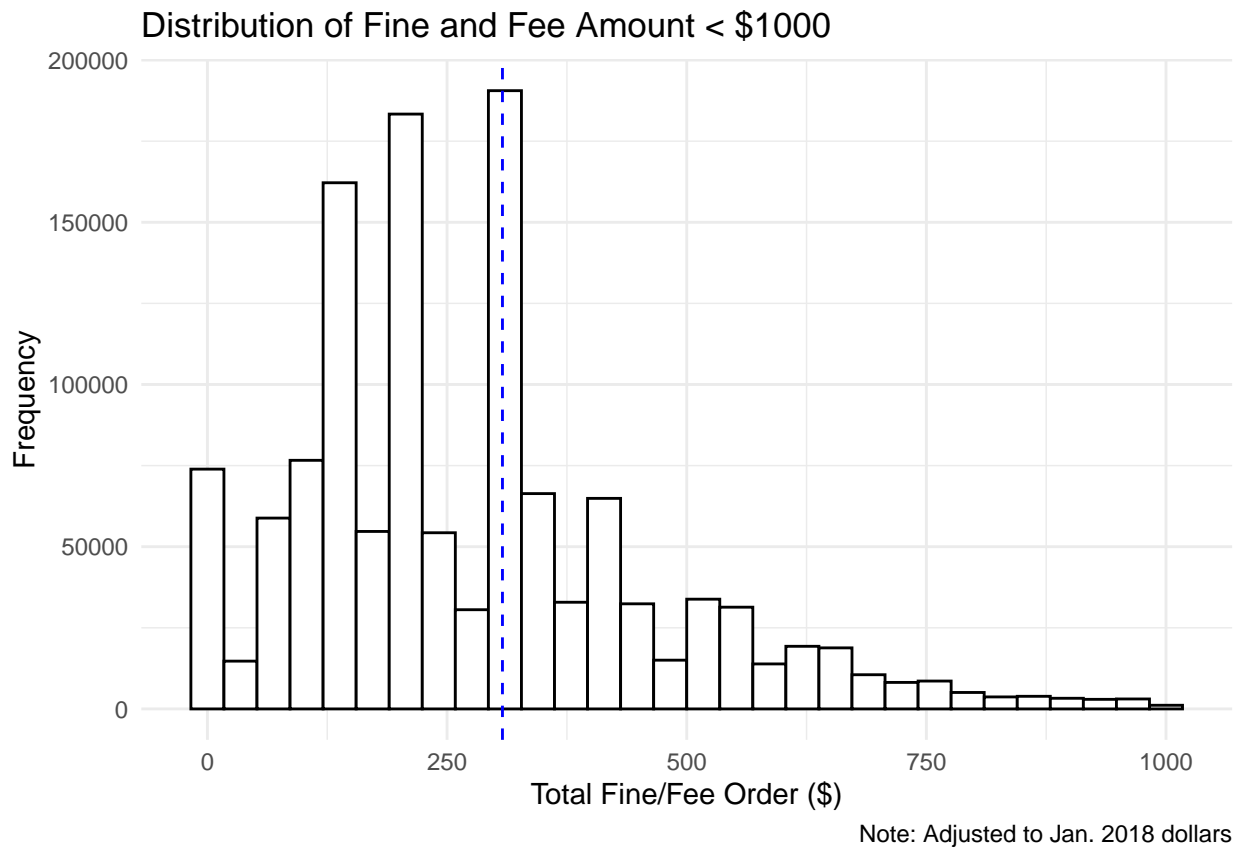# ASR Replication Preliminary - No Petty Misdemeanors

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This analysis represents a preliminary attempt to replicate and extend the Harris et. al. ASR paper. The Minnesota data is situated at the case level from 2010-2015. The full data series extends back to 2004, but VIBES data in the two most populous MN counties, Hennepin and Ramsey, are missing and inconsistent until 2010. Additionally, while data at the conviction level would be more comparable, we do not have data at the conviction level for much of the VIBES data. This analysis uses the full sample (misdemenor, gross misdemeanor, felony) except for petty misdemeanors. We also include an extention set of mixed models to Native American populations, with hypothesized interactions with alcohol-related and hunting and fisheries violations to examine if the courtesty stigma and steretype congruence effects found in the Black and Latino models extend to Native American populations.

A few differences are of note: "SRA score" and "offender score", or comparable measures, are not redily available in the MCAO data. We decided to preliminarily use the number of prior offenses as a proxy for "offender score" and the degree of charge (e.g., gross misdemeanor) as an indicator of offense severity akin to "SRA score". Additionally, we use a more expansive offense type categorization for our Native American extentions, including both alcohol-related and hunting and fisheries violations in addition to violent and drug indicators. Hunting and fisheries violations were not included in the felony level analyses, as no felony-level hunting or fisheries violations were documented for Native American defendants, which does not allow the estimation of that specific interaction.

Distribution of Fines and Fees

Distribution of Fine and Fee Amount < $1000

Note: Adjusted to Jan. 2018 dollars

Descriptive Statistics

Table 1: Descriptive Statistics - Felony, GM, and Misdem. Data

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Total Fine/Fee	1,314,531	307.776	973.025	0.000	144.160	381.500	356,515.000
Priors	1,338,310	6.427	8.619	0.000	1.000	9.000	236.000
Age	1,338,753	33.116	12.460	15	23	41	115
Male	1,307,742	0.714	0.452	0.000	0.000	1.000	1.000
White	1,022,745	0.587	0.492	0.000	0.000	1.000	1.000
Asian	1,022,745	0.031	0.173	0.000	0.000	0.000	1.000
Black	1,022,745	0.223	0.416	0.000	0.000	0.000	1.000
Hispanic	1,022,745	0.085	0.279	0.000	0.000	0.000	1.000
Native Am.	1,022,745	0.055	0.228	0.000	0.000	0.000	1.000
Other Race	1,022,745	0.019	0.135	0.000	0.000	0.000	1.000
Trial	1,332,189	0.0001	0.011	0.000	0.000	0.000	1.000
Petty Misdemeanor	1,338,753	0.083	0.276	0	0	0	1
Misdemenor	1,338,753	0.849	0.358	0	1	1	1
Gross Misdemeanor	1,338,753	0.082	0.274	0	0	0	1
Felony	1,338,753	0.078	0.268	0	0	0	1
Violent	1,338,753	0.065	0.246	0	0	0	1
Alcohol/DUI	1,338,753	0.163	0.369	0	0	0	1
Drug	1,338,753	0.041	0.198	0	0	0	1
Hunt/Fish	1,338,753	0.019	0.137	0	0	0	1
Percent Minority	1,338,753	11.626	6.532	1.348	6.300	18.930	50.801
Percent Vote Republican	1,338,753	43.174	8.576	31.633	35.716	49.958	58.858
Percent Law and Justice	1,338,753	15.353	3.073	8.467	13.370	18.323	22.683

Bivariate Correlations

Table 2: Pairwise Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Total.Fine.Fee	1												
Priors	-0.01	1											
Age	0	-0.01	1										
Male	0.01	0.08	0.03	1									
White	0.02	-0.13	0.07	0.01	1								
Asian	0	-0.04	-0.03	0.02	-0.21	1							
Black	-0.03	0.21	-0.03	0.01	-0.64	-0.1	1						
Hispanic	0	-0.07	-0.04	0.03	-0.36	-0.05	-0.16	1					
Native.Am.	0	0.02	-0.01	-0.07	-0.29	-0.04	-0.13	-0.07	1				
Other.Race	0	-0.01	-0.03	-0.01	-0.16	-0.02	-0.07	-0.04	-0.03	1			
Trial	0	0.01	0	0	-0.01	0	0.01	0	0	0	1		
Petty.Misdmeanor	0.02	-0.02	-0.05	0	-0.02	0.02	0	0.04	-0.03	0.01	0	1	
Misdemenor	-0.05	-0.1	-0.03	-0.06	-0.03	0.01	0.02	0.05	-0.04	0.01	-0.02	0.12	1
Gross.Misdemeanor	0.06	0.04	0.06	0.03	0.05	-0.01	-0.05	-0.03	0.03	-0.01	0	-0.09	-0.67
Felony	0.02	0.11	-0.02	0.06	-0.01	-0.01	0.02	-0.03	0.03	-0.01	0.02	-0.09	-0.66
Violent	0	0.04	0	0.08	-0.02	-0.02	0.03	-0.02	0.04	0	0.02	-0.08	-0.28
Alcohol.DUI	0.05	-0.12	-0.09	0.01	0.14	0	-0.12	-0.04	-0.01	-0.01	0	-0.09	-0.15
Drug	0.02	0.05	-0.05	0.03	0.03	-0.01	-0.02	-0.02	0.01	0	0.01	0.1	-0.26
Hunt.Fish	0	0.04	0	0.08	-0.02	-0.02	0.03	-0.02	0.04	0	0.02	-0.08	-0.28
Violent.1	-0.02	-0.06	0.07	0.07	0.05	0.02	-0.05	-0.02	-0.02	-0.01	0	-0.04	0.06
Percent.Minority	-0.02	0.12	0.01	-0.04	-0.34	0.07	0.31	0.02	0.07	0.03	0.01	0.04	0.04
Percent.Vote.Republican	0.01	-0.09	-0.01	0.02	0.26	-0.06	-0.27	0	0	-0.02	-0.01	-0.05	-0.04
Percent.Law.and..Justice	0.01	-0.01	-0.01	0	0.09	0.01	-0.08	-0.05	0	-0.02	-0.01	0.01	-0.05

Table 3 Replication

The table below presents a replication of Table 3 in Harris et. al. 2011 with data using all charge levels. A few differences are of note: "SRA score" and "offender score", or comparable measures, are not redily available in the MCAO data. We decided to preliminarily use the number of prior offenses as a proxy for "offender score". Additionally, we use a more expansive offense type categorization for our Native American extentions, including alcohol-related in addition to violent and drug indicators. We run each of the models on a subset of cases consisting of all felony cases, as to make a closer comparison to the superior court data in Washington.

Table 3: Harris et. al. ASR Table 3 Replication - MCAO All Charges

| | Total Fine and Fee Order (log) | | | |
	(1)	(2)	(3)	(4)
Black		−0.363***	−0.247***	−0.247***
Hispanic		0.107***	0.086***	0.086***
Asian		0.059***	0.034***	0.034***
Native Am.		−0.416***	−0.323***	−0.323***
Other Race		−0.064***	−0.048***	−0.048***
Male			0.025***	0.025***
log(Age)			0.009*	0.009*
Priors			−0.013***	−0.013***
Trial			−0.292*	−0.292*
Petty Misdemeanor			0.670***	0.670***
Misdemeanor			0.353***	0.353***
Gross Misdemeanor			0.467***	0.467***
Felony			−0.192***	−0.192***
Drug			−0.066***	−0.066***
Alcohol.DUI			0.290***	0.290***
Hunt.Fish			−0.348***	−0.348***
Violent			−0.287***	−0.287***
Percent Minority				0.004
Percent Vote Republican				0.005
Percent Law and Justice				−0.010
Constant	5.431***	5.496***	5.131***	5.008***
L1 Variance	1.95	2.24	2.13	2.13
L2 Variance	0.04	0.06	0.06	0.06
N	1,314,531	1,000,241	988,760	988,760

$^*p < .05$; $^{**}p < .01$; $^{***}p < .001$

Table 4: Harris et. al. ASR Table 4 Replication - MCAO All Charges

| | Total Fine and Fee Order (log) | | | |
	(1)	(2)	(3)	(4)
Priors	−0.015***	−0.014***	−0.015***	−0.015***
Age	−0.019***	−0.020***	−0.022***	−0.023***
Male	0.042***	0.040***	0.044***	0.044***
Black	−0.259***	−0.033***	−0.216***	−0.248***
Trial	−0.269*	−0.254	−0.188	−0.023
Violent	−0.340***	−0.340***	−0.214***	0.238***
Petty Misdemeanor	0.639***	0.637***	0.640***	0.634***
Misdemeanor	0.373***	0.372***	0.359***	0.322***
Gross Misdemeanor	0.599***	0.599***	0.589***	0.555***
Felony	−0.208***	−0.208***	−0.209***	−0.232***
Percent Black	−0.016	−0.014	−0.015	−0.006
Percent Vote Republican	0.003	0.003	0.003	0.004
Percent Law and Justice	−0.008	−0.008	−0.008	−0.009
Black*Percent Black		−0.027***		
Black*Violent			−0.503***	
Violent*Percent Black				−0.110***
Constant	5.206***	5.218***	5.215***	5.205***
L1 Variance	2.15	2.15	2.15	2.13
L2 Variance	0.05	0.05	0.05	0.05
N	988,760	988,760	988,760	988,760

*$p < .05$; **$p < .01$; ***$p < .001$

Table 5: Harris et. al. ASR Table 5 Replication - MCAO All Charges

	Total Fine and Fee Order (log)			
	(1)	(2)	(3)	(4)
Priors	−0.016***	−0.016***	−0.016***	−0.016***
Age	−0.001	−0.001	−0.001	−0.002
Male	0.026***	0.026***	0.026***	0.027***
Hispanic	0.150***	0.129***	0.151***	0.148***
Trial	−0.355**	−0.354**	−0.354**	−0.335*
Drug	0.028***	0.028***	0.030***	0.372***
Petty Misdemeanor	0.657***	0.657***	0.657***	0.655***
Misdemeanor	0.365***	0.365***	0.365***	0.358***
Gross Misdemeanor	0.579***	0.579***	0.579***	0.573***
Felony	−0.322***	−0.322***	−0.322***	−0.332***
Percent Hispanic	0.002	0.002	0.002	0.006
Percent Vote Republican	0.006	0.006	0.006	0.006
Percent Law and Justice	−0.011	−0.011	−0.011	−0.011
Hispanic*Percent Hispanic		0.003		
Hispanic*Drug			−0.040	
Drug*Percent Hispanic				−0.071***
Constant	5.028***	5.031***	5.029***	5.018***
L1 Variance	2.17	2.17	2.17	2.17
L2 Variance	0.06	0.06	0.06	0.06
N	988,760	988,760	988,760	988,760

*$p < .05$; **$p < .01$; ***$p < .001$

Table 6: Native American Interactions - MCAO All Charges

	Total Fine and Fee Order (log)			
	(1)	(2)	(3)	(4)
Priors	−0.014***	−0.014***	−0.014***	−0.014***
Age	0.029***	0.029***	0.029***	0.029***
Male	0.017***	0.017***	0.017***	0.017***
Native Am.	−0.289***	−0.343***	−0.277***	−0.289***
Trial	−0.371**	−0.371**	−0.371**	−0.371**
Petty Misdemeanor	0.693***	0.694***	0.694***	0.693***
Misdemeanor	0.341***	0.340***	0.343***	0.341***
Gross Misdemeanor	0.421***	0.420***	0.422***	0.421***
Felony	−0.309***	−0.309***	−0.308***	−0.309***
Alcohol.DUI	0.341***	0.342***	0.345***	0.339***
Hunt/Fish	−0.306***	−0.302***	−0.309***	−0.299***
Percent NA	0.007	0.0001	0.007	0.007
Percent Vote Republican	0.006	0.006	0.006	0.006
Percent Law and Justice	−0.011	−0.012	−0.011	−0.011
Native Am.*Percent NA		0.013***		
Native Am.*Alcohol.DUI			−0.083***	
Native Am.*Hunt/Fish			0.234*	
Alcohol.DUI*Percent NA				0.001
Hunt/Fish*Percent NA				−0.003
Constant	4.900***	4.922***	4.897***	4.900***
L1 Variance	2.15	2.15	2.15	2.15
L2 Variance	0.06	0.06	0.06	0.06
N	988,760	988,760	988,760	988,760

*$p < .05$; **$p < .01$; ***$p < .001$