VII. SUMMARY OF FINDINGS FROM REGRESSION ANALYSIS

This section establishes the inter-relationship of demographics, performance in elementary and secondary school, performance on college entrance exams and performance in the CUNY freshman year. By connecting student performance across the K-16 continuum, we are seeking to generate some insight into the strengths and weaknesses of BOE graduates who enroll at CUNY. The data indicates that the need for remediation in English as a second language and basic skills starts early, persists at every testing point and seems to influence college outcomes. Across the K-16 continuum, this dynamic is exacerbated by LEP status, remedial status at the end of 8th grade and immigrant status, and mitigated by attending a private elementary school and good quality public high school and earning a Regents diploma.

At this point in our investigation, we rely on two types of regression analysis: linear regression analysis and logistical regression analysis. Logistical regression analysis expresses the probability of a specific outcome in an "odds ratio." A value of 1 indicates an even (50%/50%) chance.

A. Understanding Performance in 8th Grade

We found that demographics – specifically, gender, nation of origin and English language facility – are important in explaining students' performance as of 8th grade. In these equations, students' results on the Degrees of Reading Power (DRP) and California Achievement Test in mathematics (CAT-Math), both scored on a scale of 1 to 99, were the outcome variables.

Linear regression equations in the first two columns of Table 17 explain 20% of the variance in DRP score and 11% of the variance in CAT-Math score. Although the equations explained little variance, the variables of gender, nation of origin and language facility emerged as highly significant ($p < .001$). Being male accounted for 2.38 points on the DRP and 5.94 points on the CAT-Math. Being from Asia-East or the former USSR was negatively associated with reading skills and positively associated with math skills, while being from Puerto Rico, the Caribbean, Central and South America or Mexico was negatively associated with both skill sets. The effect of LEP status was startling – it was associated with a drop in DRP scores of 30.83 points and a drop in CAT-Math scores of 19.06 points.

Logistical regression equations in the next three columns of Table 17 take a different cut. Odds ratios express the probability of performing above or below grade level, as measured by a cut score of 50 on the DRP and CAT-Math. We found that males were significantly less likely than a randomly selected student to be remedial in reading (.87), in math (.84) and on both math and reading (.84). Graduates born outside the United States, particularly graduates from the former USSR, had better than even chances of being remedial in reading, math or both. LEP graduates had the greatest chances of needing remediation – they were 9.56 times more likely than a randomly selected student to need remediation in reading, 24 times more likely to need remediation in math, and 19 times more likely to need remediation in both reading and math.

Table 1. Demographics as Independent Variables of Performance in 8th Grade (CUNY Students Only)

INDEPENDENT VARIABLES	OUTCOME VARIABLES									
					Below Grade Level					
	DRP		CAT-Math		DRP		CAT-Math		DRP & CAT-Math	
Sample Size	6228		3697		8559		8559		8559	
% Var. Explained	20		11		(odds ratio)		(odds ratio)		(odds ratio)	
Coefficients:										
Male	2.38	***	5.94	***	0.87	***	0.84	***	0.84	***
White	6.84		3.46		0.49		0.55		0.44	
Black	-1.82		-8.57		0.80		0.91		0.75	
Hispanic	-0.07		-3.55		0.62		0.73		0.55	
Asian	4.80		8.21		0.49		0.56		0.41	***
United States	-0.87		-2.75	**	1.33		0.92	***	0.96	
Asia-East	-4.13	**	6.43	*	1.78		1.27	***	1.36	***
Asia-West	-0.54		-4.48		2.55		1.44	***	1.84	***
PR & Caribbean	-1.85		-3.71	**	1.26	***	1.49	***	1.60	***
Former USSR	-5.91	*	-0.74		2.29	***	2.95	***	3.15	***
C & S America; Mex	-3.15	**	-4.75	**	1.27	***	1.41	***	1.52	***
LEP status	-30.83	***	-19.06	***	9.56	***	23.71	***	19.14	***
Age in months	-0.22	***	-0.15	**	1.02	***	1.03	***	1.03	***

Statistical significance: * = (p<.05); ** = (p<.01); and *** = (p<.001)

B. Understanding Performance in Secondary School

We established the relationship of demographics and 8th grade performance with performance in high school. Outcome variables were the number of CPI English units, level of math achievement, Regents English and math scores, academic high school average (GPA) and odds of receiving a Regents diploma. In general, we found that gender, LEP status, scores on the DRP and CAT-Math, and type of school attended in 8th grade had the greatest impact on high school performance.

Demographics as independent variables. As Table 18 indicates, demographics explained some variance in high school variables. Being male had a significant negative effect on accumulation of CPI units, performance on the Regents English exam and academic GPA – but had a slight positive association with earning a Regents diploma. Being from Asia-East and the former USSR had a positive, strong relationship with excelling on the Regents math exam and outperforming peers in the number of CPI units in English and levels of math completed. Graduates from the former USSR had strong odds (1.66 to 1) of earning a Regents diploma. Not surprisingly, LEP status was negatively associated with all high school indicators of performance, including CPI units, levels of math completed, Regents English and math exam scores and GPA. LEP students' odds of earning a Regents diploma were significant and very low (.24). Male and white graduates, meanwhile, had an above even chance (1.11 to 1 and 1.13 to 1 odds, respectively) of getting a Regents diploma.

Table 2. Demographics as Independent Variables of Performance in High School (CUNY Students Only)

INDEPENDENT VARIABLES	OUTCOME VARIABLES											
	CPI Units English		High Level Math		Regents English		Regents Math		Academic GPA		Regents Diploma?	
Sample Size	8559		7566		6598		7843		8559		8540	
% Var. Explained	15		9		8		11		5		(odds ratio)	
Coefficients:												
Male	-0.12	***	0.06	**	-1.18	***	1.33	**	-2.60	***	1.11	***
White	0.28		-0.22		-0.15		4.54		-0.07		1.13	
Black	-0.23		-0.53	**	-5.76	**	-4.34		-4.04		0.28	***
Hispanic	-0.39		-0.53	**	-4.36		-1.44		-2.40		0.42	
Asian	0.21		0.05		-1.21		8.72	*	1.37		1.35	
United States	-0.02		-0.09	**	-0.89	**	-1.77	**	-0.34		0.77	***
Asia-East	0.25	**	0.60	***	-0.19		8.29	***	3.94	***	1.13	
Asia-West	0.36	***	-0.12		0.36		3.28	**	0.20		0.81	
PR & Caribbean	-0.39	***	-0.03		0.33		0.25		2.14	***	1.01	
Former USSR	0.82	***	0.46	***	1.85	*	6.50	***	2.87	***	1.66	***
C & S America; Mex	0.30	***	-0.05		-0.44		1.09		1.71	**	0.70	***
LEP status	-0.92	***	-0.22	***	-7.04	***	-1.52	**	-1.45	***	0.24	***
Age in months	-0.01	***	0.00	***	-0.05	**	-0.06	**	-0.08	***	0.99	***

Statistical significance:* = (p<.05); ** = (p<.01); and *** = (p<.001)

Demographics and elementary school data as independent variables. Table 19 combines the independent variables from Table 18 with 8th grade DRP and CAT-Math scores and the type of school that students attended in 8th grade. Thus, we get some sense of the combined effects of background, tests, and school type on students' performance in high school. Here, our outcome variables explained between 21% and 36% of the variance in CPI unit accumulation, level of attainment in math and Regents English and math exam scores. Most demographic characteristics behaved as they did in the previous table. However, at this stage, the negative impact of LEP status was slighter. In addition, the coefficients associated with being from the former USSR changed direction (and degree). Taken together, these two findings lead us to the conclusion that some LEP students, most likely the students from the former USSR, overcame their language limitation.

Table 3. Demographics and 8th Grade Test Data as Independent Variables of Performance in High School (CUNY Students Only)

INDEPENDENT VARIABLES	OUTCOME VARIABLES					
	CPI Units	High Level	Regents		Academic	Regents
	English	Math	English	Math	GPA	Diploma?
Sample Size	3688	3287	3278	3466	3688	3686
% Var. Explained	21	29	36	35	23	(odds ratio)
Coefficients:						
Male	-0.20 ***	-0.01	-2.28 ***	-0.33	-2.41 ***	0.99
White	0.53	-0.46	0.79	0.69	-2.00	0.39
Black	0.23	-0.41	-1.45	-0.63	-3.37	0.20
Hispanic	0.24	-0.41	-1.10	1.59	-2.17	0.24
Asian	0.51	-0.07	0.48	7.52	0.03	0.71
United States	-0.13 ***	-0.06	-0.77 **	-1.06	-0.72 **	0.67 **
Asia-East	0.15	0.56 ***	2.21 *	5.10 **	2.13 **	1.57
Asia-West	-0.25	0.34 *	1.07	7.48 **	1.30	0.83
PR & Caribbean	-0.23 ***	0.11	1.08	0.61	0.24	0.95
Former USSR	0.19	0.10	1.59	5.01	2.72 *	3.33 **
C & S America; Mex	0.00	0.19 **	0.73	2.10	0.36	1.07
LEP status	-0.27 ***	0.12	-0.05	2.70 **	1.64 **	0.98
Age in months	-0.01 ***	0.00	0.02	-0.04	-0.02	1.00
DRP score	0.01 ***	0.00 ***	0.22 ***	0.08 ***	0.06 ***	1.03 ***
CAT-Math score	0.00 ***	0.02 ***	0.07 ***	0.29 ***	0.06 ***	1.04 ***
Accelerated courses	0.07 ***	0.16 ***	0.84 ***	2.92 ***	1.25 ***	1.67 ***
NYC public K-8	0.27	0.21	-0.11	-2.28	2.40	4.20 *
NYC private K-8	-0.56	0.33	-2.37	-8.13	4.03	
US not NYC K-9	-0.72	0.38	-7.04	13.70		

Statistical significance:* = (p<.05); ** = (p<.01); and *** = (p<.001)

C. Understanding Performance on College Entrance Exams

After establishing the relationship among demographics, elementary school and high school attended, we set out to connect them with performance on college entrance exams. In Tables 20-22, the outcome variables are verbal and math SAT scores, scores on CUNY's FSATs, and consequent placement in remediation by subject and number of subjects; note that the data pertains to CUNY students only. This model confirmed the significant impact of gender, country of origin, LEP status and remedial status at the end of 8th grade, and uncovered the significant and positive impact of a good quality high school, higher scores on Regents English and math exams, and attainment of a Regents diploma.

Demographics as independent variables. Table 20 shows that patterns established earlier in students' academic careers persisted. Males did significantly better than females on CUNY's FSATs and were significantly less likely to be deemed remedial in reading or mathematics or in more than one subject. On the SAT, being male was positively and significantly related to higher verbal and math scores.

Asia-East graduates showed a more mixed pattern, performing significantly less well on the RAT but better on the MAT. Using odds ratios, Asia-East graduates who went to CUNY were slightly

more than likely (1.19 to 1) to be remedial in reading but much less likely than a randomly selected student to be remedial in math (0.34 to 1). This immigrant group had a better than even chance of being remedial in one subject (1.19 to 1) or two subjects (2.18 to 1).

Former USSR students showed strong performance on all three FSATs, and correspondingly low odds of being placed in remediation in any subject or in more than one subject. Being from the former USSR was negatively associated with verbal SAT score, but strongly and positively associated with math SAT score. These findings seem to affirm our earlier observation that students from the former USSR start out remedial in the lower grades, perhaps due to lack of English language facility, and make substantial progress by the time they apply to college.

LEP students were at a distinct disadvantage when transitioning to college. They were 5.22 times as likely as a randomly selected student to need remedial help in two or more skill areas, indicating that their academic disability was pervasive. As one might expect, we found that English language deficiency is significantly associated with a decline in SAT scores, 73.58 points on the verbal section and 18.45 points on the math section.

Table 4. Demographics as Independent Variables of College Entrance Test Performance on College Entrance Exams (CUNY Students Only)

INDEPENDENT VARIABLES	Outcome Variables											
	FSATs			Remedial Designation			Number of Remedial Subjects				SAT I	
	RAT	MAT	WAT	Reading	Math	Writing	1	2	3	2 or 3	Verbal	Math
Sample size	8401	8416	8433	8559	8559	8559	8559	8559	8559	8559	5686	5686
% Variance explained	20	13	22	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	12	17
Coefficients												
Male	0.56 ***	0.99 ***	-0.24 ***	0.85 ***	0.80 ***	1.40 ***	1.16 **	0.96	0.95	0.93	9.93 ***	30.94 ***
White	1.08	0.12	0.73 **	0.75	1.01	0.45	0.79	0.84	0.67	0.70	-27.96	-4.14
Black	-2.08	-2.50	0.14	1.61	1.90	1.02	0.68	1.17	1.98	1.68	-62.60 **	-52.46 *
Hispanic	-1.33	-2.32	0.22	1.38	1.77	0.88	0.69	0.93	1.85	1.40	-54.88 **	-43.23
Asian	-0.80	2.61	0.34	1.17	0.49	0.79	0.71	1.37	0.60	0.99	-35.51	27.74
United States	-0.18	-0.25	-0.05	1.07	1.09	1.12 *	0.94	1.23 **	0.98	1.18	-5.81 *	-10.32 **
Asia-East	-0.66 *	3.80 ***	-0.51 ***	1.19	0.34 ***	2.15 ***	1.19	2.18 ***	0.34 ***	1.26 ***	-11.40 *	45.88 ***
Asia-West	-0.84	-0.19	0.03	1.30	1.08	0.88	1.13	1.00	1.26	1.00	-29.10 **	-32.58 ***
PR & Caribbean	-0.88 **	-0.55 *	-0.25 ***	1.22 **	1.20 **	1.62 ***	0.86	0.85 *	1.38 ***	1.32 ***	3.06	-10.74 **
Former USSR	1.58 ***	3.61 ***	0.25 **	0.72 **	0.44 ***	0.73 **	1.49 **	1.14	0.61 **	0.62 **	-6.69	41.03 ***
C & S America; Mexico	-0.63 *	0.39	-0.27 ***	1.22 *	0.91	1.60 ***	1.10	1.14	1.02	1.22	3.39	-7.47
LEP status	-7.03 ***	-1.77 ***	-1.32 ***	5.31 ***	1.60 ***	5.54 ***	0.47 ***	2.40 ***	2.74 ***	5.22 ***	-73.58 ***	-18.45 ***
Age in months	-0.06 ***	-0.04 ***	-0.01 ***	1.02 ***	1.01 ***	1.02 ***	1.00 *	1.01 **	1.01 ***	1.02 ***	-0.46 **	-0.36 **

Statistical significance:* = (p<.05); ** = (p<.01); and *** = (p<.001)

Demographics and secondary school data as independent variables. Table 21 combines high school variables with the demographic variables from Table 20. This expanded regression model proved quite robust in accounting for college entrance exam results, explaining 43% of the variance in the RAT, 54% in the MAT, 38% in the verbal SAT and 48% in the math SAT. The most powerful variables were type of high school and type of diploma. Attending a National Merit high school, for example, was significantly and positively related to RAT and MAT scores, signaling that students from those schools would need little remediation in college. In addition, having a Regents diploma was highly and positively related to SAT scores, accounting for 26.42 points on the verbal section and 27.07 points on the math section of the SAT.

Table 5. Demographics and High School Data as Independent Variables of Performance on College Entrance Exams (CUNY Students Only)

INDEPENDENT VARIABLES	OUTCOME VARIABLES											
	FSATs			Remedial Designation			Number of Remedial Subjects				SAT I	
	RAT	MAT	WAT	Reading	Math	Writing	1	2	3	2 or 3	Verbal	Math
Sample size	5788	5798	5824	5908	5908	5908	5908	5908	5908	5908	4343	4343
% Variance explained	43	54	29	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	38	48
Coefficients												
Male	1.25 ***	0.98 ***	-0.16 ***	0.66 ***	0.74 ***	1.27 ***	1.30 ***	0.85 **	0.80 **	0.74 ***	17.60 ***	34.06 ***
White	-1.62	-2.00	0.64 **	2.21	3.24	0.42	0.55	1.54	2.00	1.99	-27.94	-8.73
Black	-1.60	-1.62	0.53 *	2.25	2.79	0.52	0.53	1.55	2.56	2.19	-24.80	-16.78
Hispanic	-1.52	-1.82	0.55 *	2.31	3.01	0.49	0.55	1.42	2.96	2.12	-27.42	-19.58
Asian	-2.84 **	-0.70	0.38	3.38	1.88	0.71	0.54	2.22	2.34	3.02	-26.39	14.05
United States	0.09	0.26 *	-0.02	1.02	0.93	1.09	0.87 *	1.30 **	0.79 *	1.19 **	1.25	-0.55
Asia-East	-1.29 ***	1.03 **	-0.59 ***	1.70 **	0.82	2.65 ***	1.11	2.19 ***	0.82	2.23 ***	-11.86 **	25.01 ***
Asia-West	-0.76	-0.86 *	0.05	1.43	1.97 **	0.79	1.19	0.64 *	2.67 **	0.96	-21.58 **	-26.12 **
PR & Caribbean	-0.45	-0.48 **	-0.29 ***	1.22	1.35 **	1.58 ***	0.97	0.99	1.65 **	1.37 **	2.92	-10.56 **
Former USSR	-0.33	1.12 **	-0.17	1.21	0.94	1.16	0.90	1.23	1.64	1.36	-13.54 *	19.51 **
C & S America; Mex	-0.60 *	-0.35	-0.21 **	1.26	1.28	1.50 **	0.99	1.16	1.41 *	1.41 **	2.50	-7.45
LEP status	-2.16 ***	-0.01	-0.44 ***	2.10 ***	1.12	2.15 ***	0.81 **	1.88 ***	1.21	2.32 ***	-28.49 ***	7.86 **
Age in months	-0.02 **	0.00	0.00	1.01 **	1.00	1.01 *	1.00	1.00	1.01	1.01 *	-0.18	-0.17
CPI English	0.80 ***	0.00	0.13 ***	0.81 ***	0.97	0.78 ***	1.07 **	0.96	0.83 ***	0.82 ***	4.63 ***	1.47
Highest level math course	0.29 ***	1.63 ***	-0.02	0.88 ***	0.54 ***	1.01	1.12 **	0.90 **	0.63 ***	0.75 ***	2.93 **	20.06 ***
Regents English	0.25 ***	0.06 ***	0.04 ***	0.92 ***	0.98 ***	0.93 ***	1.01 ***	0.97 ***	0.95 ***	0.92 ***	3.41 ***	1.26 ***
Regents Math	0.04 ***	0.14 ***	0.01 ***	0.99 ***	0.95 ***	0.99 ***	1.00	1.00	0.96 ***	0.98 ***	0.56 ***	1.47 ***
Days absent	0.09 ***	0.01 *	0.01 ***	0.97 ***	1.00	0.99 **	1.01 **	0.98 ***	0.99 **	0.97 ***	1.02 ***	0.93 ***
Time in high school	0.01	-0.01	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.02	-0.23
CAA	0.02 *	0.02 **	0.01 **	1.00	1.00	0.99	1.00	1.00	1.00	0.99	0.46 **	0.32
Number of schools attended	-0.18	0.16	-0.04	1.05	1.05	1.00	1.07	0.93	1.15	0.98	-0.30	2.02
Type: SURR	-0.33	-0.21	-0.05	1.16	1.03	1.28	0.70 *	1.41 *	0.89	1.43 *	11.54	14.49 *
Type: National Merit	1.28 ***	0.67 ***	0.24 ***	0.71 **	1.05	0.73 **	0.73 **	0.70 **	1.00	0.76 **	22.83 ***	22.38 ***
Type: vocational	0.07	0.59	-0.06	1.07	1.04	1.19	0.93	1.46 *	0.83	1.30	0.43	4.88
Diploma: Regents	1.60 ***	0.81 ***	0.26 ***	0.52 ***	0.67 **	0.69 ***	0.57 ***	0.42 ***	0.45 **	0.62 ***	26.42 ***	27.07 ***

Statistical significance:* = (p<.05); ** = (p<.01); and *** = (p<.001)

Demographics and elementary school data as independent variables. Even going back as far as the 8th grade, we can see the influence of early achievement on college remediation. Table 22 shows that demographics and 8th grade test scores were related to FSAT results, assignment to remedial courses by subject and number, and performance on the verbal and math portions of the SAT. DRP scores were highly and significantly associated with FSAT scores and remedial designation by subject and number of subjects. LEP status remained a key factor, making students 1.27 times as likely as a randomly selected student to be remedial in reading at CUNY.

Table 6. Demographics and 8th Grade Test Scores as Independent Variables of Performance on College Entrance Exams

INDEPENDENT VARIABLES	OUTCOME VARIABLES											
	FSATs			Remedial Designation			Number of Remedial Subjects				SAT I	
	RAT	MAT	WAT	Reading	Math	Writing	1	2	3	2 or 3	Verbal	Math
Sample size	3612	3629	3641	3688	3688	3688	3688	3688	3688	3688	2647	2647
% Variance explained	50	46	27	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	(odds ratio)	44	46
Coefficients												
Male	-0.28 *	0.23	-0.38 ***	1.10	0.98	1.80 ***	1.05	0.96	1.39 **	1.26 **	0.29	18.44 ***
White	0.65 **	-2.97 ***	0.19 **	0.74 *	3.24 ***	0.63 **	1.05	0.78 *	1.65 **	0.91	-9.59 **	-39.64 ***
Black	0.03	-2.39 ***	-0.03	0.98	2.66 ***	0.95	0.96	0.72 **	2.62 ***	1.14	-11.42 **	-49.98 ***
Hispanic	0.07	-2.44 ***	-0.05	1.09	2.64 ***	0.94	1.08	0.70 **	2.90 ***	1.11	-13.54 **	-47.82 ***
United States	-0.26	-0.08	-0.06	1.04	1.05	1.10	0.91	1.08	0.99	1.14	-1.06	-3.52
Asia-East	0.29	2.40 ***	-0.52 ***	0.70	0.38 **	1.99 **	1.20	1.72 *	0.23 **	1.09	11.17	37.98 ***
Asia-West	-0.18	0.76	0.15	1.51	1.48	0.73	0.60	0.80	1.78	1.26	8.81	9.26
PR &Caribbean	-0.22	0.22	-0.12	1.05	1.05	1.20	0.95	0.81	1.14	1.08	4.37	-1.95
Former USSR	1.51	0.97	0.11	1.02	0.90	0.86	0.55	1.48	0.75	1.36	-1.27	15.89
C & S America; Mex	-0.38	1.08 **	-0.07	0.95	0.66 *	1.06	1.44 **	0.90	0.59 *	0.72	9.43	8.69
LEP status	0.23	0.81 **	-0.19 **	1.27	0.89	1.40 *	0.70 *	1.03	0.76	1.35	3.03	13.65 **
Age in months	0.00	0.00	0.00	1.01	1.00	1.01	1.00	1.00	1.00	1.01	-0.22	-0.09
DRP score	0.17 ***	0.03 ***	0.02 ***	0.94 ***	0.99 ***	0.97 ***	1.01 **	0.98 ***	0.96 ***	0.96 ***	2.22 ***	0.56 ***
CAT-Math score	0.05 ***	0.14 ***	0.01 ***	0.98 ***	0.96 ***	0.99 ***	1.01 **	0.99 ***	0.97 ***	0.97 ***	0.55 ***	1.68 ***
Number of accelerated courses	0.21 **	0.57 ***	0.09 ***	0.86 **	0.73 ***	0.83 ***	0.76 ***	0.76 ***	0.64 ***	0.81 **	6.07 ***	11.39 ***
NYC public K-8 school	0.05	-0.48	0.07	0.68	1.83	1.22	1.25	0.48 *	4.01 **	0.75	-5.61	12.75

Statistical significance:* = (p<.05); ** = (p<.01); and *** = (p<.001)

D. Understanding Performance in College-Level and Remedial Courses at CUNY

Finally, we looked for the inter-relationship among demographics, performance on college entrance exams and performance during freshman year at CUNY. Our outcome variables were:

- the number of equated (remedial) credits attempted, failed and accumulated;
- the rate at which equated credits were accumulated;
- number of college-level credits attempted, failed and accumulated; and
- grade point average (adjusted for number of courses).

We found that LEP and remedial status in reading and math at the end of 8th grade were powerfully associated with college success.

Demographics as independent variables. As in our previous analyses, our first step was isolating the influence of demographics on college performance. Table 23 shows that gender, country of origin and LEP status were related to equated and college-level credit accumulation during the freshman year at CUNY. Being male was significantly associated with attempting more and passing fewer equated credits and attempting and passing fewer college-level credits. Being from the former USSR – and to a lesser extent from Asia-East, Puerto Rico and the Caribbean – was positively and significantly associated with both equated and college-level credit accumulation.

Notably, LEP students, who until this point were the chronic under-achievers within the total cohort, showed some strength in accumulating equated credits. Their success in remediation appeared to be at the expense of their performance in college-level courses, where they attempted fewer college-level credits and had trouble passing them.

Table 7. Demographics as Independent Variables of College Performance (CUNY Students Only)

INDEPENDENT VARIABLES	OUTCOME VARIABLES								
	Equated Credits			College-Level Credits					Equated Accum. / Equated Attempt.
	Attempt.	Failed	Accum.	Attempt.	Failed	Accum.	GPA	Adjusted GPA	
Sample size	8201	8201	8201	8201	8201	8201	8306	7996	6222
% Variance explained	14	1	10	12	2	8	5	8	2
Coefficients									
Male	0.25 **	0.11 **	-0.08	-0.37 ***	0.37 ***	-0.71 ***	-0.21 ***	-2.99 ***	-0.06 ***
White	0.19	0.39	0.30	0.68	0.30	0.82	0.08	4.11	0.13
Black	2.61 **	0.53	1.68 *	-1.62 *	0.09	-1.39	-0.22	-3.87	0.07
Hispanic	2.14 **	0.59	1.43	-1.19	0.20	-1.15	-0.16	-2.49	0.08
Asian	0.82	0.36	0.62	0.06	-0.10	0.31	0.10	2.43	0.11
United States	0.12	-0.07	0.10	-0.20 *	-0.07	-0.18	-0.06 **	-0.57	0.01
Asia-East	0.41	-0.15	0.38 *	-0.19	-0.30 **	0.42	0.25 ***	2.46 **	0.01
Asia-West	-0.24	-0.10	0.12	0.48	-0.03	0.50	0.04	1.90 *	0.06
PR & Caribbean	0.24	-0.26 ***	0.53 **	-0.09	-0.33 **	0.25	0.15 ***	1.13 *	0.04 **
Former USSR	-1.11 ***	-0.30 **	-0.22	1.05 ***	-0.44 **	1.55 ***	0.22 ***	4.97 ***	0.12 ***
C & S America; Mex	0.81 ***	-0.14	0.89 ***	-0.25	-0.36 **	0.12	0.12 **	0.24	0.06
LEP status	3.38 ***	0.07	2.65 ***	-2.42 ***	-0.40 ***	-1.86 ***	0.07 **	-4.78 ***	0.02 *
Age in months	0.03 ***	0.00 **	0.02 ***	-0.03 ***	0.00	-0.03 ***	0.00	-0.07 ***	0.00 *

Statistical significance:* = (p<.05); ** = (p<.01); and *** = (p<.001)

Demographics and college entry data as independent variables. Table 24 combines demographic data from Table 23 with college entrance data to create a more comprehensive model for explaining college performance. Being remedial in any subject – reading, writing or math – was negatively and significantly associated with number of college-level credits attempted and accumulated. Being remedial in more than one subject was negatively but not significantly associated with the same outcome. These phenomena strongly suggest that the remedial burden seriously inhibits students from advancing toward a CUNY degree

Table 8. College Entrance Test Data as Independent Variables of College Performance

INDEPENDENT VRIABLES	OUTCOME VARIABLES								
	Equated Credits			College-Level Credits					Equated Accum. / Equated Att.
	Attempt.	Failed	Accum.	Attempt.	Failed	Accum.	GPA	Adjusted GPA	
Sample size	5215	5215	5215	5215	5215	5215	5357	5101	3693
% Variance explained	46	5	28	41	3	24	10	26	7
Coefficients									
Male	0.40 ***	0.11 ***	0.01	-0.46 ***	0.45 ***	-0.93 ***	-0.27 ***	-4.13 ***	-0.07 ***
White	0.66	0.24	1.05	-0.51	0.21	-0.19	-0.21	-0.37	0.24
Black	1.47	0.19	1.57	-1.34	0.09	-1.10	-0.33	-3.87	0.24
Hispanic	1.17	0.28	1.31	-1.18	0.17	-1.14	-0.30	-3.39	0.22
Asian	1.16	0.22	1.13	-0.97	-0.21	-0.63	-0.18	-1.71	0.19
United States	0.06	-0.07	0.09	-0.18	-0.16 ***	-0.13	-0.02	-0.27	0.02
Asia-East	0.75 ***	0.04	0.42 ***	-0.45 ***	-0.23	0.06	0.16 ***	1.05	-0.02
Asia-West	-0.51	-0.15	-0.11	0.40	-0.12	0.48	0.10	2.21 ***	0.05
PR & Caribbean	-0.27	-0.18 ***	0.18	-0.03	-0.22	0.14	0.06	0.68	0.05 ***
Former USSR	-0.03	-0.09	0.19	0.27	-0.52 ***	0.87 ***	0.12 ***	3.04 ***	0.06
C & S America; Mex	-0.21	-0.15	0.20	0.33	-0.33 ***	0.53 ***	0.10	1.65 ***	0.09 ***
LEP status	0.73 ***	-0.10	0.74 ***	-0.40 ***	-0.20 ***	-0.23	0.21 ***	0.61	0.04 ***
Age in months	0.01	0.00	0.00	-0.01	0.00	-0.01	0.00	0.00	0.00
RAT	-0.08 ***	0.00	-0.05 ***	0.06 ***	0.00	0.06 ***	0.01 ***	0.20 ***	0.00 ***
MAT	-0.10 ***	-0.03 ***	-0.03 ***	0.10 ***	-0.02	0.12 ***	0.03 ***	0.50 ***	0.01 ***
WAT	-0.59 ***	0.01	-0.36 ***	0.45 ***	-0.06	0.44 ***	0.04 ***	1.53 ***	0.02 ***
Remedial in reading	1.30 ***	0.06	1.23 ***	-1.15 ***	-0.27 ***	-0.85 ***	0.01	-2.33 ***	0.07 ***
Remedial in math	1.31 ***	0.22 ***	0.72 ***	-1.01 ***	-0.25 ***	-0.64 ***	0.11 ***	0.06	-0.03
Remedial in writing	0.22	0.16 ***	0.33	-0.45 ***	-0.38 ***	-0.17	0.02	-0.31	0.02
Remedial in 2 or 3 subjects	0.48 ***	-0.03	0.25	-0.25	-0.05	-0.16	0.04	0.05	-0.04
SAT verbal score	0.00	0.00	0.00	0.00	0.00	0.00	0.00 ***	0.00	0.00
SAT math score	0.00 ***	0.00 ***	0.00 ***	0.00 ***	0.00	0.00	0.00 ***	0.01 ***	0.00

Statistical significance:* = (p<.05); ** = (p<.01); and *** = (p<.001)