International Education Journal, 2006, 7(3), 284-304.
ISSN 1443-1475 © 2006 *Shannon Research Press*.
http://iej.com.au

Enhancing access in theory and practice: A study of graduates of an Israeli large public college in 1995-2003

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This paper carefully follows graduates of the largest of Israel's public colleges, their success in their studies at the College, and in their studies towards graduate degrees in institutions of higher education in Israel. It explores who these graduates are, where they came from, their academic success, and where they headed after attaining an undergraduate degree. The aim is to examine the links between graduates' academic success and the preliminary conditions for their admission, that is the socio-economic background from which they developed and their scholastic achievements prior to admission into the college. The paper cautiously indicates that the College fulfilled its social objective as defined by the Commission for Higher Education's decision to establish a system of colleges alongside the universities. It also points to several patterns typical of graduates of institutions of higher learning in Israel in general, from a broader perspective of academic graduates in the Western world.

Higher education, stratified system, graduates ,academic success,
scholastic achievement, family background

INTRODUCTION

On the Global Revolution in Higher Education and its Repercussions

Until the end of World War II, the higher education system functioned as a hothouse for the cultivation of elite groups. Consequently, it reflected and reproduced the existing social structure (Havighurst, 1989; Morrison, 1998). The surge of growth in higher education at the beginning of the latter half of the twentieth century modified its target audience. In 2001, over one-third (34%) of the 25-34 year old age group in Australia and France had received higher education. In Spain and Sweden, 36 per cent and 37 per cent of this age group, respectively, had received higher education. In Belgium, Finland and Norway, 38 per cent of this group had received higher education; 40 per cent in South Korea, 48 per cent in Ireland and Japan and 51 per cent in Canada (OECD, 2003, Table A24). The average percentage of individuals with a higher education of this age group in all the member countries of the OECD's umbrella organisation was 28 per cent (OECD, 2003).

This explains the discussion on higher education for the masses or the massification of higher education (Trow, 1974). Higher education is no longer the privilege of a minority. It has become a universal right, and strives to become accessible to all. A BA certificate has become the norm in developed countries, similar to the status of a high-school diploma (or matriculation certificate) in

the twentieth century (Allen and Allen, 2003; Scott, 1995; Trow, 1974). The era of higher education as the exclusive benefit of the elite is over. The contemporary debates in developing countries no longer concern whom higher education targets, but the need and the means to increase access to higher education as a consequence of social equality. The premise that is now taking hold is that higher education should be accessible to all able and qualified individuals (Tonks, 1999). Furthermore, by virtue of the dominant principles of human capital economics, individual and social welfare are both increasingly dependent on formal education (Mortenson, 2000; Brennan, 2000).

This dramatic expansion of higher education, yet to be exhausted, generated significant debates on its social implications. There are two schools of sociologists debating this point. On the one hand are the advocates of the diversity approach, representing the functionalist stream in sociology. On the other hand are the advocates of the stratification approach, representing the conflict school of sociology. The first group views the extension of higher education to the masses as a process that contributes to increased social equality. This contribution is reflected in the development of a broad and diverse spectrum of institutions of higher education operating alongside classic research universities, and targeting various and unique student sectors (Dey and Hurtado, 1999; Meek et al., 1996). The second stream views the expansion of higher education in its current format as a mere optical illusion, insufficient to open a genuine window of opportunities to society's periphery. According to this view, an education imparted by research universities is not equal to the education imparted by the various colleges. Moreover, the diverse institutions of higher learning reflect the existing order and function as a speculum of social status. The centre remains the centre, while the periphery remains the periphery (Archer et al., 2003; Dougherty, 1994).

In this manner, for example, a survey conducted in England several years ago (Archer, 2000) found that the majority of respondents believed that only the less prestigious institutions of higher learning were open to the working class. The prestigious research universities are considered the exclusive estate of the middle and upper-middle classes. Working class youngsters, having no alternative, contented themselves with second-class regional colleges. A second survey, conducted slightly less than 15 years ago, indicated that while the upper two social strata in England's stratified class system constitute 39 per cent of all 18 year old, they constitute 70 per cent in England's prestigious universities (Hasley, 1992).

Independent of the debate between these two streams, various sociologists noted that the expansion of higher education generated an excess supply or surplus of graduates. This surplus created what is currently termed *credential inflation* (Collins, 1979; Dore, 1976). Individuals are required to present academic credentials even for occupations in which such credentials are not necessary. Many individuals are prevented from engaging in an occupation they are able to perform without assistance, only because they lack the appropriate certificate (Hurn, 1990, p.59). Credential inflation also contributed to the perpetuation of inequality in education, by encouraging competition over degrees awarded by prestigious institutions, which are more highly valued in the market than degrees from other institutions (Bills, 2004; Van de Qwerfhorst and Anderson, 2004).

In summary, we cannot deny that the policy of higher education for the masses was designed to implement the principle recently defined by Australians as a knowledge nation (Breen, 2002, p.18). Following the transformation, access to higher education has indeed increased. In the entire developed world, a broad spectrum of institutions of higher education has emerged, diverse in their academic emphases and directions of training as well as their growing geographical distribution. At the same time, not all individuals share an equal opportunity to study in prestigious institutions in high demand. Individuals from the sociological centre still have an advantage over individuals in the periphery. The cultural capital (using this term following Collins, as a type of certificate and degree, not necessarily the contents they represent) available to the graduates of the prestigious institutions greatly exceeds that available to others.

The Higher Education Revolution in Israel

Similar to the rest of the world, an enormous increase in the number of students and their weight in the general population occurred in Israel since the establishment of the State in 1948. In 1948, approximately 1600 students attended the two institutions of higher learning – the Hebrew University and the Technion-Israel Institute of Technology. At the end of the first decade of statehood, the number of students reached 9000. In the 1960s, the student population grew at a rapid annual pace of 14 per cent, and reached 35,000 in 1970. This accelerated growth continued as the student population reached 56,000 in 1980 and 76,000 in 1990 (Soen, 2004).

This development was summarised in a proclamation of the Association of Regional Colleges in Israel in the late 1990s, stating that:

> the population of undergraduate students in Israel, based on data of the Commission for Higher Education (CHE), increased **forty-fold** (emphasis – NDandDS) since the establishment of the state, while the population of the country increased **five-fold** (emphasis – NDandDS) during the corresponding period. (Association of Regional Colleges in Israel, 1997)

In the 1990s, in an amendment to the Law of Higher Education, the CHE accredited a long line of colleges to award academic degrees. The decision was accompanied by an explanation (Commission for Planning and Budgeting, 1997), according to which a system of higher education would be thereafter composed of two strata. One stratum would encompass the universities and would be designed to promote engagement in research and promotion of knowledge, and grant advanced degrees. The second stratum would encompass the colleges, which would focus on undergraduate studies and function as an instrument to achieve social justice and equality by virtue of the fact that the gates of higher education would be open to students from the periphery.

Until the 1980s, over 90 per cent of all undergraduate students studied at one of the six universities in Israel (Shavit et al., 2003). This situation changed substantially following the amendment in the Law of Higher Education. While 46,516 undergraduate students attended universities in 1989-90, compared to only 8,286 students who attended colleges, including teaching colleges, in 2002-3 there were 76,581 undergraduate students in universities and 68,115 undergraduate students in colleges (CBS, 2004, p.209). When we add the 11,971 students who studied at an extension of foreign universities (Traubman and Chromachenko, 2005) to these figures, the number of undergraduate students attending colleges surpassed the number of undergraduate students at universities for the first time. In this year, over one half of all undergraduate students in Israel attended colleges.

As noted, following the reforms of the 1990s and the declaration of intent by the CHE, several scholars term the current system of higher education in Israel as dichotomous or binary (Guri-Rosenblit, 1996, 1999). Others prefer to define the Israeli system as a stratified system, where two types of academic institutions differ in their prestige (Shavit et al., 2003b). In any case, all concur with the opinion that universities should, ostensibly, engage primarily in the autonomous functions (Trow, 1970), that is in imparting that is known in the social sciences as high culture (or *hochkultur* in German): the promotion of science through research, and the formation and accreditation of elite groups. Colleges, on their part, should engage in the popular functions (Trow, 1970), which entails exposing new population sectors to the contents of higher culture, and awarding the certificates required to ensure proper employment.

As previously noted, the CHE viewed the stratum of academic colleges as a tool for the achievement of social equality and justice, by virtue of the fact that they opened the gates of higher education to students from the periphery, and provided access to higher education for new population segments for which this opportunity did not exist. The fact that the admission rejection

rate declined from 30-34 per cent in the 1990s, to a mere 19 per cent in 2000, speaks for itself in this context (Kimmerling, 2000). The consistent increase in high school graduates accepted into higher education programs also constitutes a significant index indicating the achievement of this goal. Moreover, data presented in Table 1 underline that the proportion of high school graduates accepted into academic colleges, of all high school graduates, is also steadily increasing.

Table 1. Post-secondary studies within eight years of high school graduation, by institution type (%)

Year of graduation	Continuing Graduates in:					
	University	Open University	Academic colleges	Teaching colleges	Post-secondary programs	Total
1991	21.2	7.5	5.7	7.0	8.0	49.4
1992	21.4	7.5	6.7	6.8	9.1	51.4
1993	20.9	7.3	7.2	7.1	9.7	52.3
1994	20.2	7.6	7.2	6.9	10.9	52.7
1995	20.3	7.3	8.5	7.0	12.3	55.4

Source: CBS 2004, Table 8.32

Notably, the relatively high rate of graduates from towns in the lowest socio-economic clusters[1] who continue studies in colleges also emphasises their significance as a **social equaliser**. Needless to say, there is a positive relationship between the rate of high school graduates who continue their studies, and the socio-economic stratum of their town. While only 31.8 per cent of all 1995 high school graduates in towns in the two bottom clusters (1 and 2) continued their studies within 8 years of graduation, 73.6 per cent of all 1995 high school graduates in towns in the two top clusters (9 and 10) continued their studies within 8 years of graduation.

Notably, 38.1 per cent of cluster 1 and cluster 2 high school graduates who continued their studies attended colleges, while 27.0 per cent attended universities. Of cluster 3 and cluster 4 high school graduates who continued their studies, 28.6 per cent attended colleges compared to 34.0 per cent who attended universities. The situation is substantially different with regards to the upper classes. Of cluster 9 and cluster 10 high school graduates 50.34 per cent continued their studies in universities while merely 27.4 per cent continued in colleges (Table 2). In other words, the relative significance of academic colleges as institutions for academic studies is much greater for individuals in lower, rather than higher socio-economic clusters.

Who are the students and what do they study? On the link between continuation to higher education and various variables

In any case, there is broad agreement that education in general, and higher education in particular, is defined as a major resource in the acquisition of social-economic status in modern, industrial and post-industrial societies. In this context, studies and surveys point to an increasing gap between the income of university and college graduates, on the one hand, and high school graduates, on the other (Fenwick, 2005). In 1979, income levels of university and college graduates in the US were 48 per cent higher than income levels of high school graduates. In 2000, this gap rose to 100 per cent. Studies conducted in Israel illustrate a similar trend. The income levels of employees with 16 years of education or more increased. It exceeded the average salary by 153 per cent in 1980-1982 and rose to 171 per cent of the average salary in 1995-1997. On the other hand, the income levels of employees with 8 years of education or less dropped from 74 per cent and 59 per cent of the average salary in 1980-1982 and 1995-1997, respectively (Mualem and Frisch, 1999). Between 1978 and 1983, the income levels of employees with 16 years of education

[1] The CBS developed a socio-economic development index based on many indicators and resulting in 10 clusters. The lowest cluster is 1, the highest – 10.

or more exceeded income levels of employees with 10-12 years of education by 38-49 per cent. In 1992-1997, this gap increased to 72-80 per cent, underlining the significance increase in the return on educational investments. Moreover, accreditation (or certification) by an institution of higher learning, rather than the studies themselves, accounted for the majority of this gap in income. The 2000 US Census data indicated that the 20 highest-paying occupations required an academic degree (Fenwick, 2005).

Table 2. 1995 high school graduates who continued studies within 8 years of graduation, by socio-economic cluster of place of residence and higher education institution

Socio-economic cluster of town	Percentage continued studies	University	Open University	Academic college	Teaching college	Post-secondary studies
1-2	31.8	8.6	1.8	1.7	10.4	9.3
3-4	47.6	16.2	4.3	4.7	8.9	13.5
5-6	55.8	18.5	6.8	8.8	5.7	16.0
7-8	65.4	25.5	11.3	11.8	5.5	11.3
9-10	73.0	36.7	11.1	17.1	2.9	5.2

Source: CBS 2004, Table 8.32

Extensive sociological literature confirms that the decision to continue studies in an institution of higher learning is a function of a series of diverse factors, the most important of which is the individual's scholastic achievements in high school (Baker and Velez, 1996; Cairns et al., 1989; Finn and Rock, 1997; McDonough, 2004; McNeal, 1995). Other factors are career and education aspirations, cognitive abilities (Deci and Ryan, 1985, 2000), gender (Green, 2003; Hess-Biber, 1985; Jacobs, 1995, 1999; Percell et al., 1992l Sewell et al., 1980, Street et al., 1996), and the individual's family SES (parents' education, occupations and income levels) (Andres and Grayson, 2003; Astone et al., 1999; Hansen, 1997; Hossler et al., 1999; McDonough, 1997; Tinklin, 2000; Zaff et al., 2001).

The latter variable is of great significance and scholars concur that the family transmits to its offspring various types of capital, which either encourage or undermine continuation to higher education. Thus, a family may confer upon its offspring financial capital to assist them in their studies and occasionally allow the selection of expensive study programs (Steelman and Powell, 1991), social capital, which implies social ties, political power and the appropriate knowledge to pave the way to the desired type of education (Coleman, 1988); and cultural capital, which implies attitudes, tastes, preferences, orientations, patterns of speech and expression also have a not insignificant effect on higher education choices (Bernstein, 1975; Blau, 1995; Bourdieu and Passeron, 1977; Kohn, 1969). A large number of studies point to a link between the various types of family capital and the academic achievements of the offspring (Aschaffenburg and Ineke, 1997; Dar and Resh, 1996).

As previously noted, extensive literature exists on the effect of gender on the educational decision making process. It is a statistical fact that the proportion of women who continue their studies in institutions of higher education has risen significantly in recent years. In many countries, women constitute a majority of the undergraduate and graduate student body. This is also the situation in Israel. According to CBS data, 56.4 per cent of all university students in 2003/2004 were women. Women constitute 55.9 per cent of all undergraduate students, 57.3 per cent of all graduate students and 52.8 per cent of all doctoral students (CBS, 2005).

At the same time, we should take into consideration a long series of findings of studies conducted on the link between gender and continued studies. For example, studies indicate that the differences between men and women in the process to attain social status may account for the different academic choices made by each gender (Doron, 1983; Jacobs, 1995; Lysine, 1981; Spates et al., 1977; Street et al., 1996). This is also true for the differential significance attributed by each gender to the centrality of family and career (Archer, 1985; Gilligan, 1982; Hess-Biber,

1985). This is to say nothing of the fact that job opportunities are greatly affected by the gender of the applicant (Charles, 1992). Gender-based variance may ultimately find expression in different selections of fields of study (Jacobs, 1999) or institutions (Davies and Guppy, 1997; Percell et al., 1992).

Needless to say, this fact is very prominent in the distribution of students in Israel, as shown in Table 3. For example, women comprised a significant majority in education and teacher training, arts, and applied arts programs in 2003-2004. This is also true for language programs, literature and regional studies in the humanities. In schools of health sciences, women are prominent in medicine and other para-medical professions. In the natural sciences, women are prominent in para-medical occupations and biology. This is also true for the social sciences. On the other hand, men feature prominently in mathematics, statistics and computer sciences, and especially in engineering and architecture.

Table 3. University students by program 2003-2004

Program	Men	Women
Humanities – total	31.3	68.7
General humanities	43.7	56.3
Languages, literature and regional studies	24.0	76.0
Education and teacher training	16.4	83.6
Arts, crafts and applied arts	28.7	71.3
Social Sciences – total	38.3	61.7
Social sciences	34.1	65.9
Business administration and management studies	52.0	48.0
Law	45.9	54.1
Medicine and para-medical occupations – total	29.5	70.5
Medicine	47.2	52.8
Para-medical occupations	20.2	79.8
Mathematics and natural sciences – total	54.7	45.3
Mathematics, statistics and computer science	67.0	33.0
Physical sciences	61.8	38.2
Biological sciences	36.6	63.4
Agriculture	41.5	58.5
Engineering and architecture	72.7	27.3

Based on CBS 2005, Table 3

FIELD STUDY

The study population

In view of the above, the authors decided to examine the profiles of graduates of Israel's largest academic college, in an attempt to explore the connections between their academic success and their decision to continue to graduate studies on the one hand, and their socio-economic background, and their scholastic achievements before entering the College, on the other hand.

The College was established in 1982. Initially functioning as a regional college, the institution opened academic study tracks in 1990/91 as an extension of a university. Eventually, the College established its own autonomous departments and was accredited by the CHE to award undergraduate degrees. Today, the College comprises over 20 departments, and it awards full-fledged academic degrees in engineering, architecture, social sciences and the humanities, natural sciences and health sciences. For the academic year of 2005/6, the College received a permit to initiate graduate studies in social work. Of approximately 6000 students who attended the College in the academic year of 2004-5, a small number represent the last of the students in the university extension, which is scheduled to close in 2005-6.

Between 1993 and 2004, 3,016 students were awarded undergraduate degrees by the College (Davidovitch and Soen, 2004). The present study focuses on the graduates of this period, including students who studied at the College's independent departments, as well as the students who studied under the auspices of the university and completed their studies at the College campus. The study population excludes students who attended programs defined by the university as 'specialisation programs.' This latter group attended classes at the College during their first two years of studies, and completed their final year at the university campus. Thus, the present study encompasses 2641 graduates. Their numbers and distribution over the period reflects the growth of the College. For example, over half of the students awarded degrees during the entire period, graduated in 2002-3. The number of graduates in the College programs, in contrast to the university-sponsored programs, also grew steadily over the period, reflecting the College's trend toward independence and its gradual detachment from the university-sponsored programs. Almost one half of the graduates of this period (48.6%) studied in the Faculty of Engineering, 13.7 per cent studied in the Faculties of Science, Social Science and Humanities; 32.6 per cent studied in university-sponsored programs. Notably, the predominance of students in the social sciences and humanities in the entire student body of the College increased steeply in recent years. In 2004-5, the Faculty of Social Studies and Humanities was the largest faculty in the College. A distribution of graduates by faculty is presented below in Table 4.

Table 4. Distribution of ACJS Graduates by Faculty, 1995-2003

Year	Architecture		Engineering		Social Sciences and Humanities		Health Sciences		Bar Ilan Programs		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
1995	0	0	0	0	0	0	0	0	16	100	16	100
1996	0	0	21	35.6	0	0	0	0	38	64.4	59	100
1997	0	0	44	32.8	21	15.7	0	0	69	51.5	134	100
1998	0	0	111	37.2	37	12.4	0	0	150	50.3	298	100
1999	0	0	128	50.0	16	6.3	0	0	112	43.8	256	100
2000	0	0	101	49.5	6	2.9	0	0	97	47.5	204	100
2001	5	1.4	151	43.5	27	7.8	0	0	164	47.3	347	100
2002	38	6.1	363	58.0	86	13.7	0	0	139	22.2	626	100
2003	33	4.7	365	52.1	170	24.3	11	1.6	122	17.4	701	100
Total	76	2.9	1284	48.6	363	13.7	11	0.4	907	34.3	2641	100

Research Questions

In view of the aforesaid background data on the system of higher education in Israel, the authors posed the following series of six research questions.

1. Is there a connection between College graduates' personal and family background variables (gender and socio-economic strata) and other academic variables (faculty, study track, admission score, and year degree awarded)?
2. Is there a connection between College graduates' personal and family background variables (gender and socio-economic strata) and their grade average (honor status) at graduation?
3. Is there a connection between College graduates' personal and family background variables (gender and socio-economic strata), and their progression to graduate studies?
4. Is there a connection between College graduates' initial admission scores and their personal and family background variables (gender and socio-economic strata)?
5. Is there a connection between College initial admission scores and their grade average upon graduation?
6. Is there a connection between College initial admission scores and their progression to graduate studies?

Research Tools and Methodology

Analysis of findings was based on data collected from the following three sources.

1. **The College Michlol Database**: The College's computer database provides complete information on the two primary facets in this study:
    a. personal profile (gender, place of residence), and
    b. academic profile (faculty, track, year degree awarded, academic achievements upon graduation).
2. **Survey**: A survey, including a self-addressed envelope, was sent by mail to College graduates for completion. Questionnaires were sent as part of a survey conducted in preparation of the establishment of an Alumni Association. The questionnaire comprised mainly closed questions but also included several open-ended questions. In total, 530 graduates responded to the survey by mail.
3. **Telephone survey**: In order to reach the maximum number of graduates, we conducted telephone surveys with graduates who failed to return a questionnaire by mail, or with their family members.

Information on 2641 graduates was collected.

STATISTICAL ANALYSIS

Various statistical analyses were performed to explore the internal links between various parameters as directed by the research question. The two main reference sets were graduates' personal-family data and their academic achievements.

Personal-family background variables (gender and socio-economic strata) were measured as follows:

a. study track (university-sponsored program or College program),
b. faculty,
c. year degree awarded, and
d. admission score (psychometric score, matriculation grade average, post-secondary education diplomas, conditional admission status). Students whose admission stores did not meet the minimum requirements, were granted conditional status and permitted to study General Studies. These students were admitted into their second year of studies on the basis of their first year average, after achieving a minimum grade average.

Graduates' achievements were measured by:

a. grade average upon graduation,
b. honors awarded (*summa cum laude*, *cum laude*, other), and
c. graduate studies.

The present study used chi-square tests to examine the connection between the variables, t-tests to examine differences in independent samples, and uni-directional analysis of variance. Where significant differences were found, we performed Bonferoni tests to identify the source of the differences.

FINDINGS

Personal-Family Profile and Academic Profile

Our first research question concerned the link between graduates' personal and family profile (gender, SES) and their academic profile (faculty, track, admission scores and year degree awarded).

Gender

We found a significant statistical relationship between year of graduation and gender ($\chi^2(8)=29.21$, $p<0.001$). In the majority of years, similar proportions of men and women graduated from ACJS. However, in the years 1995, 2000 and 2002, the respective graduating classes contained more men than women. This statistical relationship has a simple explanation for one of the three irregular years (2002). In this graduating class, 363 of the 626 graduates studied in the Faculty of Science, where, consistent with national figures, the majority of students are generally male. In the two remaining irregular years, graduating classes had a preponderance of students from the Faculty of Social Studies, generally comprised of a majority of women. The fact that men constituted a majority in the graduating classes in those two years is, apparently, **incidental**, because today women constitute a majority in this Faculty.

We also found a significant relationship between gender and admission scores ($\chi^2(2)=473.16$, $p<0.001$). Table 5 shows that the proportion of students, who were accepted after having met formal admission criteria, was higher among men than women. Nonetheless, the fact is that only a minority of the students, either male or female, were accepted on the basis of formal admission criteria. Of all female graduates, 56 per cent were admitted to university-sponsored programs on the basis of informal admission criteria, 24 per cent were admitted into College programs on the basis of informal admission criteria, while 20 per cent were accepted on the basis of formal admission criteria. Of all the men graduates, 16.9 per cent were admitted to university-sponsored programs on the basis of informal admission criteria, 57.8 per cent had been admitted into College programs on the basis of informal admission criteria, while 25.3 per cent were accepted on the basis of formal admission criteria.

Table 5. Gender and admission scores

Admission based on: Gender	Met formal admission standards		Admitted on the basis of informal admission criteria (university-sponsored programs)		Admitted on the basis of informal admission criteria (ACJS programs)		Total all students over 1995-2004	
	N	%	N	%	N	%	N	%
Female	235	20.0	659	56.0	282	24.0	1176	100
Male	370	25.3	248	16.9	847	57.8	1465	100
Total	605	22.9	907	34.3	1129	42.7	2641	100

The explanation for the fact that more male than female students were accepted to the College on the basis of formal criteria, stems from the fact that the number of male students in university-sponsored programs was much lower than the number of female students in these programs (see Table 5). The proportion of students admitted to university-sponsored programs on the basis of informal criteria was decisive. Since the proportion of female students in these programs was much higher than the proportion of male students, this affected the final balance of proportions of students who were admitted by formal or informal criteria.

Admission Requirements and Other Variables

The College graduates were accepted on the basis of various criteria. As noted above, the colleges were designed, in advance, to open their gates to groups for whom universities were closed. Analysis of the data indicates – and this fact has already been emphasised above in the discussion

on gender – that only a minority of all graduates were accepted by the College on the basis of formal criteria similar to those applied by the universities. Table 6 presents the situation in detail.

Table 6. Distribution of graduates by admission criteria

Criterion	Criteria	N	%
Formal College admission criteria			
	Admission based on Matriculation grades	434	16.4
	Admission based on psychometric scores	126	4.8
	Admission based on Matriculation grades and psychometric scores	45	1.7
Informal College criteria (Enhanced access policy, admission to ACJS programs)			
	Admission based on grade average (technician/practical engineering diplomas awarded by post-secondary institutions)	907	34.3
	Admission based on relaxed Matriculation grades and psychometric scores	941	35.6
	Affirmative action	170	6.4
	Admission based on diploma certificates	11	0.4
Informal university criteria (Enhanced access policy, admission to university-sponsored programs)			
	Admission to General Studies track (conditional status)	7	0.3
Total		2641	100

According to Table 6, only 22.9 per cent of all graduates were admitted on the basis of formal criteria (psychometric scores and Matriculation grades), 42.7 per cent were admitted to College programs on the basis of informal criteria (that is, grade average or post-secondary practical engineering diplomas), while 34.3 per cent were admitted to the university-sponsored General Studies track and granted conditional status.

Matriculation grade average of all students who were admitted on the basis of this criterion was 84.2 with a SD of 10.6. The average psychometric score of students who were admitted on the basis of this criterion type was 541, with a SD of 69.

Based on these data, we were able to examine the relationships between admission criteria and other variables, in this study. We explored the links between admission criteria and study track; admission criteria and faculty; and admission criteria and year of graduation. These examinations indicate statistical significance in all the above relationships, as indicated by Table 7, Table 8, and Table 9.

Table 7. Correlation between study track and admission criteria

Study track	Formal admission		Informal admission: university-sponsored program		Informal admission: College programs		Total	
	N	%	N	%	N	%	N	%
University	0	0	907	100	0	0	907	100
College	605	34.9	0	0	1129	65.4	1734	100
Total	605	22.9	907	100	1129	42.7	2641	100

The most meaningful relationship emerging from Table 6 concerns the large difference between the admission criteria of graduates who studied in university-sponsored programs, and graduates who studied in the College's autonomous programs. **All graduates who studied in the university extension programs were accepted to these programs on the basis of informal criteria. This is not true for graduates of the College programs**. We found a significant statistical relationship between study track and admission criteria ($\chi^2(2)=2641$, $p<0.001$). All graduates of the university-based programs were accepted, as mentioned previously, on the basis of informal criteria. Of all graduates of the College programs, 34.9 per cent were accepted on the basis of formal criteria, while 65.1 per cent were accepted on the basis of informal criteria. In addition to the relationship between admission criteria and study track, we also found a statistically significant relationship between admission criteria and faculty.

We found a significant relationship between faculty and admission criteria ($\chi^2(10=2910.53$, $p<0.001$). Table 8 indicates each faculty was characterised by a different proportion of students

who were admitted on the basis of informal criteria. This is not true for the university-sponsored programs. In these programs, students were accepted into a General Studies track in one of two faculties (Faculty of Science or Faculty of Social Sciences), on the basis of informal criteria.

Table 8. Correlation between faculty and admission criteria

Faculty	Formal admission		Informal admission: university-sponsored program		Informal admission: College programs		Total	
	N	%	N	%	N	%	N	%
Architecture	65	85.5	0	0	11	14.5	76	100
Engineering	343	26.7	0	0	941	73.3	1284	100
Social Sciences & Humanities	193	53.2	0	0	170	46.8	363	100
Health Sciences	4	36.4	0	0	7	63.6	11	100
University– Natural Sciences	0	0	46	100	0	0	46	100
University– Social Sciences	0	0	861	100	0	0	861	100
Total	605	22.9	907	34.3	1129	42.7	2641	100

The College's department of architecture was unique: 85.5 per cent of all the graduates of this department were accepted on the basis of formal criteria; while a mere 14.5 per cent of the graduates were accepted on the basis of informal criteria (including achievements in post-secondary education). Of all graduates of the Faculty of Social Sciences and Humanities, 53.2 per cent were admitted on the basis of formal criteria, while 46.8 per cent were admitted on the basis of informal criteria (including diploma studies or affirmative action policies). In Health Sciences, 36.4 per cent and 63.6 per cent of all graduates were admitted on the basis of formal and informal criteria, respectively. In the Faculty of Engineering, these figures were 26.7 per cent and 73.3 per cent for formal and informal criteria, respectively.

As previously noted, the data indicate a relationship between graduates admission criteria and the year of graduation. We examined these data for graduates of the College only, because graduates of the university-sponsored programs were admitted on the basis of informal criteria, as shown in Table 9. We found a significant relationship between admission criterion and graduation year ($\chi^2(7)=97.80$, $p<0.001$), with an increase in admissions based on formal criteria over time.

Table 9. Correlation between admission criterion and graduation year of College-program graduates

Graduation Year	Formal admission		Informal admission		Total	
	N	%	N	%	N	%
1996	2	3.4	19	32.2	59	100
1997	11	8.2	54	40.3	134	100
1998	16	5.4	132	44.3	298	100
1999	44	17.2	100	39.1	256	100
2000	20	9.8	87	42.6	204	100
2001	63	18.2	120	34.6	347	100
2002	185	29.6	302	48.2	626	100
2003	264	37.7	315	44.9	701	100
Total	605	22.9	1129	42.7	2641	100

Socio-Economic Profile

In this study, graduates' socio-economic background was defined on the basis of geographical clustering of towns (between 1-10) by the Central Bureau of Statistics. According to this method, as already mentioned above, all towns in Israel are divided into socio-economic clusters. Cluster 1 reflects the lowest socio-economic stratum, and 10 reflect the highest socio-economic stratum. The most interesting result emerging from the analysis is the statistically significant relationship between socio-economic profile and admission criteria.

Not less interesting is the finding that a mere 8.6 per cent of all graduates belong to the lowest four clusters (no graduates representing Cluster 1). Average socio-economic profile is M=6.49, with a SD of 1.43. We managed to classify 2080 graduates of all 2641 graduates in our original sample into clusters, as shown in Table 10.

Table 10. Distribution of graduates by residential cluster [upon admission]

Cluster	Frequency	%
1	-	-
2	4	0.2
3	60	2.9
4	114	5.5
5	461	22.2
6	176	8.5
7	644	31.0
8	597	28.7
9	24	1.2
10	-	-
Total	2080	100

A total of 60.9 per cent of the graduates were classified as belonging to relatively high SES clusters (Clusters 7,8 and 9), while a mere 8.6 per cent belonged to relatively low SES clusters (Clusters 2,3 and 4). No students were classified in the lowest cluster, and very few students belonged to second to lowest cluster. No students were classified in the highest SES cluster, and the second to highest cluster (9) had a mere nominal representation among graduates (1.2%). We can therefore conclude that the two highest and two lowest clusters are not represented among the graduates. Approximately 60 per cent of the graduates came from middle-class neighbourhoods (strata 7 and 8).

In examining the differences in SES clusters by study tracks, we found no significant differences ($t(2078)=1.92$, $p>0.05$). Table 11 shows that the average SES profile for students who attended university-sponsored programs was similar to the average SES profile of College-based programs (M=6.41, SD=1.39, and M=6.53, SD=1.45; respectively). We found no differences in SES groups by year of graduation ($F(8,2071)=0.70$, $p>0.05$).

Table 11. Distribution of SES cluster by admission criteria

Cluster	Formal admission		Informal admission: university-sponsored program		Informal admission: College programs		Total	
	N	%	N	%	N	%	N	%
1-5	130	20.7	229	36.5	268	42.7	627	100
6-7	167	20.5	273	33.5	376	46.1	816	100
8-9	177	28.5	190	30.6	253	40.8	620	100
Total	474	23.0	692	33.5	897	43.5	2063	100

However, significant differences in SES distribution were found by faculty ($F(5,2074)=4.20$, $p<0.01$). The SES profile of students of architecture (M=7.19) was higher than graduates of university-sponsored social studies programs in the social studies (M=6.42), ACJS students of social sciences and humanities (M=6.41) and engineering students (M=6.53). In other words, the SES profile of graduates of architecture was the highest of all graduates. A significant relationship was found between SES cluster and admission criteria ($\chi^2(4)=17.57$, $p<0.01$).

A similar proportion of students from SES clusters 1-5 and 6-7 were admitted on the basis of formal admission criteria (20.7% and 24%, respectively). However, a higher proportion of students from SES clusters 8-9 were admitted on the basis of formal criteria (28.5%).

Of the graduates from clusters 1-5, 32.7 per cent were admitted on the basis of formal admission criteria, while 30.8 per cent of the graduates from clusters 6-7 and 41.2 per cent of the graduates from clusters 8-9 were admitted on the basis of formal criteria.

Correlation between Personal-Family Profile and Academic Achievements upon Graduation

Our second research question concerned the relationship between graduates' personal-family profile (gender and SES) and their average grades and honor status at graduation.

Two interesting findings emerged in this context. One, we found a significant relationship between gender and grade average at graduation, **with female students showing a clear and significant advantage over male students.** Two, we found no significant statistical relationship between graduates' SES cluster and their grades at graduation. This point is especially interesting in view of the fact that students' SES had an explicit effect on the admission policy and criteria applied. As we explained, students from low SES clusters had a lower initial starting point, compared to students from higher SES clusters.

Table 12 shows the significant relationship between gender and graduation honor status ($\chi^2(2)=32.33$, $p<0.001$). We found that 17.9 per cent of all female graduates graduated *cum laude* or *summa cum laude* (14% and 3.9% respectively), compared to 12.9 per cent of all male graduates (10.2% and 2.7% respectively).

Table 12. Distribution of graduates by honor status at graduation

Gender	Graduated without honors		*Cum laude*		*Summa cum laude*		Total	
	N	%	N	%	N	%	N	%
Female	966	82.1	165	14	45	3.9	1176	100
Male	1277	87.2	149	10.2	39	2.7	1465	100
Total	2243	84.9	314	11.9	84	3.2	2641	100

Grade averages also reflected significant differences ($t(1669)=3.28$, $p<0.01$), although these differences were not large. Female graduates had higher final grades ($M=84.68$, $SD=5.14$) than male graduates ($M=83.80$, $SD=5.00$).

We wished to explore the link between gender and progression to graduate studies, as Table 13 presents. We assumed that since there were a larger number of honor students among the female graduates, who also had a higher final grade average, more female than male graduates would continue to graduate studies. Our data, however, did not confirm this assumption. We found no significant relationship between gender and continuation to graduate studies ($\chi^2(1)=0.34$, $p<0.05$) and the explanation for this finding remains unanswered. The question is interesting, especially since women constitute the majority of graduate students in national-level data.

Table 13. Distribution of gender and progression to graduate studies

Graduate Studies	NO		YES		Total	
	N	%	N	%	N	%
Female	1062	90.3	114	9.7	1176	100
Male	1313	89.6	152	10.4	1465	100
Total	2375	89.9	266	10.1	2641	100

Links between Admission Criteria and Graduates' Achievements

Graduates' achievements upon graduation were assessed on the basis of several criteria:

1. **Graduation honors**: Of all graduates, 84 (3.2%) graduated *summa cum laude*, 314 (11.9%) graduated *cum laude* and 2,243 (84.9%) graduated without honors. Final graduation grades were available for 1,671 graduates. Average final grade was 84.1 (SD=10.6).

2. **Progression to graduate studies**: Slightly over 10 per cent of the graduates (266) noted that they continued to graduate studies, while 89.9 per cent (2,375) did not note similar studies.

Final graduation grade

A significant relationship was found between study track and graduation honor status ($\chi^2(2)=32.33$, $p<0.001$). Among graduates of the university-sponsored programs, 79.6 per cent graduated without honors, 16.6 per cent graduated *cum laude* and 3.7 per cent graduated *summa cum laude*. In other words, over 20 per cent of all university extension graduates graduate with some type of honor. Among graduates of College programs, 87.7 per cent graduated without honors, 9.4 per cent graduated *cum laude*, and 2.9 per cent graduated *summa cum laude*. Table 14 presents the findings.

Table 14. Correlation between graduation honor status and study track

Track	Graduated without honors		Graduated *sum laude*		Graduated *summa cum laude*		Total	
	N	%	N	%	N	%	N	%
University-sponsored	722	79.6	151	16.6	34	3.7	907	100
College	1521	87.7	163	9.4	50	2.9	1734	100
Total	2243	84.9	314	11.9	84	3.2	2641	100

No less interesting is the relationship between students' graduation honor status and the criteria on the basis of which they were admitted that is comparing graduates who were accepted on the basis of formal criteria. Ostensibly, we should expect higher achievements from students who were accepted on the basis of **formal** criteria. The data in Table 15, however, indicate a more complex picture.

Table 15. Graduation honor status and admission criterion

Admission Criterion	Graduated without honors		Graduated *sum laude*		Graduated *summa cum laude*		Total	
	N	%	N	%		N	%	N
Formal	524	86.6	65	10.7	16	2.6	605	100
Informal: university-sponsored programs	722	79.6	151	16.6	34	3.7	907	100
Informal: College programs	997	88.3	98	8.7	34	3.0	1129	100
Total	2243	84.9	314	11.9	84	3.2	2641	100

A significant relationship was found between admission scores and graduation honor status ($\chi^2(4)=34.04$, $p<0.001$). Among the graduates who were accepted on the basis of formal criteria, 10.7 per cent graduated *cum laude* and 2.6 per cent graduated *summa cum laude*. Among graduates who were accepted to university-sponsored programs on the basis of informal criteria, 16.6 per cent graduated *cum laude* and 3.7 per cent graduated *summa cum laude*. Among graduates who were accepted to College programs on the basis of informal criteria, 8.7 per cent graduated *cum laude* and 3.0 per cent graduated *summa cum laude*.

No differences were found ($F(1,1669)=0.24$, $p>0.05$) between graduates accepted on the basis of formal criteria and graduates who were accepted to College programs on the basis of informal criteria, M=84.0, SD=5.0; and M=84.1, SD=5.1, respectively). As noted, this analysis was performed only on graduates for whom such data were available.

In sum, graduation grades reflect no difference between these two groups of graduates. Honor status differed among students in the College programs. As anticipated, students who were accepted on the basis of formal criteria showed an advantage. On the other hand, it emerged that the proportion of students with excellent achievements was especially high among graduates of the university-sponsored programs who were accepted on the basis of informal criteria.

Progression to Graduate Studies

At this point, we sought to explore the nature of the relationship between graduates' initial admission criteria and their progression to graduate studies. We assumed that the lower students' admission scores would be, the lower the probability of their continuing to graduate programs. We first examined the relationship between study track and progression to graduate programs. Data presented in Table 16 confirm our assumption. The proportion of graduates who continued to graduate programs was lower among graduates of the university-sponsored programs, compared to graduates of the College's independent programs.

Table 16. Correlation between study track and graduate studies

Study track	Graduate studies not noted		Graduate studies noted		Total	
	N	%	N	%	N	%
University-sponsored programs	832	91.7	75	8.3	907	100
College-based programs	1543	89.0	191	11.0	1734	100
Total	2375	89.9	266	10.1	2641	100

Thus, a significant relationship was found between graduates' study track and graduate studies ($\chi^2(1)=4.96$, $p<0.05$). A total of 8.3 per cent of the graduates of university-sponsored programs, and 11.0 per cent of the graduates of the College programs noted that they had continued to graduate studies. Readers should be informed of a fact that bears dramatically upon this issue: approximately one half of the College-based program graduates graduated from the Faculty of Engineering. The proportion of engineering graduates continuing to graduate degrees is very low, based on national-level data (Central Bureau of Statistics, 2005, Table 3). Taking this into consideration, there is a high proportion of graduates of College-based programs who continued to graduate studies.

We then examined the relationship between admission criteria and progression to graduate studies, as shown in Table 17. In contrast to the significant statistical relationship found between study track and graduate studies, no significant relationship was found between admission criteria and progression to graduate studies ($\chi^2(2)=5.01$, $p<0.05$).

Table 17. Correlation between admission criterion and graduate studies

Admission criterion	Graduate studies not noted		Graduate studies noted		Total	
	N	%	N	N	%	N
Formal admission	537	88.8	68	11.2	605	100
Informal admission: Bar Ilan	832	91.7	75	8.3	907	100
Informal admission : ACJS	1006	89.1	123	10.9	1129	100
Total	2375	89.9	266	10.1	2641	100

SUMMARY

The present study is the first attempt to explore systematically the profiles of College graduates in Israel. We made an attempt to uncover links between graduates' personal, family and scholastic profiles and their graduation achievements, and studies toward graduate's degrees.

Orderly and detailed studies following graduates of various institutions of higher learning have been conducted for many years in western countries. Rich data exists for Canada, United States, United Kingdom and Australia. International organisations including UNESCO and OECD publish detailed data from graduate studies. Furthermore, we now have convenient access to graduate studies conducted by numerous universities in many countries. Extensive information is also available through web-based search engines.

In Israel, however, available data in this area are lacking. We found no published national study on this issue. Although several institutions have conducted internal studies (i.e. Ben Gurion University; Beth Berl Teachers College), access to these studies is difficult and almost impossible.

Ultimately, a series of conclusions emerged from the above study, based on a survey of graduates, which confirmed the findings from other countries, yet also indicated that, fortunately at this stage at least, reality fulfils the intentions of the CHE when making the decision to establish regional colleges in Israel.

The main findings of the study relate to a) the link between graduates' SES background and their academic studies; b) the link between gender and academic studies; and c) the link between admission criteria, achievements and progression to graduate studies.

As previously noted, the study found that the SES profile of College graduates is not high. Members of the two highest and two lowest clusters are absent. Approximately 60 per cent of the graduates come from clusters 7 and 8, that is, the middle class. Approximately 30 per cent come from the lower middle class, and an additional 8.5 per cent come from lower class clusters 3-4. From this perspective, we can say that the proportion of the population from the periphery – using the sociological meaning of this term – is not insignificant among the graduates. There is no doubt that this confirms the colleges' contribution to their social objectives.

In the connection between SES profiles and academic achievements, the study also pointed to two interesting points. First, there is a significant statistical connection between graduates' SES profile and their academic admission criteria. This implies that the SES profile of graduates who were accepted on the basis of formal criteria (M=6.63) is higher than graduates who were accepted on the basis of informal criteria (M=6.41). Moreover, this connection is reflected differently in the different faculties. The SES profile of graduates of architecture (M=7.19) was found to be significantly higher than SES profiles of all other graduates. Thus, we can say that graduates of this faculty have the largest social, economic and cultural capital of all graduates. Second, **no significant statistical relationship was found between graduates' SES profiles and their grades.**

The second question explored by this study concerned gender. The authors found several notable findings. The first is the fact that, in contrast to the known advantage women enjoy in education, the profiles of female students upon admission were inferior to those of male students. Only 20 per cent of all female graduates were admitted to the College on the basis of formal admission criteria, compared to 35.3 per cent of the male graduates. However, with regards to achievements at the College, women show clear superiority. Both the average final grade and the proportion of honor graduates are higher among female graduates compared to male graduates. Compared to 12.9 per cent of the male graduates who graduated with honors, 17.9 per cent of all female graduates graduated with honors. Female graduates' final grade average was 84.7 per cent compared to an average of 83.8 per cent for male graduates. Nonetheless, no gender-based difference was found in the progression to graduate studies.

The third question addressed by this study concerned the connection between admission criteria and academic achievements. The most important finding emerging from this study is **the lack of any connection** between admission criteria and academic achievements. Survey findings indicated an amazing starting point for students at the College. A mere 23 per cent were accepted on the basis of formal criteria, that is slightly less than one quarter of all graduates. The majority of College graduates were accepted on the basis of informal criteria of various kinds. Nonetheless, the findings of this study clearly indicate the steady decline over time in the proportion of students admitted on the basis of informal criteria. Among the class of 1996, this group comprised 90 per cent of the graduating class, as against a mere 54 per cent of the graduating class of 2003.

Despite the College's commitment to social aims, the more it becomes established and the demand for admission increases, the College poses stricter admission criteria. The average final grade of graduates who were accepted on the basis of formal criteria is 84.0 – while the average final grade of graduates who were accepted on the basis of informal criteria is 84.1. Similarly, no statistically significant connection was found between admission criteria and progression to graduate studies.

In sum, we can point to the following main conclusions of this study.

1. A large proportion of the graduates were admitted to the College, although their admission scores were such that would probably not have allowed admission into other academic institutions.
2. These inferior admission profiles, however, did not impede students' progress or achievements at the College, and had no adverse effect on their ability to graduate, or on their final graduation marks.

Thus, the philosophy of the CHE was found to be justified. The College opened a second chance to groups who otherwise would be barred from entry into higher education. We can assume that other public colleges play and will continue to play a similar role. We believe that these findings are the first step towards a discussion on an additional series of interesting questions relating to the profiles of college graduates.

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