

Exercise, Thursday 8, 15-16 Binomial regression, link functions

Ram/Ayushi

1. Create a 2x2 table and conduct a binomial regression analysis with a logit link to explore the association between Preterm birth and Passive smoking.

Q1. Is passive smoking a risk factor of preterm birth?

Q2 What is the interpretation of the beta coefficient in this analysis?

Q3. How do you calculate the odds ratio from the beta coefficient?

```
tab preterm_birth passive_smoking, col
glm preterm_birth i.passive_smoking, family(binomial) link(logit) eform
*or
binreg preterm_birth i.passive_smoking , or
```

2. Repeat step 1, but use a log link in the binomial regression analysis. Interpret the results.

```
glm preterm_birth i.passive_smoking, family(binomial) link(log) eform
*or
binreg preterm_birth i.passive_smoking, rr
```

3. Repeat step 1, but use an identity link in the binomial regression analysis. Interpret the results.

```
glm preterm_birth i.passive_smoking, family(binomial) link(identity)
*or
binreg preterm_birth i.passive_smoking, rd
```

4. Create a 2x4 table and conduct a binomial regression analysis with a logit link to examine the association between Preterm birth and Prepregnancy BMI as a categorical exposure. Interpret the results.

```
tab preterm_birth bmi_group ,col
glm preterm_birth i.bmi_group, family(binomial) link(logit) eform
*or
binreg preterm_birth i.bmi_group , or
```