The Thurgood Marshall School of Law Empirical Findings: A Report of the Statistical Analysis of the February 2010 TMSL Texas Bar Results

June 18, 2010

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June 18, 2010

To: Holley, D.
Dean, Thurgood Marshall School of Law (TMSL)

From: Kadhi, T.
Director of Assessment, TMSL

Subject: Analysis of February 2010 TMSL Bar Results

The following report gives the statistical findings of the 2010 TMSL Bar results. Data is pre-existing and was given to the Evaluator by email from the Dean. Statistical analyses were run using SPSS 17 to address the following questions:

1. What are the statistical descriptors of the February 2010 TMSL Bar students?

2. What is the relationship of the subcategories, Times Taken the Bar, and Final Bar Score in the February 2010 TMSL Bar test takers?

3. What subcategory served as the best Predictor of the February 2010 TMSL Bar test taking students to their Final Bar Score?

A findings and summary section is written at the end of this report/study addressing each research question.

CC:
Asst. Dean of Academic Support

Statistical Descriptors

Statistics

		Final_Score	Times_Taken	P_Criminal	E_Civil
	Mean	675.03	2.16	45.94	50.09
	Median	676.00	2.00	45.00	48.95
	Mode	632[a]	2	38[a]	39[a]
	Std. Deviation	48.526	1.117	26.567	25.591
	Skewness	.162	.933	.254	.021
	Kurtosis	.776	.562	-.958	-1.013
	Minimum	537	1	3	2
	Maximum	801	6	100	96
Percentiles	25	644.00	1.00	20.90	32.25
	50	676.00	2.00	45.00	48.95
	75	704.00	3.00	65.81	73.51

a. Multiple modes exist. The smallest value is shown

Statistics

		Const.Law	Contracts	MBECrimLaw	Evidence
	Mean	36.67	31.43	45.13	36.74
	Median	31.71	21.63	42.44	27.86
	Mode	23	9[a]	32	37
	Std. Deviation	27.779	25.646	27.881	27.256
	Skewness	.448	.791	.253	.672
	Kurtosis	-1.079	-.322	-1.107	-.501
	Minimum	0	0	2	0
	Maximum	95	96	98	100
Percentiles	25	10.63	8.98	23.28	15.31
	50	31.71	21.63	42.44	27.86
	75	60.91	48.58	68.47	56.46

Statistics

		Const.Law	Contracts	MBECrimLaw	Evidence
	Mean	36.67	31.43	45.13	36.74
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	Maximum	95	96	98	100
Percentiles	25	10.63	8.98	23.28	15.31
	50	31.71	21.63	42.44	27.86
	75	60.91	48.58	68.47	56.46

a. Multiple modes exist. The smallest value is shown

Statistics

		RealProperty	Torts	Family	Family2	RealProp
	Mean	39.37	36.83	47.44	42.32	37.27
	Median	33.73	31.16	45.00	42.00	33.00
	Mode	42	41	62	29	27
	Std. Deviation	25.550	25.371	27.516	26.693	26.693
	Skewness	.476	.559	-.048	.186	.641
	Kurtosis	-.742	-.568	-1.123	-1.188	-.453
	Minimum	1	0	0	0	0
	Maximum	97	100	97	97	99
Percentiles	25	18.24	14.67	21.45	18.00	13.70
	50	33.73	31.16	45.00	42.00	33.00
	75	58.94	50.78	70.48	66.00	51.70

Statistics

	RealProp2	Trusts	Consumer	BA	BA2

	Mean	36.13	40.94	43.55	45.04	36.24
	Median	21.26	41.06	50.69	48.00	27.00
	Mode	21	67	51	73	52
	Std. Deviation	28.479	27.719	30.267	27.452	28.621
	Skewness	.530	.384	.334	.116	.498
	Kurtosis	-1.180	-.969	-1.105	-1.135	-1.162
	Minimum	1	0	0	0	0
	Maximum	95	98	100	99	87
Percentiles	25	10.91	21.54	14.39	21.50	12.00
	50	21.26	41.06	50.69	48.00	27.00
	75	65.99	67.28	74.24	73.00	52.00

Statistics

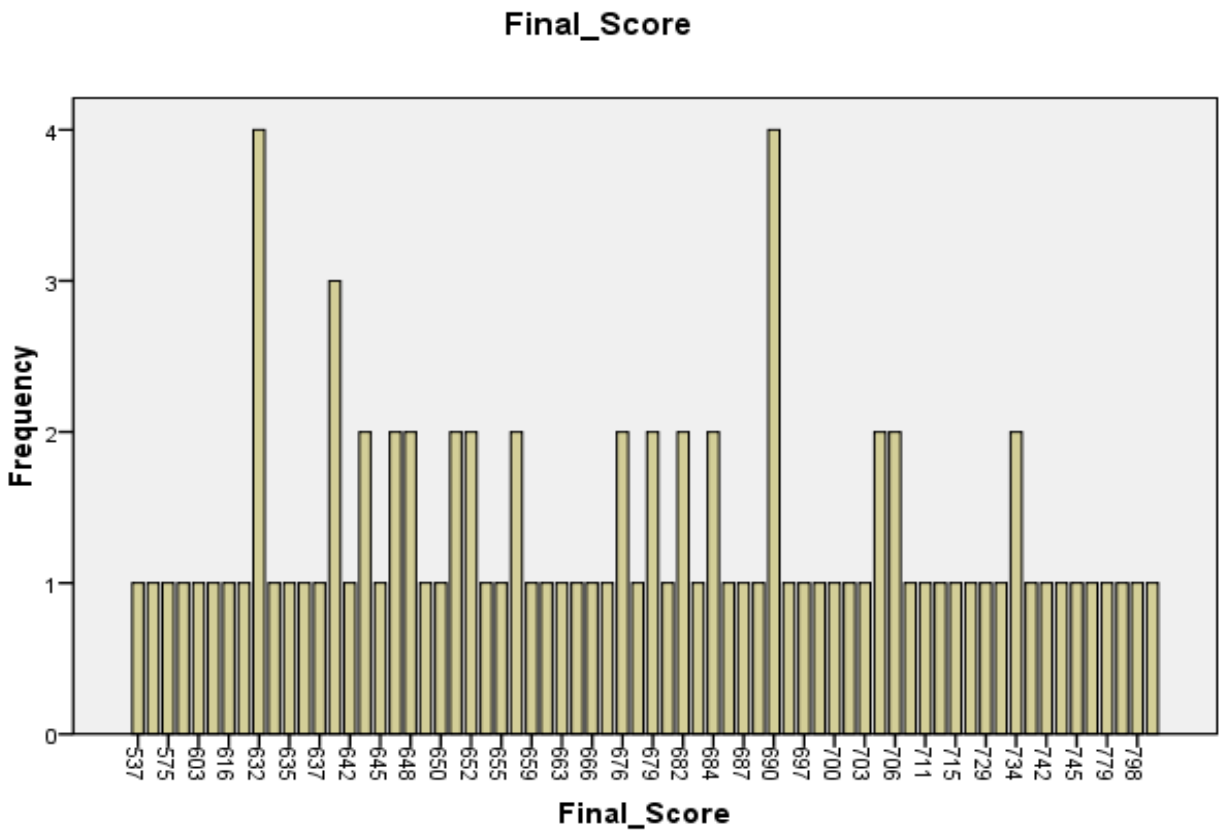
		UCC	UCC2	Wills	Wills2
	Mean	35.80	34.95	45.32	41.37
	Median	32.00	29.00	47.65	38.77
	Mode	25	22[a]	48	39
	Std. Deviation	26.562	24.107	24.044	28.439
	Skewness	.524	.431	.237	.343
	Kurtosis	-.736	-.906	-.916	-1.115
	Minimum	0	0	8	0
	Maximum	93	86	98	92
Percentiles	25	12.00	16.00	23.10	13.38
	50	32.00	29.00	47.65	38.77
	75	57.00	53.00	66.91	66.91

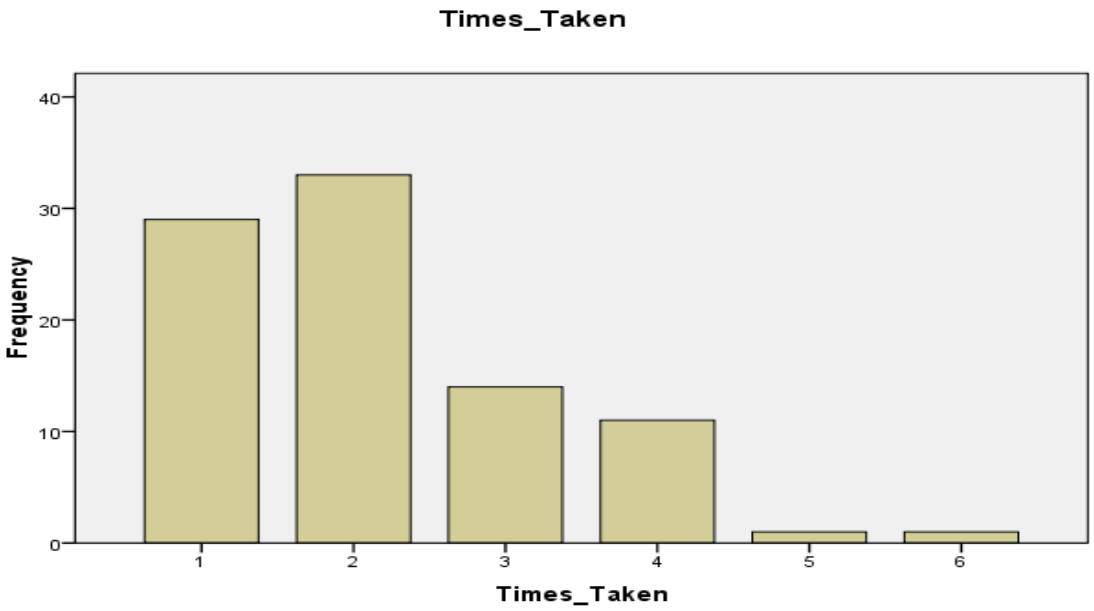
a. Multiple modes exist. The smallest value is shown

Times Taken

		Frequency	Percent	Valid Percent	Cumulative Percent
Times	1	29	32.6	32.6	32.6
	2	33	37.1	37.1	69.7
	3	14	15.7	15.7	85.4
	4	11	12.4	12.4	97.8
	5	1	1.1	1.1	98.9
	6	1	1.1	1.1	100.0
	Total	89	100.0	100.0	

Bar Charts

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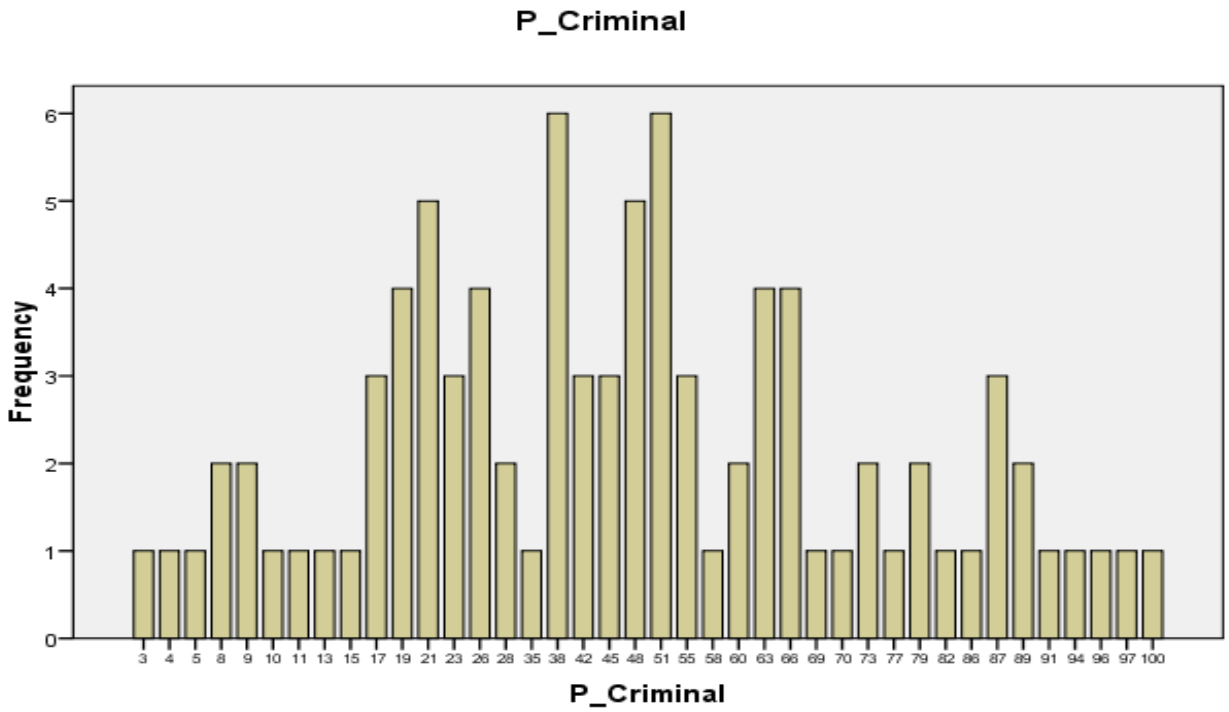
Times_Taken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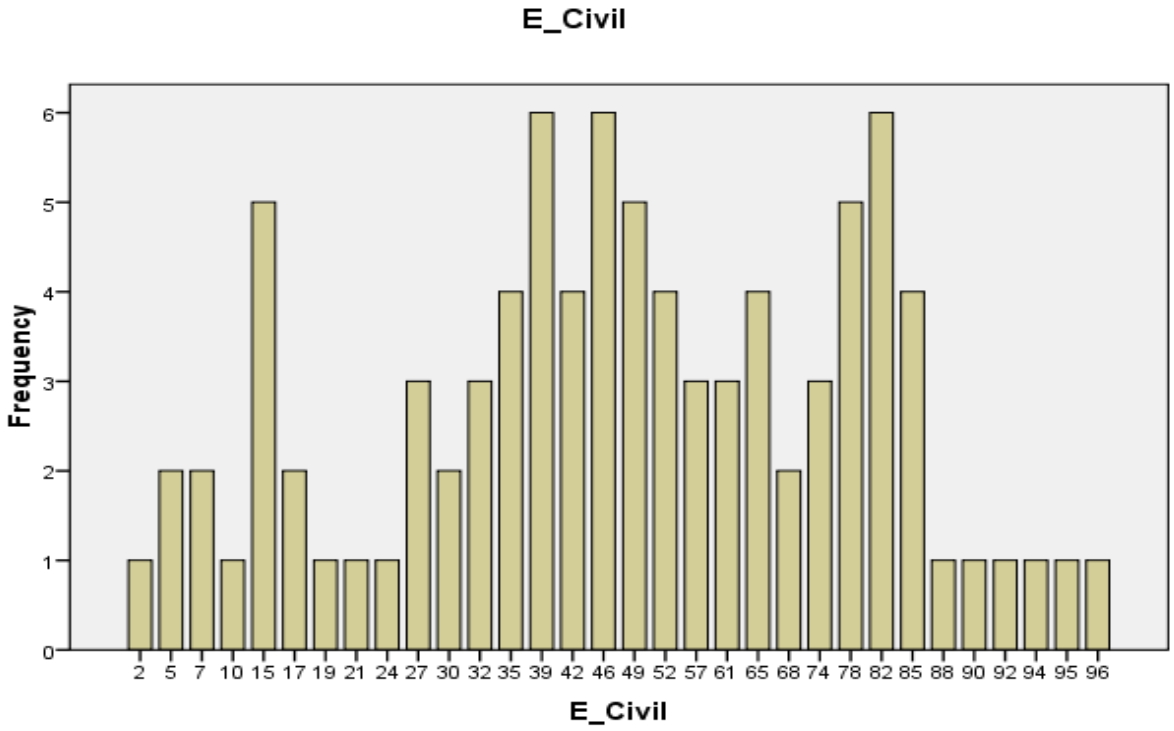
P_Criminal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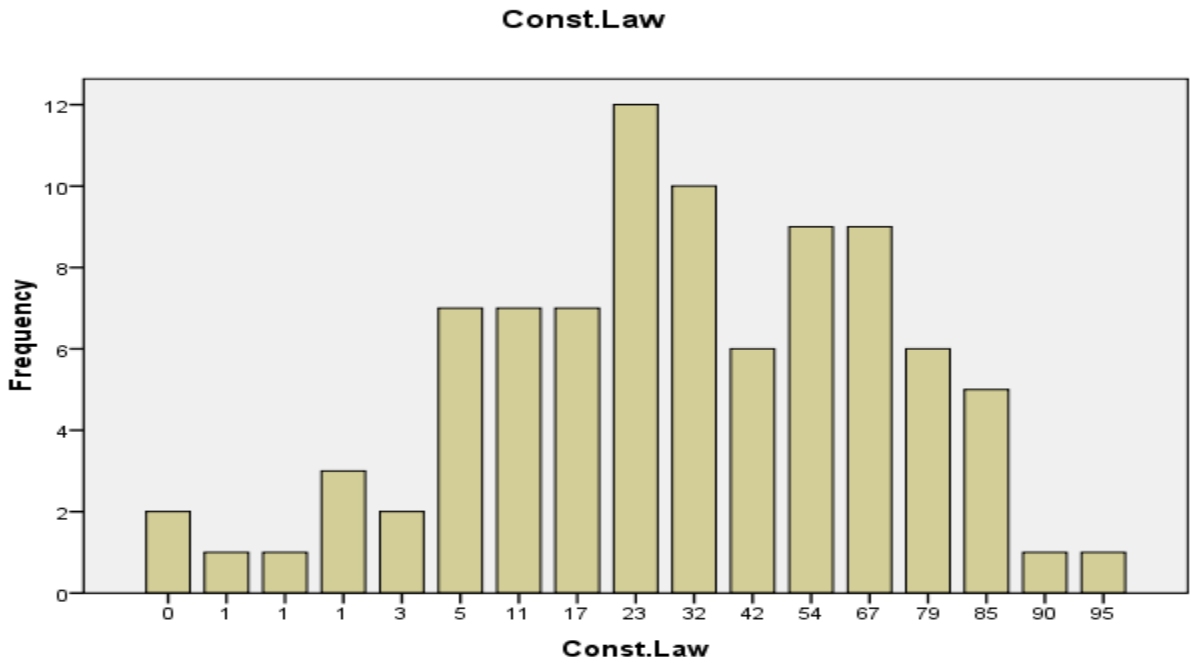
E_Civil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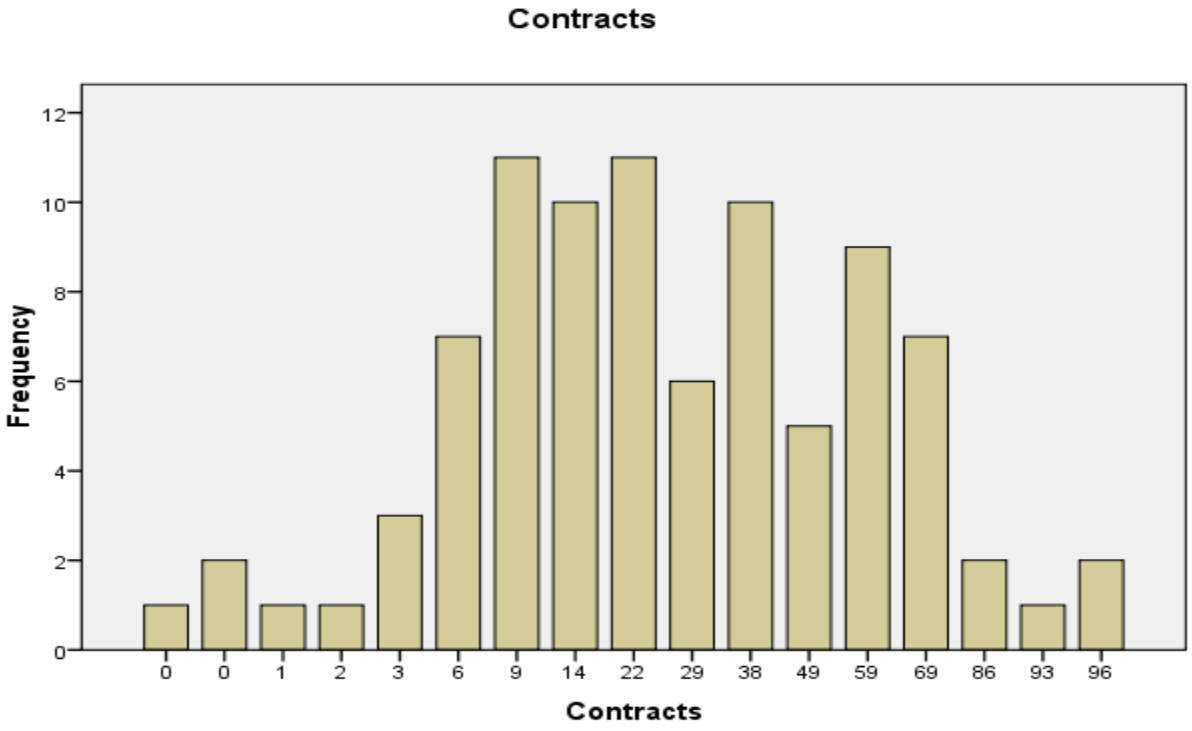
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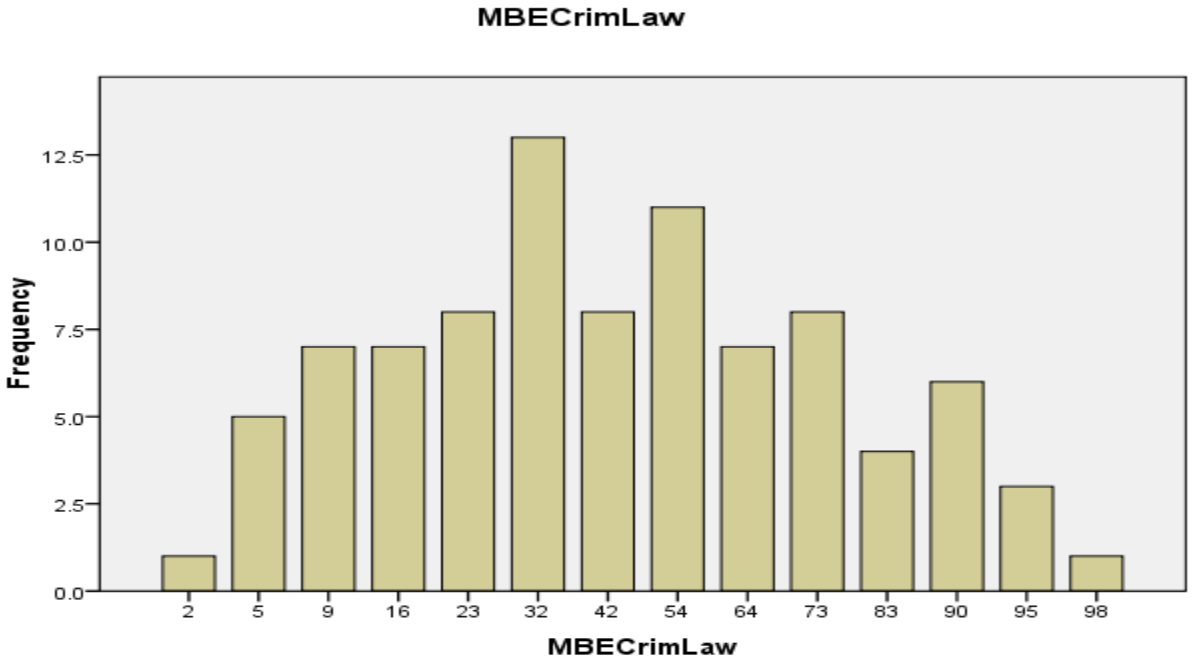
86
93
96
Contracts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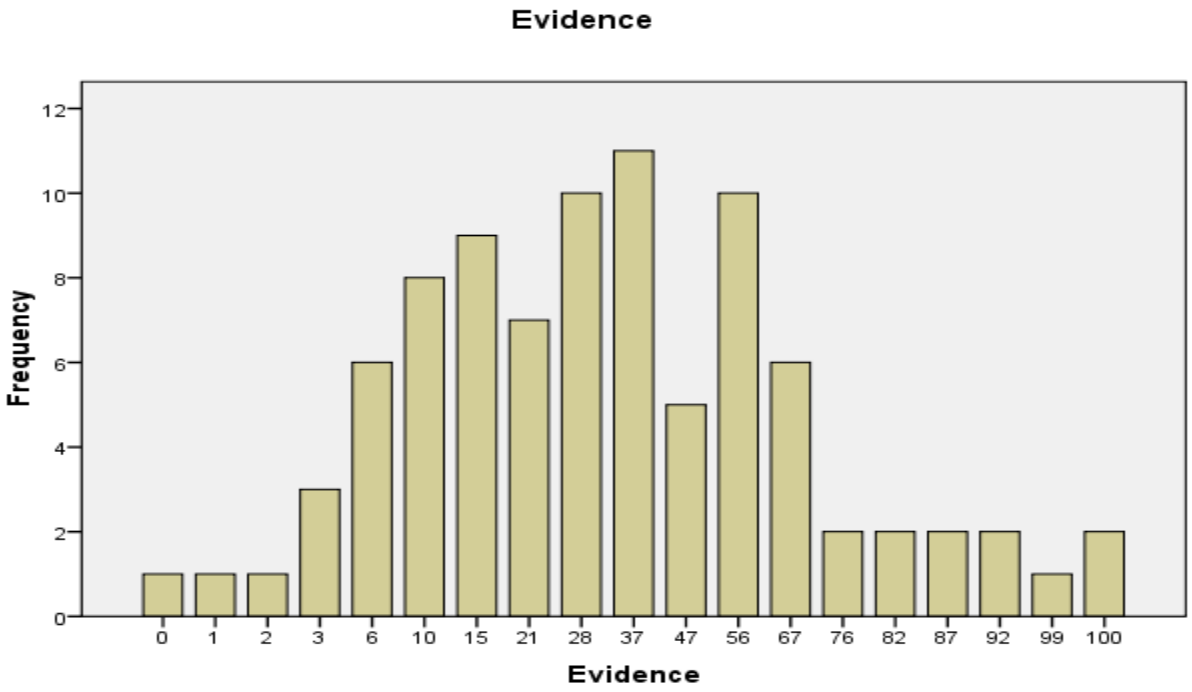
MBECrimLaw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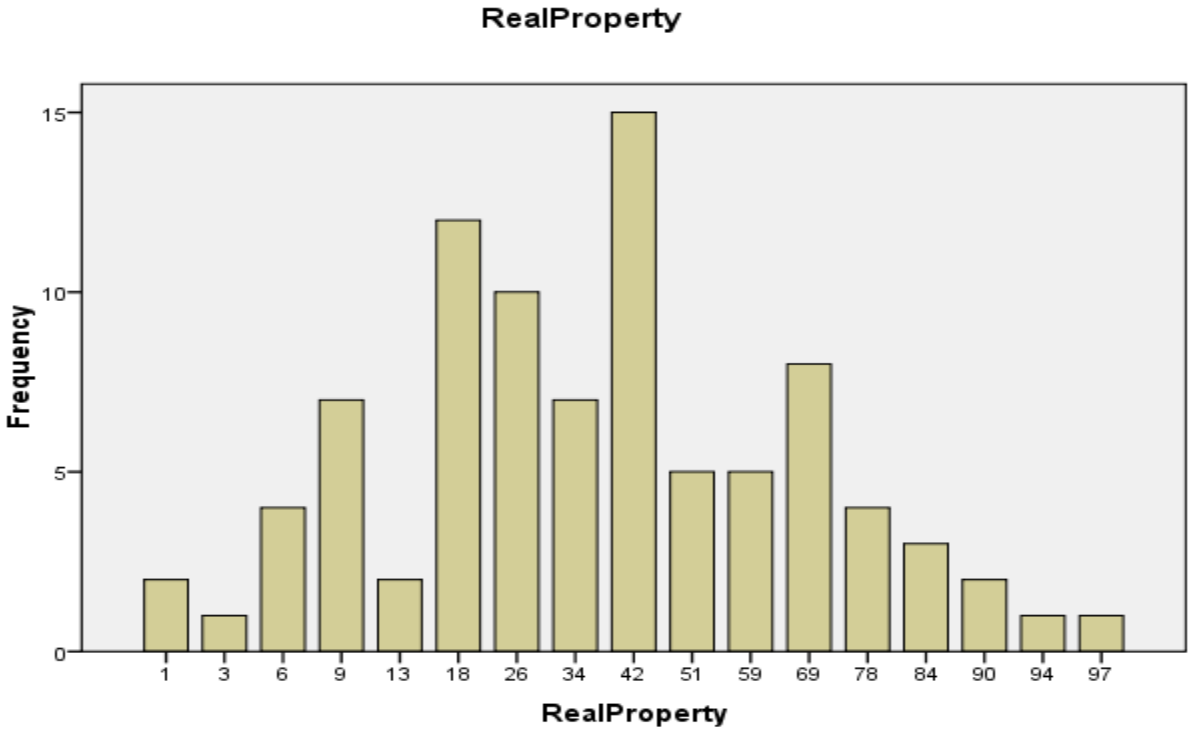
Evidence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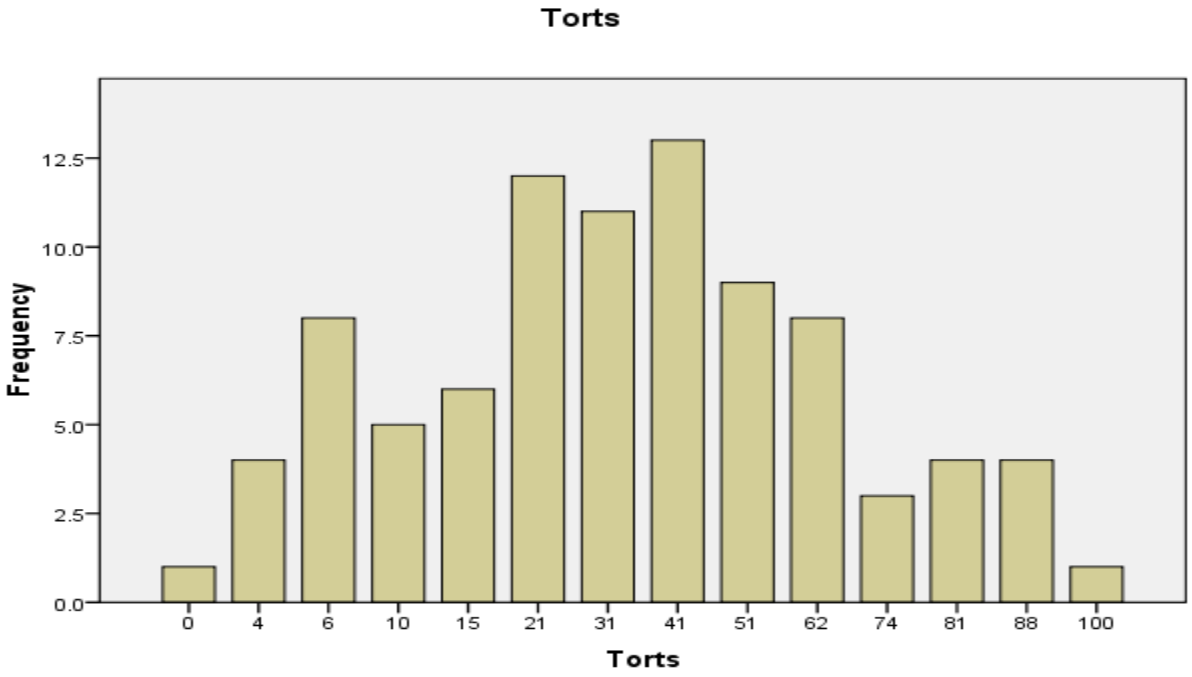
RealProperty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7.5
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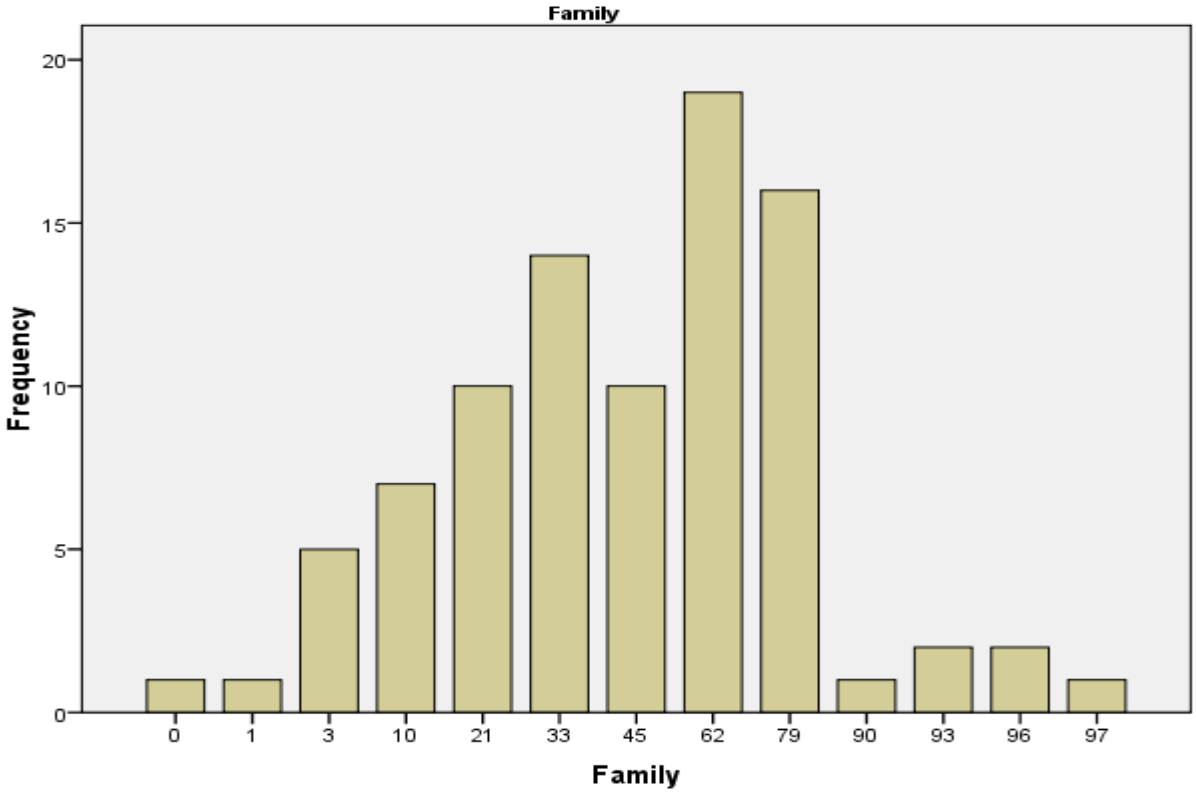
62
74
81
88
100
Torts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96
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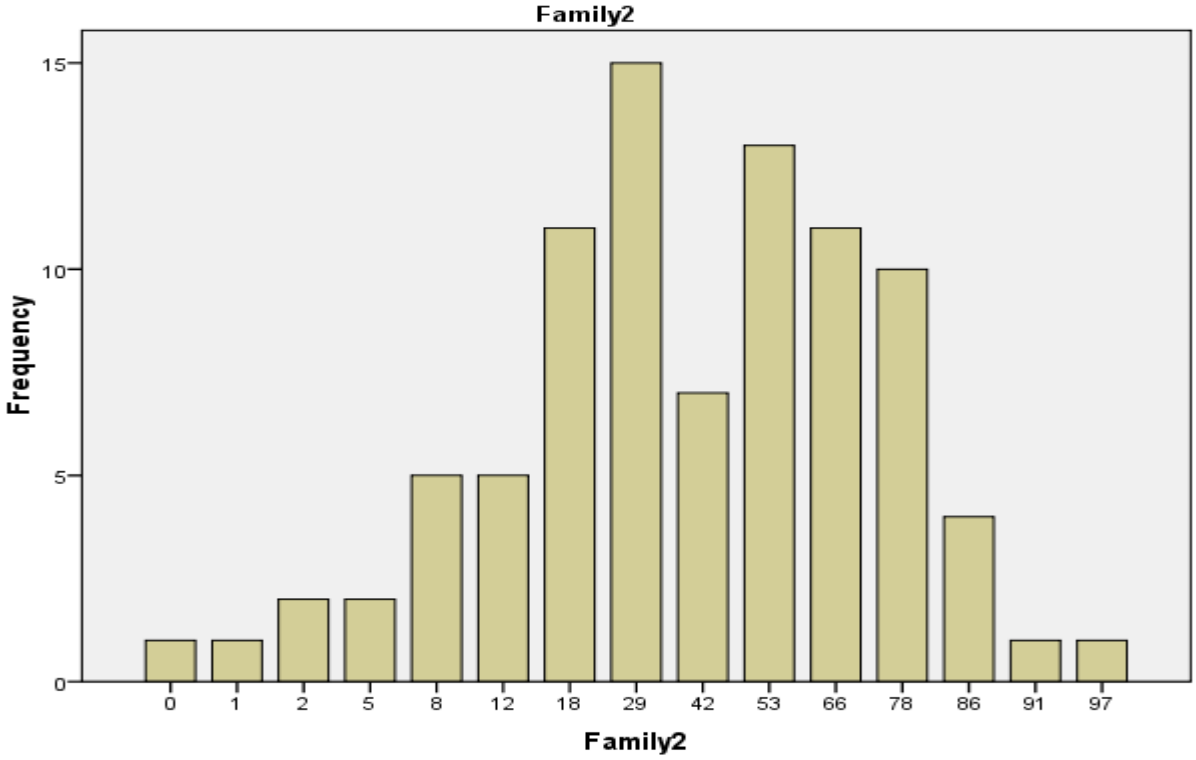
Family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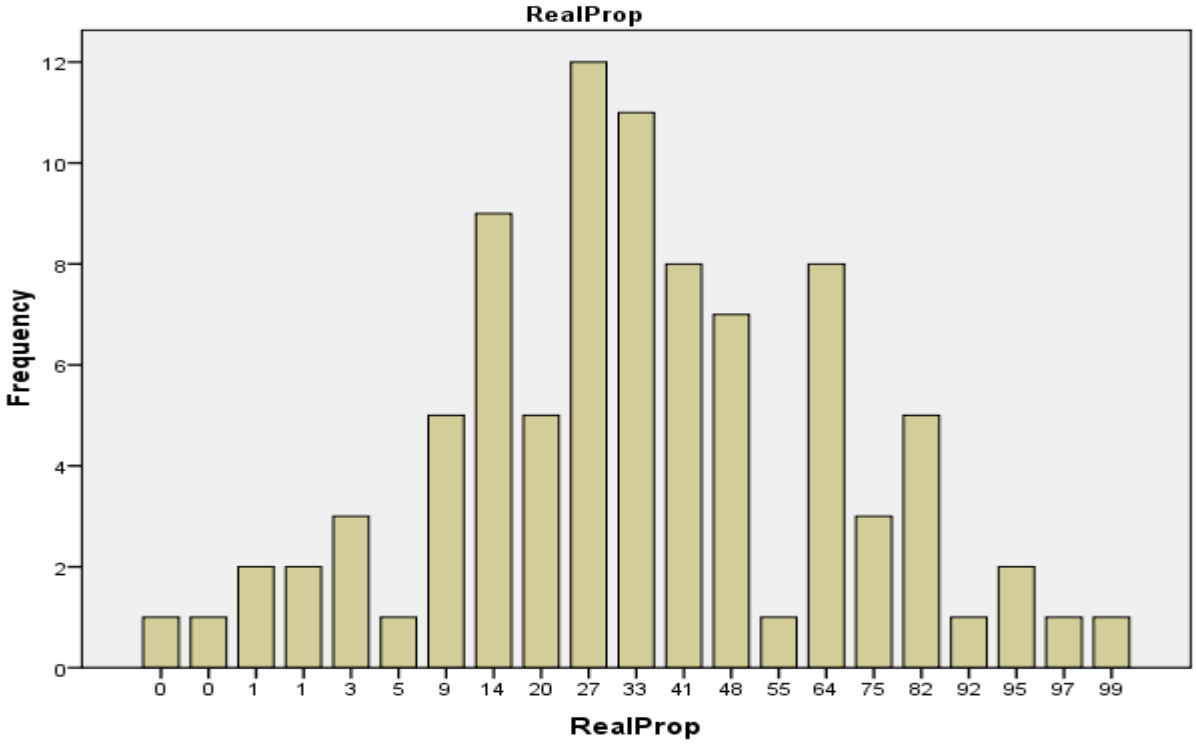
Family2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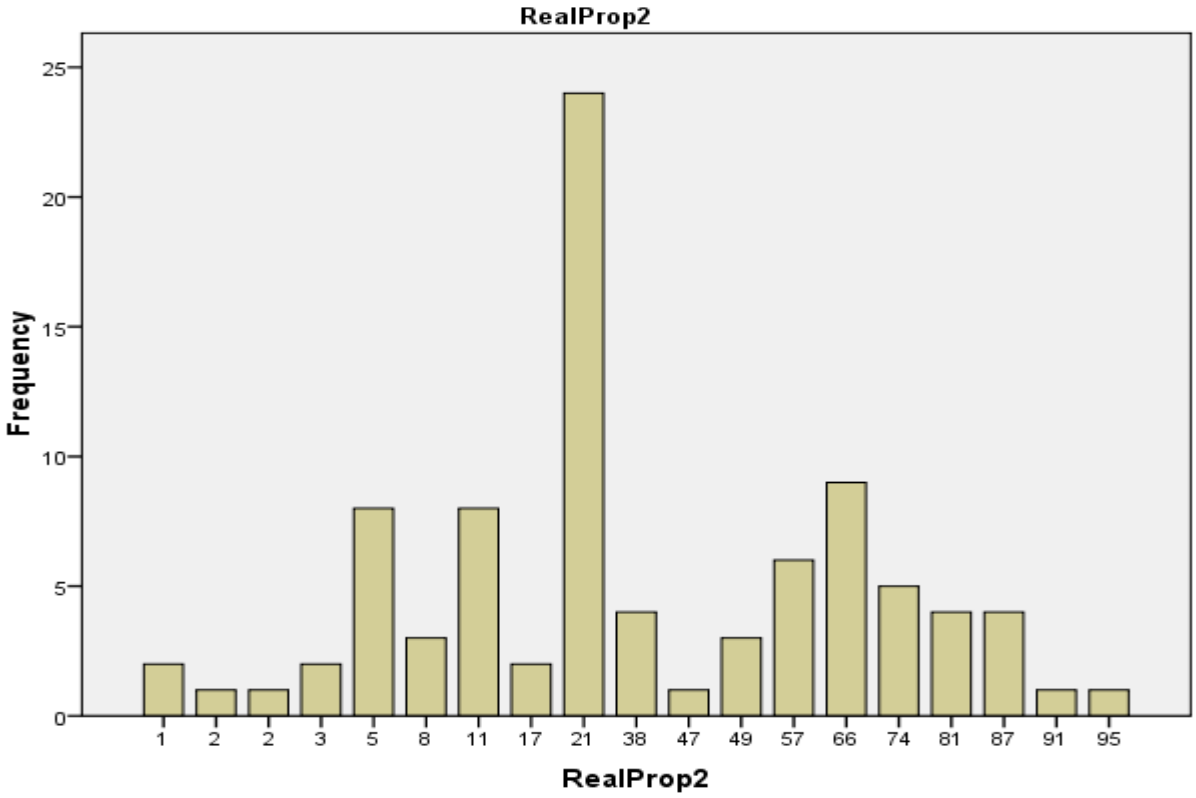
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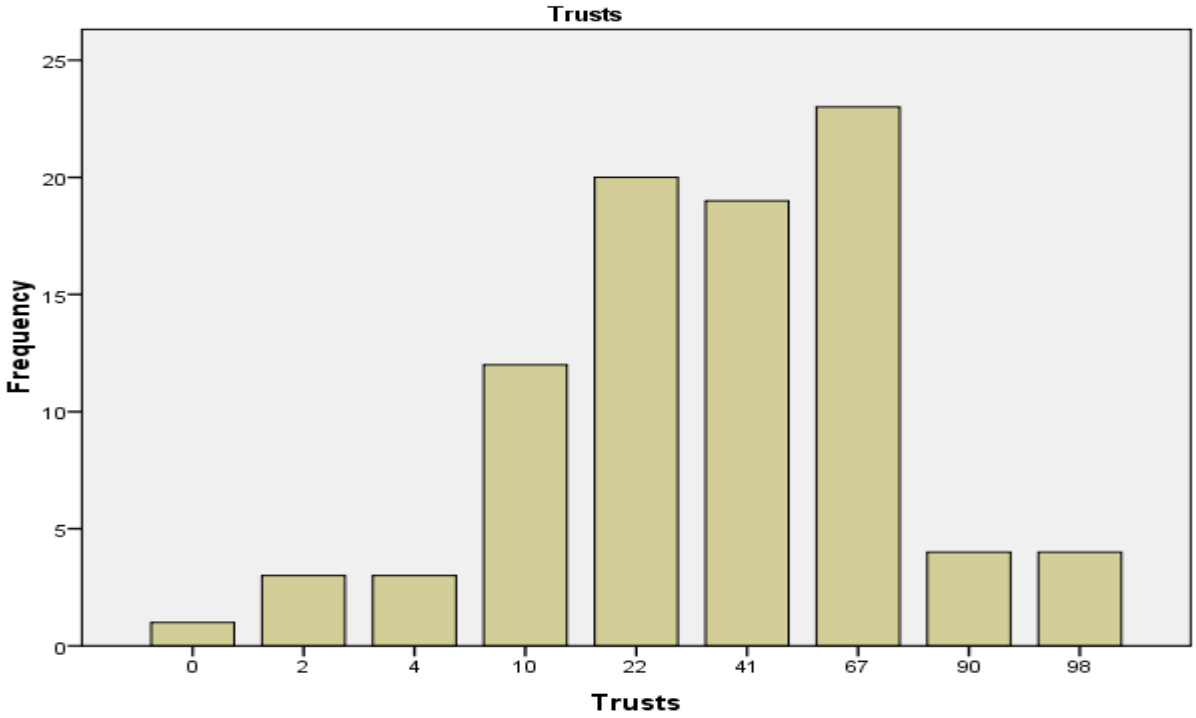
RealProp2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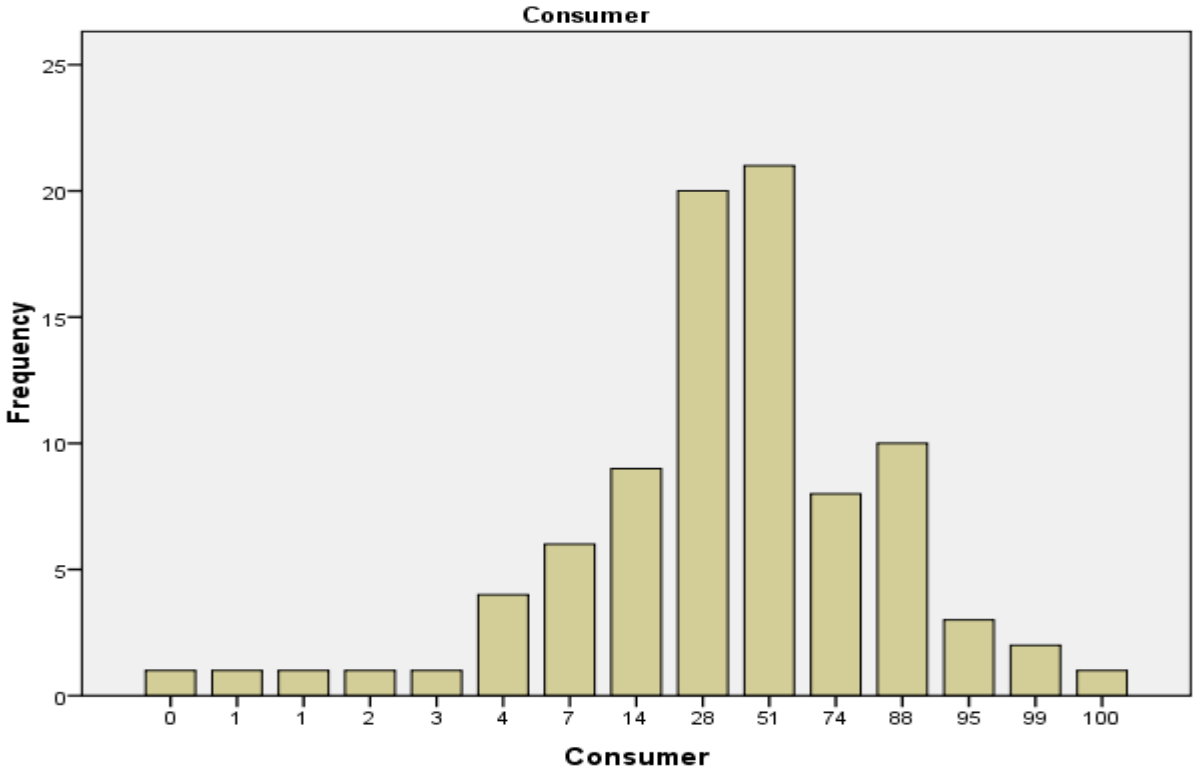
Trusts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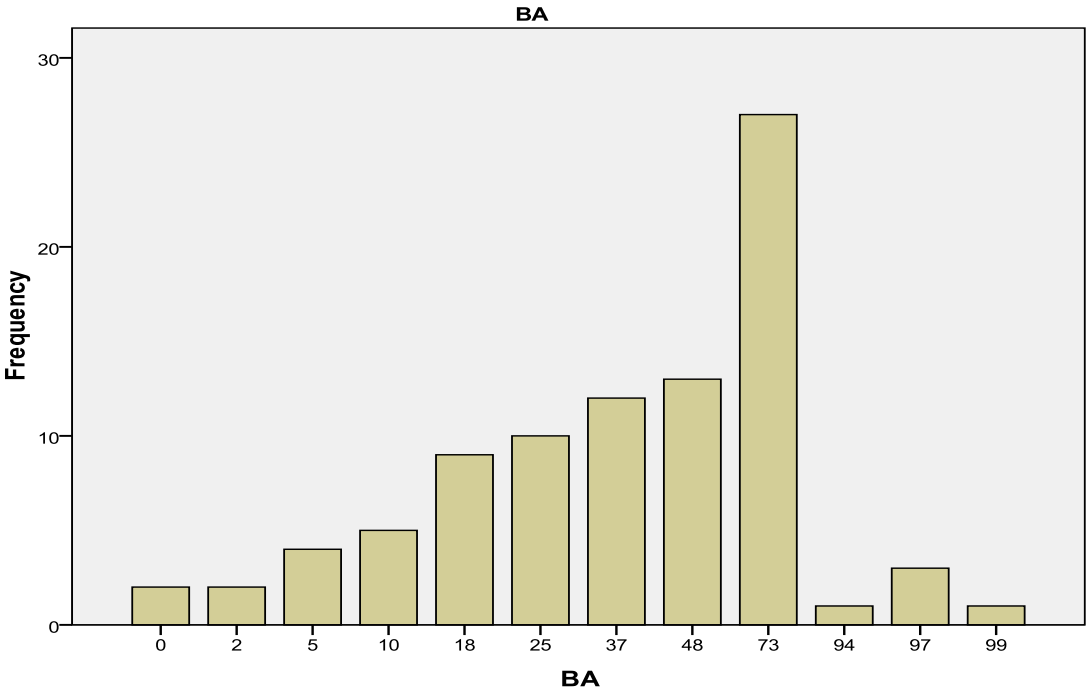
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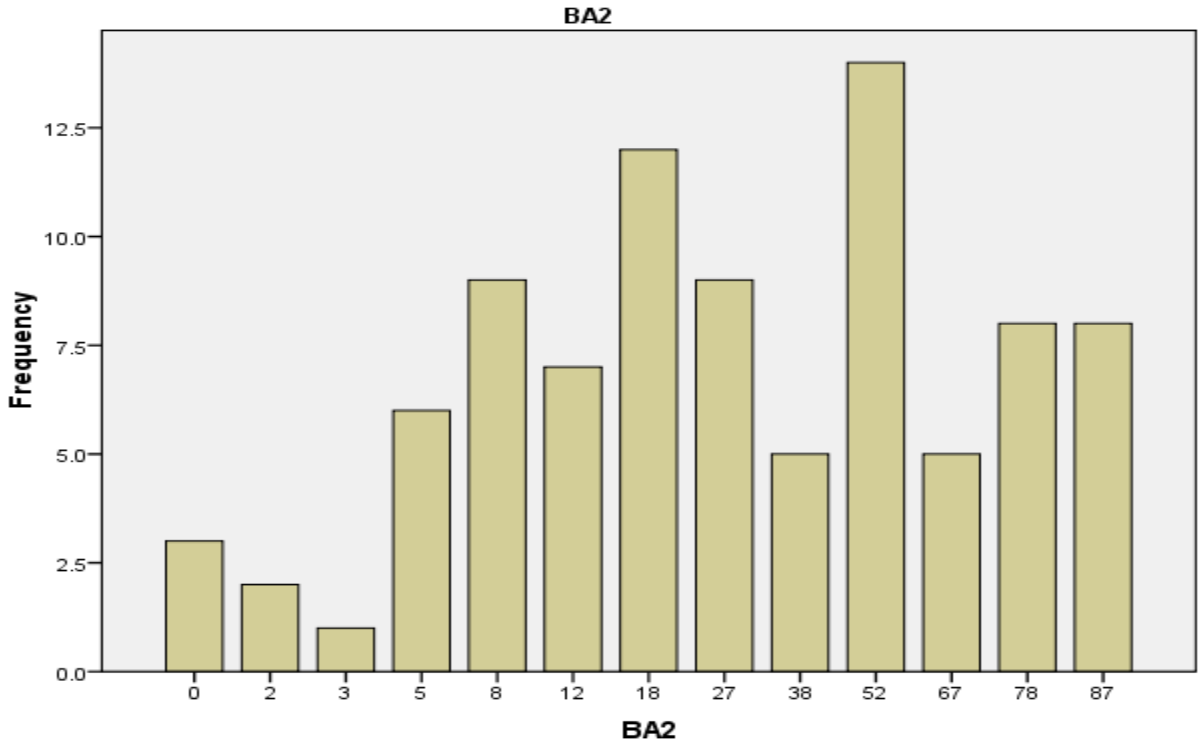
BA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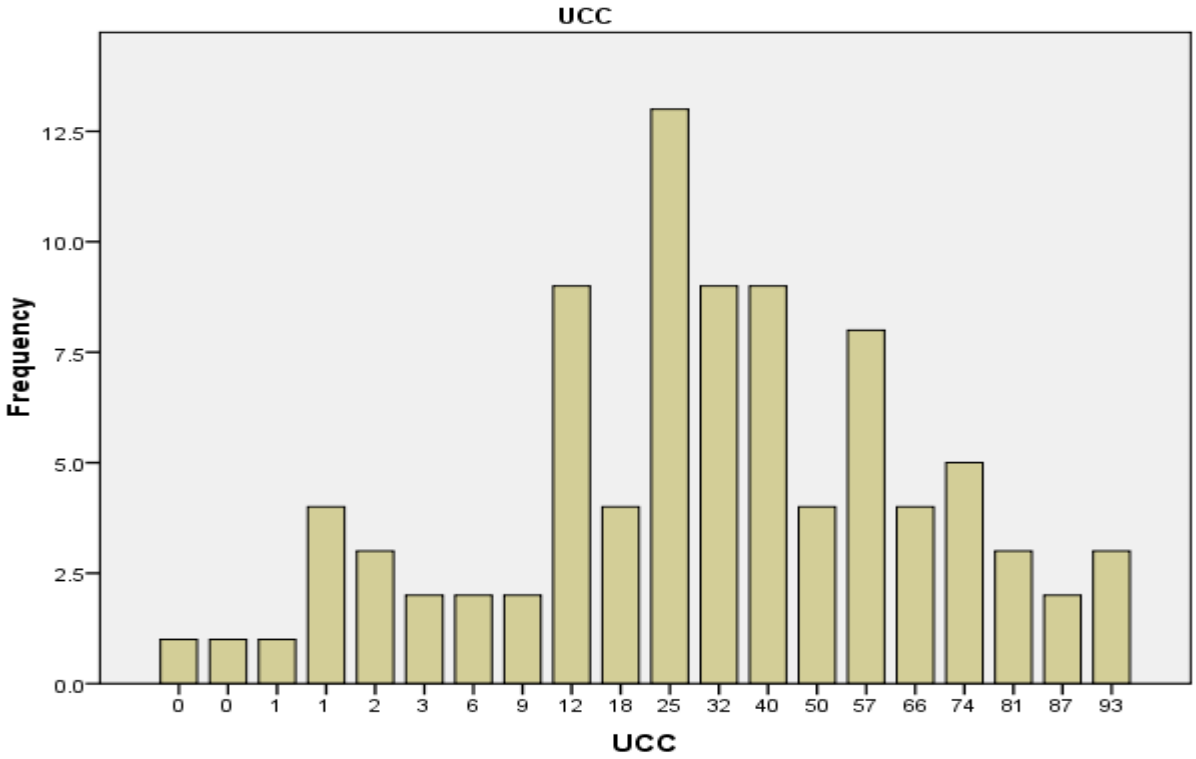
BA2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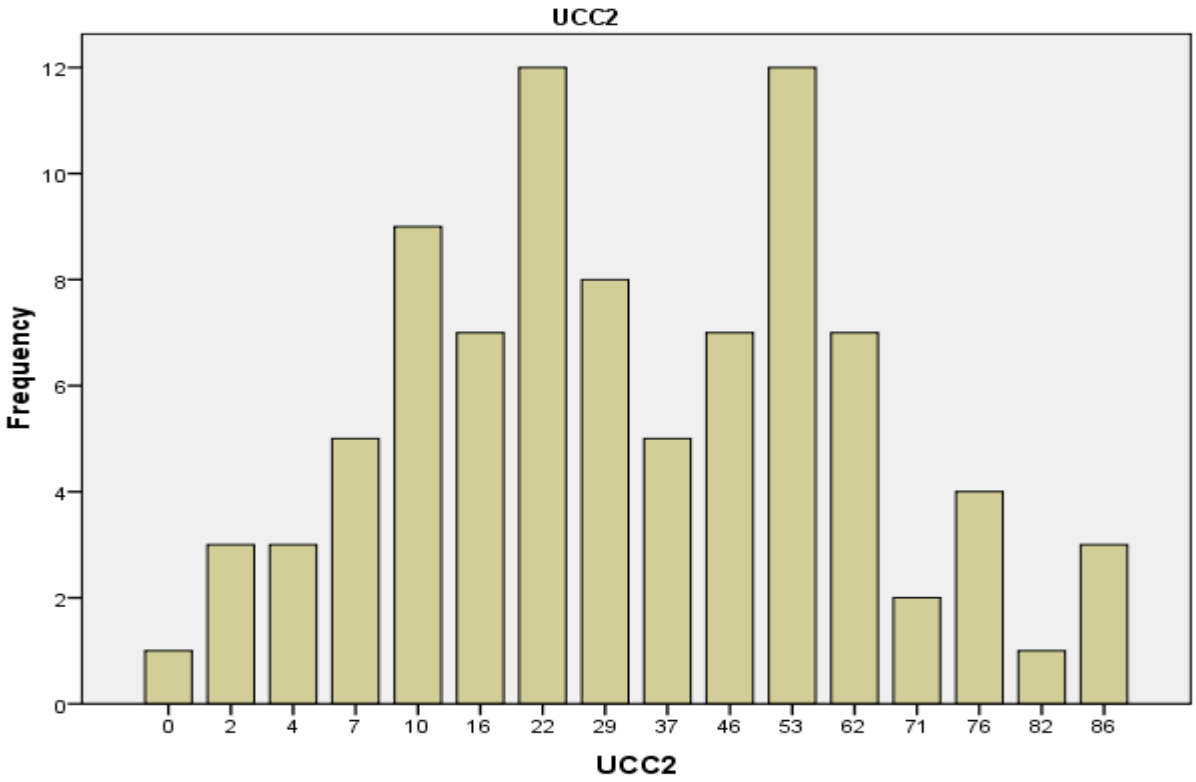
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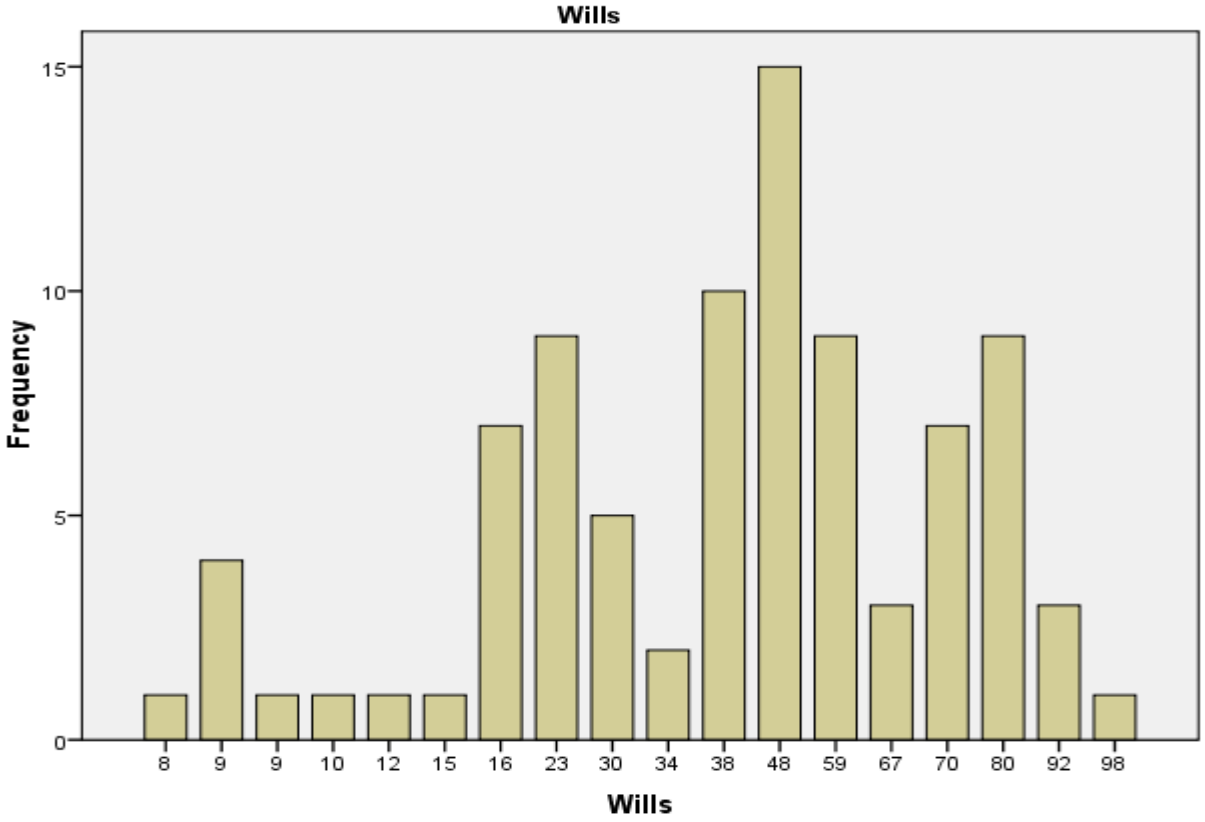
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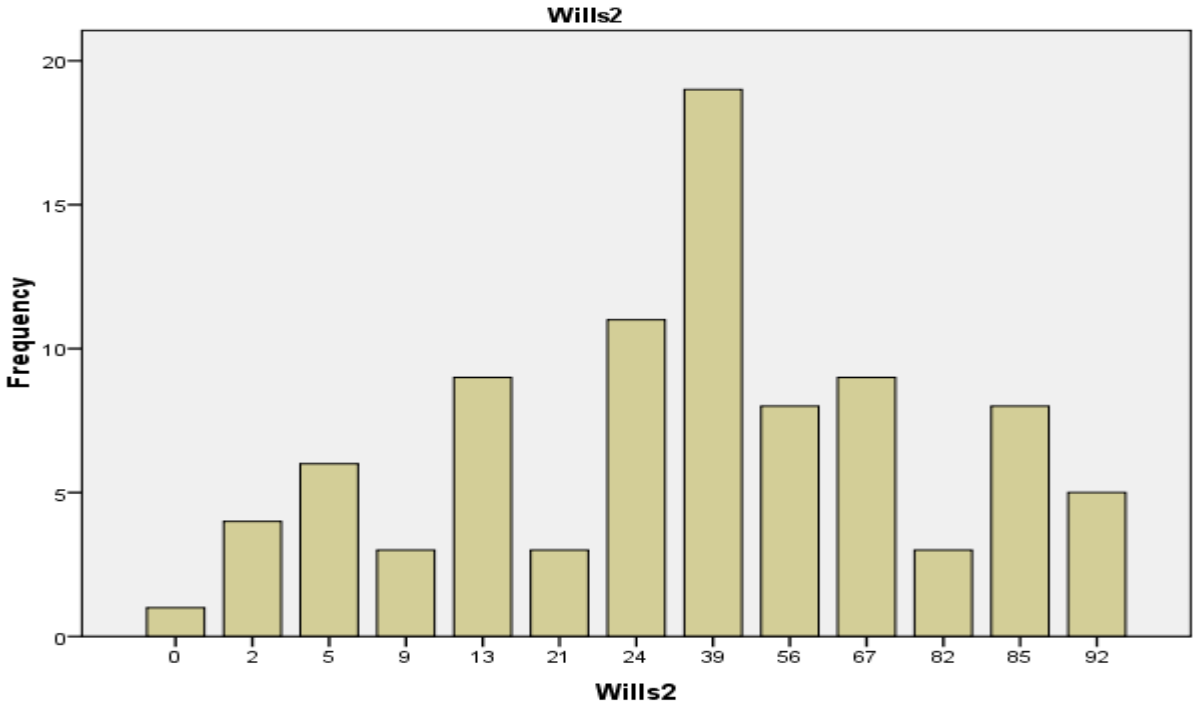
Wills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92
Wills2

Correlational Relationships of TMSL February 2010 Bar Examination Scores

Correlations

		Final Score	Times Taken	P Criminal	E Civil	Const Law	Cntracts	MBE CrimLaw	Evdnce
Final_Score	Pearson Correlation	1	-.273**	.656**	.643**	.549**	.613**	.480**	.581**
	Sig. (2-tailed)		.010	.000	.000	.000	.000	.000	.000
Times_Taken	Pearson Correlation	-.273**	1	-.075	-.183	-.051	-.212*	-.368**	-.245*
	Sig. (2-tailed)	.010		.485	.085	.636	.046	.000	.021
P_Criminal	Pearson Correlation	.656**	-.075	1	.482**	.408**	.371**	.194	.349**
	Sig. (2-tailed)	.000	.485		.000	.000	.000	.069	.001
E_Civil	Pearson Correlation	.643**	-.183	.482**	1	.438**	.285**	.250*	.324**
	Sig. (2-tailed)	.000	.085	.000		.000	.007	.018	.002
Const.Law	Pearson Correlation	.549**	-.051	.408**	.438**	1	.414**	.335**	.377**
	Sig. (2-tailed)	.000	.636	.000	.000		.000	.001	.000
Contracts	Pearson Correlation	.613**	-.212*	.371**	.285**	.414**	1	.302**	.409**
	Sig. (2-tailed)	.000	.046	.000	.007	.000		.004	.000
MBECrimLaw	Pearson Correlation	.480**	-.368**	.194	.250*	.335**	.302**	1	.414**
	Sig. (2-tailed)	.000	.000	.069	.018	.001	.004		.000
Evidence	Pearson Correlation	.581**	-.245*	.349**	.324**	.377**	.409**	.414**	1
	Sig. (2-tailed)	.000	.021	.001	.002	.000	.000	.000	
RealProperty	Pearson Correlation	.635**	-.342**	.360**	.467**	.413**	.371**	.502**	.380**
	Sig. (2-tailed)	.000	.001	.001	.000	.000	.000	.000	.000

Torts	Pearson Correlation	.636**	-.104	.471**	.426**	.386**	.389**	.360**	.471**
	Sig. (2-tailed)	.000	.333	.000	.000	.000	.000	.001	.000
Family	Pearson Correlation	.394**	.059	.368**	.408**	.191	.114	.000	.093
	Sig. (2-tailed)	.000	.582	.000	.000	.074	.289	1.000	.385
Family2	Pearson Correlation	.359**	.024	.238*	.167	.035	.098	.052	.236*
	Sig. (2-tailed)	.001	.822	.025	.117	.747	.361	.628	.026
RealProp	Pearson Correlation	.420**	-.110	.171	.168	.164	.331**	-.088	.013
	Sig. (2-tailed)	.000	.303	.109	.116	.124	.002	.414	.906
RealProp2	Pearson Correlation	.101	.093	-.040	-.033	-.017	.038	.066	.037
	Sig. (2-tailed)	.346	.385	.711	.756	.873	.723	.538	.734
Trusts	Pearson Correlation	.405**	-.056	.246*	.203	.202	.156	.168	.169
	Sig. (2-tailed)	.000	.603	.020	.056	.057	.144	.115	.112
Consumer	Pearson Correlation	.405**	-.020	.245*	.151	.139	.348**	.148	.108
	Sig. (2-tailed)	.000	.850	.021	.159	.193	.001	.168	.314
BA	Pearson Correlation	.270*	-.073	.056	.139	.183	.136	.141	.140
	Sig. (2-tailed)	.010	.495	.603	.194	.086	.204	.187	.191
BA2	Pearson Correlation	.306**	-.110	.286**	.203	.068	.095	-.007	.128
	Sig. (2-tailed)	.004	.303	.007	.057	.527	.377	.949	.231
UCC	Pearson Correlation	.472**	-.138	.350**	.300**	.185	.145	.124	.130
	Sig. (2-tailed)	.000	.198	.001	.004	.083	.174	.247	.223
UCC2	Pearson Correlation	.366**	-.125	.160	.308**	.062	.253*	.083	.220*
	Sig. (2-tailed)	.000	.243	.134	.003	.564	.017	.440	.038

Wills	Pearson Correlation	.368**	-.224*	.313**	.241*	.081	.208	.218*	.209*
	Sig. (2-tailed)	.000	.035	.003	.023	.449	.051	.040	.049
Wills2	Pearson Correlation	.427**	-.235*	.363**	.314**	.075	.179	.214*	.220*
	Sig. (2-tailed)	.000	.026	.000	.003	.484	.093	.044	.039

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		RealProperty	Torts	Family	Family2	Real Prop	Real Prop2	Trusts	Consumer	BA
Final_Score	Pearson Correlation	.635**	.636**	.394**	.359**	.420**	.101	.405**	.405**	.270*
	Sig. (2-tailed)	.000	.000	.000	.001	.000	.346	.000	.000	.010
Times_Taken	Pearson Correlation	-.342**	-.104	.059	.024	-.110	.093	-.056	-.020	-.073
	Sig. (2-tailed)	.001	.333	.582	.822	.303	.385	.603	.850	.495
P_Criminal	Pearson Correlation	.360**	.471**	.368**	.238*	.171	-.040	.246*	.245*	.056
	Sig. (2-tailed)	.001	.000	.000	.025	.109	.711	.020	.021	.603
E_Civil	Pearson Correlation	.467**	.426**	.408**	.167	.168	-.033	.203	.151	.139
	Sig. (2-tailed)	.000	.000	.000	.117	.116	.756	.056	.159	.194
Const.Law	Pearson Correlation	.413**	.386**	.191	.035	.164	-.017	.202	.139	.183
	Sig. (2-tailed)	.000	.000	.074	.747	.124	.873	.057	.193	.086
Contracts	Pearson Correlation	.371**	.389**	.114	.098	.331**	.038	.156	.348**	.136
	Sig. (2-tailed)	.000	.000	.289	.361	.002	.723	.144	.001	.204
MBECrimLaw	Pearson Correlation	.502**	.360**	.000	.052	-.088	.066	.168	.148	.141
	Sig. (2-tailed)	.000	.001	1.000	.628	.414	.538	.115	.168	.187

Evidence	Pearson Correlation	.380**	.471**	.093	.236*	.013	.037	.169	.108	.140
	Sig. (2-tailed)	.000	.000	.385	.026	.906	.734	.112	.314	.191
RealProperty	Pearson Correlation	1	.516**	.162	.049	.173	.053	.258*	.084	.117
	Sig. (2-tailed)		.000	.129	.648	.105	.623	.015	.436	.277
Torts	Pearson Correlation	.516**	1	.248*	.276**	.112	.012	.269*	.186	.089
	Sig. (2-tailed)	.000		.019	.009	.294	.914	.011	.082	.406
Family	Pearson Correlation	.162	.248*	1	.235*	.019	-.118	.192	.306**	.062
	Sig. (2-tailed)	.129	.019		.027	.858	.270	.071	.004	.561
Family2	Pearson Correlation	.049	.276**	.235*	1	.103	.095	-.009	.159	.052
	Sig. (2-tailed)	.648	.009	.027		.339	.378	.933	.137	.626
RealProp	Pearson Correlation	.173	.112	.019	.103	1	.059	.008	.137	.070
	Sig. (2-tailed)	.105	.294	.858	.339		.583	.944	.201	.512
RealProp2	Pearson Correlation	.053	.012	-.118	.095	.059	1	-.099	-.108	.198
	Sig. (2-tailed)	.623	.914	.270	.378	.583		.354	.314	.062
Trusts	Pearson Correlation	.258*	.269*	.192	-.009	.008	-.099	1	.325**	.039
	Sig. (2-tailed)	.015	.011	.071	.933	.944	.354		.002	.715
Consumer	Pearson Correlation	.084	.186	.306**	.159	.137	-.108	.325**	1	.038
	Sig. (2-tailed)	.436	.082	.004	.137	.201	.314	.002		.726
BA	Pearson Correlation	.117	.089	.062	.052	.070	.198	.039	.038	1
	Sig. (2-tailed)	.277	.406	.561	.626	.512	.062	.715	.726	
BA2	Pearson Correlation	.149	.261*	.231*	.074	.310**	-.019	.060	-.044	-.034
	Sig. (2-tailed)	.163	.014	.030	.491	.003	.859	.574	.679	.750

UCC	Pearson Correlation	.313**	.264*	.134	.115	.235*	.010	.355**	-.022	.013
	Sig. (2-tailed)	.003	.013	.212	.281	.026	.925	.001	.841	.906
UCC2	Pearson Correlation	.166	.070	.114	.073	.179	.108	.179	.206	.028
	Sig. (2-tailed)	.120	.517	.287	.499	.093	.312	.094	.053	.796
Wills	Pearson Correlation	.106	.085	.096	.034	.108	.091	.053	.104	.169
	Sig. (2-tailed)	.325	.430	.370	.749	.312	.396	.625	.333	.114
Wills2	Pearson Correlation	.292**	.197	.086	.104	.161	.001	.075	.192	-.083
	Sig. (2-tailed)	.005	.064	.425	.330	.131	.991	.486	.071	.442

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Final Times Taken Correlations

		BA2	UCC	UCC2	Wills	Wills2
Times_Taken	Pearson Correlation	-.110	-.138	-.125	-.224*	-.235*
	Sig. (2-tailed)	.303	.198	.243	.035	.026

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Best Sub-Category Predictor of TMSL Feb 2010 Bar Examination

Model Summary[b]

odel	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983[a]	.967	.957	10.097

a. Predictors: Sub-Categories of the TMSL Feb 2010 Bar Examination

b. Dependent Variable: Final_Score

Model Summary[b]

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.967	98.236	20	68	.000

b. Dependent Variable: Final_Score

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	200284.958	20	10014.248	98.236	.000[a]
	Residual	6931.941	68	101.940		
	Total	207216.899	88			

a. Predictors: Sub-Categories of the TMSL Feb 2010 Bar Examination

b. Dependent Variable: Final_Score

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	523.180	4.243		123.301	.000
	P_Criminal	.163	.058	.089	2.821	.006
	E_Civil	.196	.059	.104	3.322	.001
	Const.Law	.163	.051	.093	3.189	.002
	Contracts	.207	.056	.109	3.695	.000
	MBECrimLaw	.215	.051	.124	4.247	.000
	Evidence	.245	.052	.137	4.691	.000
	RealProperty	.233	.060	.123	3.871	.000
	Torts	.157	.059	.082	2.634	.010
	Family	.166	.049	.094	3.401	.001
	Family2	.244	.046	.134	5.325	.000
	RealProp	.349	.050	.192	7.000	.000
	RealProp2	.103	.040	.060	2.553	.013
	Trusts	.185	.047	.106	3.966	.000
	Consumer	.190	.045	.119	4.184	.000
	BA	.182	.042	.103	4.312	.000
	BA2	.092	.045	.054	2.024	.047
	UCC	.226	.050	.124	4.485	.000
	UCC2	.105	.053	.052	1.983	.051
	Wills	.191	.052	.094	3.658	.000
	Wills2	.138	.045	.081	3.045	.003

a. Dependent Variable: Final_Score

Findings

The findings of the preceding report indicate many statistical phenomenons, but the research questions listed initially guide this report. The preceding highlighted data points were cited and explained as appropriate.

Question 1: What are the statistical descriptors of the February 2010 TMSL Bar students? (pgs. 2-26)

A descriptive analysis using SPSS 17 produced the results on pages 2-23. Descriptive data of the Bar and Sub-Categories are given on pages 2-4. The median measure is circled because the median appears to be the best representative of the "individual" in the sample. The mean and the mode are also given because these measures of central tendency are also useful when evaluating data. The median of the Feb 2010 Bar Examinees final score was 676 (p. 2) and the times taken was 2. The data was considered slightly skewed to the right (Kurtosis = .162) indicating that a few scores are strung out to the positive end of the distribution. Kurtosis is another measure of abnormalities in data. The Min was 537 and the Max was 801, and the quartiles were given as 644, 676, and 704 respectively. Frequency charts are given on pages 5-23.

Question 2: What is the relationship of the subcategories, Times Taken the Bar, and Final Bar Score of the Feb 2010 TMSL Bar test takers?

A correlational analysis was run using SPSS 17 producing the results on pages 16-23. The Final Score relationship Pearson Correlation was given in the first column on pages 16-23 and is highlighted in yellow. The correlation coefficient of the Times Taken Row 2 is highlighted in turquoise to emphasize the negative relationship of the variable with the others. The only positive relationship with that variable and the subcategories were Family, Family2, and RealProp2. Indicating the possibility of retention of those subject areas over time, but the others are dissipating.

Question 3: What subcategory served as the best Predictor of the Feb 2010 TMSL Bar test taking students to their Final Bar Score?

The subcategory that served as the best Predictor of the Feb 2010 TMSL Bar examinees was the Real Prop (Essays 1). This subcategory had an unstandardized B=.349. The next four completing the top five predictors were Evidence (B=.245 - MBE), Family (B=.244 – Essays 2), Real Property (B=.233 - MBE), and UCC (B=.226 – Essays 1).

These predictors are arguably the best five predictors that can be found when addressing Bar Exam initiatives. The overall effect size or R^2 was given as .967, which indicates the subcategories of the bar cover approximately 97% of the Final Bar Score. This high effect size is common with standardized examinations and speaks mostly to the efficient measurability of the examination.

What can be taken from these statistics is where focus can be made when addressing educational initiatives. Although the highest correlational coefficient (.636) was found with the Torts subcategory, the unstandardized B was .157, which was not a very good predictor. The second highest correlational coefficient was Real Property (MBE) at .635, and that was listed as the 4th best predictor. This is another reason why looking at only the correlational coefficient in decision making is statistically discouraged. Correlation does not mean causality. Here is clear that the largest correlation does not yield a good predictor.

Summary

Theoretically, the Bar Examination's educational components could be found by further evaluating the learning objectives that were tested upon in the subcategories. If the goal is to address curricula initiatives that affect the Bar Exam, then further study of those objectives should be done. This high stakes test is very well designed and could serve as a baseline for further TMSL educational studies. The high effect size yields statistically significant results with a very low N. Therefore, learning initiatives based on objectives can easily be measured (summative) by analyzing changes in subcategories of the Bar.