

MITx: 14.310x Data Analysis for Social Scientists

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Long Question 1 - Jail Sentences and Recidivism

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You are interested in doing a project on jail sentences and recidivism. You find a website listing plea deals and court decisions resulting in jail sentences for Middlesex County, Massachusetts. The list contains name of offender, offense, sex, age, prison of incarceration, and hometown. You scrape the data and perform some preliminary analysis. You then contact the prisoners and ask each to participate in a survey. You survey those who are willing and analyze the resulting data.

Question 6

1/1 point (graded)

You must obtain approval from your IRB before _____.

- a. You scrape the data.
- b. You do any preliminary analysis.
- c. You contact the prisoners.
- d. You administer your survey.

Functions of Random Variable

- Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression
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 Sample Mean, the
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 Analyzing Randomized
 Experiments, &
 Nonparametric
 Regression
- Module 9: Single and Multivariate Linear

Explanation

You should obtain approval from your IRB prior to contacting the prisoners and asking them to participate in the survey, as this would meet the criterion of "data obtained through intervention or interaction with the individual."

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You have used 1 of 1 attempt

✓ Correct (1/1 point)

Question 7

1.0/1.0 point (graded)

Suppose you conclude, later in continuing research, that recidivism (whether released prisoners commit additional crimes) is a function of length of original sentence, S, distance of prison from hometown, D, and sex of offender, M (= 1 if male). In particular, the probability of recidivism, P(R), is S/32 + D/40 + 0.1M. Suppose also that S follows a $\mathcal{U}(1,15)$ distribution, D follows a $\mathcal{E}(0.05)$, and S0% of offenders are male.

What is the expected recidivism rate?

Please express your answer to the nearest whole percentage, i.e if your answer is 23.2, please enter 23 and DO NOT enter in a % sign

83

✓ Answer: 83

Models

- Module 10: Practical Issues in Running Regressions, and Omitted Variable Bias
- Module 11: Intro to Machine Learning and Data Visualization
- Module 12: Endogeneity, Instrumental Variables, and Experimental Design
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Final Exam

Final Exam due Dec 19, 2016 05:00 IST

Ø.

83

Explanation

$$[R] = \left[rac{S}{32} + rac{D}{40} + 0.1M
ight] = rac{[S]}{32} + rac{[D]}{40} + 0.1[M] \ [S] = rac{1+15}{2} = 8, \ [D] = rac{1}{0.05} = 20,$$
 and $[M] = 0.8.$ So, $[R] = rac{8}{32} + rac{20}{40} + 0.1*0.8 = rac{83}{100}$ The recidivism rate is thus 83% .

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You have used 1 of 1 attempt

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