

ASR Replication Preliminary - All Charges, Topcode \$1000

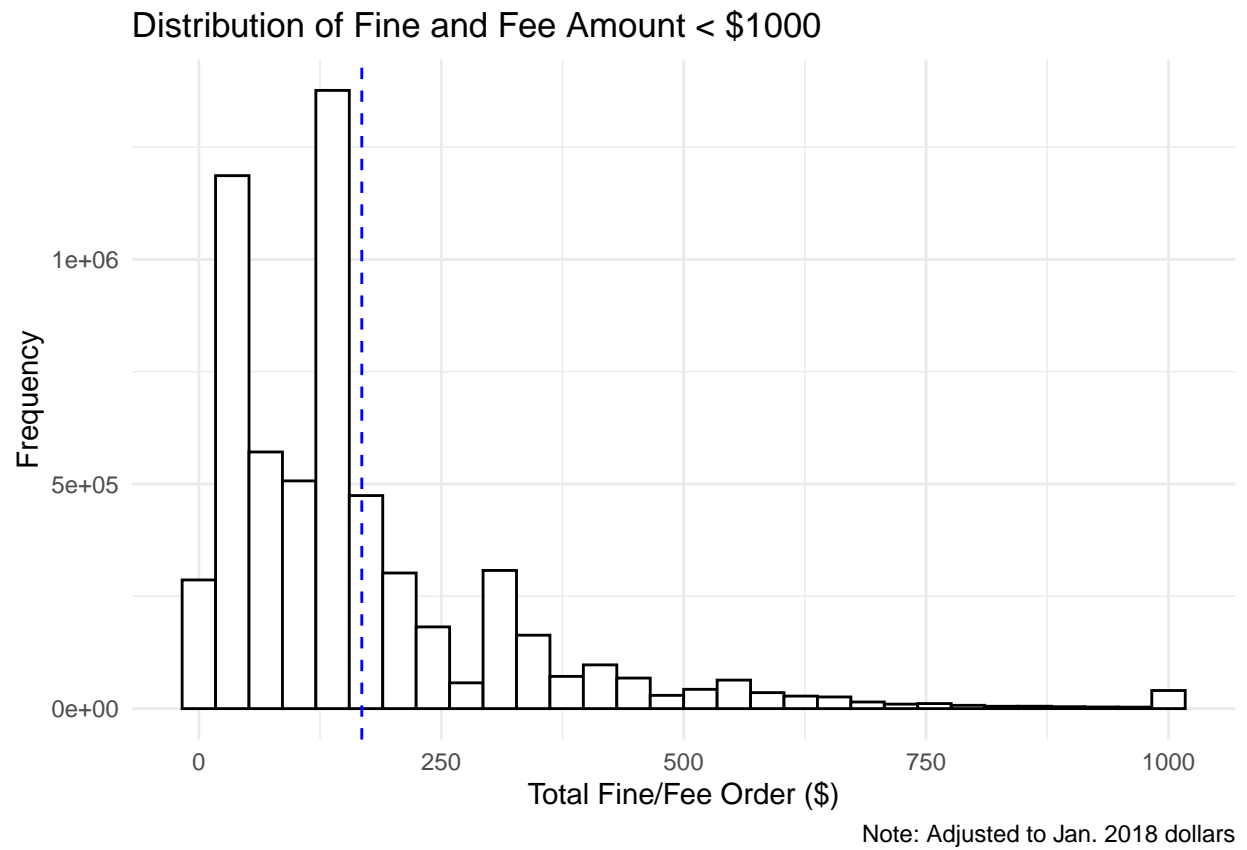
Ryan Larson - UMN

11/05/2019

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 (petty misdemeanor, misdemeanor, gross misdemeanor, felony). We also include an extension set of mixed models to Native American populations, with hypothesized interactions with alcohol-related and hunting and fisheries violations to examine if the courtship stigma and stereotype 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 readily 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 extensions, 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



Descriptive Statistics

Table 1: Descriptive Statistics - Felony Data

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Total Fine/Fee	5,981,037	168.045	159.018	0.000	53.110	197.290	1,000.000
Priors	6,153,358	5.614	8.480	0.000	1.000	7.000	256.000
Age	6,155,750	36.874	14.001	15	25	47	115
Male	5,458,901	0.658	0.474	0.000	0.000	1.000	1.000
White	3,381,753	0.575	0.494	0.000	0.000	1.000	1.000
Asian	3,381,753	0.042	0.201	0.000	0.000	0.000	1.000
Black	3,381,753	0.260	0.438	0.000	0.000	1.000	1.000
Hispanic	3,381,753	0.069	0.254	0.000	0.000	0.000	1.000
Native Am.	3,381,753	0.034	0.181	0.000	0.000	0.000	1.000
Other Race	3,381,753	0.020	0.139	0.000	0.000	0.000	1.000
Trial	6,117,958	0.00005	0.007	0.000	0.000	0.000	1.000
Violent	6,097,485	0.025	0.156	0.000	0.000	0.000	1.000
Alcohol/DUI	6,097,485	0.046	0.210	0.000	0.000	0.000	1.000
Drug	6,097,485	0.020	0.139	0.000	0.000	0.000	1.000
Hunt/Fish	6,097,485	0.005	0.069	0.000	0.000	0.000	1.000
Other Offense	6,097,485	0.904	0.294	0.000	1.000	1.000	1.000
Percent Minority	6,143,428	14.182	6.049	1.348	8.292	18.930	50.801
Percent Vote Republican	6,143,428	39.900	8.171	31.633	35.716	47.431	58.858
Percent Law and Justice	6,143,428	15.242	2.863	8.467	13.370	18.393	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 (log)	1												
Priors	-0.02	1											
Age	-0.1	-0.06	1										
Male	0.02	0.09	0.02	1									
White	0.02	-0.19	0.05	0.02	1								
Asian	0	-0.06	0	0	-0.24	1							
Black	-0.04	0.25	-0.02	-0.02	-0.69	-0.12	1						
Hispanic	0.02	-0.04	-0.02	0.03	-0.32	-0.06	-0.16	1					
Native Am.	0	0.02	-0.02	-0.04	-0.22	-0.04	-0.11	-0.05	1				
Other Race	0	0	-0.02	0	-0.16	-0.03	-0.08	-0.04	-0.03	1			
Trial	0	0.01	0	0	0	0	0.01	0	0	0	1		
Violent	-0.01	0.05	-0.04	0.06	-0.02	-0.02	0.01	0	0.05	0	0.02	1	
Alcohol.DUI	0.14	-0.01	-0.09	0.04	0.07	-0.02	-0.07	-0.01	0.04	-0.01	0	-0.04	1
Drug	0.02	0.05	-0.08	0.04	0.02	-0.02	-0.01	-0.01	0.03	0	0	-0.02	-0.03
Hunt.Fish	0.02	-0.02	0.01	0.04	0.03	0.01	-0.03	-0.01	0	0	0	-0.01	-0.02
Other Offense	-0.11	-0.03	0.13	-0.09	-0.05	0.03	0.06	0.01	-0.07	0.01	-0.01	-0.49	-0.68
Percent Minority	-0.08	0.1	0.11	-0.05	-0.29	0.07	0.28	0.01	0	0.03	0.01	-0.08	-0.12
Percent Vote Republican	0.06	-0.08	-0.11	0.04	0.24	-0.08	-0.25	0	0.03	-0.02	0	0.07	0.1
Percent Law and Justice	0.04	0	-0.02	-0.01	0.06	0.04	-0.06	-0.03	0.01	-0.02	0	0.03	0.02

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 readily 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 extensions, 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		−0.040***	−0.018***	−0.018***
Hispanic		0.129***	0.127***	0.126***
Asian		0.035***	0.019***	0.019***
Native Am.		−0.095***	−0.087***	−0.088***
Other Race		0.030***	0.021***	0.021***
Male			0.035***	0.035***
log(Age)			−0.255***	−0.255***
Priors			−0.005***	−0.005***
Trial			−0.389***	−0.388***
Alcohol.DUI			0.267***	0.269***
Drug			0.875***	0.877***
Hunt.Fish			0.320***	0.324***
Other Offense			0.221***	0.224***
Percent Minority				0.001
Percent Vote Republican				0.004
Percent Law and Justice				−0.011
Constant	4.891***	4.966***	5.548***	5.496***
L1 Variance	1.63	2.06	2.03	2.03
L2 Variance	0.03	0.04	0.04	0.04
N	5,981,037	3,232,676	3,124,415	3,117,334

*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	-0.005***	-0.005***	-0.005***	-0.005***
Age	-0.283***	-0.284***	-0.289***	-0.295***
Male	0.051***	0.051***	0.054***	0.056***
Black	-0.040***	0.044***	-0.0003	-0.032***
Trial	-0.334***	-0.331***	-0.187	-0.013
Violent	-0.290***	-0.291***	0.015**	0.671***
Percent Black	-0.032**	-0.032**	-0.030**	-0.021*
Percent Vote Republican	0.001	0.001	0.001	0.002
Percent Law and Justice	-0.008	-0.008	-0.008	-0.009
Black*Percent Black		-0.008***		
Black*Violent			-1.108***	
Violent*Percent Black				-0.170***
Constant	6.077***	6.081***	6.065***	6.023***
L1 Variance	2.05	2.05	2.05	2.03
L2 Variance	0.03	0.03	0.03	0.03
N	3,117,334	3,117,334	3,117,334	3,117,334

*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	-0.006***	-0.006***	-0.006***	-0.006***
Age	-0.279***	-0.279***	-0.279***	-0.280***
Male	0.044***	0.044***	0.044***	0.045***
Hispanic	0.124***	0.142***	0.124***	0.124***
Trial	-0.418***	-0.418***	-0.418***	-0.411***
Drug	-0.009	-0.009	-0.009	0.254***
Percent Hispanic	-0.0001	0.0004	-0.0001	0.002
Percent Vote Republican	0.004	0.004	0.004	0.004
Percent Law and Justice	-0.012*	-0.012*	-0.012*	-0.012*
Hispanic*Percent Hispanic		-0.003*		
Hispanic*Drug			0.001	
Drug*Percent Hispanic				-0.053***
Constant	5.905***	5.903***	5.905***	5.896***
L1 Variance	2.06	2.06	2.06	2.06
L2 Variance	0.04	0.04	0.04	0.04
N	3,117,334	3,117,334	3,117,334	3,117,334

*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	−0.005***	−0.005***	−0.005***	−0.005***
Age	−0.256***	−0.256***	−0.256***	−0.257***
Male	0.033***	0.033***	0.033***	0.033***
Native Am.	−0.101***	−0.140***	−0.050***	−0.100***
Trial	−0.457***	−0.457***	−0.460***	−0.457***
Alcohol.DUI	0.661***	0.663***	0.687***	0.661***
Hunt/Fish		0.115***	0.112***	0.114***
Percent NA	0.006	−0.0002	0.006	0.006
Percent Vote Republican	0.005	0.005	0.005	0.005
Percent Law and Justice	−0.012*	−0.013*	−0.012*	−0.012*
Native Am.*Percent NA		0.012***		
Native Am.*Alcohol.DUI			−0.439***	
Native Am.*Hunt/Fish			0.068	
Alcohol.DUI*Percent NA				0.001
Hunt/Fish*Percent NA				−0.001
Constant	5.694***	5.710***	5.685***	5.691***
L1 Variance	2.03	2.03	2.03	2.03
L2 Variance	0.03	0.04	0.03	0.03
N	3,117,334	3,117,334	3,117,334	3,117,334

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