ABSTRACT
            This study investigated differences in performance on the Law
School Admission Test (LSAT) and subsequent applications and admission
decisions separately for men and women. Data were drawn from the 1990-1991
law school applicant pool, a total of 83,336 applicants, who generated
417,103 applications at 178 law schools. The undergraduate grade point
average data presented in this study are consistent with hundreds of studies
that report that women earn higher grades than men at both the high school
and undergraduate levels. Data do not support a need for concern that female
test takers are differentially selecting themselves out of the applicant
pool. Nor do data support concerns about negative social consequences
resulting from women's slightly lower LSAT scores. An appendix shows
undergraduate majors of the sample. (Contains 11 figures, 26 tables, and 16
references.) (SLD)

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■ **Analysis of LSAT Performance and Patterns of Application for Male and Female Law School Applicants**

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■ Law School Admission Council
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ANALYSIS OF LSAT PERFORMANCE AND PATTERNS OF APPLICATION FOR MALE AND FEMALE LAW SCHOOL APPLICANTS

INTRODUCTION

In recent years, virtually all higher education admission testing programs have reported small but consistent differences favoring men's over women's scores on multiple-choice tests of verbal reasoning ability. Unlike the more substantial differences in quantitative performance that have been reported for many years, typically, differences in verbal scores tend to be neither large nor of apparent practical significance. Nevertheless, the consistency of these differences both within and across different testing programs demands that the phenomenon be understood to the extent possible. More importantly, little is known about the impact of even slightly lower scores earned by women on their subsequent decisions about applying to and attending college, graduate school, or professional school.

With regard to the latter point, the research literature supporting differential tendencies toward risk-taking behaviors between men and women suggests that women's response to the lower admission test scores, in terms of patterns of application, deserves special study. A series of studies about gender differences in risk taking tended to find greater evidence of risk taking among boys than among girls (e.g., Kass, 1964; McManis & Bell, 1968; Slovic, 1966). More recently, Ben-Shakhar and Sinai (1991) considered the theory of higher risk-taking tendency among males as an explanation for differential guessing behavior between men and women. In support of their hypothesis of differential guessing as a consequence of a differential personality dimension of risk taking, the authors found evidence of differential guessing among high school and college students even on tests where students explicitly were advised to guess. The support in the literature for lesser risk taking among women raises the question of whether even slightly lower test scores among female Law School Admission Test (LSAT) takers might either (1) discourage

lower-scoring women from applying to college, graduate school, or professional school at all or (2) discourage women from applying to the better or more competitive schools.

One purpose of this study is to investigate differences between men and women in performance on the LSAT. A second purpose is to investigate the possible social consequences of the slightly lower scores earned by women. More specifically, the uniqueness of the database maintained by the Law School Admission Council allows the investigation to be extended beyond differences in test performance to explore what role, if any, these slightly lower test scores earned by women might play in their subsequent law school application processes and decisions. The phenomena that precipitated this investigation include:

o   a small but persistent difference in performance on the LSAT between men and women,

o   continued underrepresentation of women in professional schools, and

o   documented disparities between test performance and academic achievement at the undergraduate level.

The LSAT is a half-day standardized test required for admission to most U.S. and Canadian law schools. It consists of four 35-minute sections of multiple-choice questions designed to measure skills considered essential for success in law school. The three item types included in the LSAT are reading comprehension, logical reasoning, and analytical reasoning. The average LSAT score for women is approximately one scaled score point below the average score for men on the 120-180 LSAT scale that has been in use since June 1991, and .8 scaled score point on the 10-48 LSAT scale used between June 1982 and February 1991. It is the persistence rather than the magnitude of these differences that warrants investigation. A compelling cause for concern is the consistency of the LSAT findings with the disparity

found in other paper and pencil multiple-choice admission tests that measure the same kinds of skills. Men traditionally have scored higher than women on the SAT-M, but recent trends show men now scoring higher on both sections of the SAT (Burton, Lewis, & Robertson, 1988). Burton et al. reported a change from equal scores for men and women on the SAT verbal test in 1975 to a 12-point disparity in favor of men in 1985. Looking only at college bound seniors, an 8- to 10-point verbal score difference persists in the 1990 through 1992 data. Quantitative score differences are considerably larger for these populations. GRE verbal score differences are much smaller, ranging from a 1.4-score point advantage for women in 1989-90 to a 1.6-point advantage for men in 1991-92. As is the case for SAT quantitative scores, the male-female differences for GRE quantitative scores are considerably larger in favor of males. The GRE analytical score differences show an 11- to 13-point advantage for men during the same time period. The analytical reasoning (AR) difference is particularly relevant to the LSAT investigation because the AR test contains item types that are parallel to the logical reasoning and analytical reasoning items that make up approximately 75 percent of the LSAT. The GMAT also reports total score mean scores for men that exceed those of women by 19 to 27 points across the period 1986-87 through 1990-91 (Graduate Management Admission Council, 1992). The GMAT total score is a combination of 70 verbal items and 65 quantitative items. Most of the total score difference is attributable to differences in performance on the quantitative sections. The Medical College Admission Test (MCAT) reports higher test scores for men in the physical science and biological science scores, but virtually identical scores for verbal reasoning.

In absolute terms, the differences between men and women seem to be substantially larger for these other testing programs than they are for the LSAT. However, the different testing programs report scores on a variety of different score scales. A more meaningful way to compare the differences is first to convert them to standard deviation units. The data in Table 1 show male-female differences in standard deviation units for the admission tests previously discussed. These data suggest that the male-female differences found in the LSAT are approximately equal to those found in the GRE Analytical and the SAT Verbal·

measures and larger than the differences found in the GRE Verbal, GMAT Verbal, and the MCAT Verbal

Reasoning measures.

Table 1

Standardized Mean Score Difference Between Men and Women in Selected Admission Testing Programs (Men Minus Women)

Testing Program		Year		
		1989-90	1990-91	1991-92
LSAT	Total	0.14	0.09	0.13
SAT	Verbal	0.09	0.07	0.08
	Quantitative	0.36	0.36	0.35
GRE	Verbal	-0.01	0.01	0.01
	Quantitative	0.66	0.68	0.66
	Analytical	0.11	0.08	0.09
MCAT	Biology	0.28	0.33	NA
	Physical Science	0.43	0.43	NA
	Verbal Reasoning	0.00	0.04	NA
GMAT	Total	0.26	0.26	0.28
	Verbal	0.02	0.02	NA
	Quantitative	0.43	0.42	NA

As noted previously, one reason to be concerned about these differences is their consistency; another is

that women continue to be underrepresented in professional schools. Although 53 percent of the

bachelor's degrees conferred in 1989-90 were awarded to women, only 39 percent of the professional

degrees conferred in 1992 were awarded to women. Consistent with the pattern found among all

professional degrees, 42.7 percent of the J.D./LL.B degrees conferred in 1992 by ABA-approved schools

were awarded to women (ABA, Section of Legal Education, 1993.) These figures are inconsistent with

expectations based on the reported 4.6 percent of women compared with 4.1 percent of men from the fall

1991 entering college freshmen who identify LL.B or J.D. as the highest degree they plan to obtain (*The Chronicle of Higher Education Almanac*, 1992). That is, female aspirants are somehow being lost along the way.

This study will focus on the 1991 law school applicants and will begin to address questions related to the above general observations. More specifically,

o   Are the differences in LSAT scores between male and female test takers also evidenced in the pool of applicants in a given application year?

o   Are the differences between test scores earned by men and women still observed when men and women are matched on certain demographic and educational characteristics (e.g., age, ethnicity, undergraduate major)?

o   Do lower scoring women disproportionately remove themselves from the applicant pool?

o   What role do test scores play in the law school application and selection process? That is:

        (1) Is gender a significant variable in a model of the probability of admission to a particular school? What happens when background variables such as ethnicity are taken into account?

        (2) Are women applying to lesser quality law schools as a consequence of lower test scores?

This report provides two distinct areas of comparison between male and female law school applicants. First, the two standard quantifiable variables that are considered in most admission processes—LSAT score and undergraduate grade point average (UGPA)—are examined to better understand the magnitude and nature of the differences. In this regard, not only are score distributions studied, but differences are reexamined in the context of the demographic breakdowns within a gender group. Second, information about law school applications and admission decisions is provided, including development of a model of the probability of women gaining admission to a particular law school. The results from these probability calculations are compared with the actual admission rates for male and female applicants to the same schools.

METHODS

Description of the Sample

The data reported in this study were drawn from the 1990-91 law school applicant pool. More specifically, the data represent applicants and applications to 173 U. S. American Bar Association (ABA)-approved law schools plus five Canadian law schools that provide application and decision data to the Law School Admission Council. The Law School Admission Council maintains a database that includes not only the standard application credentials (LSAT score and UGPA) and demographic variables, but also information about which test takers applied to law school, where they applied, and what admission decision was made by each school. Only applicants who completed their application to at least one law school and for whom an admission decision was reported by the law school are included. Those 2,551 applicants who did not report gender on their application for the LSAT nor on the application for the Law School Data Assembly Service (LSDAS) are not included in the analyses, leaving 88,336 applicants in

the study sample. The 88,336 applicants included in these analyses generated 417,103 applications to the 178 studied law schools.

Test Performance Data

This portion of the study presents data about LSAT scores and undergraduate GPAs for men and women, taking into account other demographic differences between these two groups. First, the distributions of LSAT scores for male and female law school applicants were compared with the distributions by gender of scores for all 1989-90 and 1990-91 test takers.

Approximately 22 percent of law school applicants took the LSAT more than one time. For those applicants who tested multiple times, their test scores are averaged in all the analyses reported in this study.

The 1989-90 and 1990-91 testing years produced the test scores for the vast majority of 1990-91 applicants. The data allowed comparison of differences in performance between male and female test takers and between male and female applicants. They also allowed evaluation of the presence of differential self selection into the applicant pool. Next, the applicant distributions were compared one to the other at selected centile points across the scaled score range to determine whether there is any interaction between gender and ability level. Some recent work with scores on the Iowa Tests of Basic Skills (Han & Hoover, 1994) demonstrated that, although on average males scored only slightly higher than females on math, social studies, and science measures, at the means (1) males outperformed females at the upper achievement levels considerably more than at the median and below, and (2) females were slightly better than males at low percentile rank levels. Centile rank comparisons were made to determine whether similar patterns could be found among law school applicants.

Finally, demographic variables were examined to determine whether some of the observed difference in performance on the LSAT could be accounted for by differences in the demographic makeup of the two groups. Three variables were studied: age, ethnicity, and undergraduate major area. These variables were selected because each was hypothesized to be related to LSAT score and to be distributed differently for males than for females. There is some support in the literature for the proposition that these three variables also are related to each other. For example, black and Hispanic students tend to be relatively overrepresented in social science majors and underrepresented in humanities and physical science majors (Brown, 1987). Additionally, the proportions of black, American Indian, and Hispanic high school graduates who delay entry to postsecondary institutions or stop out for some period tend to exceed the proportions for white students (National Center for Educational Statistics, 1985). These data are consistent with law school data showing that law students from these ethnic groups tend to be older than white students.

Ordinary least squares multiple linear regression was used to estimate the impact of each of the three variables on the observed LSAT score difference. The goal was to determine whether some of the differences that are observed between male and female test takers would be adjusted by taking account of these variables. To attempt to address this issue, gender plus one or more of the demographic variables served as the independent variables and LSAT score served as the dependent variable in a least squares multiple regression model. The adjustments were made singly and then in combination. To aid in the interpretation of the results, gender was coded -1 for females and 1 for males in each model. The consequence of this dummy coding is that two times the unstandardized regression weight for gender is the adjusted mean difference between men and women on the dependent variable. Interactions among the demographic variables were included in the models for some preliminary analyses, but the resulting multiple Rs were essentially unchanged so analysis models including interactions were not pursued.

Law School Application Data

This section of the study provides information about law school applications and acceptances separately for male and female applicants. One purpose of this part of the investigation was to determine whether men and women demonstrate different patterns of applying to law school. The primary variables used to study these patterns for male and female applicants were LSAT scores and undergraduate grade point averages (UGPAs). Both are important factors in admission decisions for most law schools and for the purpose of these analyses are the only universally used quantifiable variables. Additionally, both of these measures have been validated for use in the admission process at all law schools included in this study. The number of applications submitted and selected characteristics of the law schools also were considered in the analyses included in this study. More specifically, differences between male and female applicants in LSAT score and UGPA were examined between and within law schools. The number of applications generated by men and women and the application credentials of the applicants relative to the credentials of the accepted students at the schools of application also were studied.

Law School Admission Data

A second purpose of the study of law school application and admission data was to determine whether applicants with similar application credentials have a differential probability of gaining acceptance to law school if they are women than if they are men. If differences exist between the proportion predicted to be accepted and the proportion actually accepted, it would suggest that law schools use different standards in reaching admission decisions for women than for men. These analyses are germane to evaluating concerns about potential gender bias, either conscious or unconscious, in the admission process, in contrast to the previous analyses that focus on the application decisions made by women themselves.

The methodology adopted to evaluate differential probability is logistic regression. Separate regression models were estimated for each law school. First, a logistic regression model was used to determine the probability of admission to a particular law school for a male applicant with a given LSAT score and undergraduate grade point average. The next step was to determine whether a female applicant with the same LSAT score and undergraduate grade point average had the same probability of admission.

The probability-of-admission model was produced for each law school using a binary-response model logistic-regression procedure. That is, the response variable only was allowed to take on one of two possible values—accepted or not accepted. For the data analyzed in this study, $Y = 1$ if the applicant is accepted and $Y = 2$ if the applicant is not accepted. The linear logistic model has the form

$$\text{logit}(p) = \log(p/(1-p)) = \alpha + \beta'x$$

where, for the model specific to this study,

x	is a vector of LSAT scores and UGPAs
p	is the probability that the applicant is accepted given his or her LSAT score and UGPA $(\Pr(Y = 1|x))$
α	is the intercept parameter
β'	is the vector of slope parameters

Using the logit estimate produced by the logistic model described above, the probability of each individual applicant being accepted is calculated as follows:

$$p = e^{\text{logit}(p)} / \left(1 + e^{\text{logit}(p)}\right)$$

The analysis of data for male and female law school applicants followed a model used by Willingham (1988) to evaluate admission decisions for undergraduate school applicants with disabilities. First, the group of female applicants is identified within each law school. Next, the likelihood that each female

applicant will be admitted to law school is estimated using the logistic function calculated for the law school being studied. The logistic regression weights were obtained using data from male applicants to that school. Finally, the likelihood estimates are summed to obtain the proportion of female applicants who would be expected to be admitted based exclusively on LSAT scores and undergraduate grade point averages. This estimated proportion is compared with the proportion of female applicants who, in fact, were admitted. The statistic of primary interest is the residual selection rate. The residual selection rate is calculated by subtracting the proportion actually admitted from the proportion expected to be admitted. If the residual is a negative number, the percentage actually admitted exceeds the percentage expected to be admitted. Conversely, if fewer female applicants are admitted than would be projected based on their LSAT scores and undergraduate grade point averages, the residual selection rate will be positive.

The probability models for male applicants were developed using data from 1991-92 applicants for whom LSAT scores, UGPAs, and final admission decisions were available. Decision data were provided by law schools as part of the LSAS decision entry process. The LSAT scores and undergraduate grade point averages were obtained from the Law Services' LSDAS applicant files. The undergraduate grade point average is computed either by the LSDAS or according to LSDAS procedures, following the computing options selected from the undergraduate school the student attended. Grades computed in this manner are expressed on a scale of 0.00 to 4.33. The UGPA used in this part of the study is the same as the UGPA reported to the law school by Law Services for each applicant. LSAT scores for the 1990-91 application year all were reported on the 10-48 LSAT score scale.

Applicants to a law school who withdrew their applications prior to an admission decision were eliminated from the analyses, as were those with law school decisions of "other." All other applicant decisions were recoded to either *accepted* or *not accepted*.

In addition to working with admission data summed across all law schools, data were examined within law schools that are similar in control. More specifically, schools were identified as public or private, and residuals were examined for public schools compared with private schools both across and within gender and ethnic group.

RESULTS AND DISCUSSION

Test Performance Data

The distribution of LSAT scores is shown separately for men and for women for the 1989-90 and the 1990-91 testing years in Table 2. These data include all test takers, and each test taker is represented one time only within the testing year. The average score is used for men and women who tested at more than one administration. The data in this table show that the distribution is fairly consistent across the two years. It also shows that the percent below is larger for women than for men at every score point across the score range. The proportions of male and female test takers at each scaled score point are shown separately for 1989-90 and 1990-91 test takers in Figures 1a and 1b, respectively. These figures illustrate that a slightly larger proportion of women than men score in the lower range of the scale and a slightly larger proportion of men than women score in the upper range. The shapes of the curves and the relative position of male and female test takers are essentially the same across the two years.

Table 2

LSAT Score Distribution by Gender for 1989-90 and 1990-91 Test Takers

| | Percent Below | | | |
| | 1989-90 | | 1990-91 | |
LSAT	Men	Women	Men	Women
48	99.0	99.4	99.4	99.6
47	98.2	98.8	98.6	99.1
46	96.9	97.9	97.8	98.6
45	95.7	97.1	96.5	97.7
44	93.7	95.5	94.9	96.4
43	91.5	93.7	93.3	95.1
42	89.1	91.8	90.5	92.5
41	85.7	88.8	87.5	90.1
40	81.9	85.5	84.1	86.7
39	78.0	82.0	80.1	83.0
38	74.8	79.1	76.3	79.5
37	70.0	74.7	71.4	74.9
36	65.3	70.4	66.7	70.3
35	60.6	65.9	61.8	65.5
34	55.5	60.9	56.9	60.5
33	50.4	56.1	50.9	54.4
32	45.6	51.4	46.1	49.4
31	40.7	46.5	41.3	44.5
30	36.3	41.6	36.7	39.9
29	32.4	37.5	32.0	34.9
28	28.4	33.2	27.1	30.1
27	24.9	29.4	23.1	25.9
26	21.1	25.1	19.8	22.2
25	18.1	21.8	16.8	18.9
24	15.3	18.6	14.4	16.1
23	13.4	16.5	11.9	13.6
22	11.2	13.9	9.8	11.1
21	9.5	11.7	8.0	9.0
20	7.8	9.6	6.5	7.2
19	6.5	8.1	5.2	5.7
18	5.4	6.6	4.2	4.5
17	4.3	5.1	3.2	3.4
16	3.5	4.1	2.6	2.6
15	2.8	3.3	1.9	1.9
14	2.2	2.5	1.5	1.5
13	1.7	1.9	1.2	1.1
12	1.3	1.4	0.8	0.7
11	1.0	1.0	0.7	0.6
10	0.0	0.0	0.0	0.0
Number	62,304	47,926	67,968	52,734
Mean	31.78	30.69	31.76	31.09
Standard deviation	8.08	8.07	7.59	7.47

Figure 1a

Distribution of LSAT Scores by Gender
1989-90 Test Takers
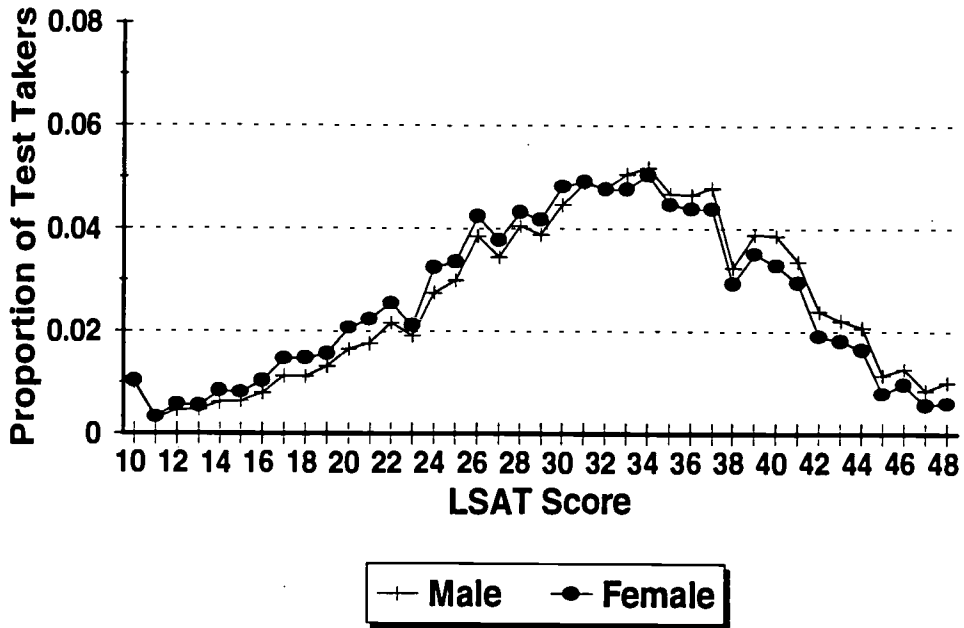
Figure 1b

Distribution of LSAT Scores by Gender
1990-91 Test Takers
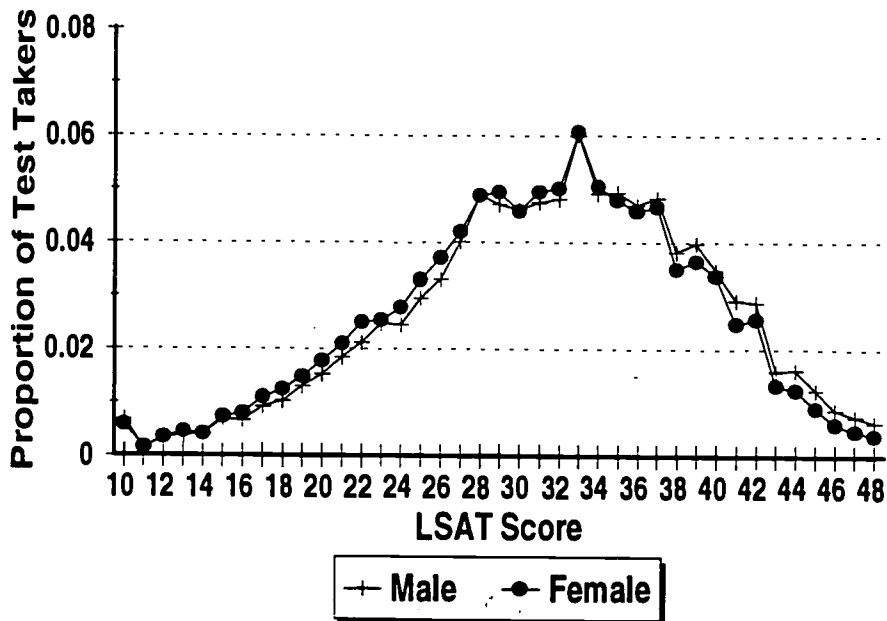
Table 3 shows the LSAT score distributions separately for men and women who became law school applicants during the 1990-91 application year. The first comparison of interest is between male and female applicants. The data in Table 3 show that the mean LSAT score difference between men and women is about the same (.12 in standard score units) as the difference between men and women who took the test in 1989-90 or in 1990-91 (.14 and .09 in standard score units). The second comparison of interest is between test takers and applicants, that is, between Table 2 and Table 3. One question of interest is whether women selected themselves out of the application process differentially from the selection exercised by men. The data in Tables 2 and 3 fail to support that hypothesis. Although the LSAT mean for applicants is larger than the mean for all test takers, the difference between male test takers and male applicants is slightly larger than the difference between female applicants and female test takers (1.7 for males compared with 1.25 for females.) The proportion of male and female law school applicants at each LSAT score point is shown in Figure 2. The relative position of male and female applicants is essentially identical to the positions observed for test takers. For both male and female applicants, the curves are shifted to the right, reflecting the increased means in both male and female applicant scores relative to the test taker groups. The cumulative distribution reported in Table 3 is illustrated in Figure 3.

Table 3

LSAT Score Distribution by Gender for 1990-91 Law School Applicants

	Percent Below	
LSAT	Men	Women
48	99.0	99.4
47	98.0	98.7
46	96.8	97.8
45	95.2	96.6
44	93.0	94.9
43	90.8	93.0
42	87.2	89.9
41	83.3	86.5
40	78.9	82.2
39	74.1	77.8
38	69.6	73.5
37	64.1	68.2
36	58.6	62.9
35	52.9	57.3
34	47.3	51.6
33	41.2	45.4
32	36.0	40.1
31	31.1	35.0
30	26.5	30.3
29	22.3	25.9
28	18.3	21.8
27	15.1	18.3
26	12.4	15.2
25	10.2	12.7
24	8.4	10.4
23	6.8	8.5
22	5.4	6.7
21	4.2	5.3
20	3.3	4.1
19	2.5	3.3
18	2.0	2.5
17	1.4	1.9
16	1.1	1.4
15	0.8	1.0
14	0.6	0.7
13	0.4	0.5
12	0.2	0.3
11	0.2	0.2
10	0.0	0.0
Number	51,103	37,233
Mean	33.60	32.78
Standard deviation	6.99	7.04

Figure 2

Distribution of LSAT Score by Gender
All 1990-91 Applicants
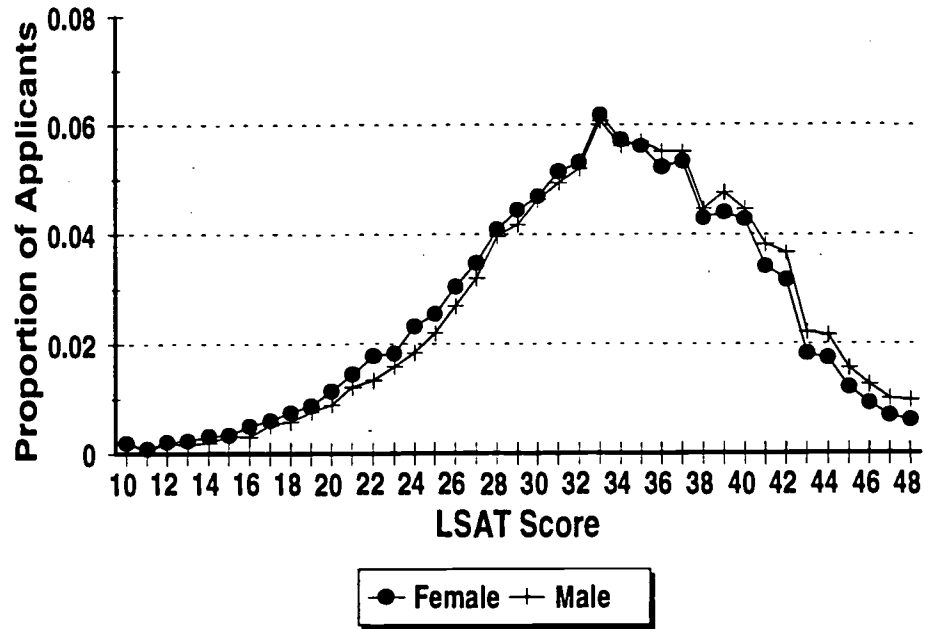
Figure 3

Cumulative Frequency Distribution of
LSAT Scores for Male & Female Apps.
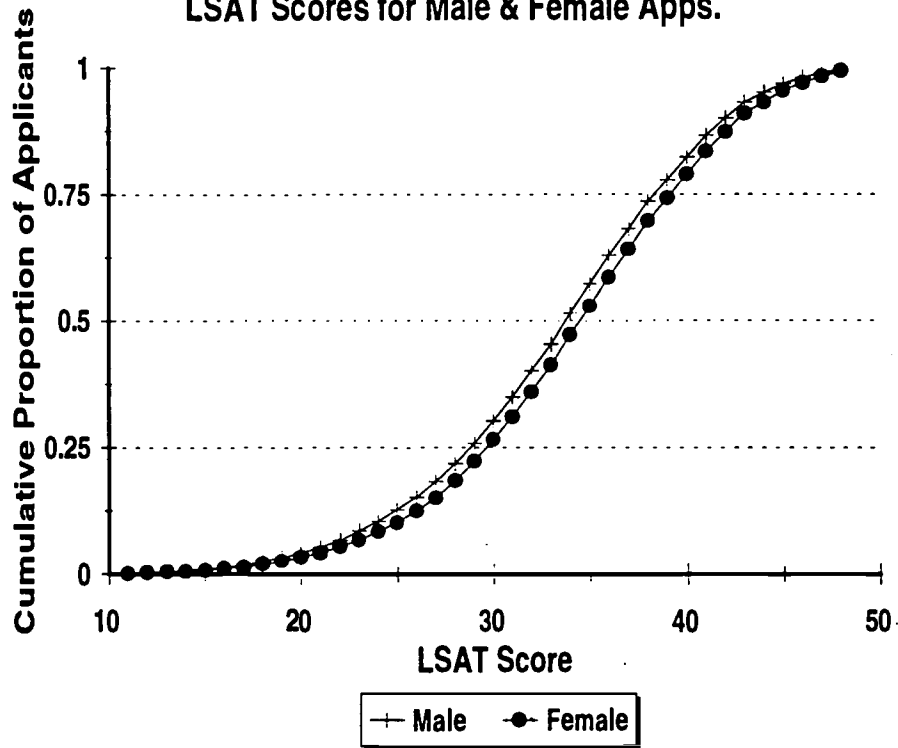
An important consideration is whether the mean difference between male and female applicants masks an interaction between ability and differential performance between men and women. The data in Table 4 show the mean LSAT score for men and women at selected percentile points representing the high, middle, and low ability levels of the distribution. These data clearly confirm that the slight differential performance favoring men on the LSAT is consistent throughout the score range. The differences between men and women at the 90th and 95th percentiles are nearly identical to the difference observed at the middle of the distribution (i.e., 50th percentile.) The largest differences are observed at the very bottom of the distribution, but the difference between the largest difference, observed at the 10th percentile and the smallest difference, observed at the 90th percentile is less than five hundredths of a standard deviation unit. These results are inconsistent with those reported by Han and Hoover (1994.) One explanation may be the self-selection of the students who elect to become law school applicants. Another may be the age difference between the subjects in the two studies. That is, whatever development lags are reflected in the Han and Hoover data may be closed by the time students graduate from college and select themselves into the competitive professional school admission process.

Table 4

Mean LSAT Scores and Score Differences for Men
and Women Applicants at Selected Percentile Ranks

Centile Rank	Mean LSAT		Difference	
	Men	Women	Raw	SD Units
c10	24.376	23.300	1.076	0.152
c25	29.141	28.292	0.850	0.120
c50	33.963	33.239	0.724	0.102
c75	38.659	37.850	0.809	0.114
c90	42.233	41.540	0.693	0.098
c95	44.330	43.578	0.752	0.106

Demographic Distribution Data

The distributions of male and female applicants by age group, gender, and undergraduate major are shown in Table 5. The data are shown both as raw numbers and percentages. The χ^2 for each of the distributions is statistically significant. However, the number of applicants is so large that determinations of statistical significance between male and female distributions are not meaningful. An estimation of effect size provides more useful information. Table 5 shows the difference between the percentage distributions for each of the three demographic variables in w units (Cohen, 1988). As a rule of thumb, a w of .10 is considered a small effect and a w of .30 is considered a medium effect. Only the ethnic group and major group distributions show small effect sizes.

Table 5

Distribution of 1990-91 Law School Applicants on Selected Demographic Variables

	Number Men	Number Women	Percentage Men	Percentage Women	Difference*
Age Group					
LT23	18,620	15,595	36.44	41.88	0.06
23-25	6,298	3,966	12.32	10.65	
26-29	11,124	6,910	21.77	18.56	
30PLUS	15,061	10,762	29.47	28.90	
Ethnic					
No Response	552	316	1.08	0.85	0.10
American Indian	268	210	0.52	0.56	
Asian American	1,905	1,703	3.73	4.57	
Black	2,977	3,993	5.83	10.72	
Canadian Aboriginal	34	29	0.07	0.08	
Hispanic	1,251	1,004	2.45	2.70	
Mexican American	623	464	1.22	1.25	
Other	730	508	1.43	1.36	
Puerto Rican	362	331	0.71	0.89	
White	42,401	28,675	82.97	77.02	
Majors					
Business	14,436	6,793	28.25	18.27	0.20
Computer Science	372	173	0.73	0.46	
Engineering	2,690	461	5.27	1.23	
Health Professions	397	978	0.79	2.65	
Humanities	7,804	9,391	14.09	23.05	
Natural Sciences	2,359	1,379	4.64	3.71	
Social Sciences	21,450	16,753	42.95	46.98	
Other	431	390	0.86	1.07	
Missing	1,164	915	2.39	2.58	

*The difference between the percentage distributions is in w units (Cohen, 1988): $\sqrt{\chi^2/N}$. A w of .10 is a small effect; w of .30 is a medium effect.

Age Group Distributions. The number of male applicants is larger than the number of female applicants in each of the four age groups. Looking between gender groups, the percentage of women who are younger than 23 years old is somewhat larger (41.88 versus 36.44) than the percentage of men in that age group. In contrast, the percentage of male applicants and the percentage of female applicants who are 30 years old or older are nearly identical. Despite the differences in the proportion of applicants who are younger than 23 years old, examination of the effect size for the gender by age group distributions confirms that overall there is essentially no meaningful difference between male and female applicants in their age group distributions.

Ethnic Group Distributions. In all ethnic groups except blacks, the number of male applicants is larger than the number of female applicants. The number of female black applicants exceeds the number of male black applicants by more than 1000. Looking between gender groups, the percentage of female applicants who are members of an ethnic minority group exceeds the percentage of male applicants in every named group. The most striking difference is between female black applicants, who make up 10.72 percent of the female applicant pool, and male black applicants, who make up only 5.83 percent of the male applicant pool. Only about 1 percent each of the male and female applicants declined to report the ethnic group to which they belong. The nonresponse rate is very small and is not likely to bias analyses and data interpretation for ethnic groups.

The number of male and female applicants who identified themselves as Canadian Aboriginal is very small (34 and 29, respectively). Because analyses using these small numbers are likely to be unstable, this ethnic group is not included in the regression analyses. Means and standard deviations of LSAT scores and UGPAs are reported because the numbers represent the entire population of Canadian Aboriginal applicants to schools included in this study.

Undergraduate Major Group Distributions. The large variety of undergraduate majors reported by law school applicants was collapsed into eight categories. The specific majors that comprise each category are listed in the Appendix.

The number of male applicants exceeds the number of female applicants in every undergraduate major category except health professions and humanities. A relatively small percentage of both female and male applicants comes from health professions majors, while humanities is the second largest major category for female applicants. Social science is the largest major category for both male and female applicants. but a slightly larger proportion of women than men reported a social science major. When comparing the percentage distributions, the largest effect size is observed for the distribution by majors ($w = .20$), but even this effect size is not quite large enough to be considered a medium effect.

Test Performance and UGPAs

Age Group Performance. Tables 6 and 7 present LSAT and UGPA means and standard deviations for 1990-91 law school applicants by gender and age group. The data in Table 6 show that male applicants earn higher LSAT scores than female applicants across each of the age groups. The largest difference is found between the youngest applicants, and the smallest between the oldest. Again, an effect size is included to assist in interpretation. Effect size is shown in d units (Cohen, 1988), where d is the male mean minus the female mean divided by the standard deviation for the total group. A d of .20 usually is considered to be a small effect size and a d of .50 a medium effect size. Even the largest difference is not quite large enough to be considered a small effect. Again, it is the consistency rather than the magnitude of the differences that is striking. For both male applicants and female applicants, the highest average LSAT scores are earned by the youngest applicants and the lowest are earned by the oldest. The standard deviations are slightly larger for women than for men in all age groups except the 30 Plus Group. For both males and females, the standard deviation is smallest for the youngest applicants and largest for those who are 30 and over.

Table 6

LSAT Means and Standard Deviations for 1990-91 Applicants
by Age Group and Gender

	LT23	23-25	26-29	30 PLUS
Women				
Number	15,595	3,966	6,910	10,762
Mean	33.85	33.20	32.69	31.15
Standard deviation	6.66	7.00	7.09	7.27
Men				
Number	18,620	6,298	11,124	15,061
Mean	35.00	33.89	33.60	31.76
Standard deviation	6.52	6.74	6.72	7.43
Total				
Number	34,215	10,264	18,034	25,823
Mean	34.47	33.62	33.25	31.51
Standard deviation	6.60	6.84	6.88	7.37
Difference				
Men-Women	1.15	0.69	0.91	0.61
Effect Size [*]	0.18	0.11	0.14	0.09

[*] Effect size is expressed as mean difference in d units (Cohen, 1988): (male mean-female mean)/total standard deviation. A d of .20 is a small effect size; a d of .50 is a medium effect size.

Table 7

UGPA Means and Standard Deviations for 1990-91 Applicants
by Age Group and Gender

	LT23	23-25	26-29	30 PLUS
Women				
Number	15,595	3,966	6,910	10,762
Mean	3.22	3.06	2.99	3.00
Standard Deviation	0.46	0.50	0.51	0.52
Men				
Number	18,620	6,298	11,124	15,061
Mean	3.15	2.96	2.89	2.83
Standard Deviation	0.46	0.50	0.51	0.54
Total				
Number	34,215	10,264	18,034	25,823
Mean	3.18	3.00	2.93	2.91
Standard Deviation	0.46	0.50	0.52	0.54
Difference				
Men-Women	-0.07	-0.10	-0.10	-0.17
Effect Size[*]	-0.15	-0.20	-0.19	-0.31

[*] Effect size is expressed as mean difference in d units (Cohen. 1988): (female mean-male mean)/total standard deviation. A d of .20 is a small effect size; a d of .50 is a medium effect size.

In contrast to Table 6, the data in Table 7 show that female applicants earn higher UGPAs than male applicants across all age categories. The effect size is larger for UGPA differences than for LSAT differences. For both the 23-25 age group and the 30 Plus age group, d meets or exceeds the value of a small effect size. Consistent with the findings for LSAT scores, the highest UGPAs both for male applicants and for female applicants are found among the youngest age group. Male applicants show the same linear trend for mean UGPAs across age groups as was found for LSAT score. UGPAs for women are more consistent with each other across the other age groups. The standard deviations are quite similar between men and women, and again are smallest for the youngest applicants and largest for those who are 30 and over.

Ethnic Group Performance. Tables 8 and 9 show LSAT score and UGPA means and standard deviations by gender and ethnic group. The LSAT score difference is positive, indicating that men earned higher LSAT scores than women, for every ethnic group except Asian Americans. A positive difference also is observed for those men and women who failed to report ethnicity.

Table 8

LSAT Means and Standard Deviations for 1990-91 Applicants by Ethnic Group and Gender

	No Response	American Indian	Asian American	Black	Canadian Aboriginal	Hispanic	Mexican American	Puerto Rican	White	Other
Women										
Number	316	210	1,703	3,993	29	1,004	464	331	28,675	508
Mean	32.64	29.58	33.25	24.84	31.79	29.76	29.55	25.04	34.16	31.56
Standard deviation	8.03	7.20	6.98	6.78	6.16	7.20	7.12	8.29	6.14	7.46
Men										
Number	552	268	1,905	2,977	34	1,251	623	362	42,401	730
Mean	34.61	30.84	33.19	25.14	32.24	30.30	29.73	27.12	34.45	32.31
Standard deviation	7.37	7.05	7.56	7.43	6.86	7.22	7.25	8.62	6.37	8.00
Total										
Number	868	478	3,608	6,970	63	2,255	1,087	693	71,076	1238
Mean	33.89	30.29	33.22	24.97	32.03	30.06	29.65	26.12	34.33	32.00
Standard deviation	7.67	7.14	7.29	7.06	6.50	7.21	7.19	8.53	6.28	7.79
Difference										
Men-Women	1.97	1.26	-0.06	0.30	0.45	0.54	0.18	2.08	0.29	0.75
Effect Size*	0.26	0.18	-0.01	0.04	0.07	0.07	0.03	0.24	0.05	0.10

* Effect size is expressed as mean difference in d units (Cohen 1988): (male mean-female mean)/total standard deviation. A d of .20 is a small effect size; a d of .50 is a medium effect size.

Table 9

UGPA Means and Standard Deviations for 1990-91 Law School Applicants by Ethnic Group and Gender

	No Response	American Indian	Asian American	Black	Canadian Aboriginal	Hispanic	Mexican American	Puerto Rican	White	Other
Women										
Number	316	210	1,703	3,993	29	1,004	464	331	28,675	508
Mean	2.83	2.93	3.12	2.74	2.65	3.01	2.96	2.92	3.16	3.08
Standard deviation	0.89	0.46	0.50	0.45	1.18	0.45	0.42	0.48	0.48	0.44
Men										
Number	552	268	1,905	2,977	34	1,251	623	362	42,401	730
Mean	2.82	2.82	2.99	2.64	2.73	2.89	2.85	2.87	3.01	3.00
Standard deviation	0.83	0.51	0.60	0.48	0.81	0.46	0.45	0.46	0.51	0.49
Total										
Number	868	478	3,608	6,970	63	2,255	1,087	693	71,076	1,238
Mean	2.82	2.87	3.05	2.70	2.69	2.95	2.90	2.89	3.07	3.03
Standard deviation	0.85	0.49	0.56	0.47	0.98	0.46	0.44	0.47	0.50	0.47
Difference										
Men-Women	-0.01	-0.11	-0.13	-0.10	0.08	-0.12	-0.11	-0.05	-0.15	-0.08
Effect Size[*]	-0.01	-0.22	-0.23	-0.21	0.08	-0.26	-0.25	-0.11	-0.30	-0.17

[*] Effect size is expressed as mean difference in d units (Cohen 1988): (male mean-female mean)/total standard deviation. A d of .20 is a small effect size; a d of .50 is a medium effect size.

The largest LSAT difference between male and female applicants is observed for Puerto Rican applicants and the smallest difference for Asian American applicants. Among the named ethnic groups, only the difference for Puerto Rican applicants is large enough to constitute a small effect size. The data reported for the Puerto Rican group in Tables 8 and 9 represent only applicants to U. S. mainland law schools. Data from Spanish-speaking Puerto Rican law schools are not included in the study. For both men and women, the smallest standard deviation is found for white applicants and the largest for Puerto Rican applicants.

Again, the pattern for UGPA data is quite different. The data in Table 9 show that women earned higher UGPAs than men in every group except Canadian Aboriginal. Additionally, the effect sizes for UGPA differences are larger than the effect sizes for LSAT differences for each ethnic group except Puerto Ricans. The largest difference is found between white men and white women.

Undergraduate Major Group Performance. Tables 10 and 11 present LSAT and UGPA means and standard deviations by gender and undergraduate major group. Again, the majority of the groups show a positive LSAT score difference, indicating that men in those majors earned higher LSAT scores than women. The major exception is engineering, where women earned higher LSAT scores than men. There is essentially no difference in mean LSAT scores between men and women who majored in the natural sciences or in health professions. Among those applicants who reported a major, the largest differences are observed for computer science and humanities majors. There is not much variation in the standard deviations across the different major groups.

Table 10

LSAT Means and Standard Deviations for 1990-91 Law School Applicants by Undergraduate Major and Gender

	Business	Computer Science	Engineering	Health Professions	Humanities	Natural Science	Social Science	Other	No Response
Women									
Number	6,793	173	461	978	9,391	1,379	16,753	390	915
Mean	33.16	33.86	36.04	30.48	33.15	34.89	32.33	31.56	31.07
Standard deviation	6.79	7.30	6.24	6.21	7.04	6.53	7.18	7.28	7.73
Men									
Number	14,436	372	2,690	397	7,804	2,359	21,450	431	1,164
Mean	33.70	34.82	35.23	30.49	34.35	34.85	33.04	32.55	32.58
Standard deviation	6.63	7.03	6.60	6.76	6.86	6.94	7.18	7.85	7.68
Total									
Number	21,229	545	3,151	1,375	17,195	3,738	38,203	821	2,079
Mean	33.53	34.51	35.36	30.48	33.77	34.87	32.73	32.08	31.91
Standard deviation	6.68	7.12	6.55	6.37	6.90	6.79	7.19	7.60	7.74
Difference									
Men-Women	0.54	0.96	-0.81	0.01	1.20	-0.04	0.71	0.99	1.51
Effect	0.08	0.13	-0.12	0.00	0.17	-0.01	0.10	0.13	0.21

* Effect size is expressed as mean difference in d units (Cohen 1988): (male mean-female mean)/total standard deviation. A d of .20 is a small effect size; a d of .50 is a medium effect size.

Table 11

UGPA Means and Standard Deviations for 1990-91 Law School Applicants by Undergraduate Major and Gender

	Business	Computer Science	Engineering	Health Professions	Humanities	Natural Science	Social Science	Other	No Response
Women									
Number	6,793	173	461	978	9,391	1,379	16,753	390	915
Mean	3.12	3.11	2.97	3.07	3.14	3.08	3.11	3.10	2.35
Standard deviation	0.46	0.44	0.48	0.44	0.44	0.46	0.45	0.46	1.28
Men									
Number	14,436	372	2,690	397	7,804	2,359	21,450	431	1,164
Mean	3.01	3.01	2.94	2.90	3.03	2.96	2.99	2.97	2.13
Standard deviation	0.48	0.50	0.48	0.45	0.47	0.49	0.47	0.50	1.32
Total									
Number	21,229	545	3,151	1,375	17,195	3,738	38,203	821	2,079
Mean	3.04	3.04	2.94	3.02	3.09	3.00	3.04	3.03	2.23
Standard deviation	0.47	0.48	0.48	0.45	0.46	0.48	0.46	0.48	1.31
Difference									
Men-Women	-0.11	-0.10	-0.03	-0.17	-0.11	-0.12	-0.12	-0.13	-0.22
Effect	-0.23	-0.21	-0.06	-0.38	-0.24	-0.25	-0.26	-0.27	-0.17

Effect size is expressed as mean difference in d units (Cohen 1988): (male mean-female mean)/total standard deviation. A d of .20 is a small effect size; a d of .50 is a medium effect size.

Unlike the mixed pattern of positive and negative differences observed for LSAT score, all of the UGPA differences between men and women are negative. The largest difference is found between men and women who majored in health professions and the smallest between engineering majors. These results, showing women earning higher UGPAs than men when they are matched on undergraduate major, are contrary to the often-cited explanation that the higher UGPAs earned by women are a consequence of women choosing less rigorous undergraduate curricula. The differences represent a small effect size for every major group except engineering.

Regression Analyses

The results of the adjustment to male-female LSAT score differences using multiple linear regression are presented in Table 12. For each combination of variables, the table shows the LSAT score difference and the multiple correlation coefficient (R). The first row in Table 12 shows the observed score difference between male and female applicants. The next three rows show the adjusted score difference that results from including each of the demographic variables of age, ethnicity, or undergraduate major singly in the regression equation with gender. These data show that adding age results in no adjustment to the difference, while adding undergraduate major results in a modest difference. In contrast, adding ethnicity results in a fairly dramatic reduction in the difference between the test scores of men and women. Because age had no affect on the observed score difference, it was not included in any additional models. The final line of Table 12 shows the results of adjusting for both major and ethnicity. The additional reduction beyond ethnicity alone is again fairly modest, but even so, the total difference between male and female applicants is almost totally eliminated when differences are adjusted by ethnicity and undergraduate major.

Table 12

Adjusted Mean LSAT Score Differences Between Men and Women
From Adding Selected Main Effect Demographic Variables to a Multiple Regression Model

Variables	Male-Female Difference	Multiple R
Gender	0.822	0.055
Gender, age	0.822	0.195
Gender, undergraduate major	0.700	0.124
Gender, ethnicity	0.332	0.383
Gender, major, ethnicity	0.214	0.395

Another way to think about the individual contributions of age and ethnicity to the adjustment in the LSAT score difference between men and women is to compare the unadjusted difference (that is, the observed difference between men and women of .82) with the difference that results from including each of the variables alone in an adjustment equation. For example, the data in Table 12 show that the unadjusted or observed difference between male and female LSAT scores is .82 and that the difference after adjusting for undergraduate major is .70. Thus, the simple contribution of undergraduate major is .12. The simple contribution of each variable to the adjustment of the LSAT score difference between men and women is shown in Table 13.

Table 13

Contribution to Adjustment of LSAT Gender Differences
by Individual Variables

Variable	Simple Contribution
Age	0.00
Ethnicity	0.49
Undergraduate Major	0.12

These data suggest that more than half of the observed differences in LSAT scores between men and women are attributable to ethnicity.

Law School Application Data

One concern about the persistently lower LSAT scores earned by female test takers is that these lower scores might impact on women's decisions about if and where to apply to law school. The LSAT score distribution data for applicants shown in Table 3 and Figure 2 do not support the speculation that women differentially select themselves out of the applicant pool. Thus, the next issue for investigation is whether women self-select themselves into less prestigious law schools in the process of determining where their applications will be competitive. If LSAT scores are an important factor in women's decisions about where to apply to law school, we might expect to find that the difference between male and female applicants within the more competitive law schools' applicant pools is considerably smaller than the difference observed between male and female applicants overall. Because the U.S. legal education system includes a more diverse range of law schools in terms of control (public and private), cost of attending, and perceived differences in quality and prestige than does the Canadian system, analyses designed to evaluate differential application patterns are based only on data from U.S. law schools.

Table 14 shows the overall mean differences between male and female 1990-91 applicants to 173 U. S. ABA-approved law schools for LSAT scores and undergraduate grade point averages. In these analyses, the mean LSAT score and UGPA for female applicants was subtracted from the mean LSAT score and UGPA, respectively, for male applicants to the same school. Thus a positive difference indicates that the mean for males was higher than the mean for females, and a negative difference indicates that the mean for females was higher than the mean for males. Also included in Table 14 are the minimum and maximum mean differences across the 173 schools and the standard deviations of the mean differences. Both LSAT score differences and UGPA differences are reported on their respective scales. Standardizing the differences reveals that LSAT scores for male applicants are .13 standard deviation higher than LSAT scores for female applicants, while UGPAs for female applicants are on average one half standard deviation higher than UGPAs for male applicants.

Table 14

Mean Difference in LSAT Score and UGPA Between Male
and Female Applicants to the Same U.S. Law Schools
(Men's Mean Minus Women's Mean)

	Difference
LSAT	
Mean	.81
Standard deviation	.58
Minimum	-.94
Maximum	2.20
UGPA	
Mean	-.12
Standard deviation	.06
Minimum	-.24
Maximum	.03
Number of schools	173

As suggested earlier, if women take a more conservative approach to the law school application process and if women feel discouraged from making application to the more competitive law schools as a response to their slightly lower LSAT scores, we would expect the size of the male–female LSAT difference to decrease and perhaps even reverse itself within the applicant pools of the more competitive schools. One way to determine whether the data support this proposition is to examine the magnitude of the within-school male–female difference across schools after sorting schools on some measure of competitiveness or admission standard. Figure 4 shows for each law school the within-school male–female LSAT score difference for applicants plotted against the mean LSAT score of the accepted applicants to that school. If women differentially select themselves out of the applicant pools of schools that admit the highest-scoring applicants, we would expect the male–female difference to decrease as the mean of the accepted students increases. If the LSAT score were not a factor, we would expect the distribution of differences to be fairly constant across law school, regardless of its LSAT mean. In fact, Figure 4 portrays a fairly strong positive relationship between male–female differences and the mean LSAT scores of accepted students. That is, as the LSAT mean increases, so does the size of the difference between male and female applicants' scores. At schools with the highest mean LSAT scores for these accepted students, the mean LSAT score for female applicants is more than two points lower than the mean for male applicants. This phenomenon may contribute to a perception that the male–female differential is larger than it actually is. The correlation between male–female LSAT score difference and mean LSAT of accepted students within each law school is .50. The data in Figure 4 show that the four schools with mean LSAT scores less than 31 do not follow the linear trend observed for the other 169 schools. If these schools are treated as outliers and are eliminated from the analysis, the correlation between male–female LSAT score difference and mean LSAT of accepted students within each law school increases to .64.

Figure 4

Male-Female LSAT for Applicants by
Within School Mn LSAT for Accepted
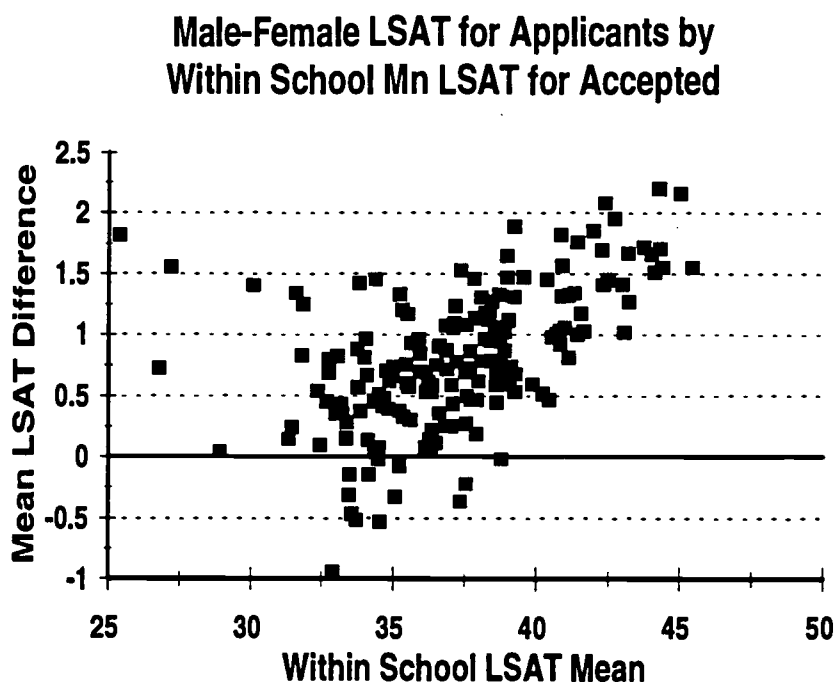
One possible explanation for the trend observed in Figure 4 is that female applicants with lower LSAT scores believe that their UGPA's are sufficiently high to compensate for their test scores. In other words, we might expect to see that the difference in UGPA favoring females would increase in much the same way that the difference in LSAT scores favoring males increased. The data presented in Figure 5 do not support this speculation. The higher UGPA's presented by women in the applicant pools of schools with mean LSAT scores of approximately 30 virtually disappears (i.e., becomes zero) for schools with mean LSAT scores above 42. The relationship between male–female UGPA difference and mean LSAT of accepted students within each law school is even stronger than the comparable relationship for LSAT difference. The correlation between mean UGPA difference and mean LSAT for accepted students is .73 for all schools, and .82 when the five lowest mean LSAT schools are excluded.

Figure 5

Male-Female UGPA for Applicants by Within School Mn LSAT for Accepted
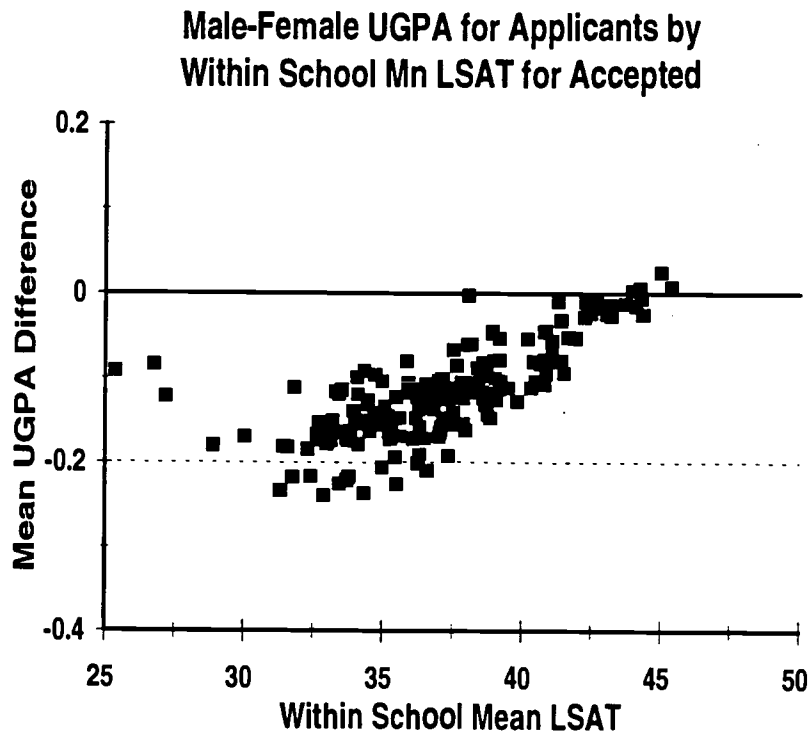
Replacing mean LSAT for accepted students with mean UGPA for accepted students as an indication of school admission standards does not change the observed relationships. Figures 6 and 7 show the male minus female LSAT score difference and the male minus female UGPA difference by mean UGPA for accepted students, respectively.

Figure 6

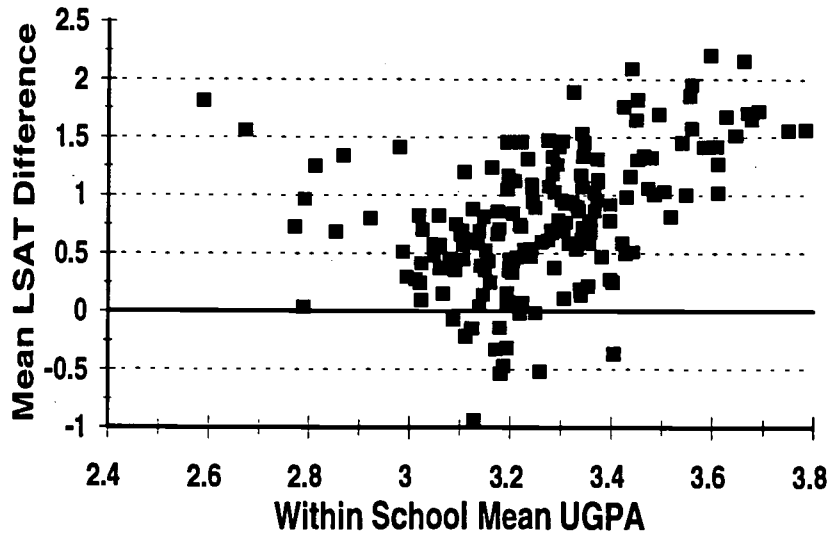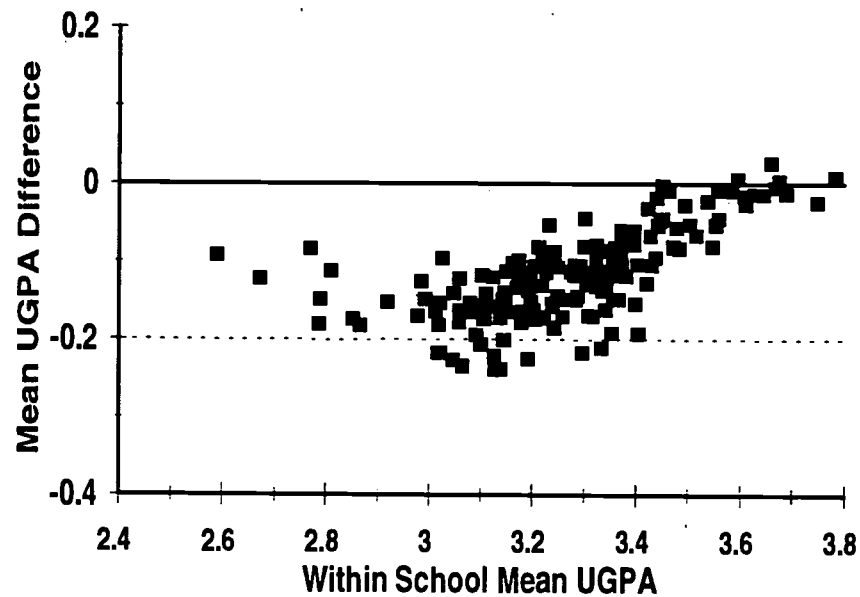## Male-Female Mean LSAT for Applicants by Within School Mn UGPA for Accepted

Figure 7

Male-Female Mn UGPA for Applicants by Within School Mn UGPA for Accepted

To evaluate more completely the law school application patterns of female applicants compared with male applicants, the distributions of male and female applicants' LSAT scores were examined within law schools grouped by the mean of the LSAT score of the students they admit. Summary data are presented in Table 15. The distributions are shown separately for different values of mean LSAT score of accepted students to allow trends across schools as well as across gender to be examined. The mean LSAT scores for male applicants and for female applicants differ substantially across schools, suggesting that men and women each take into consideration both their own LSAT score and the mean LSAT for accepted students at the schools of interest when deciding to apply to a school. Consistently across the levels of means of accepted applicants, the mean for all female applicants is lower than the mean for all male applicants. Additionally, the mean LSAT score for both male and female applicants is lower than the mean for accepted students across the score range, indicating that in general both men and women tend to aspire to schools with admission standards somewhat above their application credentials, although the level of negative skewness at the highest level schools suggests that the means at least somewhat are affected by the few relatively extreme scores in the lower tail of the distribution. Even so, the applicants' medians, though higher than the means, also are lower than the means of the accepted students. At schools with the highest mean LSAT scores for accepted students, women seem to be even more aggressive than men, resulting in a lower mean LSAT for female applicants than for male applicants at those schools. Table 15 also reports the proportion of men and women in the different applicant pools, and the standard deviations and the skewness of the distributions. Looking across schools, the data show that the proportion of female applicants is higher among schools with higher mean LSAT scores and tends to decrease as the mean LSAT of the accepted students decreases. The data also show that the LSAT scores for both male and female applicants is highly negatively skewed for the higher mean LSAT schools and relatively normally distributed for schools with the lowest mean LSAT scores. The negative skewness results partly from the fact that a few applicants with much lower LSAT scores applied to those schools and partly because the mean LSAT for those schools is very close to the top of the LSAT score scale. The distribution of LSAT scores for male applicants tends to be slightly more negatively skewed than is the distribution for female applicants to schools with higher mean LSAT scores.

Table 15

Distributions of 1990-91 LSAT Scores for Male and Female Applicants
Within Law Schools Grouped by Mean Scores of Accepted Applicants

Accepted	All Applicants							
Mean LSAT	Proportion Males	Proportion Females	Male Mean	Standard Deviation	Skew	Female Mean	Standard Deviation	Skew
45-44	0.58	0.42	40.11	5.96	-1.24	38.35	6.74	-1.04
43-42	0.57	0.43	38.28	5.96	-0.99	36.78	6.43	-0.83
41-40	0.58	0.42	36.29	5.93	-0.83	35.15	6.21	-0.72
39-38	0.58	0.42	33.88	6.03	-0.58	33.02	6.17	-0.50
37-36	0.61	0.39	32.37	5.73	-0.45	31.74	5.90	-0.42
35-34	0.64	0.36	30.56	5.68	-0.35	30.14	5.80	-0.32
33-32	0.65	0.35	29.37	5.58	-0.22	28.93	5.76	-0.25
31-30	0.66	0.34	28.33	5.82	-0.02	27.54	5.94	0.09
29-28	0.70	0.30	28.20	4.92	0.00	28.16	5.42	0.04
27-26	0.66	0.34	24.43	6.23	-0.02	23.07	6.61	0.27

Next, the difference between the applicant's LSAT score and the average of the mean LSAT scores of all the schools to which the applicant applied was calculated separately for each applicant. These data provide an indication of where the applicant stands relative to the admission standards of the schools to which she applied. A negative difference indicates that the applicant was selecting schools with admission standards that tended to be higher than the applicant's credentials, while a positive difference indicates that the applicant's score exceeds the admission standard of the schools to which she applied. A summary of this analysis for applicants with different ranges of LSAT scores is shown separately for men and women in Table 16. The general pattern is the same for men and women. That is, applicants with the lowest LSAT scores applied to schools well above their scores, and the size of the difference decreased as the LSAT score of the applicants increased. The data in Table 16 also show that the magnitude of the negative difference is consistently larger for female applicants than for male applicants, again confirming that female applicants tend to apply to schools farther above their LSAT scores than do male applicants.

Table 16

Value of Applicant's LSAT Minus School's Mean LSAT for
Accepted Students by LSAT Score Group and Gender

	LT28	28-32	33-37	38-41	42-48
Men					
Number	9,302	11,671	14,410	8,880	6,520
Mean	-12.71	-6.24	-2.60	0.04	2.71
Standard deviation	4.77	2.85	2.60	2.55	2.59
Women					
Number	8,035	8,787	10,385	6,044	3,751
Mean	-13.69	-6.89	-3.12	-0.18	2.57
Standard deviation	4.75	2.84	2.57	2.50	2.57

Table 17 presents the same data as Table 16, but further broken down by the number of applications submitted. Again, the general pattern for men and women is parallel. First, both men and women applying to only one school apply to a school closer to their LSAT score than do applicants applying to more than one school. Across score levels, for number of applications up to seven or eight, as the number of applications increases, so does the size of the difference between LSAT score of the applicant and the average of the mean LSAT scores of accepted students at the schools of application. These data suggest that when applicants increase the number of applications, the additional applications are sent to schools to which the applicant has a lesser chance of gaining admission, using mean LSAT of admitted students as the estimate of admission standards. The data further suggest that applications beyond seven or eight tend to be more random and have little additional impact on the size of the difference. The trend of increasing the size of the difference is more extended for applicants in the middle ranges than for applicants at the high or low end of the LSAT score scale. Comparing the differences for female applicants with the differences for male applicants, the data show that female applicants exhibit a consistently larger difference regardless of number of applications.

Table 17

Mean of Applicant's LSAT Minus School's Mean LSAT
for Accepted Students by Number of Applications,
LSAT Score Group, and Gender

NumAMFs	LT 28		28-32		33-37		38-41		42-48	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
1	-11.98	-12.67	-5.77	-5.77	-1.59	-1.92	1.44	1.25	3.94	4.01
2	-12.80	-13.62	-6.43	-6.43	-2.07	-2.51	0.89	0.79	3.68	3.64
3	-12.76	-13.96	-6.98	-6.98	-2.44	-3.08	0.58	0.38	3.06	3.06
4	-13.39	-14.08	-7.36	-7.36	-2.85	-3.48	-0.13	-0.44	2.80	2.44
5	-13.01	-14.55	-7.54	-7.54	-3.07	-3.66	-0.40	-0.51	2.35	2.43
6	-13.31	-14.55	-7.80	-7.80	-2.99	-3.74	-0.57	-0.87	2.29	2.08
7	-12.91	-14.63	-7.72	-7.72	-3.19	-4.01	-0.45	-1.10	2.26	1.98
8	-12.94	-14.23	-7.99	-7.99	-3.35	-3.92	-0.76	-0.97	2.11	1.86
9	-13.31	-14.18	-7.61	-7.61	-3.49	-4.19	-0.96	-1.23	2.10	1.69
10	-13.24	-14.69	-7.98	-7.98	-3.54	-4.11	-0.81	-1.40	2.05	1.87
11	-12.88	-14.87	-7.78	-7.78	-3.30	-4.39	-1.30	-1.24	1.82	1.75
12	-13.33	-14.16	-7.68	-7.68	-3.70	-4.24	-1.17	-1.43	1.93	1.66

Among the highest scoring applicants, that is 42 to 48, both men and women apply to schools with mean LSAT scores lower than their own scores. This result is a necessary consequence of the distribution of law school means. Within this score level. there is essentially no difference between men and women whose number of applications ranges from one to five. When the number of applications exceeds five, men tend to be slightly further above the school's means than are women.

Another question of interest is whether women's application patterns suggest that they attempt to compensate for lower LSAT scores with higher UGPAs. Analyses parallel to those summarized in Tables 15 through 17 are replicated in Tables 18 through 20. using UGPA rather than LSAT to define both the admission standards for the law schools and the entering credentials of interest for the applicant.

Table 18 shows the distributions of 1990-91 male and female law school applicants' UGPAs for different levels of within school mean UGPAs for accepted students. As was the case when LSAT scores were used as the sorting variable, the proportion of female applicants relative to male applicants is largest at

the schools with the highest mean UGPAs and tends to decrease as mean UGPA decreases. Unlike the pattern observed for LSAT scores, the mean UGPAs for male and female applicants are approximately equal among applicants to schools with the highest means UGPAs. For the remaining schools. the mean UGPA for female applicants is higher than the mean for male applicants to the same schools. Again. like the distributions of applicants' LSAT scores, the distributions for both male and female applicants tend to be negatively skewed, suggesting that the pools include some applicants with much lower UGPAs.

Table 18

Distributions of 1990-91 UGPAs for Male and Female Applicants
for Law Schools Grouped by Mean UGPAs of Accepted Applicants

Accepted			All Applicants					
Mean UGPA	Proportion Males	Proportion Females	Males Mean	Standard Deviation	Skew	Females Mean	Standard Deviation	Skew
3.8	0.59	0.41	3.42	0.42	-1.36	3.43	0.39	-1.25
3.7	0.58	0.42	3.36	0.40	-0.94	3.36	0.40	-0.99
3.6	0.58	0.42	3.28	0.41	-0.98	3.31	0.39	-0.73
3.5	0.57	0.43	3.19	0.41	-0.72	3.23	0.40	-0.63
3.4	0.59	0.41	2.94	0.43	-0.19	3.07	0.42	-0.51
3.3	0.58	0.42	2.97	0.43	-0.25	3.10	0.42	-0.32
3.2	0.59	0.41	2.91	0.42	-0.12	3.04	0.42	-0.26
3.1	0.64	0.36	2.82	0.41	0.04	3.00	0.42	-0.12
3.0	0.63	0.37	2.74	0.42	0.11	2.90	0.44	-0.05
2.9	0.68	0.32	2.73	0.46	-0.14	2.90	0.42	-0.05
2.8	0.66	0.34	2.65	0.41	0.06	2.79	0.42	0.07
2.7	0.65	0.35	2.53	0.46	-0.74	2.65	0.50	-1.23
2.6	0.68	0.32	2.59	0.39	0.38	2.68	0.43	0.18

Next, paralleling the analyses presented in Table 16. the difference between each applicant's UGPA and the average of the mean UGPAs for accepted students at all of the law schools to which the applicant applied was calculated. The results are presented in Table 19. A negative difference results when the applicant's UGPA is lower than the average of the mean at the schools to which she applied. Again, the largest negative difference is observed for those applicants in the lowest UGPA category (less than 2.8) and the largest positive difference for those in the highest category. These extremes again are necessitated by the position of these applicants relative to the mean UGPA for the majority of law schools. Of note

in this table is the comparison between the average differences for male and female applicants. In the highest UGPA groups, the positive female difference is slightly larger than the positive male difference. In the lower two groups, the male and female differences are identical.

Table 19

Value of Applicant's UGPA Minus School's Mean UGPA for
Accepted Students by UGPA Score Group and Gender

	LT 2.8	2.8-3.1	3.2-3.5	3.6-4.2
Men				
Number	17,376	15,392	12,463	5,551
Mean	-0.74	-0.28	0.01	0.30
Standard deviation	0.31	0.18	0.18	0.20
Women				
Number	8,903	11,276	11,207	5,616
Mean	-0.74	-0.27	0.04	0.35
Standard deviation	0.30	0.17	0.18	0.20

Table 20 shows the data from Table 19 further broken down by number of applications. The same general trends observed for LSAT scores also are apparent for UGPAs. That is, applicants who submit multiple applications tend to be further below, or in the case of the highest UGPA applicants, not so far above, the mean of students accepted at the schools to which they send applications than are applicants who submit only one application. Additionally, the distance tends to increase as the number of applications increases. Except in the highest UGPA category, the data for men and women are virtually identical. In the highest UGPA category the positive difference for women is slightly larger than the positive difference for men regardless of number of applications.

Table 20

Mean of Applicant's UGPA Minus School's Mean UGPA for Accepted Students by Number of Applications, UGPA Score Group, and Gender

Number of Applications	UGPA Score Group							
	LT 2.8		2.8-3.1		3.2-3.5		3.6-4.2	
	Men	Women	Men	Women	Men	Women	Men	Women
1	-0.74	-0.71	-0.22	-0.22	0.08	0.11	0.39	0.44
2	-0.74	-0.73	-0.26	-0.25	0.06	0.09	0.38	0.42
3	-0.74	-0.74	-0.26	-0.27	0.03	0.07	0.34	0.38
4	-0.75	-0.74	-0.29	-0.28	0.02	0.03	0.29	0.33
5	-0.75	-0.75	-0.30	-0.30	0.00	0.01	0.26	0.31
6	-0.74	-0.75	-0.31	-0.31	-0.01	0.00	0.26	0.28
7	-0.73	-0.78	-0.31	-0.31	-0.02	-0.02	0.25	0.28
8	-0.73	-0.76	-0.30	-0.31	-0.04	-0.03	0.23	0.27
9	-0.74	-0.74	-0.33	-0.32	-0.04	-0.03	0.22	0.25
10	-0.75	-0.73	-0.32	-0.32	-0.04	-0.04	0.25	0.25
11	-0.76	-0.79	-0.32	-0.33	-0.06	-0.04	0.20	0.26
12	-0.76	-0.75	-0.32	-0.32	-0.05	-0.03	0.23	0.26

Evidence that women tend to apply to schools at which their LSAT scores are not only lower than the mean for accepted students but further below than is observed for male applicants raises questions about whether women protect themselves in the application process by generating more applications per person than do their male counterparts. A related question is whether there is a relationship between LSAT score and number of applications. More specifically, do applicants with lower LSAT scores submit more applications than applicants with higher scores? Information about number of applications is shown in Table 21. These data show that, on average, men generate a slightly but not significantly larger number of applications than women. The correlation between number of applications and LSAT score is virtually the same for men and women. These correlation coefficients of .1 fail to provide evidence that there is a relationship between these two variables.

Table 21

Correlation Between Number of Applications and LSAT Score by Gender

	Men	Women
Mean number of applications	4.94	4.70
Standard deviation	4.22	4.01
Correlation		
LSAT/Number of applications	.10	.12
Number	51,104	37,233

In a related analysis, Figure 8 shows the actual distribution of the number of schools to which 1990-91 male and female applicants applied. Approximately 24 percent of women and 22 percent of men apply to only one school. A slightly higher percentage of women than men also apply to two schools. In contrast, when the number of applications reaches seven or more, the percentage of men slightly exceeds the percentage of women who submitted the same number of applications. The data considered in this study suggest that women do not respond to their slightly lower LSAT scores by producing additional

Figure 8

Distribution of Number of Schools to Which Males and Females Apply

Female   Male
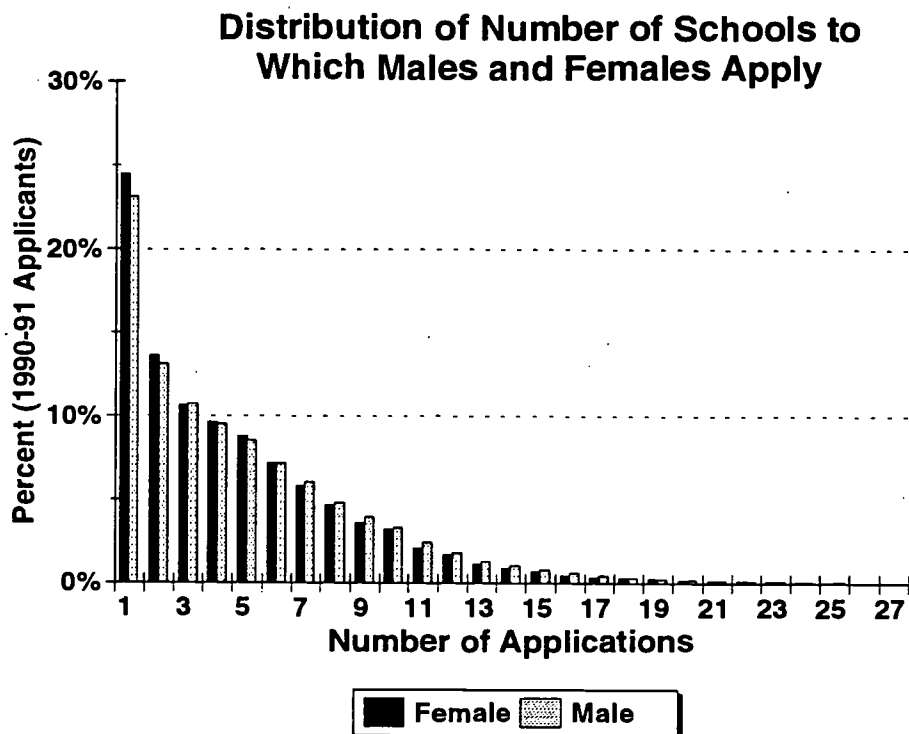
applications. Further, it does not appear that women portray a greater aversion to risk than do men by generating additional applications nor by applying to schools with lower admission standards relative to their own application credentials.

A final study of application patterns examined number of applications as a function of the mean LSAT of accepted students at each school separately for men and women. In order to adjust for variation in the size of the schools, the ratio of number of applicants to number of accepted students was used instead of a single count of total applicants. Figure 9 shows the plot of the ratio of applicants to accepted students against the mean LSAT score for accepted students separately for male and female applicants. These data demonstrate a tendency for larger numbers of applicants per available place to apply to schools with higher LSAT scores. The trends are similar for men and for women, but the correlation between the applicant/accepted ratio and mean LSAT score for accepted applicants is higher for women than for men (.58 vs .46). Note that the plus signs for male applicants fall higher than the oval symbols for female applicants on the ratio axis because the number of male applicants is larger than the number of female applicants. These data again confirm that both male and female applicants tend to aspire to schools with the highest admission standards even when those standards exceed their own application credentials. If instead, applicants were applying to schools whose LSAT scores were in a narrow range of their own LSAT scores and UGPAs, schools with LSAT scores in the middle range would have the largest ratio of applicants per place because that is where the largest number of applicants fall. If female applicants were more conservative in their application selection process than men, the positive correlation might be evident for male applicants, while a more rectangular distribution, or a distribution that peaks in the middle would be seen for female applicants.

Figure 9

Ratio of Male and Female Applicants / Total Accepted by Mn LSAT for Accepted
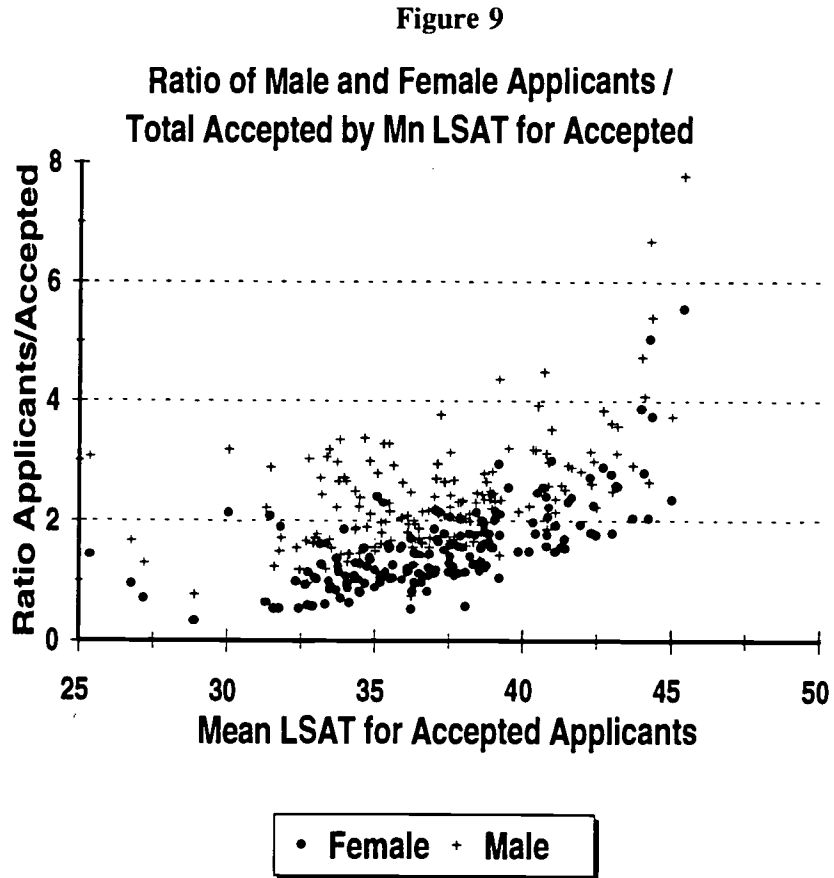
Female + Male

Law School Admission Data

The next analyses are directed toward assessing what happens to these female applicants in the admission process. Table 22 presents the number and percentage of male and female applicants who were accepted to at least one law school. Fifty-seven percent each of the 1990-91 male and female applicants received at least one acceptance. Because women make up only 42 percent of the total applicant pool, accepting equal proportions of male and female applicants helps to perpetuate the higher proportion of male law school students.

Table 22

1990-91 Male and Female Applicants Accepted
by at Least One Law School

	Accepted	Not Accepted	Total Applicants
Men			
Number	29,063	22,040	51,103
Row percent	56.87%	43.13%	
Column percent			57.85%
Women			
Number	21,378	15,855	37,233
Row percent	57.42%	42.58%	
Column percent			42.15%

A final objective of this study is to evaluate whether the same standards are used to admit or deny applicants regardless of their gender. Logistic regression equations that used LSAT scores and UGPAs to predict admission decisions were employed for that purpose. The logistic regression model is reasonable if there is a relationship between each of these variables and admission. For the schools included in this study, the correlation between LSAT score and admission decisions is .31; the correlation between UGPA and admission decisions is .26. In a similar study conducted to evaluate admission decisions for undergraduate schools, Willingham (1988) found a correlation of .37 between SAT score and undergraduate admission decisions and .36 between high school grade point average and undergraduate admission decisions. These data suggest that high school grades are somewhat more important in undergraduate admission than college grades are in law school admission, although the lower correlation between grades and law school admission decisions also might be a consequence of more severe restriction of range. Regardless, the data support that LSAT score and UGPA are useful measures to include in the logistic regression model.

If the same standards are applied to all applicants when making admission decisions, the logistic regression model estimated from data for male applicants should predict admission equally well for women

as for men. The correlations between the predicted admission decisions based on the logistic regression model for each law school and the actual decision are shown in Table 23. Overall, the correlation both for male applicants and for female applicants is .71. The correlations between predicted and actual admission decisions are very high, indicating that half of the variance in admission decisions is accounted for by these two variables. Another way to think about these correlations is that the higher the composite of LSAT and UGPA, the greater the probability of gaining admission. The data in Table 23 show the correlations separately by ethnic group for female applicants. These data show that the correlation is lowest for black applicants and highest for white applicants. The lower correlations for several ethnic groups reported in Table 23 suggest that factors other than LSAT score and UGPA play an important role in the decision process for those applicants. This is especially relevant for these applicants because their average LSAT scores and UGPAs, as presented in Tables 8 and 9, tend to be considerably lower than those presented by white and Asian American applicants.

Table 23

Correlations of Admission Decisions with Predicted Admission,
LSAT, and UGPA by Gender

| | Correlations of Admission Decision With | | |
Applicants	Predicted Admission	LSAT	UGPA
All Men	.71	.30	.25
All Women	.71	.34	.27
American Indian	.48	.31	.18
Asian American	.70	.31	.24
Black	.43	.46	.32
Hispanic	.63	.36	.31
Mexican American	.52	.45	.32
Puerto Rican	.53	.37	.32
White	.77	.36	.28

As noted previously, one calculation of interest in these analyses is the difference between predicted admission and actual admission for female applicants. Table 24 presents the proportion of applicants predicted to be admitted, the proportion actually admitted, and the residual by gender. Note that because a separate prediction equation was estimated and applied for each law school, those men and women who applied to more than one law school had their probability of admission evaluated separately within each school. Those applicants are counted more than once in the total number of applicants. In other words, the total number of applicants reported in Table 24 is the total number of applicants whose admission decision was evaluated against a prediction model. It corresponds to the total number of applications submitted and acted upon at the 178 schools included in this study. A negative residual indicates that the proportion actually admitted exceeded the proportion predicted to be admitted. The residual is negative for female applicants, but the size of the residual is very small and is not of any practical significance. These data do not suggest that female applicants are treated differently from male applicants in the admission decision process.

Table 24

Predicted Versus Actual Admission Rates by
Gender for the 1990-91 Admission Year

| Applicants	Number of Applicants	Proportion Predicted to be Admitted	Proportion Actually Admitted	Residual (Predicted-Actual)
Men	238,161	.25	.25	.00
Women	165,148	.25	.28	-.03

Because the data in Table 23 suggest that the prediction decision based on LSAT score and UGPA do not correlate as highly with actual admission decisions for women of color as they do for white women, predicted versus actual admission rates were examined separately by gender and ethnicity for the 1990-91 admission year. In order to determine not only the admission decision results for women of color compared with white women, but women of color compared with men of color, both male and female applicant groups were examined separately by ethnic group membership. The prediction model based on

all male applicants was used to evaluate each of the groups. The proportions predicted to be admitted and actually admitted, as well as the residuals are reported in Table 25. The proportions predicted and actually admitted also are shown in Figure 10. These data show that the proportions predicted and admitted are almost identical by ethnic group across gender group. For example, five percent of black female applicants are predicted, based on LSAT score and UGPA, to be admitted and 26 percent actually were admitted. Likewise, five percent of black male applicants are predicted, based on LSAT score and UGPA, to be admitted and 26 percent actually were admitted.

Table 25

**Predicted Versus Actual Admission Rates by
Gender and Ethnicity for the 1990-91 Admission Year**

Applicants	Number of Applicants	Proportion Predicted to be Admitted	Proportion Actually Admitted	Residual (Predicted-Actual)
Women				
American Indian	835	0.13	0.32	-0.19
Asian American	10,790	0.17	0.26	-0.09
Black	16,404	0.05	0.26	-0.21
Hispanic	4,697	0.15	0.28	-0.13
Mexican American	2,208	0.11	0.34	-0.23
Puerto Rican	1,390	0.09	0.26	-0.17
White	124,424	0.30	0.29	0.01
Men				
American Indian	1,202	0.15	0.29	-0.14
Asian American	11,662	0.17	0.25	-0.08
Black	12,336	0.05	0.26	-0.21
Hispanic	6,320	0.14	0.26	-0.12
Mexican American	3,042	0.11	0.30	-0.19
Puerto Rican	1,649	0.10	0.26	-0.15
White	195,405	0.28	0.25	0.03

Figure 10

**Predicted and Actual Admission Rates
By Gender and Ethnic Subgroup**
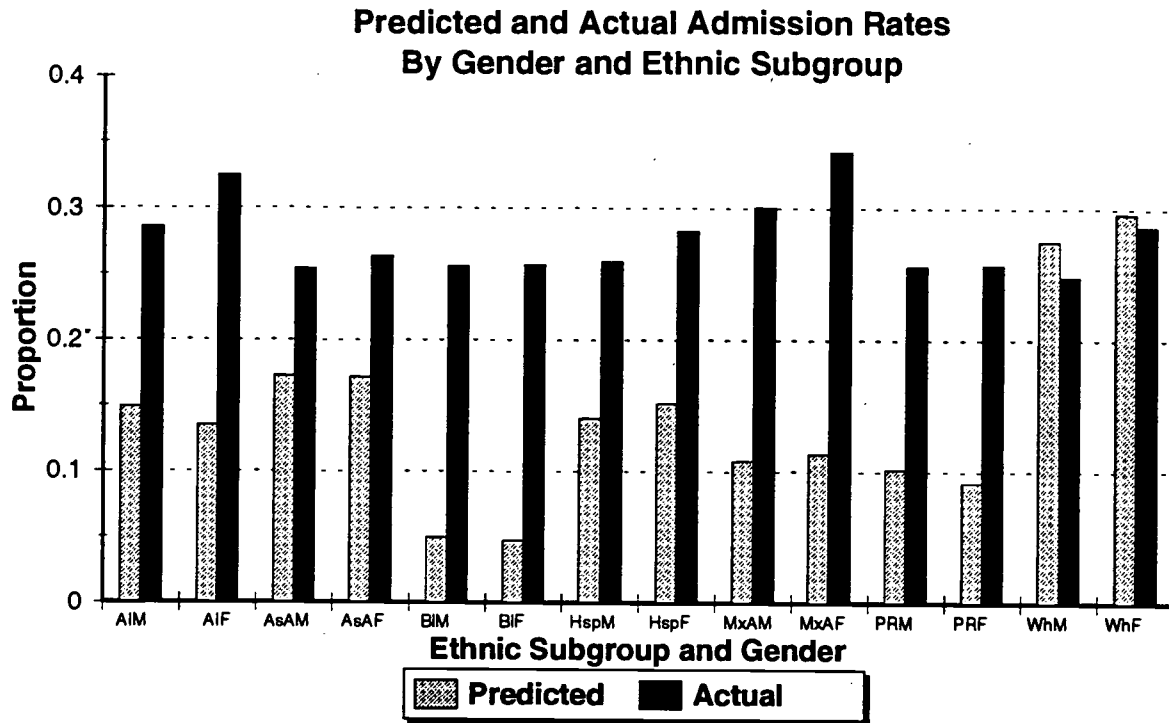
The data also show that the residuals are negative for each group except white males and white females. Negative residuals result when the proportion actually admitted is larger than the proportion predicted to be admitted. The residuals for white men and for white women are essentially zero, suggesting that white female applicants whose application credentials, as measured by LSAT and UGPA, met the school's criteria for admission are not being disproportionately denied.

The actual and predicted admission rates also were examined separately for public and private law schools for each of the ethnic groups for female applicants. The proportions predicted and admitted, and the residuals are presented in Table 26 and in Figure 11. Again, the residuals are negative regardless of school category for every ethnic group except white. There does not appear to be a pattern for the relative size of the negative residuals between private and public schools. That is, the negative residual is larger

Table 26

Predicted Versus Actual Admission Rates for Female
Applicants by Ethnicity and School Control 1990-91 Admission Year

Applicants	Law School Control	Number of Applicants	Proportion Predicted to be Admitted	Proportion Actually Admitted	Residual (Predicted-Actual)
American Indian	Private	473	0.15	0.30	-0.15
	Public	359	0.11	0.35	-0.24
Asian American	Private	7,076	0.18	0.28	-0.10
	Public	3,604	0.15	0.23	-0.08
Black	Private	9,751	0.05	0.26	-0.21
	Public	6,647	0.04	0.25	-0.21
Hispanic	Private	3,191	0.17	0.30	-0.13
	Public	1,498	0.11	0.24	-0.13
Mexican American	Private	1,310	0.13	0.35	-0.22
	Public	895	0.08	0.33	-0.25
Puerto Rican	Private	911	0.09	0.27	-0.18
	Public	432	0.06	0.20	-0.14
White	Private	79,335	0.32	0.31	0.01
	Public	44,706	0.26	0.25	0.01

Figure 11

Predicted & Actual Admission Rates for Women by Ethnicity & School Control
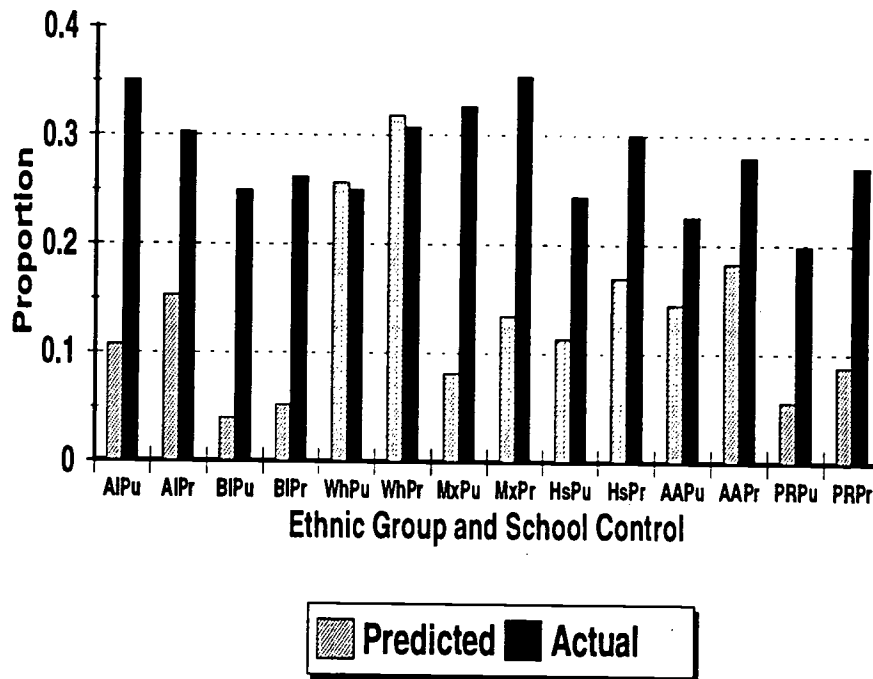
for public than for private schools for American Indian and Puerto Rican female applicants, but larger for private than for public, for Asian American and for Mexican American applicants. Thus, the public schools are admitting a slightly larger proportion of Asian American and Puerto Rican female applicants than are predicted to be admitted while the private schools are admitting a slightly larger proportion of Asian American and Mexican American applicants than predicted. The residuals for public and private law schools are identical for black and Hispanic female applicants.

SUMMARY AND CONCLUSIONS

This study used data from the law school application and admission process to investigate the issue of differential test performance between men and women from two different perspectives. The analyses focussed initially on factors that might explain the phenomenon of lower test scores that is persistently observed. The possible social consequences that might result from the lower scores were explored next. The main questions of concern were (1) whether women differentially selected themselves out of the applicant pool as a response to their lower test scores, (2) whether women elected to apply to less competitive and less demanding schools as a consequence of their lower scores, and (3) whether the probability of gaining admission to law school is related to the sex of the applicant.

The data do not support a need for concern that female test takers are differentially selecting themselves out of the applicant pool. The shape and position of the distribution of test scores for female law school applicants relative to male applicants are parallel to the shape and position of the distribution for female test takers relative to male test takers. There is some self-selection out of the applicant pool by both low scoring male and low scoring female test takers. As a result, the mean LSAT for both male and female applicants is approximately two score scale points higher than the mean for male and female test takers. However, the magnitude of the difference between men and women remains fairly constant, not only at the means but throughout the score range. Additionally, the standard deviations for women's score distributions are approximately equal to those for men's distributions. Finally, the proportion of women

in the applicant pool is approximately the same as the proportion of women in the population of test takers.

Demographic characteristics for male and female applicants were examined to determine whether differences in demographic distributions might account for some of the differences in test performance between men and women. These data revealed that

o   a larger proportion of women fall within the youngest age group category,

o   a larger proportion of women applicants are nonwhite,

o   approximately 70 percent of women, compared with 57 percent of men, report humanities or social sciences as their undergraduate majors, and

o   social sciences is the most frequently cited major for both men and women, but a larger proportion of women than men were social science majors.

Both LSAT performance and performance in undergraduate school, as measured by UGPA, were examined by age group, ethnic group, and undergraduate major category group separately for men and for women. General findings from these analyses are

o   men tend to earn higher LSAT scores than women regardless of demographic group. The most salient exception is that female engineering majors earned LSAT scores .8 higher than male engineering majors.

o   women earned higher UGPAs than men, regardless of demographic group. This is particularly striking in the analyses in which men and women are matched on undergraduate majors. The higher UGPAs earned by women frequently are attributed to

the fact that women select easier majors in college. These data dispute that claim at least for men and women who apply to law school.

o   the effect sizes, expressed as mean difference in *d* units, are larger for the UGPA differences than for the LSAT score differences.

These three demographic variables were added to a multiple linear regression model in which gender was the initial independent variable in order to estimate the adjustment to the mean LSAT score difference between men and women that might result from taking them into account. The largest adjustment is associated with ethnicity. Adding age had no impact, while adding undergraduate major resulted in a small adjustment. When adjusted for both ethnicity and major, the magnitude of difference between test scores for men and women was reduced from .82 to .21. These results are consistent with the finding that a substantially larger proportion of women than men are members of ethnic minority groups.

The data analyzed in this study also do not support concerns about negative social consequences resulting from women's slightly lower LSAT scores. Although the data do confirm that male applicants have higher LSAT scores, on average, than female applicants both within and across law schools, there is no support for the hypothesis that women fail to make application to the more prestigious law schools as a consequence of their lower test scores. In fact, the data suggest just the opposite! When the data are examined after schools are sorted by the mean LSAT or the mean UGPA of their accepted students, the difference in LSAT scores increases as the means for accepted students increase even more sharply for women than for men. The data also show that the percentage of female applicants in the school's applicant pool increases as the mean LSAT or mean UGPA of their accepted students increases.

Interestingly, this same pattern was observed regardless of whether LSAT or UGPA was analyzed relative to the schools to which individual women applied.. That is, women seem more likely than men to apply to law schools at which the admission standards defined by LSAT score and UGPA exceed their own credentials.

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There also is no evidence to suggest that women compensate for their higher risk taking in their application patterns either by adding more safety schools or by generating more applications than male applicants. The data show

o   women tend to be further below the average LSAT of accepted students across all the schools to which they apply,

o   women submit, on average, slightly fewer applications per person than do men (4.70 vs. 4.94), and

o   a larger proportion of women than men submit only one or two applications.

Finally, data on admission decisions were evaluated. The data show that an equal percentage of male and female applicants (57 percent) were accepted by at least one law school. Given that the total applicant pool is approximately 58 percent male, accepting equal percentages of male and female applicants helps to perpetuate the approximately 60/40 ratio of men to women in legal education.

A logistic regression model to predict the probability of acceptance to law school based on LSAT score and UGPA was developed using data from male applicants. The resulting equations were applied to data for female applicants. If gender were not a factor in the admission process, we would expect the model to predict as well for female applicants as for male applicants. The data supported equally good prediction for women.

Evaluation of the utility of the male prediction model for women separately by ethnic group revealed that white women were admitted in the same proportions as predicted by the model. In contrast, women of color were admitted in substantially higher proportions than predicted. In a parallel analysis, the same pattern was observed for white men and men of color, suggesting that these results are not gender specific.

The final analyses looked separately at public and private schools. Again, the same general admission prediction patterns were observed regardless of type of school.

Future Research

This study investigated differences in test performance and subsequent application and admission decisions separately for men and women. The next step is to examine performance in law school by those who were admitted and who chose to attend. The UGPA data presented in this study are consistent with hundreds of studies that report that women earn higher grades than men at both the high school and the undergraduate school levels (e.g., see Astin, Dey, Korn, & Riggs, 1991; McCormack & McLeod, 1988; Young, 1991). The initial research question is whether this same pattern of better academic performance by women is exhibited in law school.

A second question is whether the standard predictors, LSAT score and UGPA, predict as well for women as for men. Additionally, studies are needed not only to evaluate the academic performance of these men and women in law school, but also the kinds of factors that may have impacted their performance. A large proportion of the 1990-91 applicants entered law school in fall 1991. A vast amount of data about these students is available through the Bar Passage Study data collection effort. The Bar Passage Study data will be used to address these questions in a future study.

REFERENCES

American Bar Association Section of Legal Education. (1993). A review of legal education in the United States. Chicago, IL: Author.

Astin, A. W., Dey, E. L., Korn, W. S., & Riggs, E. R. (1991). The American freshman: National norms for fall 1991. Los Angeles, CA: Higher Education Research Institute, UCLA.

Ben-Shakhar, G., & Sinai, Y. (1991). Gender differences in multiple-choice tests: The role of differential guessing tendencies. Journal of Educational Measurement, 28, 23-35.

Burton, N. W., Lewis, C., & Robertson, N. (1988). Sex differences in SAT scores. (College Board Report No. 88-9, ETS Research Report No. 88-58). New York: College Entrance Examination Board.

Brown, S. V. (1987). Minorities in the graduate education pipeline. Princeton, NJ: Educational Testing Service.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences. (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Graduate Management Admission Council. (1992). An admissions office profile of candidates taking the Graduate Management Admission Test 1986-87 through 1990-91.

Han, L., & Hoover, H. D. (1994, April). Gender differences in achievement test scores. Paper presented at the annual meeting of the National Council on Measurement in Education, New Orleans, LA.

Kass, N. (1964). Risk in decision-making as a function of age, sex and probability preference. Child Development, 35, 577-582.

McCormack, R. L., & McLeod M. M. (1988). Gender bias in the prediction of college course performance. Journal of Educational Measurement. 25, 321-331.

McManis, D. L., & Bell, D. R. (1968). Risk-taking by reward-seeking, punishment-avoiding, or mixed orientation retardates. American Journal of Mental Deficiency. 73, 267-272.

National Center for Education Statistics. (1985). The condition of education. Washington, DC: U.S. Government Printing Office.

Slovic, P. (1966). Risk-taking in children: Age and sex differences. Child Development, 37, 169-176.

The Chronicle of Higher Education Almanac. (1992, August). Washington, DC: The Chronicle of Higher Education, Inc.

Willingham, W. W. (1988). Admissions decisions. In W. W. Willingham, M. Ragosta, R. E. Bennett, H. Braun, D. A. Rock, & D. E. Powers (Eds.), Testing handicapped people (pp. 71-81). Boston, MA: Allyn and Bacon, Inc.

Young, J. W. (1991). Gender bias in predicting college academic performance: A new approach using item response theory. Journal of Educational Measurement. 28, 37-47.

APPENDIX

Undergraduate Majors Included in Each of Eight Undergraduate Major Categories

Humanities

Architecture/Environmental Design
Art/Design
Art History
Classics
Communications
Drama/Theatre Arts
English
Fine Arts
Foreign Languages
French
German
Home Economics
Journalism
Liberal Arts
Library Studies
Linguistics
Literature
Music
Performing Arts
Philosophy
Practical Arts
Religion/Religious Studies
Spanish
Theology
Other

Business

Accounting
Advertising
Business Administration
Business Education
Business Management
Business Management/Administration
Business and Commerce, General
Economics
Finance
Hotel/Restaurant Management
Industrial Management
Industrial Relations
Marketing
Personnel Management
Real Estate
Sales/Retail
Transportation and Commerce
Other

Computer Science

Computer Science, General
Computer Programming
Database Management
Information Sciences
Systems Analysis
Other

Engineering

Aerospace and Aeronautical
Bio/Biomedical
Chemical Engineering
Civil Engineering
Construction Engineering
Electrical Engineering
Electronic Engineering
Engineering Technologies/Design
Industrial Engineering
Mechanical Engineering
Mining Engineering
Nuclear Engineering
Petroleum Engineering
Other

Health Professions

Animal Sciences/Veterinary Medicine
Dietetics/Nutritional Science
Hospital/Health Care Administration
Medical Laboratory Technology/Radiology
Nursing
Occupational Therapy
Pharmacy
Physical Therapy
Predentistry/Dentistry
Premedical/Medicine
Speech Pathology/Audiology
Other

Natural Sciences

Agriculture
Astronomy
Biology, General
Biology, Specialization
Botany
Chemistry, General
Chemistry, Specialization
Environmental Sciences
Geography
Geology\Earth Sciences
Marine Studies
Mathematics
Physical Sciences
Physics, General
Physics, Specialization
Other

Social Sciences

African American Studies
American Civilization
Anthropology
Archaeology
Criminal Justice
Criminology
Education, General
Education/Administration
Educational Psychology
Family Relations/Child Development
Government/Service
Guidance/Counseling
History
International Relations
Law Enforcement
Military Science
Physical Education
Political Science
Prelaw
Psychology
Public Affairs/Services/Administration
Social Science
Social Work
Sociology
Special Education/Disabilities/Handicapped
Urban Studies/Regional Planning
Women's Studies
Other

Other

Any area not listed

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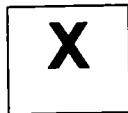
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