

Demographic and Risk Factors in Inmate Populations:

An Exploratory Analysis

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Abstract

This research dives into an analysis on the demographics and risk factors of 60,831 prison inmates in Florida. It focuses on gender, marital status and various risk assessment's that are categories by columns and contingency tables designed to discover patterns and outliers. In this research you will find a disproportionate representation of single males between 20-29 years old. You will also find a distribution of marital status across age and gender showing remarkable trends for risk factors within the widowed category. Through a statistical analysis, the study shows the relationships between age, gender, marital status, and the profound effects they have on; risks of violence, failure to appear in court, and likeliness of recommitting a crime within a short period. This research can provide valuable insight into the strategies used to formulate policies within the justice system and corrections facilities; as well help provide solutions on the complex needs of prison inmates.

Introduction

The goal of this research is to provide a comprehensive analysis on inmate demographic and risk factors such as likelihood of failure to appear in court, violence, and recidivism. Using in-depth analysis to uncover trends, patterns, and outliers within the inmate population.

Data Preparation

To prepare for the statistical analysis of gender, marital status, and ethnicity, I start by categorizing these demographics, and creating additional columns to represent age, age range (starting at the minimum age of 15-19 and counting by 10 thereafter). later a combine the columns of interest by creating a contingency table. A contingency table will be constructed to illustrate the distribution of these columns. Following this data preparation, a deeper dive will be taken into demographics, age, and sentencing time.

Demographics

I also conduct a brief regression and correlation analyses to show the differences in averages across patterns, trends, and outliers. Among 60,831 inmates in 2013/2014, the average age hovers around 33-34 years, ranging from a 15-year-old to an 83-year-old. The age mix stretches from 24 years at the 25th percentile to 31 at the median and 42 at the 75th percentile. For gender, the conversion to binary gives us a mean value of 0.78, hinting at more male than female inmates with limited variations. For marital status, the average of 3.28 indicating most inmates are single. However, variabilities are present (standard deviation of 1.37) in the single status across different groups. (SEE FIGURE 1)

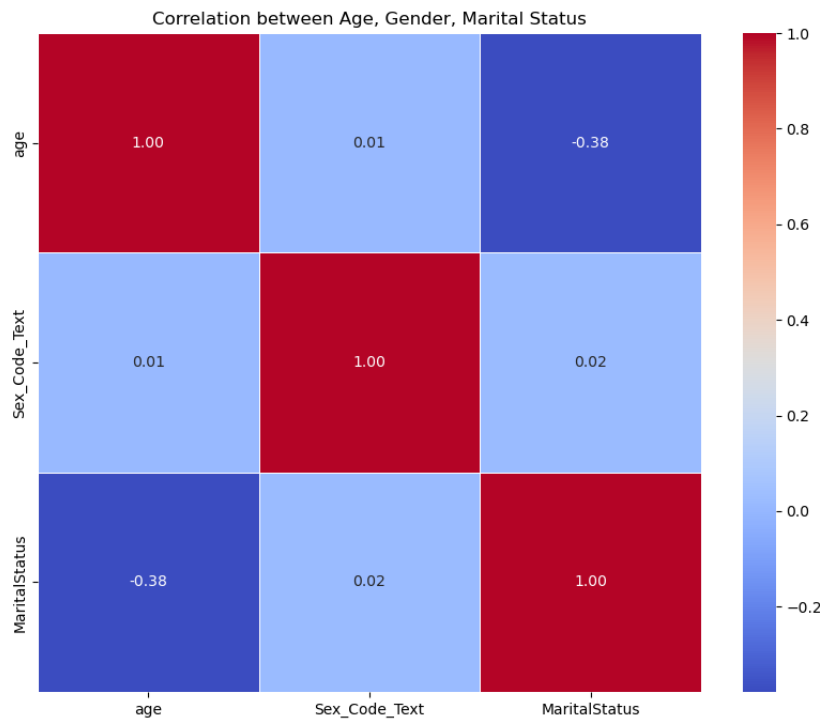


Figure 1 AMONG 60,831 INMATES, THE AGE AVERAGES AROUND 33-34 YEARS, WITH A RANGE FROM 15 TO 83; THE GENDER MIX LEANS TOWARDS MORE MALES (MEAN OF 0.78), AND ON THE MARITAL STATUS, THE MAJORITY OF INMATES ARE SINGLE (AVERAGE OF 3.28),

Relationships Between Age, Gender, and Marital Status

Age

- The average age of the inmate population is between 33-34 years old.
- The youngest inmate is approximately 15 years old, while the oldest is around 83 years old.
- The age distribution shows 24 years old for the 25th percentile, 31 years old for the median, and 42 years old for the 75th percentile.

Gender

- Converting the gender column to binary representation demonstrates a mean value of 0.78, indicating more male inmates than females.
- The standard deviation of 0.41 suggests minimal variability in gender.
- Overall, the distributions show a disproportionate amount of males with limited variability

Marital

- The mean value for marital status is 3.28, suggesting that most inmates are single.
- A standard deviation of 1.37 indicates variability in marital status across the population.

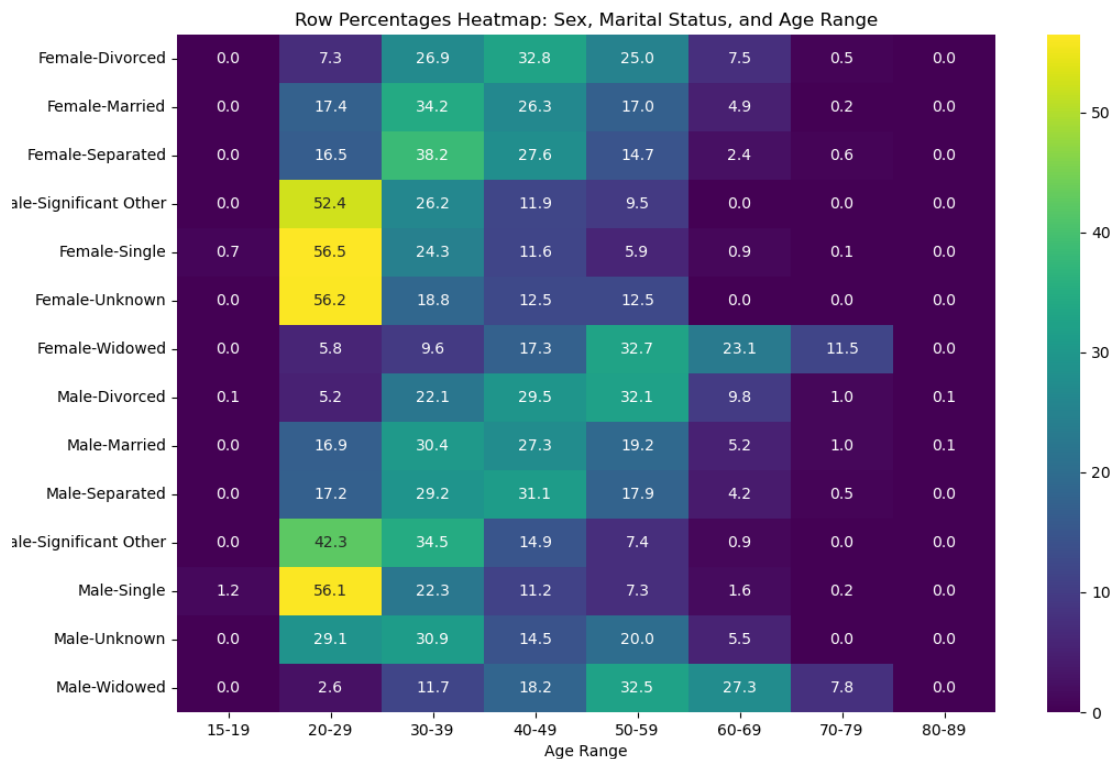


Figure 2 Figure In the age group 20-29, a slightly higher percentage of males (14.7%) are married compared to females (14.4%), but a significant shift occurs in the 30-39 range, where 34.6% of females are married versus 29.5% of males. The pattern continues with

The findings of this analysis indicate a relatively younger average population age who are disproportionately male and single. There is a reversal of this trend after age 40 showing males leading in the percent of married inmates. There is a similar trend in those claiming to have significant others. It is also important to notate males between ages 50-59 lead the widowed category at 32.5 percent. The correlation and regression analysis in [FIGURE 1](#) allowed me to see that marital status shifts from single to relationship as age increases; and men consistently led the non-single statuses for all age groups. According to Western and Pettit (2010), "incarceration rates are highest for those in their twenties and early thirties... These years of early adulthood are important not just for a man's life trajectory, but also for the family and children that he helps support". Further studies in these areas can shed light on preventative measures and factors contributing to such significant metrics.

Risk Factors

We observe how the transformation of raw scores into decile scores and analyze them based on risk categories in the score test column. This allows for the discovery of distributions in the in gender, age, and marital columns; showing the relationships they have with risks of violence, failure to appear and recidivism. For raw scores there is an average score of 5.08 with

a standard deviation of 10.08. Due to its complexity, the scores are converted to deciles that range from 1-10. These decile scores provided a mean average of 3.57 which indicated the average inmate had a lower risk after across all risk categories. Diving deeper, we see that failure to appear had much lower risks compared to violence and recidivism, with risk of violence giving a medium to low average of 3.30.

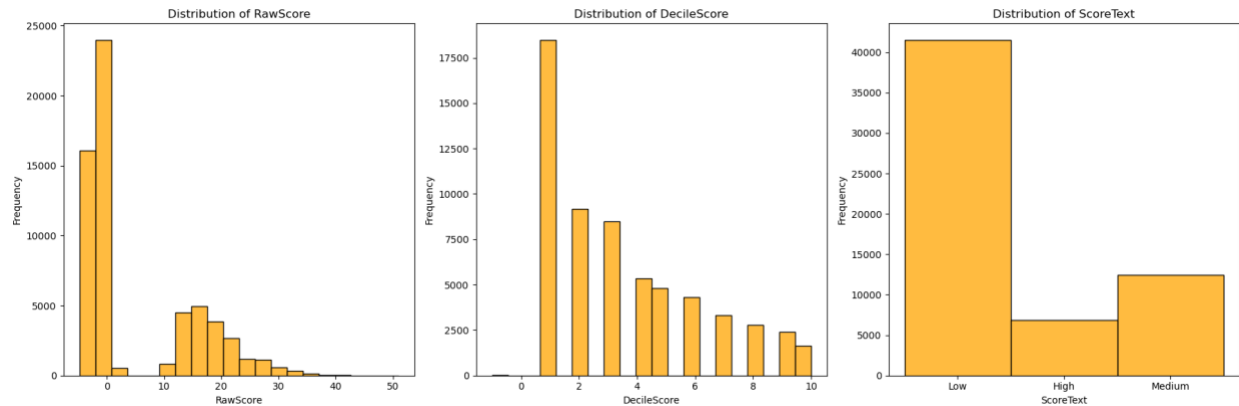


Figure 3 These raw scores are transformed into decile scores, ranging from 1 to 10, with a mean of 3.57 and a standard deviation of 2.62, indicating that, on average, inmates tend to have lower risks across these categories.

Results

Risk of Violence

Although the 30-39 age groups dominated the population of inmates; The youngest population age range of 15-19 holds the highest risks of violence. 20-29 holds the second higher and ages 80-89 shows the lowest risks. Women, also have a lower decile score average of 2.77 compared to men at 3.45. Individuals with single status hold the highest decile average indicating a higher risk of violence followed by those with significant others at 3.08 and unknown at 2.18. The rest of the categories have a consistently low average score below 2.

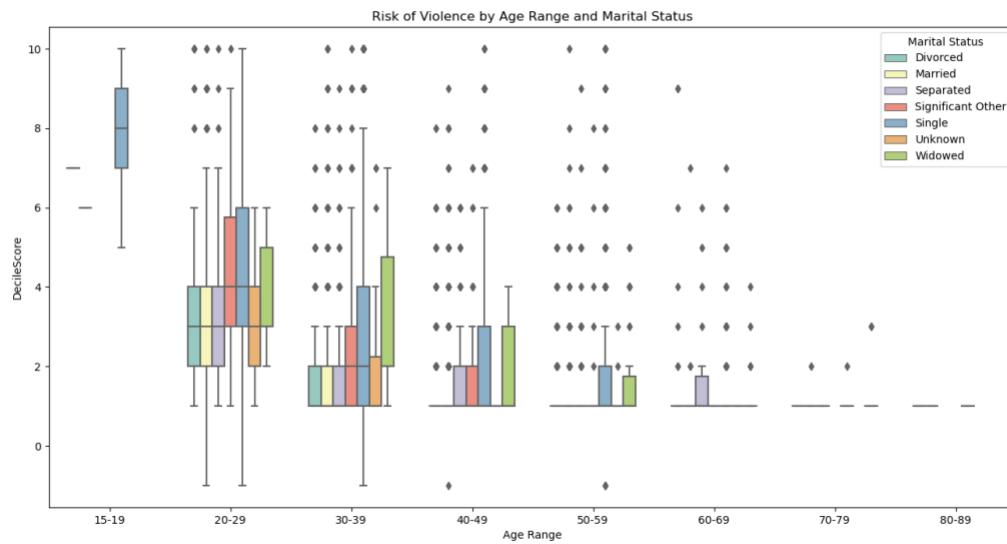


Figure 4 Although the 30-39 age groups dominated the population of inmates; The youngest population age range of 15-19 holds the highest risks of violence. 20-29 holds the second higher and ages 80-89 shows the lowest risks. Women, also have a lower decile score.

Risk of Failure to Appear

Age seems to play a significant role in failure to appear. The analysis shows that the risks increase as inmates get older. We also see an increase in the spread, between the ages of 30-59. Urbanization, economic powers, and factors affecting transportation can be a reliable area to explore; considering these age grounds fall in the lower percentile for violence and Recidivism. As far as gender, men show the highest risk of failure to appear; specifically, men between 50-59 years old who hold the highest risk overall.

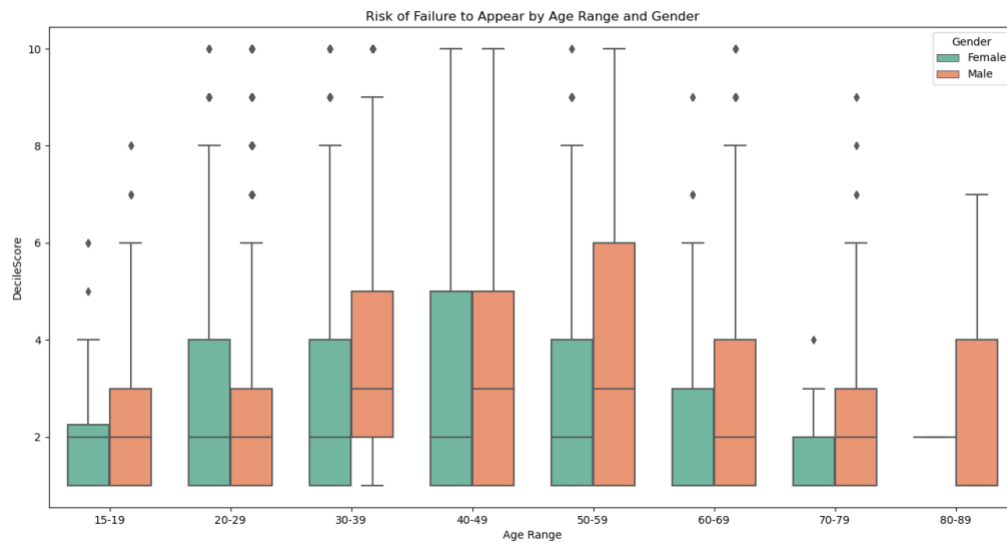


Figure 5 Men between the ages of 50 and 59, exhibit a higher risk of failure to appear, and concurrently, they demonstrate elevated levels of variability across most age groups.

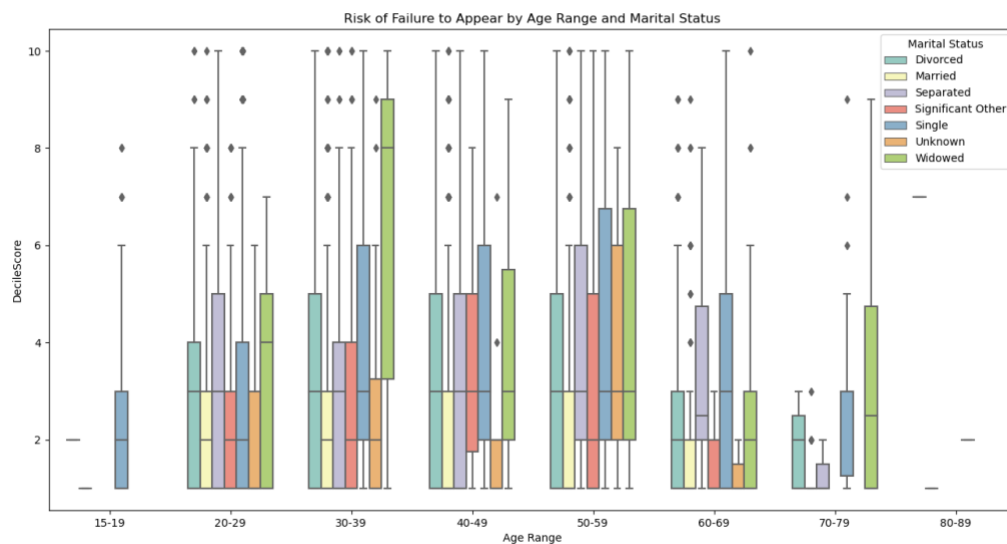


Figure 6 widowed individuals, particularly males aged 30-39 with an average score of 3.868, exhibit the highest risk of failure to appear, and widowed men consistently have the highest scores across all age groups, suggesting an overall trend of increased risk.

Regarding marital status, widowed males between 30 and 39 years old hold a higher risk of failure to appear. In fact, widowed men, consistently showed the highest score across all age groups. Ultimately, there appears to be a higher risk of failure to appear as age increases, particularly in men and widowed individuals.

Risk of Recidivism

Generally, the data indicates the average risk of recidivism decreases with age. Women, across all age groups have a lower score average than men. And the Risk of recidivism decreases significantly after the age of 50 to less than 1 point after the age of 59. The distribution shows variability across all the male categories even in the highest counts which is the single category. Finally, there are several negative scores which suggest special circumstances or outliers however, single males between 15 and 19 years old have the highest risk of recidivism.

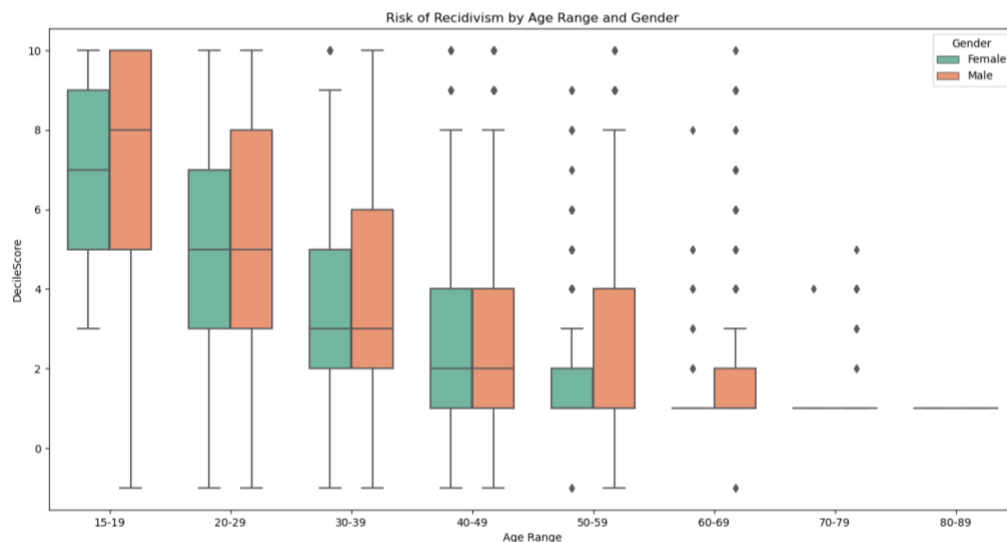


Figure 7 The average risk of recidivism decreases with age and significantly after the age of 50. Ages 15-29 hold the highest averages.

Conclusion

This analysis provides insight into the complexities of Florida's prisons. The findings help understand the relations between demographics and the risk factors affecting violence, failure to appear and recidivism. This insight can influence lawmakers and prisons to make practical decisions; specifically, around policy and the reduction of crime. For example, the age groups between 15 and 20 have the highest risk of recidivism. According to the National research council on a study addressing actions to reduces recidivism rates; " severity, certainty, and celerity of punishment... alone would not deter crime... Has confirmed both the enduring power of their theories and the modern relevance of their cautionary observation about overreliance on the severity of punishment as a crime prevention policy. (National Research Council, 2014, p. 95); Suggesting the need for practical research on crime and repeated offense prevention on this specific age group. With consideration that these are prime developmental years for these inmates; This study can also provide opportunities to study the generational impact of incarceration.

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