Final Project

Data Science

**Slide 1**

First slide, general overview

**Slide 2**

Meet Your Presenters Latrice

**Slide 3**

Meet Your Presenters Les

**Slide 4**

Project History and Inspiration

**Slide 5**

Recidivism is the rate convicted felons return to jail once their prison sentence is completed.

We are both personally invested in the topic of why people return to jail. We both know people who have served jail sentences, whether locally or prison, and have seen the impact on their lives and the lives of their family and friends.

The struggles an offender has after serving their sentence are real and we both have approached this project wondering whether this is true for everyone ~~and whether there are mitigating factors that can directly relate to why people end up back in jail after serving their sentences.~~

**Slide 6**

In the United States, approximately 2.3 million people are incarcerated in nearly 7,200 jails nationwide. These jails include federal, state, county, city, tribal, immigration, military, and youth detention centers.

We have the highest incarceration rate in the world, with only China coming close at 1.6 million people incarcerated. In fact, you could combine the number of people incarcerated in the next 8 countries on the list and not equal the number of people jailed in the US.

**Slide 7**

1 in 4 people in the United States will be rearrested within the first year after being released

On average, in the United States, the recidivism rate is nearly 64% for violent offenders. State prisoners experience an even higher rate of 83%. Internationally, Norway with a 20% recidivism rate, while the average international rate is somewhere around 40-50%.

With this data, we are both left wondering, how can this change? What programs exist or could be created to lower this number?

**Slide 8**

What are the factors that affect recidivism?

Do mandatory sentencing laws have a direct impact?

Is there a racial bias built in?

What about unemployment? Is there a higher rate of return when the economy is bad?

Does gender play a role?

**Slide 9**

And finally, are there other social factors that may be playing a role?

The United States education system is turning more and more to police to address issues previously handled by the parents and administration.

In 2017, 4,068 children under 10 were arrested. In many of these cases, police were called to schools to address routine disciplinary issues and students end up being arrested.

This has a direct impact on their education.

Those children who get arrested are more likely to be arrested as an adult, particularly if they serve time in a detention center.

Once “in the system”, children are much more likely to become a recidivism risk by the age of 25

**Slide 10**

In 2020, the National Institute of Justice published a data challenge study covering 4 years of incarceration in the state of Georgia from 2013 to 2015. This data set consisted of over 25,000 observations which included many of the categories we had questions about. We used this study for our project as it was the most complete study readily available.

For comparison, we also found data sets on Crime Rates in Georgia and Unemployment rates for the same period covered by the challenge study. By comparing the challenge study to these additional data sets, we are hoping to find some commonality.

For this study, we primarily used R to complete our data wrangling and chi-square analysis, Tableau for some visual presentations, and Python for ANOVAs and a clearer visual when recoding and data correlation.

**Slide 11**

So back to our main question:

Why do people return to jail?

What are the variables that influence recidivism?

How does unemployment and crime rate influence the return rate?

From our dataset we can answer quite a few questions, is it:

Age?

Education?

Race?

Gender?

Drugs?

Previous arrests?

**Slide 12**

**We found a lot,**

**Slide 13**

**looking at prior convictions we did not find much significance, most people did not have prior convictions for many offenses like gun charges, or domestic violence.**

**Slide 14**

**But when look at prior misdemminors we see that a large amount came in with 4 or more.**

**Slide 15**

We saw the same happening with property convictions

**Slide 16**

And felony convictions, we found all of this interesting and decided to look deeper, which I will show later

**Slide 17**

We also found that the largest portion of crime was property related, followed by non-sexual violence, and then drug offenses.

**Slide 18**

When looking at age we saw a majority of people in their 20s, get arrest then it dips off until people hit their 40s.

This reminded me of an old coworker who worked in prisons for decades, he loves data as well and was telling me that its sort of inside prison knowledge that men who stop going to prison after 25, never return to prison. 25 seems to be the golden age to have young men turn their life around.. and if they continue going to prison after 25 they are in and out of the prison system for life. I feel this data illustrates that and we decided to look into it more.

**Slide 19**

**We see that most people getting arrest only have a high school diploma**

**Slide 20**

**And when looking at the break down of race and gender we see the majority of people getting arrested are black men, followed by white men, then white women, and least arrested were black women.**

**Slide 21/ 22**

**When checking to see if drugs had an affect we did not seems to see one, a majority of people had no prior arrests or convictions related to drugs, which means a lot of first time drug offenders may elude to something else.**

**Slide 23 we had results of positive drug tests, and it shows that THC was found positive at nearly 3x the amount of any other drug. We got to thinking about how drug use and legalizing certain drugs across the nation may change those numbers of arrests and convictions. Currently, marijuana possession is a federal crime, resulting in felonies that often ruin peoples lives.**

**Slide 24**

And then we jumped into our second data set to look at unemployment and found that unemployment and crime may be correlated, as the bar gets skinnier the total crime reduces year to year.

**Slide 25**

And finally of course we checked recidivism. Finding that the most people who returned to prison did so in their first year and as two and three years went by people seemed less likely to return, so we focused on year one, and 3 years overall.

**Slide 26**

**So looking at all this we had many significant things to explore. And found some important ones!**

**Jupyter Rcode Latrice/ Anova python Les**

We first wanted to prove that recidivism in the first year was the most prominent, and its shown that correlation goes down as time goes up, so that is correct.

For unemployment and crime we found a positive correlation as suspected, but not as strong as we hoped. The correlation is significant enough, but we didn’t have high confidence in it.

So we checked correlations for all the types of crime, and found that unemployment and burglary were moderately correlated! This relates back to our main dataset that showed property crime being the most arrested for, so this finding was impressive. We saw that of total crime, burglary and larceny are highly correlated which again ties back to property!

Looking deeper into burglary and unemployment we see that it is highly correlated, and felt more confident about the positive correlation

Then we checked deeper on correlations of age and prison offense and arrests…

Looked into education levels for the same…

And found gender and race did not have much significance on getting arrested again

Looking at prior convictions we see that there was major significance in property and misdomenor offenses as we assumed for both going back in that first year and going back overall within three years

We also did some Anovas on types of crime and unemployment (give screen to les)

**Slide 27**

In summary, we’ve found that age DOES play a factor in recidivism, specifically with younger offenders, and certain crimes such as property, burglary, and violent crimes tend to send them back to prison. Older offenders have more drug crimes, but their return rate is much less than expected.  
   
Education IS a factor. Most offenders have a high school diploma or less. Those who receive education either while incarcerated or immediately afterward have a much lower return rate. People who don’t benefit from education return to jail at much higher rate.  
   
Certain crimes DO play a factor. Once offenders begin committing certain types of crime like property or drug related crimes, they are much more likely to return to prison until they become a habitual offender.

**Slide 28**

So how does all this translate to the real world? We wanted to make sure our data had importance, we wanted to be able to share our findings to a government entity and hope it causes change.

We believe that early intervention programs would reduce recidivism in young offenders: reach out to the youth and educate them on what crime is, how to be a good citizen, and ways to stay out of crime like vandalism, theft, and drug use.

For those people who have already been to prison, create, fund and upkeep programs that help them get back on their feet. Don’t let them feel alone and out of options, give them technical skills and job placement to turn their life around.

Decriminalize drugs, so those who have addictions can get proper help and not find themselves victims to the prison system.

And reduce barriers that keep those in need from getting it. Fund and maintain more state legal representatives that are free to represent the accused, teach citizens rights more readily and transparently in school so that children and adults aren’t set up for failure if they ever find themselves in jail or even worse, prison. We believe there are ways to reduce recidivism, and it can start right now.

**Slide 29**

We now have time for questions