UNIVERSITY OF CAMBRIDGE

Academic Performance of International Baccalaureate Students at Cambridge

Dr Geoff Parks, Senior Tutor, Jesus College

Introduction

This study examines the academic performance of undergraduates at Cambridge who previously studied for the International Baccalaureate (IB) Diploma while at school/college. It is part of a wider study investigating the predictive value of quantitative indicators available to Cambridge Admissions Tutors. As the majority of IB students apply to Cambridge before completing their studies for the Diploma, the principal value of this research is in helping to determine the appropriate levels at which to set conditional offers of admission.

Methodology

The study analyses results obtained by IB students admitted in the years 2005 to 2011 inclusive. The numbers in each cohort are shown in Table 1.

Table 1: Numbers of IB students admitted to Cambridge by year of entry

Year	2005	2006	2007	2008	2009	2010	2011
Number	65	127	149	154	190	162	150

The academic performance of students is judged by their results in all classed examinations in the first three years of Cambridge courses. Fourth year results are excluded because they are not all classed on the same basis.

For the purposes of analysis Cambridge courses are categorized as *Arts & Social Sciences* or *Sciences*. The total numbers of available results are shown in Table 2.

Table 2: Numbers of Cambridge examination results available for IB students admitted from 2005 to 2011

Year	Arts & Social Sciences	Sciences
1st year results	465	370
2nd year results	518	309
3rd year results	397	241

The cohort tracking effect in the study means that, in general, fewer results are available for later years. The larger number of available 2nd year Arts & Social Sciences results than 1st year results is explained by the fact that some Cambridge Arts courses (including some quite large ones) do not have classed examinations in the first year.

The prior performance of IB students is categorized on the basis both of their total score out of 45 and of their scores in their three higher level (HL) subjects, each out of 7. In cases where the student took more than three HL subjects the best three results are used.

Results and Analysis

Tables 3 and 4 show the distributions of results achieved in Arts & Social Sciences courses by IB students according to their overall score in the Diploma and their HL subject scores respectively. These include some undivided II's in first year examinations. The non-integer tallies are due to results in first year Modern & Medieval Languages where students study two languages and the results for each language are classed separately.

Table 3: Results in Arts & Social Sciences courses of IB students with different overall Diploma scores

Overall Score		<38	38	39	40	41	42	43	44	45
Class	Fail						1			
	Third		1	1			1		2	
	II.2	8	11	18.5	15	28.5	23	19	9	3
	II	1		1	3	3	6	6	5	2
	II.1	21	30	73.5	70	139.5	150	223.5	150	78
	First	4	2	13	12	37	38	53.5	62	50

Table 4: Results in Arts & Social Sciences courses of IB students with different HL subject scores

HL Scores		666	765	766	775	776	777
Class	Fail						1
	Third					5	
	II.2	5	8	31	3	62.5	25.5
	II	1		2	2	14	8
	II.1	14	24	110.5	18	384.5	369.5
	First	2	4	27.5	2	96	136

Tables 5 and 6 show the distributions of results achieved in Science courses by IB students according to their overall score in the Diploma and their HL subject scores respectively. These include several undivided II's in first year examinations.

Table 5: Results in Science courses of IB students with different overall Diploma scores

Overall Score		<38	38	39	40	41	42	43	44	45
Class	Fail					1				1
	Third	9	1	1	3	6	5	2	2	1
	II.2	1	5	7	10	24	21	21	17	6
	II	1	4	4	10	24	32	38	38	16
	II.1	5	11	18	43	47	59	71	79	26
	First	2	1	6	7	29	32	65	60	45

Table 6: Results in Science courses of IB students with different HL subject scores

HL Scores		765	766	775	776	777
Class	Fail					2
	Third	1	8		7	9
	II.2	2	16	2	32	59
	II	1	14		52	98
	II.1	2	33	5	99	216
	First		10	3	40	194

To help visualize and interpret these data, Figure 1 shows the observed likelihood of an IB student obtaining a 'good' result (here defined as a II.1 or a First) in Arts & Social Sciences courses as a function of their overall Diploma score and of their HL scores, compared to the University-wide

average likelihood of doing so. For this purpose undivided II's are excluded from the analysis entirely. Figure 2 shows the same for Science courses.

Figure 1: The observed likelihood of an IB student obtaining a II.1 or a First in Cambridge Arts & Social Sciences courses as a function of their overall Diploma score (left) and of their HL scores (right) – the horizontal red line indicates the University-wide average likelihood

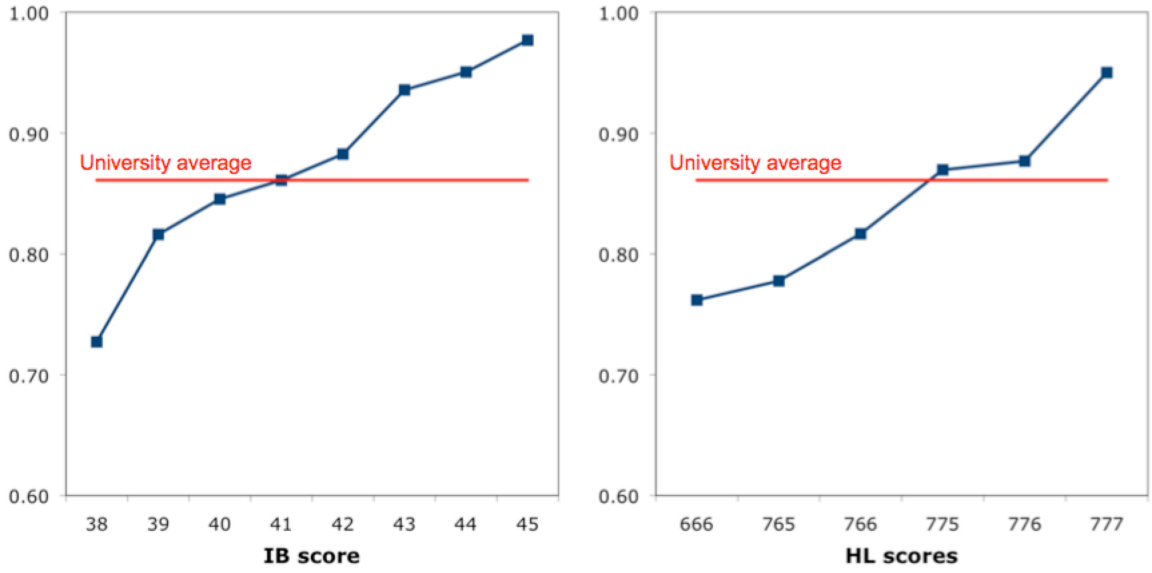
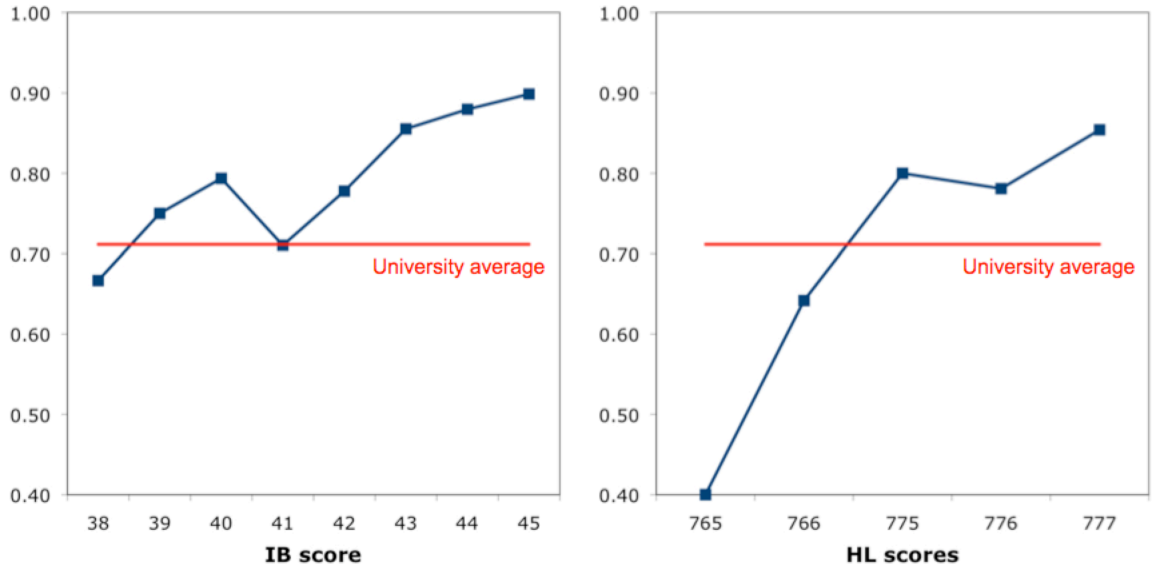


Figure 2: The observed likelihood of an IB student obtaining a II.1 or a First in Cambridge Science courses as a function of their overall Diploma score (left) and of their HL scores (right) – the horizontal red line indicates the University-wide average likelihood



Discussion

Figure 1 shows that the higher an IB student's overall points score the greater their likelihood of a good result in Cambridge Arts & Social Sciences courses. A score of 41 points suggests an at-average likelihood of a II.1 or a First; a score of 42 points suggests a better-than-average likelihood. The likelihood of a II.1 or a First increases noticeably for scores above 42. Higher Level scores of 775, 776 or 777 suggest that a student is likely to exceed average performance in the University.

Figure 2 shows that for Cambridge Science courses overall scores of 39 or more give better-than-average likelihoods of a II.1 or a First (or at-average in the case of 41 points). Again, the likelihood of a II.1 or a First increases noticeably for scores above 42. An IB student with only one 7 in their HL subjects has a below-average likelihood of a good result.

It is evident that many IB students do well or extremely well at Cambridge. However, the levels of performance in the IB that seem to be needed to predict success at Cambridge with confidence are high – significantly higher than the levels of offer routinely made at many other universities.