

Supplemental Notes on the Relative Effect of Law School Grades and Law School Prestige Upon Bar Passage

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In his comment, Daniel Ho contends that Table 6.1 in my paper, *A Systemic Analysis of Affirmative Action in American Law Schools*, is flawed. My table aims to show that how students perform in law school (as measured by grades) is far more important than where they go to law school (as measured by law school eliteness) in determining whether they pass the bar. Ho contends that including a measure of eliteness and a measure of grades in the same regression equation causes bias, because grades are influenced by school eliteness.

It is of course true that going to a more elite school tends to lead to lower grades – that is a central part of my argument. Preferences boost black students into more elite schools, where the competition is stiffer, causing them to get lower grades than they would otherwise. If grades matter more than eliteness in long-term outcomes (presumably because the lower grade signifies less actual learning by the student), then blacks are hurt by preferences.

There are a number of ways of exploring Ho's concern about whether putting grades and eliteness in the same equation obscures what's going on in some misleading way. My reply showed one method – structural equation modeling. Another very good (but less intuitive) method is detailed here.

In the table that follows, I present a series of logistic equations, all of which attempt to predict who does, and does not, pass the bar on the first attempt. (These equations use the Law School Bar Passage Study (BPS) data.) Each model adds or subtracts variables to assess the marginal importance of different factors on bar passage. This approach also provides insight into how the variables interact with one another. For each of these models (I through V), I report the coefficients, standard errors, and significance levels of each independent variable, and some summary statistics on the model as a whole. Model I is just the demographics. Model II includes Tier (the BPS approximation of prestige), and Model III removes Tier and replaces it with LSAT and UGPA. Model IV includes LSAT, UGPA, and Tier, as well as interaction terms; these interact LSAT and each Tier, and UGPA and each Tier. The final equation, Model V, adds law school GPA to all previous variables.

(Note that Tier is measured in six categories, with Tier 1 tending to contain schools with the lowest average prestige, and Tier 6 the highest. Tier 6 is the omitted category, so the other tier coefficients are measurements relative to performance by Tier 6 students. Among the demographic variables, “whites” are the omitted category, so the other racial coefficients are measured relative to whites.)

In Model I, the race coefficients are highly significant, but the overall R^2 of the model is quite low. Since race is correlated with other variables, this model by itself tells us little aside from documenting the substantial disparities in bar passage rates across racial groups.

In Model II, Tier behaves as expected. Students at Tier 1 schools are much less likely than students at Tier 6 schools (in the intercept) to pass the bar, and the higher the tier the higher the coefficient (indicating a better chance of passing the bar). Adding Tier also increases the fit somewhat over Model I, but not by a lot. The pseudo R^2 increases from 0.095 to 0.124, and the Likelihood Ratio (LR) chi-square increases significantly by 359 (1500-1141) with 5 degrees of freedom (10-5).

Model III (replacing Tier with LSAT and UGPA) indicates that LSAT and UGPA are much better predictors of bar passage than Tier. Both LSAT and UGPA are highly significant variables, and their addition to the equation increases the LR chi-square by 1324 with 2 df (pseudo $R^2 = 0.203$). Notice that the addition of these variables reduces the size of the Black, Other Race, and Hispanic coefficients by about 50%.

Model IV combines the variables in Models II and III, and adds the interaction terms of LSAT*Tier and UGPA*Tier. Note that when we control for LSAT and UGPA, neither the Tier variables nor the Tier interaction terms are statistically significant. This might be due to multi-collinearity among the interactions, but it is probably not. If multi-collinearity were to blame it would be evident in the change in model fit statistics, which would show increased fit; they do not. The explanatory of this model increases from Model III by a trivial and insignificant amount. In other words, Tier appears to have little direct impact on bar passage in this model. Its effect seems to derive from sorting students with differing background credentials into different levels of school, and not from independently influencing performance on the bar. Note, too, that all of the demographic variables are still significantly correlated with bar passage, and that the addition of Tier did not reduce their size relative to model III.

Model V includes all the variables from Model IV, with the addition of Law School GPA. There are five important observations to be made about this equation. First, Law School GPA is far more significant than any other variable in the model. Second, Law School GPA has not borrowed any of its explanatory power from Tier; Tier was insignificant before. Third, the explanatory power of the demographic variables virtually disappears when we control for law school grades. This implies that neither race, nor other unobserved factors that might be correlated with race (e.g., attendance at bar preparation courses) is strongly associated with bar passage or failure. Fourth, the effect of LSAT is diminished, and UGPA is insignificant, when Law School GPA is in the model. Fifth and most importantly, the fit of model increases dramatically. The LR chi-square increases from Model IV to Model V by 1894 on 1 degree of freedom. Psuedo R^2 increases from .207 to .370.

These models provide an even better demonstration of the story in *Systemic Analysis* than does the original Table 6.1. They support several conclusions:

--Law School GPA is a far more important determinant of bar passage than Law School Tier.

--The inclusion of Law School GPA in a model with Tier does not obscure some positive, indirect effect of Tier on bar passage; a model that omits GPA altogether but controls for the background credentials of students essentially eliminates any impact from Tier.

--The large, differential bar passage rates by race show up in Model I (when we just use demographic variables) but gradually lose importance as we add explanatory variables, and then lose all significance (except for a barely significant coefficient for Asians) when we control for law school grades. This means that part of the racial differences in bar passage rates is accounted for by differences in entering credentials (LSAT and UGPA), but is very substantially accounted for by lower law school grades. Raising someone's tier, if it substantially lowers their grades, is therefore a bad trade from the standpoint of passing the bar.

| Covariates of First Time Bar Passage. Logit coefficients (standard errors in parentheses) | | | | | |
|---|-----------------------|----------------------|----------------------|----------------------|---------------------|
| | I | II | III | IV | V |
| Male | 0.055 (0.043) | 0.077 (0.044) | 0.138** (0.047) | 0.137** (0.047) | 0.201*** (0.052) |
| Asian | -0.0993*** (0.086) | -1.136*** (0.088) | -0.772*** (0.095) | -0.747*** (0.096) | -0.255* (0.111) |
| Black | -1.954*** (0.062) | -1.945*** (0.066) | -0.684*** (0.074) | -0.660*** (0.080) | 0.101 (0.092) |
| Other Race | -1.114*** (0.122) | -1.164*** (0.124) | -0.670*** (0.134) | -0.651*** (0.136) | -0.200 (0.160) |
| Hispanic | -1.353*** (0.076) | -1.412*** (0.078) | -0.706*** (0.083) | -0.683*** (0.085) | -0.154 (0.097) |
| Tier 1 | | -1.516*** (0.134) | | 0.981 (1.266) | -2.263 (1.587) |
| Tier 2 | | -0.846*** (0.057) | | 0.772 (0.606) | 0.083 (0.748) |
| Tier 3 | | -0.328*** (0.034) | | -0.088 (0.352) | -0.442 (0.444) |
| Tier 4 | | -0.151*** (0.026) | | -0.127 (0.269) | -0.288 (0.337) |
| Tier 5 | | -0.142*** (0.022) | | -0.160 (0.225) | -0.548* (0.279) |
| LSAT | | | 0.136*** (0.005) | 0.132*** (0.020) | 0.067** (0.026) |
| UGPA | | | 0.853*** (0.056) | 0.898*** (0.262) | 0.440 (0.349) |
| LSAT*Tier 1 | | | | -0.001 (0.027) | 0.046 (0.034) |
| LSAT*Tier 2 | | | | -0.016 (0.013) | -0.009 (0.015) |
| LSAT*Tier 3 | | | | 0.003 (0.007) | 0.009 (0.009) |
| LSAT*Tier 4 | | | | 0.004 (0.005) | 0.008 (0.007) |
| LSAT*Tier 5 | | | | 0.003 (0.005) | 0.007 (0.006) |
| UGPA*Tier 1 | | | | -0.313 (0.335) | -0.282 (0.433) |
| UGPA*Tier 2 | | | | -0.123 (0.153) | -0.125 (0.196) |
| UGPA*Tier 3 | | | | 0.011 (0.093) | -0.004 (0.122) |
| UGPA*Tier 4 | | | | 0.006 (0.072) | -0.019 (0.093) |
| UGPA*Tier 5 | | | | 0.008 (0.059) | 0.058 (0.076) |
| Law School GPA | | | | | 1.440*** (0.036) |
| Intercept | 2.399*** (0.036) | 3.267*** (0.099) | -5.269*** (0.233) | -5.295 (0.997) | -0.527 (1.276) |
| LR Chi-Square | 1141 | 1500 | 2465 | 2508 | 4402 |
| Degrees of Freedom | 5 | 10 | 7 | 22 | 23 |
| Pseudo R-square | 0.095 | 0.124 | 0.203 | 0.207 | 0.370 |
| Somers' D | .296 | .413 | .541 | .548 | .741 |

*** p<0.001, **p<0.01, *p<0.05