Week 4 Lab

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8/9 points earned (88%)

Quiz passed!

1 / 1 points

1.
Is this an observational study or an experiment?

- [x] Observational study

Correct

- [ ] Experiment

1 / 1 points

2.
Which of the following statements is **false** about the distribution of wage?

- [ ] The median of the distribution is 905.
- [ ] 25% of respondents make more than 1160 dollars per week.
- [x] 7 of the respondents make less than 300 dollars per week.

Correct

- [ ] wage is right-skewed, meaning that more respondents fall below the mean wage than above it.

0 / 1 points

3.
Examine the residuals of m_wage_iq. Is the assumption of normally distributed errors valid?

- Yes, since the distribution of the dependent variable (wage) is roughly normally distributed.
- Yes, since the distribution of the residuals of the model looks approximately normal.

This should not be selected

- No, since the distribution of the residuals of the model is left-skewed.
- No, since the distribution of the residuals of the model is right-skewed.

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1 / 1 points

4.
Under the reference prior $p(\alpha, \beta, \sigma^2) \propto 1/\sigma^2$, give a 95% posterior credible interval for β, the coefficient of IQ.

- (0.00793, 0.00967)
- (0.00709, 0.01050)

Correct

- (0.00663, 0.01098)
- (0.00010, 0.01750)

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1 / 1 points

5.

From the model, all else begin equal, who would you expect to make more: a married black man or a single non-black man?

- [x] The married black man

Correct

- [ ] The single non-black man

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1 / 1 points

6.
Elimination of which variable from the full model yielded the lowest BIC?

- [ ] brthord
- [ ] sibs
- [x] feduc

Correct

- [ ] meduc

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1 / 1 points

7.
Based on this reduced data set, according to Bayesian model averaging, which of the following variables has the lowest marginal posterior inclusion probability?

- [ ] kww
- [ ] black
- [ ] south
- [x] age

Correct

1 / 1 points

8.
True or False: The naive model with all variables included has posterior probability greater than 0.5. (Use a Zellner-Siow null prior for the coefficients and a Beta-Binomial (1,1) prior for the models.)

- [x] True

Correct

- [ ] False

1 / 1 points

9.
Estimate a 95% central credible interval for a new observation y_5.

- [ ] (-3.71, 5.73)
- [x] (-2.06, 4.10)

Correct

- [ ] (-1.18, 3.19)