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WILL I PASS THE BAR EXAM?: PREDICTING STUDENT SUCCESS USING LSAT SCORES AND LAW SCHOOL PERFORMANCE

*Katherine A. Austin**
*Catherine Martin Christopher***
*Darby Dickerson****

I. INTRODUCTION

Law schools currently face a difficult climate: fewer applicants with lower incoming credentials are passing the bar exam at decreasing rates.¹ Law schools seek to understand why bar pass rates are dropping, and what can be done to remedy this problem for future graduates. The present study examined the predictors of Texas Tech University School of Law (“Texas Tech Law”) student success in the classroom and on the bar exam by analyzing admission standards, curricular performance, and extra-curricular engagement.²

Texas Tech Law is uniquely situated to provide insights into the factors that contribute to bar exam success. First, the Texas Tech Law student and alumni base has a largely homogenous educational experience in law school. Texas Tech Law does not offer a part-time or night program, nor are students permitted to begin their law studies in the spring semester.³ As a result, all students at Texas Tech Law are full-

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1. Courtney G. Lee, *Changing Gears to Meet the “New Normal” in Legal Education*, 53 DUQ. L. REV. 39, 41 (2015).

2. *See infra* Part III.

3. TEX. TECH UNIV. SCH. OF LAW, 2016/2017 CATALOG 5 (2016), https://www.depts.ttu.edu/officialpublications/pdfs/2016-17_law_catalog.pdf. Starting in fall 2016, Texas Tech Law began accepting a limited number of students who study part time under a flex-time scheduling option.

time students who begin their legal education in the fall semester. The vast majority of students graduate in May, six semesters after they began law school, and sit for the July bar exam. Moreover, Texas Tech Law has a fairly extensive required curriculum. Of the ninety credits required to earn a Juris Doctor (“J.D.”) degree, all students complete fifty-five credits of required courses—twenty-nine in the first year and twenty-six more in upper-level required courses.⁴ These factors produce an alumni base that has a fairly consistent educational experience in law school.

Also, approximately 90% of Texas Tech Law alumni who take a bar exam take the Texas bar exam.⁵ The Texas bar exam is remarkably consistent from year-to-year, both in format and in subjects tested. For example, every Texas bar exam contains two essays—no more, no less—on business associations law.⁶ The Texas Board of Law Examiners then reports detailed information to law schools about alumni performance, including the examinees’ names.⁷ This detailed reporting allows analysis of how an alumnus performed in a given course as compared to a specific subcomponent of the bar exam: that is, did an individual’s earned grade in the required Business Entities course impact performance on the business associations essays of the bar exam?

This Article reports the broad investigation that was undertaken to understand student credentials and the impact those credentials may have had on the bar exam. The authors posed the following questions:

- Whether entering credentials—undergraduate grade point average (“GPA”) and Law School Admission Test (“LSAT”) score—predicted bar exam success?
- Whether final law school GPA predicted bar exam success?
- Whether first-year (“1L”) GPA predicted bar exam success?
- Whether performance in specific courses predicted *overall* bar exam success?
- Whether performance in specific courses predicted performance on the related bar exam subcomponent?
- Whether participation in applied skills opportunities predicted overall bar exam success?⁸

This study was concluded before the new program began. *Id.*

4. *See id.* at 20.

5. Of the 213 students in the class of 2014, 192 (90.14%) took the Texas bar exam. Of the 238 students in the class of 2013, 214 (89.91%) took the Texas bar exam. The data are on file with authors. This information was compiled from internal records of Texas Tech Law.

6. *See, e.g., Bar Exam*, TEX. BOARD L. EXAMINERS, <https://ble.texas.gov/current-exam> (last visited Apr. 10, 2017).

7. The document containing such information is on file with authors but may only be made available in redacted form due to its confidential nature.

8. *See infra* Part IV.F.

This Article confirms other findings regarding the predictive validity of undergraduate GPA, LSAT score, and final law school GPA, but the Article also makes several novel contributions to the literature. The confluence of Texas Tech Law's extensive required curriculum and the Texas Board of Law Examiners' detailed reporting of examinee performance allowed the authors to analyze and report for the first time the relationship between specific courses and related subcomponents of the bar exam.⁹ The Article also reports the first inquiry into the impact of applied skills opportunities (such as journal, clinic, and moot court participation) on bar exam success rates.¹⁰

II. LITERATURE REVIEW

Many studies attempt to discover the predictors of law student success, whether in the classroom, on the bar exam, or in practice. The present study focuses on first-time bar passage and attempts to reveal predictors of success. We are most interested in what contributes to Texas Tech Law alumni passing the Texas bar exam on the first attempt.¹¹

A. Entering Credentials

When prospective students apply to law school, the primary pieces of information available to predict their success are their undergraduate GPAs and LSAT scores.¹²

Previous studies are mixed on whether undergraduate GPA is predictive of bar exam success. For example, Christian Day¹³ and Linda Wightman¹⁴ find that undergraduate GPA is predictive, while Derek

9. See *infra* Parts III–IV.

10. See *infra* Part IV.G.

11. For analysis of factors that impact student performance in law school, see William D. Henderson, *The LSAT, Law School Exams, and Meritocracy: The Surprising and Undertheorized Role of Test-Taking Speed*, 82 TEX. L. REV. 975, 984–86 (2004). For analysis of law school rankings systems, see Andrew P. Morris & William D. Henderson, *Measuring Outcomes: Post-Graduation Measures of Success in the U.S. News & World Report Law School Rankings*, 83 IND. L.J. 791, 794–96 (2008); and Jeffrey Evans Stake, *The Interplay Between Law School Rankings, Reputations, and Resource Allocations: Ways Rankings Mislead*, 81 IND. L.J. 229, 232 (2006).

12. Phoebe Haddon and Deborah Post argue that admissions decisions must include a variety of data, not just the LSAT. Phoebe A. Haddon & Deborah W. Post, *Misuse and Abuse of the LSAT: Making the Case for Alternative Evaluative Efforts and a Redefinition of Merit*, 80 ST. JOHN'S L. REV. 41, 90–94 (2006).

13. Christian C. Day, *Law Schools Can Solve the "Bar Pass Problem"—"Do the Work!"*, 40 CAL. W. L. REV. 321, 326–31 (2004) (noting that linear regression finds r^2 values of .91 and .94, significantly higher than other studies).

14. See LINDA F. WIGHTMAN, LAW SCH. ADMISSION COUNCIL, LSAC NATIONAL LONGITUDINAL BAR PASSAGE STUDY 37 (1998), <http://lawschooltransparency.com/reform/projects/>

Alphran et al.,¹⁵ Lorenzo Trujillo,¹⁶ and Nicholas Georgakopoulos¹⁷ find that it is not. The present study finds that undergraduate GPA is not predictive of bar exam success.¹⁸

Ever since institutions of higher education started using standardized test scores as a criterion for student admission, educators and scholars have studied the validity of these instruments in predicting student performance in secondary and graduate education.¹⁹ Scholars have examined the validity of the Medical College Admission Test (“MCAT”),²⁰ Graduate Record Examination (“GRE”),²¹ Graduate Management Admission Test (“GMAT”),²² and LSAT.²³

The LSAT, administered by the Law School Admission Council (“LSAC”), is widely used to measure both potential law student aptitude and, via reporting to the *U.S. News & World Report*, the overall quality of a law school’s student body.²⁴ LSAC asserts that the LSAT is

investigations/2015/documents/NLBPS.pdf.

15. Derek Alphran et al., *Yes We Can, Pass the Bar: University of the District of Columbia, David A. Clarke School of Law Bar Passage Initiatives and Bar Pass Rates—From the Titanic to the Queen Mary!*, 14 U. D.C. L. REV. 9, 39 (2011).

16. Lorenzo A. Trujillo, *The Relationship Between Law School and the Bar Exam: A Look at Assessment and Student Success*, 78 U. COLO. L. REV. 69, 107 (2007).

17. Nicholas Georgakopoulos, *Bar Passage: GPA and LSAT, Not Bar Reviews 7* (Robert H. McKinney Sch. of Law, Legal Studies Research Paper No. 2013-30, 2013).

18. See *infra* Part IV.A.

19. SAUL GEISER & MARIA VERONICA SANTELICES, CTR. FOR STUDIES IN HIGHER EDUC., VALIDITY OF HIGH-SCHOOL GRADES IN PREDICTING STUDENT SUCCESS BEYOND THE FRESHMAN YEAR: HIGH-SCHOOL RECORD VS. STANDARDIZED TESTS AS INDICATORS OF FOUR-YEAR COLLEGE OUTCOMES 1, 4-8 (2007), <http://files.eric.ed.gov/fulltext/ED502858.pdf>; Robert L. Linn, *Admissions Testing: Recommended Uses, Validity, Differential Prediction, and Coaching*, 3 APPLIED MEASUREMENT EDUC. 297, 302-08 (1990).

20. James L. Bills et al., *Validity of the Medical College Admission Test for Predicting MD–PhD Student Outcomes*, 21 ADVANCES HEALTH SCI. EDUC. 33, 39, 44-45 (2015).

21. John W. Young et al., *The Validity of Scores from the GRE Revised General Test for Forecasting Performance in Business Schools: Phase One*, 2014 ETS RES. REP. SERIES 1, 4-9.

22. Nathan R. Kuncel, *A Meta-Analysis of the Predictive Validity of the Graduate Management Admission Test (GMAT) and Undergraduate Grade Point Average (UGPA) for Graduate Student Academic Performance*, 6 ACAD. MGMT. LEARNING & EDUC. 51, 59-64 (2007).

23. Harvey Gilmore, *The SAT, LSAT, and Discrimination: Professor Gilmore Again Responds to Professor Subotnik*, 34 L. & INEQ. 153, 160-67 (2016); Laura Rothstein, *The LSAT*, U.S. News & World Report, and *Minority Admissions: Special Challenges and Special Opportunities for Law School Deans*, 80 ST. JOHN’S L. REV. 257, 264-67, 280-83 (2006). See generally LISA C. ANTHONY ET AL., LAW SCH. ADMISSION COUNCIL, PREDICTIVE VALIDITY OF THE LSAT: A NATIONAL SUMMARY OF THE 2011 AND 2012 LSAT CORRELATION STUDIES (2013), [http://www.lsac.org/docs/default-source/research-\(lsac-resources\)/tr-13-03.pdf](http://www.lsac.org/docs/default-source/research-(lsac-resources)/tr-13-03.pdf).

24. Both kinds of measurements are somewhat controversial. See Barry A. Currier, *It’s (Appropriately) Complicated: Be Cautious in Using LSAT Scores to Evaluate Law Schools*, 47 SYLLABUS 1, 1-3 (2015), http://www.americanbar.org/publications/syllabus_home/volume-47-2015-2016/syllabus-winter-2015-2016--47-2-/from-the-managing-director.html; see also Marjorie M. Shultz & Sheldon Zedeck, *Admission to Law School: New Measures*, 47 EDUC. PSYCHOLOGIST 51, 51-54 (2012).

designed to measure only “a limited set of skills that are important for success in law school,” not the overall quality of a law school or the bar pass likelihood of individual law school applicants.²⁵ Debate is ongoing about whether admitting law students with low LSAT scores creates opportunities for them or baits them for failure.²⁶

Regardless of the LSAC’s intent to measure only aptitude of potential law students, numerous studies, including those by Alphan et al.,²⁷ Georgakopoulos,²⁸ Wightman,²⁹ and Deborah Merritt,³⁰ show that the LSAT score is an indicator of bar exam success. The present study confirms this finding.³¹ Law School Transparency released a report that students with LSAT scores below 150 have increased risk of bar failure, with students of LSAT scores below 145 being at extreme risk.³² Ultimately, the LSAT is still a strong predictor of academic success and bar passage,³³ as well as career success.³⁴

25. Daniel O. Bernstine, *Why LSAT Scores Should Not Be Used to Label Law Schools and Their Students*, LAW SCH. ADMISSION COUNCIL, <http://www.lsac.org/docs/default-source/press-releases/lsac-statement-dec-1-final.pdf?sfvrsn=2> (last visited Apr. 10, 2017) (responding to criticism by Law School Transparency Blog that law schools are admitting students with low LSAT scores knowing that these students are unlikely to pass the bar exam). For a further discussion, see *2015 State of Legal Education, A Problem for Our Profession and Society*, LAW SCH. TRANSPARENCY, <http://lawschooltransparency.com/reform/projects/investigations/2015> (last visited Apr. 10, 2017); and see also ANTHONY ET AL., *supra* note 23, at 6 (recommending against using LSAT scores for any purpose other than admissions decisions, such as employment decisions); and *Cautionary Policies Concerning LSAT Scores and Related Services*, LAW SCH. ADMISSION COUNCIL (2014), [http://www.lsac.org/docs/default-source/publications-\(lsac-resources\)/cautionarypolicies.pdf](http://www.lsac.org/docs/default-source/publications-(lsac-resources)/cautionarypolicies.pdf) (“Scores should be viewed as approximate indicators rather than exact measures of an applicant’s abilities.”).

26. See, e.g., Sheldon Bernard Lyke, *Seeking Clarity—Some Dangerous Questions for Professor Lyke*, FAC. LOUNGE (Dec. 4, 2015), <http://www.thefacultylounge.org/2015/12/adding-clarity-to-law-school-transparency.html>.

27. See Alphan et al., *supra* note 15, at 39.

28. See Georgakopoulos, *supra* note 17, at 10.

29. See WIGHTMAN, *supra* note 14, at vii.

30. See Deborah J. Merritt, *LSAT Scores and Eventual Bar Passage Rates*, FAC. LOUNGE (Dec. 15, 2015), <http://www.thefacultylounge.org/2015/12/lsat-scores-and-eventual-bar-passage-rates.html>.

31. See *infra* Part IV.B.

32. *Analysis: What to Make of the State of Legal Education in 2015*, LAW SCH. TRANSPARENCY, <http://lawschooltransparency.com/reform/projects/investigations/2015> (last visited Apr. 10, 2017).

33. Alexia Brunet Marks & Scott A. Moss, *What Predicts Law Student Success? A Longitudinal Study Correlating Law Student Applicant Data and Law School Outcomes*, 13 J. EMPIRICAL LEGAL STUD. 205, 215 (2016); see Paul R. Sackett, *High-Stakes Testing in Higher Education and Employment: Appraising the Evidence for Validity and Fairness*, 63 AM. PSYCHOLOGIST 215, 219 (2008).

34. See Sackett, *supra* note 33, at 219; Adrian M. Tamayo & Mervin G. Gascon, *Predictability of Bar Exam Outcomes: A Logistic Regression Analysis* 5 (Oct. 3, 2014) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2504986.

The LSAT is generally found to be less predictive than the individual's final law school GPA.³⁵ Wightman³⁶ and Thomas³⁷ both demonstrate that an individual's LSAT score and law school GPA *in combination* are a better predictor of bar exam success than either variable in isolation. Of course, when the admissions decision is made, the final law school GPA is unknowable.

B. Law School Performance

Published studies unanimously find that the strongest indicator of a law school graduate's success on the bar exam—even more than LSAT score—is cumulative performance in law school, which can be articulated in several ways. Alphan et al.,³⁸ Georgakopoulos,³⁹ and Wightman⁴⁰ all find a strong relationship between final law school GPA and bar exam success, whereas Douglas Rush and Hisako Matsuo⁴¹ find a relationship between final law school class rank and bar passage.

Georgakopoulos did not find first-year GPA to be a statistically significant indicator of bar success;⁴² however, the present study finds otherwise.⁴³

Curriculum has been shown to impact a law graduate's bar exam success in only limited circumstances. Rush and Matsuo demonstrated that for students in the top half of the graduating class, those who failed the bar exam had taken the same number of bar-related classes as those who passed the bar; moreover, there was no relationship between the number of bar-related courses taken and success on the bar.⁴⁴ For those students in the third quartile of their graduating class, there was both a difference in the *number* of bar-related courses taken by successful and

35. Douglas Rush & Hisako Matsuo, *Does Law School Curriculum Affect Bar Examination Passage? An Empirical Analysis of Factors Related to Bar Examination Passage During the Years 2001 Through 2006 at a Midwestern Law School*, 57 J. LEG. EDUC. 224, 232-33 (2007); see also Trujillo, *supra* note 16, at 107; WIGHTMAN, *supra* note 14, at 35 (“[L]aw school grades were significantly correlated with bar examination outcome and they accounted for more of the variance than any other variable examined.”). *But see* Marks & Moss, *supra* note 27, at 210-11.

36. See WIGHTMAN, *supra* note 14, at 50, 76-77.

37. David A. Thomas, *Predicting Law School Academic Performance from LSAT Scores and Undergraduate Grade Point Averages: A Comprehensive Study*, 35 ARIZ. ST. L.J. 1007, 1011 (2003).

38. See Alphan et al., *supra* note 15, at 34-35.

39. See Georgakopoulos, *supra* note 17, at 7-10.

40. See WIGHTMAN, *supra* note 14, at 35 (analyzing both adjusted and unadjusted final cumulative law school grades; the adjustment was made in order to reduce the discrepancies in grading standards across law schools).

41. See Rush & Matsuo, *supra* note 35, at 233.

42. See Georgakopoulos, *supra* note 17, at 12.

43. See *infra* Part IV.D.

44. See Rush & Matsuo, *supra* note 35, at 233-35.

unsuccessful alumni (successful alumni took more bar courses, on average), and there was a statistically significant relationship between the number of bar exam courses taken and bar exam success.⁴⁵ For students in the fourth quartile, although successful alumni did tend to take more bar exam courses, there was no relationship between the number of bar exam courses taken and bar exam success.⁴⁶

Scott Johns demonstrated that for-credit law school courses focused on academic support and bar exam preparation also had positive impact on bar exam success.⁴⁷

While previous research demonstrated the important role of law clinic participation in the preparation of future lawyers,⁴⁸ no work has been conducted to examine the relationship between clinical participation and bar exam performance.⁴⁹ In the present study, the authors evaluate the impact of clinic participation on law school GPA and bar exam performance.⁵⁰

C. Other Considerations

Scholars have examined the general role of law student participation in non-curricular activities on bar passage,⁵¹ examining specifically the first-year experience on student success.⁵² In the present study, the authors evaluate the impact of law journal participation as well as clinic and advocacy competition participation on GPA and bar exam performance.⁵³

Psychologists have examined psychological and environmental variables that contribute to law school success and bar passage.⁵⁴ Heated debate has ensued regarding the relationship between race and bar exam

45. *Id.* at 234-35.

46. *See id.* at 235.

47. *See, e.g.,* Scott Johns, *Empirical Reflections: A Statistical Evaluation of Bar Exam Program Interventions*, 54 U. LOUISVILLE L. REV. 35, 36-37, 55 (2016).

48. Jessica Dopierala, *Bridging the Gap Between Theory and Practice: Why Are Students Falling off the Bridge and What Are Law Schools Doing to Catch Them?*, 85 U. DET. MERCY L. REV. 429, 443 (2007).

49. Robert Kuehn, *Whither Clinical Course and Bar Passage*, BEST PRACTICES LEGAL EDUC. (Jan. 18, 2016), <https://bestpracticeslegaled.albanylawblogs.org/2016/01/18/whither-clinical-courses-and-bar-passage-by-prof-robert-kuehn>.

50. *See infra* Part IV.G.2.

51. *See* Keith A. Kaufman et al., *Passing the Bar Exam: Psychological, Educational, and Demographic Predictors of Success*, 57 J. LEG. EDUC. 205, 222 (2007).

52. *See generally* Michael J. Patton, *The Student, The Situation, and Performance During the First Year of Law School*, 21 J. LEGAL EDUC. 10 (1968).

53. *See infra* Part IV.G.1-3.

54. Ron Fagan & Paula Squitiera, *The Relationship Between Personality Characteristics and Academic Success in Law School*, 16 EVALUATION & RES. EDUC. 95, 96 (2002).

success,⁵⁵ though additional analysis of that issue is beyond the scope of this Article.

Participating in academic support programs has been shown to improve bar passage⁵⁶ but is not a panacea.⁵⁷ Further, individualized academic support has been shown to be more effective than workshop-style instruction.⁵⁸

III. METHODOLOGY

In partnership with Texas Tech University's Office of the Provost, Texas Tech Law embarked on an effort to evaluate predictors of bar exam performance. Texas Tech Law alumni performance on the Texas bar exam has oscillated over time⁵⁹:

TABLE 1⁶⁰

	<i>First-Time Examinees' Bar Pass Rate for Texas Tech Law Alumni</i>	<i>First-Time Examinees' Bar Exam Pass Rate for All In-State Law School Graduates in Texas</i>
July 2016	85.71%	82.33%
July 2015	83.82%	76.60%
July 2014	77.46%	80.85%
July 2013	85.94%	88.74%
July 2012	83.62%	86.49%

55. See, e.g., Jane E. Cross, *The Bar Examination in Black and White: The Black-White Bar Passage Gap and the Implications for Minority Admissions to the Legal Profession*, 18 NAT'L BLACK L.J. 63, 66-70 (2004); Richard H. Sander, *A Systemic Analysis of Affirmative Action in American Law Schools*, 57 STAN. L. REV. 367 (2004); Merritt, *supra* note 30.

56. Alphan et al., *supra* note 15, at 22-24, 39; Leslie Yalof Garfield & Kelly Koenig Levi, *Finding Success in the "Cauldron of Competition": The Effectiveness of Academic Support Programs*, 2004 BYU EDUC. & L.J. 1, 19-20; Linda Jellum & Emmeline Paulette Reeves, *Cool Data on a Hot Issue: Empirical Evidence That a Law School Bar Support Program Enhances Bar Performance*, 5 NEV. L.J. 646, 669-82 (2005); Aleatra P. Williams, *The Role of Bar Preparation Programs in the Current Legal Education Crisis*, 59 WAYNE L. REV. 383, 401 (2013); see also Denise Riebe, *A Bar Review for Law Schools: Getting Students on Board to Pass Their Bar Exams*, 45 BRANDEIS L.J. 269, 291-300 (2007) (summarizing numerous studies on the effectiveness of various academic support programs).

57. See Alphan et al., *supra* note 15, at 24, 37-38; Catherine Martin Christopher, *Eye of the Beholder: How Perception Management Can Counter Stereotype Threat Among Struggling Law Students*, 53 DUQ. L. REV. 175-76 (2015).

58. Garfield & Levi, *supra* note 56, at 36-37.

59. See *Statistics & Analysis*, TEX. BOARD L. EXAMINERS, <https://ble.texas.gov/statistics> (last visited Apr. 10, 2017).

60. Only July bar exam results are posted here since significantly more Texas Tech Law alumni take the July exam than the February exam, giving more robust and representative information. The July 2015 Texas bar exam was taken by 173 Texas Tech Law alumni, while the February 2015 bar exam was taken by only 24. *Id.*

This chart demonstrates that on some examinations, such as the July 2015 exam, Texas Tech Law's bar pass rate significantly outperformed the state average; on other examinations, however, it significantly underperformed.⁶¹ The inconsistency of these results—and the underperformance—frustrated many faculty, students, alumni, and other stakeholders. This study was undertaken to better understand what factors predict or contribute to bar exam success, so as to improve the overall bar pass rate. The authors proffered the following research questions:

- Whether entering credentials—undergraduate GPA and LSAT score—predicted bar exam success?
- Whether final law school GPA predicted bar exam success?
- Whether 1L GPA predicted bar exam success?
- Whether performance in specific courses predicted *overall* bar exam success?
- Whether performance in specific courses predicted performance on the related bar exam subcomponent?
- Whether participation in applied skills opportunities predicted overall bar exam success?⁶²

A. Procedure

The authors analyzed data from Texas Tech Law alumni who took the Texas bar exam between February 2008 and July 2014; the data included the alumni's LSAT scores, undergraduate GPAs, performance in specific law school courses, first-year law school GPAs, final law school GPAs, percentile performance on specific bar exam subcomponents, and cumulative bar exam scores.

All data were screened for normality, and the authors found that all variable distributions were within tolerance in terms of skewness and kurtosis, indicating that parametric statistics were permissible with the dataset.⁶³

61. *Id.*

62. *See infra* Part IV.G.

63. Linda S. Fidell & Barbara G. Tabachnick, *Preparatory Data Analysis*, in HANDBOOK OF PSYCHOLOGY RESEARCH METHODS IN PSYCHOLOGY 117 (John A. Schinka & Wayne F. Velicer eds., 2003).

B. Descriptive Statistics: Texas Tech Law Alumni

Between the February 2008 and July 2014 administrations, 1572 unique Texas Tech Law alumni took the Texas bar exam.⁶⁴ These alumni collectively demonstrated the following:

TABLE 2

<i>Metric</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Comment</i>
LSAT Score	155	4.67	Slight Positive Skew
Undergraduate GPA	3.42	.38	Slight Positive Skew
Law School Final GPA	3.03	.41	Even Distribution
Texas Bar Exam Score	727	51.01	Even Distribution

Of the alumni who failed the bar exam, the authors note that they graduated disproportionately in the bottom quartile of their class:

TABLE 3

	<i>July 2014</i>	<i>July 2013</i>	<i>July 2012</i>	<i>July 2011</i>	<i>July 2010</i>	<i>July 2009</i>	<i>July 2008</i>	<i>Totals</i>
Total First-Time Failures	39	27	29	15	24	8	26	102
Graduated in Q1	1	0	0	1	0	0	0	1
Graduated in Q2	5	2	2	1	2	1	1	7
Graduated in Q3	12	6	5	5	7	1	2	20
Graduated in Q4	21	19	22	8	15	6	23	74

64. See *Statistics & Analysis*, *supra* note 59. This number represents the first-time takers. Of them, many who failed the bar exam on the first attempt made at least one additional attempt to pass. Our emphasis in this study is on the first-time takers. There were 213 individuals who attempted the bar exam more than once and analyzed as a heterogeneous group, with no distinction noted for number of attempts. Number of attempts ranged from two to five. Individuals who took the exam more than once had the following characteristics:

<i>Metric</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Comment</i>
LSAT Score	152	4.47	Slight Positive Skew
Undergraduate GPA	3.29	.51	Slight Positive Skew
Law School Final GPA	2.54	.21	Even Distribution
Bar Exam Score	677	48.80	Even Distribution

An analysis of variance, using a Bonferroni correction to mitigate the likelihood of a type I error (false positive) due to multiple comparisons in a single dataset, indicated that the multiple bar takers are statistically different compared to successful first-time bar exam takers: LSAT score $F(1,1561) = 72.50, p = .000$, law school GPA $F(1,1578) = 281.20, p = .000$, undergraduate GPA $F(1,564) = 6.22, p = .0013$, and bar exam score $F(1,1584) = 183.77, p = .000$. That is, those who took the bar exam more than once had also scored significantly lower on the LSAT, entered with a lower undergraduate GPA, earned a lower law school GPA, and scored lower on the bar exam. For an explanation of “F” statistics, see *infra* note 85 and accompanying text.

Thus, in July 2014, thirty-nine Texas Tech Law alumni failed the bar exam on their first attempt. Of those thirty-nine, one graduated in the top quarter of the class, five in the second quarter, twelve in the third quarter, and twenty-five in the fourth quarter. The trend holds across previous years. This finding, that alumni who failed the bar exam were disproportionately in the bottom quartile of their graduating class, is consistent with findings discussed above that law school GPA is the best predictor of bar exam success.⁶⁵

C. Descriptive Information: Texas Bar Exam

The Texas bar exam is currently one of the longest bar exams in the country, clocking in at 2.5 days.⁶⁶ It is scored out of 1000 points; the minimum passing score is 675.⁶⁷ The various portions of the Texas bar exam are weighted as follows⁶⁸:

TABLE 4

<i>Texas Bar Exam Component</i>	<i>Percent of Total Score</i>
Multistate Bar Exam (“MBE”)	40%
Texas Essays	40%
Procedure and Evidence Exam	10%
Multistate Performance Test (“MPT”)	10%

Half of the Texas bar exam thus consists of multistate materials that are not Texas-specific.⁶⁹ Like almost all U.S. jurisdictions, Texas administers the MBE, authored by the National Conference of Bar Examiners (“NCBE”), on the Wednesday of the bar exam.⁷⁰ Texas also administers one NCBE-authored MPT on the Tuesday of the bar exam.⁷¹

On the Thursday following the MBE, examinees complete twelve thirty-minute essays on Texas-specific material. Collectively, these essays comprise 40% of the examinee’s score, and they are on previously announced topics⁷²:

65. *See supra* Part II.B.

66. *Current Exam*, TEX. BOARD OF LAW EXAMINERS, <https://ble.texas.gov/current-exam> (last visited Apr. 10, 2017).

67. *Id.* The passing score is a cumulative score; Texas does not require that an examinee pass each portion of the bar exam independently. *Id.*

68. *Id.*

69. *Id.*

70. *Id.*

71. *Id.*

72. TEX. BD. OF LAW EXAM’RS, RULES GOVERNING ADMISSION TO THE BAR OF TEXAS 41 (2015).

- Two essays on Texas real property—usually, at least one of these questions is entirely about oil and gas law.
- Two essays on Texas family law, including Texas marital property.
- Two essays on Texas business associations—usually one question on corporations and one on partnerships.
- Two essays on the Texas Uniform Commercial Code (“U.C.C.”)—usually one question on Article 3 and one question on Article 9, but Articles 2 and 4 are also occasionally tested.
- Two essays on Texas wills and estate administration.
- One essay on Texas consumer law, generally meaning the Texas Deceptive Trade Practices Act (“DTPA”).
- One essay on either Texas trusts or Texas guardianship law.

Federal income tax and bankruptcy are considered “crossover topics” and may also appear.⁷³ These topics do not get their own dedicated essays, but a tax or bankruptcy issue is usually woven into one of the other twelve essays.⁷⁴

Lastly, Texas also writes and administers a procedure and evidence exam, which is a ninety-minute component consisting of forty short-answer questions on Texas civil procedure, Texas criminal procedure, and Texas evidence law.⁷⁵

IV. PREDICTIVE VALIDITY RESULTS

The authors conducted a series of predictive analytics⁷⁶ designed to evaluate the role of numerous variables in predicting bar exam performance. As is standard, a probability value of .05 was used to determine statistical significance through all analyses.⁷⁷ Hence, the statistics reported herein are at a 95% confidence level that our findings are due to the nature of the course materials, LSAT performance, and

73. *Id.* (stating that “income, estate, and gift tax issues,” as well as bankruptcy, are “to be included where appropriate as an element of questions in other subjects”).

74. For a list of previous Texas essay questions, see *Past Exams*, TEX. BOARD L. EXAMINERS, <http://ble.texas.gov/past-exams> (last visited Apr. 10, 2017).

75. *See id.*; *see also* TEX. BD. LAW EXAM’RS, PROCEDURE & EVIDENCE QUESTIONS: TEXAS BAR EXAMINATION (2016), http://ble.texas.gov/2016_July_Civ_Crim (providing instructions for the ninety-minute long procedure and evidence section of the July 2016 Texas bar exam).

76. *See* CHARLES NYCE, PREDICTIVE ANALYTICS WHITE PAPER 1 (2007), <http://www.hedgechatter.com/wp-content/uploads/2014/09/predictivemodelingwhitepaper.pdf> (defining predictive analytics as a “broad term describing a variety of statistical and analytical techniques used to develop models that predict future events or behaviors”).

77. *See, e.g.*, Sander Greenland & Charles Poole, *Problems in Common Interpretations of Statistics in Scientific Articles, Expert Reports, and Testimony*, 51 JURIMETRICS 113, 120 (2011) (“Statistical significance most often means that the P-value for testing the null hypothesis is less than or equal to 0.05.”).

course performance—not due to chance. The beta weights (b)⁷⁸ and correlation values (r)⁷⁹ indicate the effect size or magnitude of the impact that the variables under study had on bar exam performance. The R^2 values indicate the percentage of the variance in bar exam score that is being predicted by the identified variables in each Subpart below.

At times, these analyses may yield a statistically significant result,⁸⁰ but the actual effect or percentage of the bar exam score explained may not be of practical significance in the application to law school admissions and efforts to improve bar exam passage rates. Ultimately, managers make decisions, models do not,⁸¹ so the authors noted clearly when analyses yielded a statically significant result with questionable practical significance (percentage of total variance predicted). We recommend that law school administrators and faculty review the magnitude of the findings and determine the relevance to their institution. With limited resources, decision-makers must determine which components to target, and they will likely elect to measure and possibly improve those courses that have the strongest impact on bar passage.

A. Undergraduate GPA Is Not Predictive of Bar Exam Success

One of our first steps was to determine the role of undergraduate GPA as a predictor of bar exam performance. We conducted regression analytics⁸² for all students, evaluating the impact of undergraduate GPA on bar exam performance. In analyzing the entire population of data, regardless of bar exam attempts, the results clearly demonstrated that undergraduate GPA was not a relevant metric in analyzing bar exam

78. George Wilber, *Causal Models and Probability*, 46 SOC. FORCES 81, 81 (1967) (stating that beta coefficients “are computed for one or more specific models to help determine whether predicted relationships obtain”).

79. David M. Lane, *Values of the Pearson Correlation*, ONLINE STAT. EDUC., http://onlinestatbook.com/2/describing_bivariate_data/pearson.html (last visited Apr. 10, 2017) (defining a correlation coefficient as “a measure of the strength of the *linear relationship* between the two variables”).

80. Siddharth Kalla, *Statistically Significant Results*, EXPLORABLE, <https://explorable.com/statistically-significant-results> (last visited Apr. 10, 2017) (“Statistically significant results are those that are interpreted not likely to have occurred purely by chance and thereby have other underlying causes for their occurrence.”).

81. See LARRY M. AUSTIN & JAMES R. BURNS, *MANAGEMENT SCIENCE: AN AID FOR MANAGERIAL DECISION MAKING* 40 (1985).

82. It is understood that “[r]egression is a statistical technique to determine the linear relationship between two or more variables” and “primarily used for prediction and causal inference.” DAN CAMPBELL & SHERLOCK CAMPBELL, *STATLAB WORKSHOP: INTRODUCTION TO REGRESSION AND DATA ANALYSIS 3* (2008), <http://statlab.stat.yale.edu/workshops/IntroRegression/StatLab-IntroRegressionFa08.pdf>. Further, “regression shows the relationship between one independent variable (X) and a dependent variable (Y).” *Id.*

performance. Undergraduate GPA did not predict law school GPA, nor did it predict bar exam performance.⁸³ As a result, the variable was removed from further analyses.

B. LSAT Score Is Predictive of Bar Exam Success

For first-time takers of the bar exam, linear regression⁸⁴ was conducted to determine whether LSAT score predicted an individual's bar exam score. LSAT score significantly predicted bar exam performance, $b = .35$, $t(1,562) = 14.95$, $p < .000$, explaining a significant proportion of variance in bar exam scores, $R^2 = .125$, $F(1,1562) = 223.34$, $p < .000$.⁸⁵ LSAT scores explained 13% of bar exam performance, reinforcing the LSAT as a useful tool for admissions, as well as a means for gauging bar exam performance. These findings are consistent with the findings in the existing literature.⁸⁶

C. Final Law School GPA Is Predictive of Bar Exam Success

For first-time bar exam takers, linear regression was conducted to determine whether Texas Tech Law final GPA predicted an individual's bar exam score. Final law school GPA significantly predicted bar exam performance, $b = .72$, $t(1,572) = 40.97$, $p < .000$, explaining a significant proportion of variance in bar exam scores, $R^2 = .515$, $F(1, 1572) = 1678.42$, $p < .000$.

The beta (b) weights reported indicate that final law school GPA is a stronger predictor of bar exam success ($b = .72$) than LSAT score ($b = .35$). Because final law school GPA and LSAT score measure some of the same cognitive and social attributes of each student, they are strongly mathematically related and, taken together, predict 52% of an individual's bar exam performance.⁸⁷

83. The literature is mixed on whether undergraduate GPA is predictive of law school and bar exam success. *See supra* notes 11-15 and accompanying text.

84. Linear regressions are "designed to study the relationship between a pair of variables that appear in a data set." CAMPBELL & CAMPBELL, *supra* note 82, at 3.

85. Statistical findings are reported in the style of the *Publication Manual of the American Psychological Association*. AM. PSYCHOLOGICAL ASS'N, PUBLICATION MANUAL OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION (6th ed. 2010). For instance, in the notation " $F(1, 1562)$," the first number in the parenthesis defines the degrees of mathematical freedom, and the second number after the comma defines the total number of data points analyzed (note that the number of data points analyzed may be less than the total sample size, if the analyzed data was not available for all individuals in the sample). *See id.*

86. *See supra* note 24 and accompanying text.

87. Similar results held for multi-time bar exam takers. For those individuals, law school GPA significantly predicted bar exam performance, $b = .36$, $t(209) = 5.68$, $p < .000$, explaining a significant proportion of variance in bar exam scores, $R^2 = .187$, $F(2,208) = 23.78$, $p < .000$. LSAT

D. First-Year Law School Grade Point Average Is as Strong a Predictor of Bar Exam Success

Given that final law school GPA demonstrated significant predictive validity, the authors further examined the relationship to determine if 1L GPA strongly predicted bar performance. If 1L GPA predicts bar performance, then educators have time to implement intervention strategies for those students at risk of failing the bar.

Given structural anomalies in our institutional student information system, the authors were able to determine 1L GPA beginning in academic year 2011, thus reducing our sample size to 747 students. The following Table illustrates the means and standard deviations for LSAT, 1L GPA, final law school GPA, and bar exam performance for this subsample of first-time bar exam takers:

TABLE 5

<i>Metric</i>	<i>Mean</i>	<i>Standard Deviation</i>
Bar Exam Score	723.60	52.14
LSAT Score	155.89	4.38
First Year Law GPA	2.82	.48
Final Law GPA	3.04	.39

The authors first examined the relationship between final law school GPA and 1L GPA; the two variables had a strong, positive relationship $r(747) = .882$, $p < .000$. First-year GPA and final law school GPA together explained a significant proportion of variance in bar exam scores, $R^2 = .495$, $F(2,746) = 364.55$, $p < .000$.

Given the strong association between 1L and final law school GPAs, the authors anticipated that multicollinearity would occlude the predictive validity of 1L GPA in predicting bar performance, when evaluated with a simultaneous linear regression with LSAT, 1L GPA, and final law school GPA predicting bar exam performance.⁸⁸ To test this supposition, a hierarchical set regression⁸⁹ was conducted.

score significantly predicted bar exam performance, $b = .20$, $t(209) = 3.099$, $p < .002$, explaining a significant proportion of variance in bar exam scores, $R^2 = .187$, $F(2,208) = 23.78$, $p < .000$. Together, the two variables accounted for 18.7% of bar exam performance for those who took the bar exam the first time. The beta (b) weights reported indicate that LSAT score is a slightly weaker predictor, compared to law school GPA.

88. See Robert P. Althaus, *Multicollinearity and Non-Additive Regression Models*, in CAUSAL MODELS IN THE SOCIAL SCIENCES 453 (Hubert M. Blalock ed., 1971) (defining multicollinearity as a “statistical problem that arises when the correlations between independent variables are extremely high”); see also Day, *supra* note 13, at 328-30 (stating the correlation between LSAT scores and bar exam success is a near perfect correlation).

89. See Ulman Lindenberger & Ulrich Pötter, *The Complex Nature of Unique and Shared*

Hierarchical regression allowed investigators to enter the variables in a priori order,⁹⁰ first entering LSAT score (“Model 1”)⁹¹ and then 1L and final GPA into the regression (“Model 2”), predicting bar performance.

Results confirmed our supposition. In Model 1, LSAT predicted bar exam performance, $b = .297$, $t(736) = 8.42$, $p < .000$, explaining a significant proportion of variance in bar exam scores, $R^2 = .088$, $F(1,572) = 70.96$, $p < .000$. In Model 2, final GPA and 1L GPA, extracting LSAT performance, final GPA strongly predicted bar exam performance, $b = .72$, $t(736) = 13.08$, $p < .000$ and 1L GPA was suppressed, yielding an insignificant result, $b = -.05$, $t(736) = -.93$, $p = .35$, together explaining a significant proportion of variance in bar exam scores, $R^2 = .52$, $F(3,733) = 260.08$, $p < .000$.

In sum, 1L and final law school GPA present statistically as the same indicator that strongly predicts bar exam performance, but both cannot be included in the analysis. Our analysis revealed that 1L and final law school GPA overlap so strongly that they respond mathematically as one variable. Adding both in the analysis does not add to our knowledge of the relationship between law course performance and bar exam performance. From a law school administration perspective, 1L GPA can be used to predict bar exam performance just as strongly as using final law school GPA. Clearly, examining 1L performance provides opportunity for positive educational intervention strategies to aid the student in future bar performance.

E. Specific Course Performance Predicting Overall Bar Exam Success

The authors sought to understand the impact of two required courses on final bar exam score, though the subject matter of these courses are not tested specifically on the bar exam.⁹²

1. Civil Procedure

For first-time bar exam takers, Federal Civil Procedure accounted for 25.3% of performance on the exam, $R^2 = .253$, $F(1,1328) = 450.89$, $p < .000$, $b = .503$, $t(1330) = 21.23$, $p < .000$. Thus, Civil Procedure performance strongly predicts bar exam performance for all individuals.

Effects in Hierarchical Linear Regression: Implications for Developmental Psychology, 3 PSYCHOL. METHODS 218, 228 (1998) (defining hierarchical linear regression as “a statistical tool that reorganizes information contained in the covariance matrix”).

90. *See id.* at 218-19.

91. LSAT score is one of the primary pieces of information available during the admissions process. *See supra* Part II.A.

92. *See infra* Part IV.E.1-2. Federal civil procedure was added to the bar exam in February 2015, but it was not included on the bar during the time our data set was collected.

Our finding suggests that this course would likely be a strong predictor of bar performance at any institution, based on the course content and requirements, but more investigation is warranted on the question of why Civil Procedure in particular is so strongly predictive of overall bar exam success. The authors surmise that higher order skills and methods required for Civil Procedure are similar to the skills and methods of the bar exam. The Civil Procedure course requires students to grasp complex statutory and common law rules, many of which developed slowly over centuries; the course also requires students to master vast concepts and the intricate details of a subject matter that seems largely abstract to first-year students.⁹³ As such, the nature of Civil Procedure content and the associated skills required to master that material are similar to the content of the bar exam and the associated skills necessary to pass the bar exam.

2. Legal Practice

Legal Practice is Texas Tech Law's two-semester legal research and writing course required in the first year of law school.⁹⁴ As a fundamental legal course that builds tangible skills and affords students the opportunity to apply core legal competencies, analyses were conducted to evaluate the contribution of legal practice instruction to overall bar exam performance. For first-time bar exam takers, both semesters of Legal Practice (Legal Practice I and II), accounted for 17.8% of performance on the bar exam, $R^2 = .178$, $F(2,1335) = 144.06$, $p < .000$. Consequently, both courses contributed significantly to overall bar exam success, with Legal Practice I, $b = .149$, $t(1338) = 4.81$, $p < .000$, and Legal Practice II, $b = .315$, $t(1338) = 10.21$, $p < .000$.⁹⁵

The authors surmise that Legal Practice is a strong predictor of bar exam success not only because of the skills taught and assessed, but because of the study skills and stamina required to do well in the course. Legal research and writing courses generally encompass a wide range of skills, such as legal writing, legal research, legal analysis, oral advocacy, professional responsibility, client interviewing and counseling, fact investigation, alternative dispute resolution, and sometimes even law office management and study skills.⁹⁶ Of these skills, few are directly

93. Larry L. Teply & Ralph U. Whitten, *Teaching Civil Procedure Using an Integrated Case-Text-and-Problem Method*, 47 ST. LOUIS U. L.J. 91, 91-93 (2003); see Eric S. Knutsen et al., *The Teaching of Procedure Across Common Law Systems*, 51 OSGOODE HALL L.J. 1, 7-12 (2013).

94. *Legal Practice*, TEX. TECH U., <http://www.depts.ttu.edu/law/programs/lp/index.php> (last visited Apr. 10, 2017).

95. For those who took the bar exam multiple times, neither course contributed to success.

96. Lucia Ann Silecchia, *Legal Skills Training in the First Year of Law School: Research? Writing? Analysis? Or More?*, 100 DICK. L. REV. 245, 255-56, 256 n.40 (1996).

tested on the bar exam. However, as opposed to the daily reading and final exam preparation generally required of a lecture course, legal research and writing courses require frequent written work product, editing and revising, and incorporating professor feedback, all over sustained weeks and even months for a given assignment.⁹⁷ Although more investigation is warranted to determine why Legal Practice is so strongly predictive of bar exam success, the authors surmise that not only the legal analysis and communication skills taught but also the study skills, significant interim feedback, and emotional resilience required contribute to this course's predictive value.

F. Some Specific Courses Predict Performance on the Associated Bar Exam Portions

The previous sections analyzed variables that may contribute to *overall* success on the bar exam. Here, the authors turned to specific subsections of the bar exam and examined whether performance in specific courses impacted performance on the related subcomponent of the bar exam. The authors did not test contribution of these courses to *overall* success on the bar exam because the specificity of available data made more detailed analysis possible, namely whether the course contributed to the related subcomponent.

Because of the relatively large number of required courses at Texas Tech Law,⁹⁸ the high percentage of Texas Tech Law graduates who sit for the Texas bar exam,⁹⁹ and the consistency of the Texas bar exam,¹⁰⁰ the school is in a unique position to analyze the impact of various factors on bar exam performance—particularly the impact of specific courses on related subcomponents of the bar exam.

The authors identified the courses below as being related to specific subcomponents of the Texas bar exam. The courses listed are required to graduate, unless followed by an asterisk, used to note elective courses¹⁰¹:

97. See Judith Rosenbaum, *Why I Don't Give a Research Exam*, 11 PERSP. 1, 1-2 (2002); GEORGE MADER & MARCI A. ROSENTHAL, ASSN'N OF LEGAL WRITING DIRS. & LEGAL WRITING INST., REPORT OF THE ANNUAL LEGAL WRITING SURVEY 16-17 (2014), <http://www.alwd.org/wp-content/uploads/2014/07/2014-Survey-Report-Final.pdf>; Kathryn M. Stanchi, *Who Next, the Janitors? A Socio-Feminist Critique of the Status Hierarchy of Law Professors*, 73 UMKC L. REV. 467, 493-93 (2004); Kent D. Syverud, *The Caste System and Best Practices in Legal Education*, 1 LEGAL COMM. & RHETORIC 12, 16-17 (2002).

98. See Associate Dean for Academic Affairs, *Graduation and Academic Requirements*, TEX. TECH U. SCH. L. (Aug. 1, 2015), http://www.depts.ttu.edu/law/studentlife/policies/Documents/Academic_and_Graduation_Requirements_Policy_doc.pdf.

99. See *Statistics & Analysis*, *supra* note 59.

100. See *Past Exams*, *supra* note 74.

101. See *Course Descriptions*, TEX. TECH U., <http://catalog.ttu.edu/content.php?catoid=4&>

TABLE 6

<i>Bar Exam Component</i>	<i>Texas Tech Law School Courses</i>
MBE	Constitutional Law Contracts Criminal Procedure Criminal Law Evidence Property Torts ¹⁰²
Real Property Essays (2)	Property Oil & Gas I* Oil & Gas II* Texas Land Titles* Real Estate Finance & Transactions*
Family Law Essays (2)	Family Law* Marital Property*
Business Associations Essays (2)	Business Entities
U.C.C. Essays (2)	Commercial Law (covering U.C.C. Articles 3, 4 and 9) Contracts (including coverage of U.C.C. Article 2)
Wills and Estate Administration Essays (2)	Wills & Trusts Marital Property* Estate Planning*
Consumer Law Essay (1)	Consumer Law*
Trust or Guardianship Essay (1)	Wills & Trusts Guardianship*
Procedure and Evidence Exam—Criminal	Texas Criminal Procedure* Criminal Procedure Evidence
Procedure and Evidence Exam—Civil	Texas Pretrial Procedure* Texas Trial & Appellate Procedure* Evidence

Note: asterisks mark elective courses.

Results of the findings in this Subpart are summarized in Table 7.

navoid=666 (last visited Apr. 10, 2017) (listing Texas Tech Law's elective courses). The results of the findings in this Subpart are summarized *infra* in Table 7.

102. Civil Procedure was not examined against an MBE subcomponent for the purposes of this Article because, at the time our data set was collected, it did not appear on the MBE. *See Preparing for the MBE*, NAT'L CONF. BAR EXAMINERS, <http://ncbex.org/exams/mbe/preparing> (last visited Apr. 10, 2017); *supra* note 92 and accompanying text.

1. The MBE

While the substance of the MBE did not change during the period covered by this study, the NCBE did change the way MBE results are reported. Through the July 2013 bar exam, the NCBE and the Texas Board of Law Examiners provided Texas Tech Law with information on examinees' performance on each of the six subject matters tested.¹⁰³ Effective as of the February 2014 bar exam, however, the NCBE reports only total performance on the MBE.¹⁰⁴ In our data set, a first-time bar exam taker thus has either individual performance metrics for each subject on the MBE (if the person took the bar exam during or before the July 2013 exam) *or* an MBE composite performance (if the person took the bar during or after the February 2014 exam).

All relationships demonstrated sufficient statistical association to proceed with predictive analytics. For each subsection, the authors conducted a simultaneous linear regression with specific course performance associated with the respective subcomponent predicting bar exam subsection performance.

a. MBE Total Subcomponent

In February 2014 and July 2014, 190 individuals took the Texas bar exam and thus had only an MBE composite score. For first-time bar exam takers in this data set, the combination of Texas Tech Law courses Constitutional Law, Contracts, Criminal Law, Criminal Procedure, Evidence, Property, and Torts predicted 35.6% of the variance in performance on the MBE total, $R^2 = .356$, $F(7,182) = 14.35$, $p < .000$. However, only Contracts, $b = .144$, $t(190) = 2.06$, $p = .041$, and Evidence, $b = .226$, $t(190) = 3.41$, $p = .001$, were contributing to bar performance. The remaining courses did not contribute to performance on the MBE total significantly.¹⁰⁵

Note that some findings here may result from the smaller number of students, given the bar exam reporting change noted above. However,

103. *Id.* Civil procedure has since been added as a seventh subject. See Debra Cassens Weiss, *Gulp! Civil Procedure Will Be Added to Multistate Bar Exam*, A.B.A. J. (Mar. 8, 2013, 3:07 PM CST), http://www.abajournal.com/news/article/gulp_civil_procedure_will_be_added_to_multistate_bar_exam.

104. See Stephen Klein & Roger Bolus, *Psychometric Audit of the Texas Bar Examinations Administered in 2013*, TEX. BOARD L. EXAMINERS 2 (Mar. 3, 2014), <https://ble.texas.gov/psychometric-audit-2013>.

105. For those who took the bar exam multiple times, none of the courses predicted performance on the MBE total subcomponent.

the set of courses predicted 35% of performance on the MBE subcomponent, clearly contributing in a meaningful manner.

b. Constitutional Law Subcomponent

For first-time bar exam takers about whom we have subject-specific performance information on the MBE, the Constitutional Law course accounted for 8.1% of performance on the constitutional law subcomponent, $R^2 = .081$, $F(1,1153) = 101.39$, $p < .000$, $b = .284$, $t(1155) = 10.07$, $p < .000$.¹⁰⁶

c. Contracts Subcomponent

For first-time bar exam takers about whom we have subject-specific performance information on the MBE, the Contracts course accounted for 10.9% of performance on the contracts law subcomponent, $R^2 = .109$, $F(1,1132) = 138.05$, $p < .000$, $b = .330$, $t(1134) = 11.75$, $p < .000$.¹⁰⁷

d. Criminal Law Subcomponent

For first-time bar exam takers about whom we have subject-specific performance information on the MBE, the Criminal Law and Criminal Procedure courses accounted for 15% of performance on the criminal law subcomponent, $R^2 = .145$, $F(2,1142) = 96.69$, $p < .000$. Both contributed significantly: for Criminal Law, $b = .158$, $t(1145) = 5.39$, $p < .000$, and for Criminal Procedure, $b = .294$, $t(1145) = 10.05$, $p < .000$.¹⁰⁸

e. Evidence Subcomponent

For first-time bar exam takers about whom we have subject-specific performance information on the MBE, the Evidence course accounted for 12.8% of performance on the evidence subcomponent, $R^2 = .128$, $F(1,1161) = 170.97$, $p < .000$, $b = .365$, $t(1163) = 13.08$, $p < .000$.¹⁰⁹

106. For those who took the bar exam multiple times, Constitutional Law did not predict performance on the constitutional law subcomponent.

107. For those who took the bar exam multiple times, Contracts did not predict performance on the contracts law subcomponent.

108. For those who took the bar exam multiple times, neither Criminal Law nor Criminal Procedure predicted performance on the criminal subcomponent.

109. For those who took the bar exam multiple times, Evidence did not predict performance on the evidence subcomponent.

f. Real Property Subcomponent

For first-time bar exam takers about whom we have subject-specific performance information on the MBE, the Property course accounted for 13.3% of performance on the real property subcomponent, $R^2 = .133$, $F(1,1137) = 175.15$, $p < .000$, $b = .365$, $t(1139) = 13.24$, $p < .000$.¹¹⁰

g. Torts Subcomponent

For first-time takers about whom we have subject-specific performance information on the MBE, the Torts course accounted for 6.9% of performance on the torts subcomponent, $R^2 = .069$, $F(1,1134) = 83.59$, $p < .000$, $b = .262$, $t(1136) = 9.14$, $p < .000$.¹¹¹

2. Texas Essays

The authors compared performance on specific bar exam essay categories with the individual's performance in related classes taken at the law school.

All relationships demonstrated sufficient statistical association to proceed with predictive analytics. For each subsection, the authors conducted a simultaneous linear regression with specific course performance associated with the respective subcomponent predicting bar exam subsection performance.

a. Business Associations Essays (2)

For first-time takers, the Business Entities course accounted for 4.8% of performance on the two business associations essays, $R^2 = .48$, $F(1,1358) = 69.35$, $p < .000$, $b = .220$, $t(1360) = 8.33$, $p < .000$.¹¹²

b. U.C.C. Essays (2)

For first-time takers, the Contracts and Commercial Law¹¹³ courses accounted for 8.4% of performance on the U.C.C. essays, $R^2 = .084$,

110. For those who took the bar exam multiple times, Property did not predict performance on the real property subcomponent.

111. For those who took the bar exam multiple times, Torts predicted 2.6% of performance on the torts subcomponent, $R^2 = .026$, $F(1,142) = 3.83$, $p = .05$, $b = .162$, $t(144) = 1.96$, $p < .000$. For multiple bar exam takers, the results are statistically significant, but possibly not of practical significance.

112. For those who took the bar exam multiple times, Business Entities did not predict performance on the business associations essays.

113. The Commercial Law course covers U.C.C. Article 3 (negotiable instruments), Article 4 (banking), and Article 9 (secured transactions). The Contracts course covers U.C.C. Article 2.

$F(2,1319) = 60.20, p < .000$. Both courses contributed significantly: Commercial Law, $b = .247, t(1322) = 8.81, p < .000$, and Contracts, $b = .089, t(1322) = 3.17, p = .002$.¹¹⁴

c. Real Property Essays (2)

The authors found no evidence that course performance in the Property, Oil and Gas I, or Oil and Gas II courses predicted performance on the real property essays. The magnitude of the prediction and the associated statistical power indicated that the results were clearly not of practical significance. The authors have elected not to report the statistical findings, due to poor predictive validity, statistical power, and meaningful contribution to performance.

Some faculty members suggested that the authors examine performance in two different property-related electives: Real Property Finance and Transactions, and Texas Land Titles. For first-time takers, the two courses accounted for 25.5% of performance on the real property essays, $R^2 = .255, F(2,134) = 22.60, p < .000$. But an examination of the beta weights indicated that only Real Property Finance and Transactions contributed significantly, $b = .481, t(134) = 6.027, p < .000$. As such, for those who elected to take Real Property Finance and Transactions, their course performance predicted 25.5% of their performance on the real property essay of the bar exam.

d. Family Law and Wills Essays (2)

For each of these bar exam sections, the associated courses predicted very small amounts of subcomponent performance for first-time bar exam takers.¹¹⁵ The magnitude of the prediction and the associated statistical power indicated that the results were clearly not of practical significance. The authors have elected not to report the statistical findings, due to poor predictive validity, statistical power, and meaningful contribution to performance.

114. For those who took the bar exam multiple times, the courses predict 4.9% of performance, $R^2 = .049, F(2,177) = 4.58, p = .011$, but only Commercial Law, $b = .192, t(180) = 2.61, p = .01$, contributed to performance on the U.C.C. essays.

115. For those who took the bar exam multiple times, the authors found the same results.

e. Trust (or Guardianship) Essay (1)

One essay on the Texas bar exam is usually on the subject of trusts, though it is occasionally on guardianship law.¹¹⁶ For first-time bar exam

takers, neither the Wills and Trusts course nor the Guardianship course accounted for performance on the trust/guardianship essay.¹¹⁷

f. Consumer Law Essay (1)

For first-time bar exam takers, the Consumer Law course accounted for 2.6% of performance on the consumer law essay, $R^2 = .026$, $F(1,187) = 4.97$, $p = .027$, $b = .161$, $t(189) = 2.23$, $p < .000$.¹¹⁸ While the results are statistically significant, the practical significance of the finding is suspect. While the present study used a standard p-value of .05 to designate statistically significant, the amount of variance predicted is only 2.6% of the variance in bar performance. With the vast number of individual differences that also contribute to bar performance, this finding may not be of applied significance, in terms of identifying those who are at risk of poor bar performance.

3. Texas Procedure and Evidence Exams

The authors compared performance on the two Texas procedure and evidence subcomponents with performance in related law school classes.

All relationships demonstrated sufficient statistical association to proceed with predictive analytics. For each subsection, the authors conducted a simultaneous linear regression with specific course performance associated with the respective subcomponent predicting bar exam subsection performance.

a. Procedure and Evidence—Criminal Subcomponent

For first-time bar exam takers, the Criminal Procedure, Texas Criminal Procedure, and Evidence courses together predicted 21.8% of

116. *Current Exam*, *supra* note 66.

117. For those who took the bar exam multiple times, the Wills and Trusts and Guardianship courses predicted 30.4% of performance on the trust/guardianship essay, $R^2 = .304$, $F(2,19) = 3.92$, $p < .000$; however, only the Guardianship course contributed significantly to the prediction, $b = .554$, $t(21) = 2.79$, $p = .039$. The authors suspect that the small sample size and slight predictive contribution makes this result not significant from a practical standpoint.

118. For those who took the bar exam multiple times, the Consumer Law course did not predict performance on the consumer law essay.

the variance in performance on the criminal procedure and evidence subcomponent, $R^2 = .218$, $F(3,268) = 24.91$, $p < .000$. Upon further investigation, only Texas Criminal Procedure, $b = .261$, $t(271) = 4.01$, $p < .000$, and Evidence, $b = .237$, $t(271) = 3.8$, $p < .000$, were contributing to bar exam performance; Criminal Procedure did not contribute to the explanation of bar exam performance.¹¹⁹

b. Procedure and Evidence—Civil Subcomponent

For first-time takers, the Texas Pretrial Procedure, Texas Trial and Appellate Procedure, and Evidence courses together predicted 15.8% of the variance in performance on the civil procedure and evidence subcomponent, $R^2 = .158$, $F(3,283) = 17.68$, $p < .000$. However, only Texas Trial and Appellate Procedure, $b = .351$, $t(287) = 4.01$, $p < .000$, contributed to performance on this civil subcomponent; neither Texas Pretrial Procedure nor Evidence contributed significantly.¹²⁰

4. Summary

The authors found that some courses did predict bar performance on the relevant subcomponent of the bar exam, while others did not. An overview of course findings is as follows (elective courses are noted with an asterisk):

119. For those who took the bar exam multiple times, none of the courses predicted performance on the criminal subcomponent.

120. For those who took the bar exam multiple times, Texas Pretrial Procedure, Texas Trial and Appellate Procedure, and Evidence together predicted 32.4% of the variance in performance on the civil subcomponent, $R^2 = .324$, $F(3,26) = 4.150$, $p < .000$. But only Texas Trial and Appellate Procedure, $b = .399$, $t(30) = 2.43$, $p = .016$, contributed to performance on the civil subcomponent; neither Texas Pretrial Procedure nor Evidence contributed significantly.

TABLE 7

<i>Bar Subcomponent</i>	<i>Courses Predicting Performance</i>	<i>Courses Not Predicting Performance</i>
MBE Total	Contracts Evidence	Constitutional Law Criminal Procedure Criminal Law Property Torts
MBE Constitutional	Constitutional Law	
MBE Contracts	Contracts	
MBE Criminal	Criminal Law Criminal Procedure	
MBE Evidence	Evidence	
MBE Real Property	Property	
MBE Torts	Torts	
Business Associations Essays	Business Entities	
U.C.C. Essays	Commercial Law Contracts	
Family Law Essays		Family Law* Marital Property*
Real Property Essays		Property Oil & Gas I* Oil & Gas II*
Wills Essays		Wills and Trusts Marital Property*
Trusts Essays		Wills & Trusts Guardianship*
Consumer Essays	Consumer Law*	
U.C.C. Essays	Commercial Law Contracts	
Procedure and Evidence—Criminal	Texas Criminal Procedure* Evidence	Criminal Procedure
Procedure and Evidence—Civil	Texas Trial and Appellate Procedure*	Texas Pretrial Procedure* Evidence*

Note: asterisks mark elective courses.

*G. Student Engagement in Applied Skill Opportunities Predicts
Bar Exam Success*

In addition to curricular predictive validity, analyses were conducted to measure aspects of student engagement and applied skill opportunities, and their relative impact on bar exam performance and final law school GPA. Texas Tech Law grants academic credit for law journal, clinic, and Board of Barristers (an organization that organizes and sponsors intramural advocacy competitions) participation.¹²¹

1. Journal Participation

Journal participation has been a long-standing aspect of legal education, although some question the benefit to students. Ben Farkas clearly articulates the role of law journal participation:

Journals teach student editors to sharpen complex legal arguments, clarify language, format intricate citations, and work long hours to hone a final product. More sentimentally, the journal process reminds students that no legal doctrine is static. Law is subject to thinking and rethinking, argument and re-argument. Authority can not only be cited but questioned—by smart lawyers, through their writing.¹²²

Texas Tech Law has several journals for which students may earn academic credit.¹²³ The present project compared academic and bar performance between students who participated on a journal and those students who did not, using a simple t-test analysis.¹²⁴

Results indicate that for the first-time bar exam takers, those who participated on a journal had a statistically significant, higher mean final law GPA and bar exam score¹²⁵:

121. Assoc. Dean for Acad. Affairs, *Board of Barristers Credit*, TEX. TECH. U. SCH. L. (Aug. 26, 2013), https://www.depts.ttu.edu/law/studentlife/policies/documents/board_of_barristers_credit_Policy_doc.pdf; Assoc. Dean for Acad. Affairs, *Law Journal Credit*, TEX. TECH. U. SCH. L. (Aug. 16, 2013), https://www.depts.ttu.edu/law/studentlife/policies/Documents/Law_Journal_Credit_Policy_doc..pdf; Assoc. Dean for Acad. Affairs, *Skills Development Credit*, TEX. TECH. U. SCH. L. (Mar. 13, 2013), http://www.depts.ttu.edu/law/studentlife/policies/Documents/Skills_Development_Credit_Policy_doc.pdf.

122. Ben Farkas, *Student-Run Law Reviews Have Much to Contribute to Legal Education*, INSIDE HIGHER ED (Nov. 30, 2012), <https://www.insidehighered.com/views/2012/11/30/student-run-law-reviews-have-much-contribute-legal-education-essay>.

123. *Law Journal Credit*, *supra* note 121.

124. *The T-Test*, SOC. RES. METHODS, http://www.socialresearchmethods.net/kb/stat_t.php (last visited Apr. 10, 2017) (“[T]he t-test assesses whether the means of two groups are *statistically* different from each other. This analysis is appropriate whenever you want to compare the means of two groups, and especially appropriate as the analysis for the posttest-only two-group randomized experimental design.”).

125. For those who took the bar exam more than once, the same data pattern held, including the meaningful difference between mean law GPA and mean bar exam score of journal participants

TABLE 8

<i>TTU Bar Population</i>		<i>Journal Participation</i>	<i>No Journal Participation</i>
First-Time Takers	Number of Students	475	898
	Law GPA Mean	3.28	2.89
	Bar Exam Score Mean	750.66	714.77

The t-test reveals a substantial difference between the mean law GPA and the mean bar exam score of journal participants compared to non-participants.

Further study is needed, however, to determine if the difference between the groups of journal participants and non-participants is the result of student self-selection, other individual cognitive and achievement variables common to those students electing and chosen to participate in journal activity, or whether the skills learned in journal participation enhance bar performance.

2. Clinic Participation

We also used a second set of analytics to review the impact of clinic participation on law school final GPA and bar exam performance. “Experiential education is on the rise in law school[s]” nationwide, with students participating more actively in clinics, field placements, skills courses, and pro bono activities.¹²⁶ The Law School Survey of Student Engagement reported in 2012 that students who participate in experiential learning activities positively associate those activities with personal, academic, and professional growth.¹²⁷

We compared academic and bar-performance between students who participated in clinic opportunities and those students who did not, using a simple t-test analysis. Results indicate that for the first-time bar exam takers, those who participated in clinic activity had a statistically

compared with non-participants:

<i>TTU Bar Population</i>		<i>Journal Participation</i>	<i>No Journal Participation</i>
Multi-Time Takers	Number of Students	25	188
	Law GPA Mean	2.78	2.51
	Bar Exam Score Mean	690.04	675.63

126. LAW SCH. SURVEY OF STUDENT ENGAGEMENT, CTR. FOR POSTSECONDARY RESEARCH, IND. UNIV., LESSONS FROM LAW STUDENTS ON LEGAL EDUCATION: 2012 ANNUAL SURVEY RESULTS 14 (2012), http://lssse.indiana.edu/wp-content/uploads/2016/01/LSSSE_2012_AnnualReport.pdf.

127. *Id.*

significant, higher mean final law school GPA and a lower bar exam score.¹²⁸ The following Table displays the results:

TABLE 9

<i>TTU Bar Population</i>		<i>Clinic Participation</i>	<i>No Clinic Participation</i>
First-Time Takers	Number of Students	294	1072
	Law GPA Mean	3.05	3.02
	Bar Exam Score Mean	723	728

The t-test reveals a noteworthy difference between the mean law GPA and the mean bar exam score of clinic participants compared to non-participants.

Generally, those who participate in clinic activity have a slightly higher final law school GPA but perform significantly lower on the Texas bar exam. It is important to note that, although the mean bar exam score for clinic participants is lower than that of non-participants, the 723 mean is well above the passing score of 675.

As noted with journal participation, additional examination is needed to determine if the difference between clinic participants and non-participants is based on common student attributes for those who elect clinic participation, or student strategies to enhance GPA. Some faculty speculate that students take the clinic courses to augment their GPA,¹²⁹ and further analysis is needed to examine that phenomenon before drawing conclusions.

3. Board of Barristers Participation

We also analyzed the impact of Board of Barristers participation on bar exam performance and final law school GPA. The Board of Barristers is a student-run organization that organizes multiple intramural moot court, mock trial, and other advocacy competitions throughout the school year.¹³⁰ Upper-level students who participate in

128. For those who took the bar exam more than once, the same data pattern held, including the significant difference in mean law GPA and mean bar exam score:

<i>TTU Bar Population</i>		<i>Clinic Participation</i>	<i>No Clinic Participation</i>
Multi-Time Takers	Number of Students	48	165
	Law GPA Mean	2.62	2.52
	Bar Exam Score Mean	670	679

129. See Robert J. Condlin, *Assessing Experiential Learning, Jobs and All: A Response to the Three Professors*, 2015 WIS. L. REV. FORWARD 65, 70-71.

130. See TEX. TECH L. SCH. BOARD BARRISTERS, <http://www.tubob.org> (last visited Apr. 10,

this organization may earn academic credit for their work, provided they meet certain participation benchmarks.

Educators across all school levels have repeatedly demonstrated the value of student engagement and the important role of extra-curricular activities.¹³¹ One author's goal with this study was to measure various forms of student engagement at Texas Tech Law and the effect this engagement had on bar exam performance; the Board of Barristers is an active, engaged group of students, and inclusion of this group in the present analysis was natural and appropriate.

Results indicated that for the first-time bar exam takers, those who participated in the Board of Barristers had a statistically significant, higher mean GPA and bar exam score¹³²:

TABLE 10

<i>TTU Bar Population</i>		<i>Board of Barristers Participation</i>	<i>No Board of Barristers Participation</i>
First-Time Takers	Number of Students	197	1176
	Law GPA Mean	3.09	3.01
	Bar Exam Score Mean	737	725

The t-test reveals a meaningful difference between the mean law GPA and the mean bar exam score of Board of Barristers participants compared to non-participants. As with journal and clinic participation, though, additional examination is needed to determine if the difference between the two groups of participants and non-participants is due to a common student attribute for those choosing these activities, or whether skills developed during Board of Barristers participation enhance bar performance.

2017).

131. See Jeremy D. Finn & Kayla S. Zimmer, *Student Engagement: What Is It? Why Does It Matter?*, in HANDBOOK OF RESEARCH ON STUDENT ENGAGEMENT 97, 99, 107-09 (Sandra L. Christenson et al. eds. 2013); George D. Kuh, *The National Survey of Student Engagement: Conceptual and Empirical Foundations*, NEW DIRECTIONS INST. RES., Spring 2009, at 5, 6, 17-18; Patrick O'Day & George D. Kuh, *Assessing What Matters in Law School: The Law School Survey of Student Engagement*, 81 IND. L.J. 401, 405-07 (2006). See generally Erin Massoni, *The Positive Effects of Extra Curricular Activities on Students Education*, 9 ESSAI 84 (2011).

132. For those who took the bar exam more than once, the same data pattern held, including the significant difference in mean law GPA and mean bar exam score:

<i>TTU Bar Population</i>		<i>Board of Barristers Participation</i>	<i>No Board of Barristers Participation</i>
Multi-Time Takers	Number of Students	7	206
	Law GPA Mean	2.61	2.54
	Bar Exam Score Mean	711	676

4. Summary

In general, law students who participate in extracurricular activities that engage them during their legal education perform better in law school and on the bar exam. For each law school engagement activity studied, further evaluation is warranted to determine the contribution of these activities (as opposed to self-selected participation) to law school performance, as well as bar exam performance.

V. CONCLUSION

The impetus for this study was to identify students who are at risk of failing the bar exam so that appropriate intervention strategies could be developed and implemented. The present study demonstrated that undergraduate GPA did not predict bar exam performance.¹³³ It also demonstrated that LSAT score, 1L GPA, and final law school GPA each predict bar exam performance.¹³⁴ Of these variables, 1L or final law school GPA was the strongest predictor.¹³⁵

The study also demonstrated that the Civil Procedure and Legal Practice (legal research and writing) courses predicted overall bar exam success.¹³⁶ The authors also found that some courses did predict bar performance on the relevant subcomponent of the bar exam, while others did not.¹³⁷ The role of any law course is far broader than bar exam preparation. However, as competition in the landscape increases, bar exam performance is scrutinized by students, faculty, alumni, prospective students, and other stakeholders.

The findings of this study are being used to foster discussion among the law faculty, and to discuss curricular requirements, as well as potential curricular reform, if deemed appropriate. The present study provided support for curriculum committees that are reviewing pedagogy and methodology, in terms of student learning, as well as bar exam performance. Law faculty are engaging in discussions concerning educational interventions strategies, admissions requirements, and bar exam preparation activities.

The present study generally confirmed the positive influence of non-curricular activities on student success in law school and on the bar exam.¹³⁸ Patrick O'Day and George Kuh note the importance of student

133. *See supra* Part IV.A.

134. *See supra* Part IV.B–D. A further study is underway to identify the specific LSAT score and 1L GPA that predicts poor bar performance, so that intervention strategies can be implemented.

135. *See supra* Part IV.C–D.

136. *See supra* Part IV.E.1–2.

137. *See supra* Part IV.F.

138. *See supra* Part IV.G.

engagement in law school as productive efforts for students: “educationally effective institutions intentionally use policies and practices that induce students to expend more effort on productive activities.”¹³⁹ Further study is warranted to examine the aspects of law school engagement activities that are engendering skill development and application.

During the process of screening and preparing the data, the authors conducted an examination of multiple bar exam test takers. As reported extensively in footnotes, analyses were conducted on the multiple test takers group of students. The first trend that emerged was that the findings for first-time bar exam takers were not always replicated for those that took the exam multiple times.¹⁴⁰ In particular, the LSAT was more predictive than law school GPA for this group. The authors have embarked on an additional study to examine LSAT predictive validity in terms of altering admission standards to target prospective students who will be successful in law school and on the bar exam. The present study did not explore multiple test takers further, but the authors note that further research may be warranted. If multiple test takers can be profiled, the intervention strategies can be developed to improve first-time bar exam success.

139. O’Day & Kuh, *supra* note 131, at 407.

140. *See supra* Part III.B.