changes its direction and loses it statistical significance. As expected, better academic ability decreases the likelihood of college versus university enrolment.

To test our hypotheses, we turned to the separate analyses of the various fields of study. We started with education, the *non-selective non-equivalent* field. Following our hypothesis, we predicted that education in colleges would be more open than education in universities to less privileged students. The findings support the prediction for all disadvantaged groups – lower socio-economic strata, Mizrachim, Arabs, and residents of the periphery. Parental education has a significant negative effect on the log-odds of college versus university enrolment of education students, before and after controlling for ability, implying that decrease in parental years of schooling increases the odds of college versus university enrolment beyond academic ability. *Mizrachi* has a significant positive effect on the odds of college versus university enrolment. The significant effect of *Mizrachi* is unique to education. After control for academic ability, Mizrachi students are about 1.7 ($e^{0.55} = 1.73$) times as likely as other Jewish groups to study education in college rather than university. Arabs are 4.5 times as likely as non-Mizrachi Jews, and residents of the periphery about 2 times as likely as residents of the *centre*, to study education in a college rather than at a university. The only characteristic that has no effect on education students is income. An unreported analysis, which included all socio-demographic characteristics except parental education, yielded a negative significant effect of income. The effect disappears after the inclusion of parental education, due to the correlation (0.35) between these variables among education students.

We move now to the 'intermediate' fields: social sciences, the *non-selective equivalent* field, and technology, the *selective non-equivalent* field. For both fields the effect of parental education is negative and statistically significant before and after controlling for ability, indicating that the social background of students who took these fields in the colleges is lower than that of students who took them in the universities. Social sciences at colleges are also relatively open to Arabs, who are seven times as likely as non-Mizrachi Jews to study this field in a college rather than a university. *Mizrachi* does not have a significant effect on the odds of college versus university enrolment in either social sciences or technology. Two results are unique to social sciences – in the second model, income has a positive significant effect, and *periphery* a negative effect. The coefficient of income indicates that when ability is controlled, higher parental income increases the odds of college versus university enrolment. This suggests that the option of studying social sciences in a college appeals to less able students originating from less educated but economically established families. The analyses that separated private and public colleges showed that this pattern is true for the private colleges, which charge high tuition fees. The coefficient of *periphery* shows that for equally able students, residence in the periphery increases the relative odds of university versus college enrolment for students of social sciences. This stems from the fact that Ben-Gurion University, which is located at the southern part of Israel and attracts many residents of the periphery, offers social sciences.[6]

We move now to business, law, and architecture, the *selective equivalen*t fields of study, and arts, the *non-equivalent* field. We predicted a relative resemblance between college and university students of these fields. The findings support our hypothesis. Parental education has a negative effect on the odds of college versus university enrolment of students of law and architecture before controlling for ability, but the coefficients do not reach statistical significance at the $P < 0.05$ level. After the control, both coefficients turned smaller and lost the significance at the $P < 0.10$ level. This suggests that university and college students of both law and architecture belong to similar social strata. The findings for business are even stronger. Parental education has no effect on the odds of college versus university enrolment before controlling for ability. After the control, the effect of parental education gets positive and gains statistical significance, implying that, *ceteris paribus*, higher parental education increases the likelihood of college versus university enrolment. For business, the colleges serve children of better-educated parents who could not meet the demands of the universities due to their lower academic ability. Income, *Mizrachi*, and *periphery* have no effect on the odds of college versus university enrolment in all three *selective equivalent* fields (business, law, and architecture). The findings for Arabs are more diversified. This is probably a result of the small number of Arabs (167) in the sample. *Arab* is not included in the models of architecture, law, and arts. It is not included in the models of architecture and arts because the sample includes one Arab student of architecture, and two Arab students of arts. The picture is different for law. The sample does not include any Arab university students of

law, but it does include 26 Arab college students of law. These Arab students originate from higher status families: their mean parental education is about 12.5 years of schooling, whereas the general mean for Arabs in the sample is about 11 years. Thus, the colleges provide higher-status Arab students with the opportunity to study law. For business, the coefficient of *Arab* is negative indicating higher odds of university versus college enrolment.

The findings support our predictions for arts, and express the uniqueness of this field. Parental educations and Mizrachi origin have no effect on college versus university enrolment in this field. The effect of income does not reach statistical significance at the $P < 0.05$ level. *Periphery* has a positive significant effect, indicating that residents of the periphery have higher odds of college versus university enrolment. The uniqueness of arts is demonstrated by the absence of any effect of ability. For all other fields of study higher ability increases the odds of university versus college enrolment. This finding is a result of the unique selection process of candidates for arts in general and in the colleges in particular, which is based on artistic talents more than matriculation grades or psychometric scores.

To sum up, the findings largely support our predictions.[7] The colleges increase the relative odds of all disadvantaged groups to study education. The colleges do not increase the relative odds of lower-status and Mizrachi students to study the *selective equivalent* fields of law, business, architecture, and the *non-equivalent* field of arts. The same is true for Arabs, with the exception of law. The colleges increase the relative odds of lower-status students to study social sciences and technology, and of Arab students to study social sciences. They do not affect, however, the relative odds of Arab students to study technology and of Mizrachi students to study either technology or social sciences.

Although gender is included in the analysis, our predictions did not refer to it because gender inequality in higher education is different than other types of inequality. The disadvantage of women is not in enrolment rates, but in concentrating in the less prestigious and less lucrative fields of study (Davies and Guppy, 1997; Gerber and Schaefer, 2004). In our sample, women are particularly over-represented in the non-selective fields of education (92 per cent of all education students are female) and social sciences (78 per cent of all social sciences students), and under-represented in technology (21 per cent of all technology students). The multivariate analysis for the whole sample shows that after controlling for ability women are more likely than men to enrol in a university than in a college. The separate analyses show that after the control for ability, the coefficient of *female* is statistically significant only for technology and arts. Both technology and arts are more research oriented and less practical in the universities than in the colleges. This suggests that women are less interested than men in the practical aspects of fields of study. However, a deeper analysis of this issue is beyond the scope of the present paper.

One element is common to all fields of study, except arts – higher academic ability increases the odds of university versus college enrolment. In most fields of study, the colleges absorb students with lower academic ability. This pattern points at the colleges as the second-tier system of higher education.

Discussion

Our study has two major implications. It shows that the social outcomes of the expansion of higher education depend on field of study, and it provides additional evidence for the greater ability of privileged groups to take advantage of new educational opportunities.

The contribution of the expansion of higher education to the equalization of educational opportunities is one of the major issues in the discourse on the growth and diversification of higher education. The issue is raised in single educational systems as well as in comparative frameworks (e.g. Ambler and Neathery, 1999). Previous American and European research showed that even when inequality in higher education enrolment decreases, the diversification of the expanded systems produces new sources of inequality. Students originating from disadvantaged social groups enrol more often in less prestigious institutions that carry limited future rewards. Our findings show that the evaluation of the social outcomes of the expansion of higher education is more complicated than revealed in previous research, since inequality in enrolment in the various institutions of higher education depends not only on their relative prestige, but also on field of study.

Our findings show that in Israel the opportunity to study prestigious and lucrative fields of study in the colleges is utilized mainly by students who resemble traditional students of these fields in their social origin, but not in their scholastic ability. Thus, the newly established colleges expand the opportunities of less able members of privileged groups to acquire a prestigious and rewarding profession. This is true, however, mainly when the programmes that the colleges offer are equivalent

to those offered by the universities. When the colleges offer more practical and less academically orientated curricula and a different academic degree, as is the case with technology, they do absorb students of less privileged groups compared with the traditional students in these fields. The colleges provide these students with the opportunity to study a highly esteemed field, which they could never have studied at the universities, which set very high admission requirements for candidates for technology. Still, the different curricula and academic degrees suggest that the labour market might react differently to college versus university graduates of technology.[8]

The colleges increase the opportunity of members of socially, ethnically or residentially disadvantaged groups to study one profession – teaching. Teaching differs from all other professions offered by the colleges in its low prestige and low economic returns. Members of privileged groups are not interested in teaching (Kfir *et al.*, 1997), thus leaving the teacher training programmes in the colleges to less able members of less privileged groups.

By demonstrating the merit of analysing qualitative differentiations within education levels, our findings support the EMI approach (Lucas, 2001). The analysis of the whole sample showed that the colleges absorbed members of non-privileged groups more than the universities did. This might have created the impression that the colleges decrease inequality in higher education enrolment. The analysis within fields of study shows, however, that inequality in enrolment indeed decreases, but mainly in the less rewarding fields. It is sustained or even grows in the fields that convert education into social advantages. Responding to the public demand for access to higher education, the system is indeed more open to less privileged groups. At the same time, the students who take advantage of the new opportunities to study the socially and economically rewarding fields of study carry the traditional social profile of students in these fields. Thus, contrary to the predictions of MMI, the diversification of higher education increases the likelihood of enrolment for disadvantaged groups, although the enrolment rates of the privileged groups are far from reaching saturation. At the same time, and as suggested by EMI, members of privileged groups enhance their advantages by utilizing the better options offered by the second-tier institutions.

The existence of mechanisms that help members of privileged groups to take better advantage of the expansion and diversification of higher education is inherent in Bourdieu's (1991) well-known concept of habitus. Habitus refers to a common set of subjective perceptions held by members of the same group that shapes an individual's decision making. Our findings do not deal directly with perceptions, but they do shed some light on the specific mechanisms that assist members of privileged groups to make decisions that allow them to take better advantage of new educational opportunities. They show that privileged groups know how to classify new opportunities, and choose those that are expected to carry significant social rewards. In fact, the private colleges, which were established as a response to the demand of sons and daughters of privileged parents to study lucrative professions (Guri-Rosenblit, 1993), ensure, by charging high tuition fees, the economic profile of their students.

A major issue in this context is the actual response of the labour market to the new opportunities to acquire a prestigious and lucrative profession. The expansion of higher education in Israel is too recent to enable a significant analysis of this response, and, at the present stage, we can mainly speculate on this issue. The prediction regarding the professions that get different training and different degrees in the new colleges is straightforward. It is reasonable to predict that the labour market will react differently to professionals who were trained in different ways. The issue is more complicated regarding the professions that get similar training and academic degrees in the universities and the colleges. Our findings show that the universities and the colleges are stratified according to academic ability in all fields of study, except arts, which is more related to artistic than to scholastic abilities. This stratification, which is too obvious to be ignored by the labour market, may eventually affect the attitude toward college graduates, even when their professional training and academic degree do not differ significantly from those of university graduates. A negative reaction of the labour market may reduce the motivation of members of privileged groups to study these fields in colleges, and this may change the picture presented in our study. This, of course, is a matter for future research.

Our findings are applicable to 'second-tier' institutions of higher education that offer academic programmes and degrees and appeal to members of privileged groups, and to systems where the students concentrate on specific fields of study from their first steps in higher education. We can predict that field of study would be a less significant source of students' stratification in expanded systems where the 'second-tier' institutions do not offer an academic degree, or concentrate on vocational or semi-professional programmes. It would also be less significant in systems, like the American, where undergraduate studies start as general. Obviously,

we could not test these predictions. Our results point out, we believe, the value of the incorporation of field of study in a comparative research of expanded and diversified higher education systems. The study of the role of field in systems that take different forms of expansion has the potential of improving our understanding of the mechanisms that limit the opportunities that the expansion of higher education systems opens for disadvantaged social groups.

Notes

1. We use the admission cut-off points of 1999 because the students in our sample started their studies in that year.
2. In 1997/8 the departments of architecture rejected about 50 per cent of the applicants. The average rejection rate in that year was 19 per cent (ICBS, 1998).
3. In our survey, which will be discussed later, we asked the respondents about the significance of the curriculum in their choice of institution. All (100 per cent) arts students in the colleges said that the curriculum was the major reason in their decision to enrol in these institutions. The parallel figure for arts students in the universities was 72 per cent.
4. In the survey we asked the respondents to mark, on a five-point scale ranging from 'not at all' to 'very important' the significance of field of study in their decision to enrol in post-secondary education. In two other questions the respondents were asked to mark, on a similar scale, the significance of the field of study in their institutional choice.
5. Fifty seven per cent of the social sciences college students studied in private colleges; the parallel percentages for technology, business, and architecture students are 57 per cent, 34 per cent, and 69 per cent, respectively.
6. In our sample, about 50 per cent of the social science university students living in the periphery study in Ben Gurion University.
7. One possible alternative explanation of our findings is that the differences in the effects of the explanatory variables in the various contrasts stems from differences in the variation of these variables. In fact, our hypotheses may imply differences in variation, although they refer mainly to net effects. The prediction that education students in colleges differ from education students in universities and that arts students in colleges are not different from arts students in universities implies more variation in the explanatory variables among education students compared with art students. Indeed the coefficient of variability of parental education for students of education is the highest, 0.23, whereas for students of arts it is the lowest, 0.17. The coefficients for the remaining fields of study are between these two extremes. It is hard to assume, however, that these differences are large enough to be the reason of the different effects.
8. The leadership of the technological colleges, which is currently negotiating with the CHE the granting of the B.Sc. degree, seems to share this view.

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