

Week 7 HW

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Question 1

Comparing turn out rates for felons versus non felons is a bad research design since there are several factors within turnout that need to be addressed piece by piece. For example, white people (without a felony) may turn out more than another race, yet there may be far less whites with felony. Even with randomization efforts you cannot compare these two populations without reckoning with the fact that on average the racial makeup of turnout will be different than the racial average of incarcerated people. There could be many factors for example, education, that could impact voter turn out. simply comparing the two against each other will not isolate the issue of felonies, rather It could just exasperate other underlying socio-economic issues relating to voter turn out regardless if the demographics are randomized. You cannot make the demographic make up of felons match the demographic make up of voters because this demographic make up will not accurately represent the population of felons.

Question 1.B

i. What are the causal effect(s) that the authors are interested in studying?

Does formal alerts increase voter participation of ex felons?

ii. Describe the treatment and control conditions in the experiment.

A subset of felony population in CT were tested, half were given a letter, The other half did not get a letter. Then their voting was monitored. Additionally, prior voting participation was examined to see if a past voting history had any indicator on participation

iii. Describe the randomization strategy that the authors used. First they flushed certain felons out of the pool for if they were already registered or for other reasons regarding their crime etc. Randomly assigned ppl to three groups; control, two different treatment groups, one of which received each treatment. Blocks were made by individual crime type to ensure balance across conditions. leftover cases were randomly assigned. comparisons of blocks showed no imbalances on age, time in prison, time from release or previous voting behavior.

one treatment had standard language about registered, and the other appealed to concerns about fair treatment or humiliation at the polls because of their incarceration the ppl in the control group were not contacted.

C

```
felons<-felons[!(felons$returntoprison == 1),]  
felons$treatment_collapsed <- ifelse(felons$treatment >1,  
                                     TRUE,  
                                     FALSE )
```

D

```
t.1 <- t.test(felons$age[felons$treatment_collapsed == T],
             felons$age[felons$treatment_collapsed == F])
t.2<- t.test(felons$days_served[felons$treatment_collapsed == T],
             felons$days_served[felons$treatment_collapsed == F])
t.3<- t.test(felons$yrs_since_release[felons$treatment_collapsed == T],
             felons$yrs_since_release[felons$treatment_collapsed == F])
t.4<- t.test(felons$vote08[felons$treatment_collapsed == T],
             felons$vote08[felons$treatment_collapsed == F])

tab <- map_df(list(t.1,t.2,t.3,t.4),tidy)
tab[c("estimate1","estimate2", "p.value") ]
```

```
## # A tibble: 4 x 3
##   estimate1 estimate2 p.value
##   <dbl>      <dbl>   <dbl>
## 1    35.2      35.3     0.660
## 2   369.      370.     0.919
## 3     1.81     1.81     0.955
## 4    0.0522    0.0495    0.689
```

** ii ** No , all of the P value is larger than .05 so there is no significant difference

```
summary(lm(treatment_collapsed ~ felony_type,
           data = felons))
```

```
##
## Call:
## lm(formula = treatment_collapsed ~ felony_type, data = felons)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.6429 -0.5004  0.3571  0.4996  0.5714
##
## Coefficients:
##                                     Estimate Std. Error t value
## (Intercept)                      0.5157895  0.0514387  10.027
## felony_typeASSAULT, SECOND DEGREE -0.0221725  0.0609556  -0.364
## felony_typeBURGLARY, THIRD DEGREE -0.0214356  0.0544181  -0.394
## felony_typeCARRY PIST/RVOLLV W/O PERMIT -0.0259936  0.0881807  -0.295
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE -0.0157895  0.0796397  -0.198
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT -0.0092105  0.0655718  -0.140
## felony_typeCRIM VIOL OF PROTECTIVE ORDER -0.0184825  0.0556527  -0.332
## felony_typeCRIM VIOL ST CRIM RESTR ORDER  0.1270677  0.1435290   0.885
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE -0.0157895  0.1078112  -0.146
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER -0.0269006  0.0907294  -0.296
## felony_typeCRIMINAL POSSESSION OF A PISTOL -0.0157895  0.0914264  -0.173
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY -0.0872180  0.1963548  -0.444
## felony_typeESCAPE, FIRST DEGREE  0.0008772  0.0688524   0.013
## felony_typeFAILURE TO APPEAR, FIRST DEGREE -0.0117895  0.0682412  -0.173
## felony_typeFORGERY, FIRST DEGREE -0.0157895  0.1354852  -0.117
```

## felony_typeFORGERY, SECOND DEGREE	-0.0157895	0.0796397	-0.198
## felony_typeHARASSMENT 1ST DEGREE	0.0397661	0.1748581	0.227
## felony_typeIDENTITY THEFT 3RD DEGREE	0.0136223	0.1320307	0.103
## felony_typeLARCENY, FIRST DEGREE	-0.0157895	0.0678950	-0.233
## felony_typeLARCENY, SECOND DEGREE	-0.0063555	0.0650143	-0.098
## felony_typeLARCENY, THIRD DEGREE	-0.0120674	0.0571811	-0.211
## felony_typeMISREP OF SUB AS CONTROLLED SUB	-0.0872180	0.1963548	-0.444
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA	-0.0157895	0.1024748	-0.154
## felony_typePOSSESSION OF NARCOTICS	-0.0153566	0.0535124	-0.287
## felony_typePOSSESSION OF SHOTGUN OR SILENCER	-0.0713450	0.1748581	-0.408
## felony_typeRECKLESS BURNING	-0.0612440	0.1596787	-0.384
## felony_typeROBBERY, FIRST DEGREE	0.0119883	0.0981239	0.122
## felony_typeROBBERY, SECOND DEGREE	-0.0006380	0.0645706	-0.010
## felony_typeROBBERY, THIRD DEGREE	-0.0245614	0.0641554	-0.383
## felony_typeSALE OF CONTROLLED SUBSTANCE	-0.0130868	0.0576655	-0.227
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE	-0.0147855	0.0538360	-0.275
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT	0.0397661	0.1748581	0.227
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT	-0.0157895	0.1354852	-0.117
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED	0.0136223	0.1320307	0.103
## felony_typeSTEALING A FIREARM	-0.0452012	0.1320307	-0.342
## felony_typeSTRANGULATION 2ND DEGREE	-0.0059856	0.0870326	-0.069
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE	-0.0157895	0.0755736	-0.209
##	Pr(> t)		
## (Intercept)	<2e-16	***	
## felony_typeASSAULT, SECOND DEGREE	0.716		
## felony_typeBURGLARY, THIRD DEGREE	0.694		
## felony_typeCARRY PIST/RVOLLV W/O PERMIT	0.768		
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE	0.843		
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT	0.888		
## felony_typeCRIM VIOL OF PROTECTIVE ORDER	0.740		
## felony_typeCRIM VIOL ST CRIM RESTR ORDER	0.376		
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE	0.884		
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER	0.767		
## felony_typeCRIMINAL POSSESSION OF A PISTOL	0.863		
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY	0.657		
## felony_typeESCAPE, FIRST DEGREE	0.990		
## felony_typeFAILURE TO APPEAR, FIRST DEGREE	0.863		
## felony_typeFORGERY, FIRST DEGREE	0.907		
## felony_typeFORGERY, SECOND DEGREE	0.843		
## felony_typeHARASSMENT 1ST DEGREE	0.820		
## felony_typeIDENTITY THEFT 3RD DEGREE	0.918		
## felony_typeLARCENY, FIRST DEGREE	0.816		
## felony_typeLARCENY, SECOND DEGREE	0.922		
## felony_typeLARCENY, THIRD DEGREE	0.833		
## felony_typeMISREP OF SUB AS CONTROLLED SUB	0.657		
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA	0.878		
## felony_typePOSSESSION OF NARCOTICS	0.774		
## felony_typePOSSESSION OF SHOTGUN OR SILENCER	0.683		
## felony_typeRECKLESS BURNING	0.701		
## felony_typeROBBERY, FIRST DEGREE	0.903		
## felony_typeROBBERY, SECOND DEGREE	0.992		
## felony_typeROBBERY, THIRD DEGREE	0.702		
## felony_typeSALE OF CONTROLLED SUBSTANCE	0.820		
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE	0.784		

```
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT      0.820
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT      0.907
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED      0.918
## felony_typeSTEALING A FIREARM                        0.732
## felony_typeSTRANGULATION 2ND DEGREE                  0.945
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE          0.835
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.5014 on 6243 degrees of freedom
## Multiple R-squared:  0.0004613, Adjusted R-squared:  -0.005302
## F-statistic: 0.08003 on 36 and 6243 DF,  p-value: 1
```

**** iii****

No i do not, except that days served P value is .0746 which is much lower than the others, Still not below .05.

```
summary(lm(treatment_collapsed ~ age + days_served + yrs_since_release + vote08 + felony_type,
           data = felons))
```

```
##
## Call:
## lm(formula = treatment_collapsed ~ age + days_served + yrs_since_release +
##     vote08 + felony_type, data = felons)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.6668 -0.4998 -0.3547  0.4987  0.6602
##
## Coefficients:
##                                     Estimate Std. Error t value
## (Intercept)                      5.772e-01  6.661e-02   8.664
## age                             -4.252e-04  7.793e-04  -0.546
## days_served                      -7.404e-05  4.152e-05  -1.783
## yrs_since_release                -8.077e-03  1.101e-02  -0.734
## vote08                           1.360e-02  3.541e-02   0.384
## felony_typeASSAULT, SECOND DEGREE -3.836e-02  6.769e-02  -0.567
## felony_typeBURGLARY, THIRD DEGREE -2.585e-02  6.105e-02  -0.423
## felony_typeCARRY PIST/RVOLFV W/O PERMIT -1.712e-01  1.215e-01  -1.409
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE -2.129e-02  9.547e-02  -0.223
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT -1.867e-02  8.515e-02  -0.219
## felony_typeCRIM VIOL OF PROTECTIVE ORDER -4.816e-02  6.183e-02  -0.779
## felony_typeCRIM VIOL ST CRIM RESTR ORDER  1.124e-01  1.457e-01   0.771
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE  5.529e-04  1.344e-01   0.004
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER -6.979e-02  1.045e-01  -0.668
## felony_typeCRIMINAL POSSESSION OF A PISTOL  3.115e-02  1.184e-01   0.263
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY -1.205e-01  2.318e-01  -0.520
## felony_typeESCAPE, FIRST DEGREE        -6.448e-03  7.865e-02  -0.082
## felony_typeFAILURE TO APPEAR, FIRST DEGREE -6.195e-02  7.659e-02  -0.809
## felony_typeFORGERY, FIRST DEGREE         1.364e-01  2.125e-01   0.642
## felony_typeFORGERY, SECOND DEGREE        -4.013e-02  9.283e-02  -0.432
## felony_typeHARASSMENT 1ST DEGREE        -2.199e-02  2.127e-01  -0.103
## felony_typeIDENTITY THEFT 3RD DEGREE      2.781e-03  1.503e-01   0.019
```

## felony_typeLARCENY, FIRST DEGREE	1.597e-02	8.180e-02	0.195
## felony_typeLARCENY, SECOND DEGREE	-3.717e-02	7.616e-02	-0.488
## felony_typeLARCENY, THIRD DEGREE	-2.358e-02	6.463e-02	-0.365
## felony_typeMISREP OF SUB AS CONTROLLED SUB	-1.974e-02	2.128e-01	-0.093
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA	2.608e-03	1.137e-01	0.023
## felony_typePOSSESSION OF NARCOTICS	-3.093e-02	5.954e-02	-0.519
## felony_typePOSSESSION OF SHOTGUN OR SILENCER	-1.919e-01	2.127e-01	-0.902
## felony_typeRECKLESS BURNING	-1.089e-01	1.979e-01	-0.551
## felony_typeROBBERY, FIRST DEGREE	2.298e-02	1.153e-01	0.199
## felony_typeROBBERY, SECOND DEGREE	1.188e-02	8.026e-02	0.148
## felony_typeROBBERY, THIRD DEGREE	-1.079e-01	7.425e-02	-1.454
## felony_typeSALE OF CONTROLLED SUBSTANCE	-1.321e-02	6.578e-02	-0.201
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE	-2.291e-02	6.144e-02	-0.373
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT	1.093e-01	1.866e-01	0.585
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT	-2.468e-02	1.559e-01	-0.158
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED	-1.501e-01	1.866e-01	-0.805
## felony_typeSTEALING A FIREARM	-9.792e-02	1.458e-01	-0.672
## felony_typeSTRANGULATION 2ND DEGREE	-2.604e-02	9.144e-02	-0.285
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE	-9.739e-02	8.628e-02	-1.129
##	Pr(> t)		
## (Intercept)	<2e-16	***	
## age	0.5854		
## days_served	0.0746	.	
## yrs_since_release	0.4630		
## vote08	0.7010		
## felony_typeASSAULT, SECOND DEGREE	0.5710		
## felony_typeBURGLARY, THIRD DEGREE	0.6720		
## felony_typeCARRY PIST/RVOLV W/O PERMIT	0.1590		
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE	0.8236		
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT	0.8264		
## felony_typeCRIM VIOL OF PROTECTIVE ORDER	0.4360		
## felony_typeCRIM VIOL ST CRIM RESTR ORDER	0.4405		
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE	0.9967		
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER	0.5042		
## felony_typeCRIMINAL POSSESSION OF A PISTOL	0.7925		
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY	0.6033		
## felony_typeESCAPE, FIRST DEGREE	0.9347		
## felony_typeFAILURE TO APPEAR, FIRST DEGREE	0.4187		
## felony_typeFORGERY, FIRST DEGREE	0.5211		
## felony_typeFORGERY, SECOND DEGREE	0.6655		
## felony_typeHARASSMENT 1ST DEGREE	0.9176		
## felony_typeIDENTITY THEFT 3RD DEGREE	0.9852		
## felony_typeLARCENY, FIRST DEGREE	0.8452		
## felony_typeLARCENY, SECOND DEGREE	0.6255		
## felony_typeLARCENY, THIRD DEGREE	0.7152		
## felony_typeMISREP OF SUB AS CONTROLLED SUB	0.9261		
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA	0.9817		
## felony_typePOSSESSION OF NARCOTICS	0.6034		
## felony_typePOSSESSION OF SHOTGUN OR SILENCER	0.3671		
## felony_typeRECKLESS BURNING	0.5820		
## felony_typeROBBERY, FIRST DEGREE	0.8421		
## felony_typeROBBERY, SECOND DEGREE	0.8823		
## felony_typeROBBERY, THIRD DEGREE	0.1461		
## felony_typeSALE OF CONTROLLED SUBSTANCE	0.8409		

```
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE    0.7093
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT    0.5583
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT    0.8742
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED    0.4211
## felony_typeSTEALING A FIREARM                      0.5017
## felony_typeSTRANGULATION 2ND DEGREE                0.7758
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE        0.2591
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.5014 on 4185 degrees of freedom
## (2054 observations deleted due to missingness)
## Multiple R-squared:  0.004063,    Adjusted R-squared:  -0.005456
## F-statistic: 0.4268 on 40 and 4185 DF,  p-value: 0.9994
```

D

It appears that it did indicate that the treatment impacted registration but not voter turnout in 2012

```
mean(felons$vote12[felons$treatment_collapsed]) - mean(felons$vote12[!felons$treatment_collapsed])
```

```
## [1] 0.009103648
```

```
mean(felons$registered[felons$treatment_collapsed]) - mean(felons$registered[!felons$treatment_collapsed])
```

```
## [1] 0.0178943
```

F

Treatment did not have an effect on voting Treatment did have an effect on registration

```
summary(lm(vote12 ~ treatment_collapsed + age + days_served +
           yrs_since_release + registered + felony_type,
           data = felons))
```

```
##
## Call:
## lm(formula = vote12 ~ treatment_collapsed + age + days_served +
##     yrs_since_release + registered + felony_type, data = felons)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.52749 -0.00520  0.00014  0.00569  0.50241
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)    -2.008e-02  1.510e-02  -1.330
## treatment_collapsedTRUE -1.800e-05  3.289e-03  -0.005
## age              3.821e-04  1.657e-04   2.305
## days_served      4.679e-06  6.903e-06   0.678
```

## yrs_since_release	-6.857e-04	1.856e-03	-0.369
## registered	5.097e-01	6.571e-03	77.566
## felony_typeASSAULT, SECOND DEGREE	8.455e-03	1.584e-02	0.534
## felony_typeBURGLARY, THIRD DEGREE	1.458e-03	1.421e-02	0.103
## felony_typeCARRY PIST/RVOLF W/O PERMIT	8.241e-03	2.304e-02	0.358
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE	7.420e-03	2.074e-02	0.358
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT	1.461e-02	1.725e-02	0.847
## felony_typeCRIM VIOL OF PROTECTIVE ORDER	1.273e-02	1.448e-02	0.879
## felony_typeCRIM VIOL ST CRIM RESTR ORDER	3.155e-03	3.730e-02	0.085
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE	4.763e-03	2.805e-02	0.170
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER	-2.856e-02	2.363e-02	-1.209
## felony_typeCRIMINAL POSSESSION OF A PISTOL	3.974e-03	2.402e-02	0.165
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY	6.224e-03	5.107e-02	0.122
## felony_typeESCAPE, FIRST DEGREE	6.520e-03	1.792e-02	0.364
## felony_typeFAILURE TO APPEAR, FIRST DEGREE	1.351e-02	1.776e-02	0.761
## felony_typeFORGERY, FIRST DEGREE	-2.658e-02	3.523e-02	-0.754
## felony_typeFORGERY, SECOND DEGREE	-2.569e-03	2.073e-02	-0.124
## felony_typeHARASSMENT 1ST DEGREE	4.160e-03	4.548e-02	0.091
## felony_typeIDENTITY THEFT 3RD DEGREE	4.971e-03	3.430e-02	0.145
## felony_typeLARCENY, FIRST DEGREE	-3.680e-03	1.773e-02	-0.208
## felony_typeLARCENY, SECOND DEGREE	2.698e-02	1.696e-02	1.591
## felony_typeLARCENY, THIRD DEGREE	4.282e-03	1.491e-02	0.287
## felony_typeMISREP OF SUB AS CONTROLLED SUB	-6.576e-02	5.103e-02	-1.289
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA	6.824e-03	2.664e-02	0.256
## felony_typePOSSESSION OF NARCOTICS	3.293e-03	1.394e-02	0.236
## felony_typePOSSESSION OF SHOTGUN OR SILENCER	9.244e-03	4.547e-02	0.203
## felony_typeRECKLESS BURNING	7.086e-03	4.148e-02	0.171
## felony_typeROBBERY, FIRST DEGREE	7.903e-03	2.551e-02	0.310
## felony_typeROBBERY, SECOND DEGREE	5.030e-03	1.699e-02	0.296
## felony_typeROBBERY, THIRD DEGREE	8.746e-03	1.673e-02	0.523
## felony_typeSALE OF CONTROLLED SUBSTANCE	-1.559e-03	1.508e-02	-0.103
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE	1.207e-02	1.417e-02	0.852
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT	3.789e-03	4.546e-02	0.083
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT	3.717e-02	3.524e-02	1.055
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED	8.934e-03	3.440e-02	0.260
## felony_typeSTEALING A FIREARM	5.343e-03	3.431e-02	0.156
## felony_typeSTRANGULATION 2ND DEGREE	3.400e-03	2.261e-02	0.150
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE	-9.549e-04	1.968e-02	-0.049
##	Pr(> t)		
## (Intercept)	0.1836		
## treatment_collapsedTRUE	0.9956		
## age	0.0212 *		
## days_served	0.4979		
## yrs_since_release	0.7119		
## registered	<2e-16 ***		
## felony_typeASSAULT, SECOND DEGREE	0.5936		
## felony_typeBURGLARY, THIRD DEGREE	0.9183		
## felony_typeCARRY PIST/RVOLF W/O PERMIT	0.7206		
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE	0.7205		
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT	0.3970		
## felony_typeCRIM VIOL OF PROTECTIVE ORDER	0.3793		
## felony_typeCRIM VIOL ST CRIM RESTR ORDER	0.9326		
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE	0.8652		
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER	0.2268		

```
## felony_typeCRIMINAL POSSESSION OF A PISTOL      0.8686
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY    0.9030
## felony_typeESCAPE, FIRST DEGREE                  0.7161
## felony_typeFAILURE TO APPEAR, FIRST DEGREE       0.4467
## felony_typeFORGERY, FIRST DEGREE                 0.4506
## felony_typeFORGERY, SECOND DEGREE                0.9014
## felony_typeHARASSMENT 1ST DEGREE                 0.9271
## felony_typeIDENTITY THEFT 3RD DEGREE             0.8848
## felony_typeLARCENY, FIRST DEGREE                 0.8356
## felony_typeLARCENY, SECOND DEGREE                0.1117
## felony_typeLARCENY, THIRD DEGREE                 0.7739
## felony_typeMISREP OF SUB AS CONTROLLED SUB       0.1976
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA  0.7979
## felony_typePOSSESSION OF NARCOTICS               0.8133
## felony_typePOSSESSION OF SHOTGUN OR SILENCER     0.8389
## felony_typeRECKLESS BURNING                     0.8644
## felony_typeROBBERY, FIRST DEGREE                 0.7567
## felony_typeROBBERY, SECOND DEGREE                0.7671
## felony_typeROBBERY, THIRD DEGREE                 0.6011
## felony_typeSALE OF CONTROLLED SUBSTANCE          0.9177
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE 0.3944
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT  0.9336
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT  0.2916
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED  0.7951
## felony_typeSTEALING A FIREARM                    0.8763
## felony_typeSTRANGULATION 2ND DEGREE              0.8805
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE     0.9613
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1302 on 6238 degrees of freedom
## Multiple R-squared:  0.4952, Adjusted R-squared:  0.4919
## F-statistic: 149.3 on 41 and 6238 DF,  p-value: < 2.2e-16
```

```
summary(lm(registered ~ treatment_collapsed + age + days_served +
  yrs_since_release + felony_type,
  data = felons))
```

```
##
## Call:
## lm(formula = registered ~ treatment_collapsed + age + days_served +
##     yrs_since_release + felony_type, data = felons)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.17738 -0.08148 -0.06493 -0.04808  1.01071
##
## Coefficients:
##              Estimate Std. Error t value
## (Intercept)    3.755e-02  2.909e-02   1.291
## treatment_collapsedTRUE  1.815e-02  6.332e-03   2.866
## age            1.277e-03  3.189e-04   4.004
## days_served    -7.804e-06  1.330e-05  -0.587
## yrs_since_release -1.237e-02  3.573e-03  -3.462
```


## felony_typeASSAULT, SECOND DEGREE	1.422e-02	3.053e-02	0.466
## felony_typeBURGLARY, THIRD DEGREE	-1.218e-02	2.738e-02	-0.445
## felony_typeCARRY PIST/RVOLL W/O PERMIT	2.665e-02	4.439e-02	0.600
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE	-3.129e-02	3.995e-02	-0.783
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT	3.790e-02	3.323e-02	1.141
## felony_typeCRIM VIOL OF PROTECTIVE ORDER	-1.513e-03	2.789e-02	-0.054
## felony_typeCRIM VIOL ST CRIM RESTR ORDER	-8.544e-02	7.185e-02	-1.189
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE	-6.886e-02	5.404e-02	-1.274
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER	-2.229e-03	4.552e-02	-0.049
## felony_typeCRIMINAL POSSESSION OF A PISTOL	2.498e-02	4.627e-02	0.540
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY	-6.518e-02	9.840e-02	-0.662
## felony_typeESCAPE, FIRST DEGREE	-3.166e-02	3.453e-02	-0.917
## felony_typeFAILURE TO APPEAR, FIRST DEGREE	-2.092e-02	3.421e-02	-0.612
## felony_typeFORGERY, FIRST DEGREE	-2.375e-03	6.788e-02	-0.035
## felony_typeFORGERY, SECOND DEGREE	5.766e-03	3.993e-02	0.144
## felony_typeHARASSMENT 1ST DEGREE	-6.730e-02	8.762e-02	-0.768
## felony_typeIDENTITY THEFT 3RD DEGREE	4.826e-02	6.608e-02	0.730
## felony_typeLARCENY, FIRST DEGREE	-6.102e-03	3.416e-02	-0.179
## felony_typeLARCENY, SECOND DEGREE	1.955e-03	3.268e-02	0.060
## felony_typeLARCENY, THIRD DEGREE	-4.119e-03	2.872e-02	-0.143
## felony_typeMISREP OF SUB AS CONTROLLED SUB	8.245e-02	9.831e-02	0.839
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA	-4.535e-03	5.133e-02	-0.088
## felony_typePOSSESSION OF NARCOTICS	3.880e-03	2.685e-02	0.144
## felony_typePOSSESSION OF SHOTGUN OR SILENCER	-5.760e-02	8.760e-02	-0.658
## felony_typeRECKLESS BURNING	-6.732e-02	7.990e-02	-0.843
## felony_typeROBBERY, FIRST DEGREE	-8.994e-03	4.915e-02	-0.183
## felony_typeROBBERY, SECOND DEGREE	1.113e-02	3.273e-02	0.340
## felony_typeROBBERY, THIRD DEGREE	1.044e-02	3.222e-02	0.324
## felony_typeSALE OF CONTROLLED SUBSTANCE	7.928e-03	2.906e-02	0.273
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE	8.133e-03	2.730e-02	0.298
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT	-7.386e-02	8.758e-02	-0.843
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT	-2.066e-03	6.790e-02	-0.030
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED	-5.446e-02	6.627e-02	-0.822
## felony_typeSTEALING A FIREARM	4.679e-02	6.611e-02	0.708
## felony_typeSTRANGULATION 2ND DEGREE	3.801e-02	4.356e-02	0.873
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE	1.864e-02	3.791e-02	0.492
##	Pr(> t)		
## (Intercept)	0.196797		
## treatment_collapsedTRUE	0.004176	**	
## age	6.3e-05	***	
## days_served	0.557363		
## yrs_since_release	0.000539	***	
## felony_typeASSAULT, SECOND DEGREE	0.641427		
## felony_typeBURGLARY, THIRD DEGREE	0.656342		
## felony_typeCARRY PIST/RVOLL W/O PERMIT	0.548259		
## felony_typeCARRYING WEAPON IN A MOTOR VEHICLE	0.433478		
## felony_typeCARRYING WEAPONS WITHOUT A PERMIT	0.254065		
## felony_typeCRIM VIOL OF PROTECTIVE ORDER	0.956729		
## felony_typeCRIM VIOL ST CRIM RESTR ORDER	0.234443		
## felony_typeCRIMINAL MISCHIEF, FIRST DEGREE	0.202642		
## felony_typeCRIMINAL POSS OF PISTOL/REVOLVER	0.960954		
## felony_typeCRIMINAL POSSESSION OF A PISTOL	0.589326		
## felony_typeDRUG PARAPHERNALIA IN DRUG FACTORY	0.507755		
## felony_typeESCAPE, FIRST DEGREE	0.359308		

```

## felony_typeFAILURE TO APPEAR, FIRST DEGREE      0.540890
## felony_typeFORGERY, FIRST DEGREE                  0.972097
## felony_typeFORGERY, SECOND DEGREE                 0.885184
## felony_typeHARASSMENT 1ST DEGREE                 0.442445
## felony_typeIDENTITY THEFT 3RD DEGREE              0.465211
## felony_typeLARCENY, FIRST DEGREE                  0.858252
## felony_typeLARCENY, SECOND DEGREE                 0.952292
## felony_typeLARCENY, THIRD DEGREE                  0.885967
## felony_typeMISREP OF SUB AS CONTROLLED SUB        0.401712
## felony_typePOSSESS OF HALLUC OR 4+ OZ MARIJUANA  0.929612
## felony_typePOSSESSION OF NARCOTICS                0.885124
## felony_typePOSSESSION OF SHOTGUN OR SILENCER      0.510874
## felony_typeRECKLESS BURNING                       0.399513
## felony_typeROBBERY, FIRST DEGREE                  0.854799
## felony_typeROBBERY, SECOND DEGREE                 0.733792
## felony_typeROBBERY, THIRD DEGREE                  0.746072
## felony_typeSALE OF CONTROLLED SUBSTANCE            0.784977
## felony_typeSALE OF HALLUCIGEN/NARCOTIC SUBSTANCE  0.765746
## felony_typeSALE OF HEROIN, COC BY NON-DEPENDENT  0.399078
## felony_typeSALE OF NARC/AMPHET BY NON-DEPENDENT  0.975728
## felony_typeSELLING WEAPONS TO ALIENS PROHIBITED   0.411167
## felony_typeSTEALING A FIREARM                     0.479081
## felony_typeSTRANGULATION 2ND DEGREE               0.382914
## felony_typeUNLAWFUL RESTRAINT, FIRST DEGREE       0.622829
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2508 on 6239 degrees of freedom
## Multiple R-squared:  0.009228,    Adjusted R-squared:  0.002876
## F-statistic: 1.453 on 40 and 6239 DF,  p-value: 0.03251

```