Generalized Linear Modelling

Logistic Regression Results

I hypothesized that the likelihood people think a communist professor should be fired would be predicted by the respondent’s age, sex, number of children, marital status, religiosity, and political orientation. Firing decision was a binary outcome as the person either chose to fire the professor or not, which violated the normality assumption required for traditional regression. Thus, a logistic regression with a logit link function was used in R 3.4.1 (R Core Team, 2018). Prior to analysis, the number of children respondents had, their age, religiosity, and political views were mean centred and their marital status was effect coded.

Firing decision was modelled as a function of political orientation, controlling for the age, sex, number of children, marital status, and religiosity of the respondent. As shown in Figure 1, this analysis revealed that political orientation significantly predicted firing decision, b = -0.18, SE = 0.05, z(1121) = -3.76, p < 0.01, Odds Ratio = 0.84:1. This implies that every 1-unit increase in political orientation (towards more conservative views) predicted a decrease (0.84) in the likelihood that the person choose to fire the professor.



Figure 1. Political orientation prediction the probability of firing decision

Poisson Regression Results

I hypothesized that years that the number of sexual partners an individual had in the last 5 years would be predicted by the respondent’s age, sex, sexual orientation, marital status, religiosity, and political views. The number of sexual partners respondents had in the last 5 years represented a count of rare events, which violated the normality assumption required for traditional regression. Thus, a poisson regression with a log link function was used to predict the number of sexual partners respondents had in the last 5 years using R 3.4.1 (R Core Team, 2018). Prior to the analysis, respondents’ age, religiosity, and political views were mean centred and their sexual orientation and marital status were effect coded. Effect sizes that approximate Cohen’s d were calculated using the RCountD Shiny App (Coxe, 2018).

The number of sexual partners an individual had in the last 5 years were modelled as a function of respondents’ sex, controlling for age, sexual orientation, marital status, religiosity, and political views. As shown in Figure 2, this analysis revealed that females had fewer sexual partners in the last 5 years, b = 0.12, SE = 0.02, z(1666) = 6.27, p < .001, SMD= 0.165.



Figure 2. Sex predicting the probability of the number of sexual partners in the last 5 years

Negative Binomial Regression Results

I hypothesized that the number of hours per week spent on the internet would be predicted by respondents’ vocabulary (number of vocabulary questions correct), age, sex, religiosity, political orientation, and whether they work from home. The number hours per week on the internet represented frequency counts, which violated the normality assumption required for traditional regression. Thus, a negative binomial regression was used to predict the number of hours per week spent on the internet using the MASS package (Venables & Ripley, 2002) in R 3.4.1 (R Core Team, 2018). Prior to the analysis, respondents’ age, religiosity, political views, and whether they work from home were mean centred. Effect sizes that approximate Cohen’s d were calculated using the RCountD Shiny App (Coxe, 2018).

The number of hours spent on the internet per week were modelled as a function of vocabulary questions correct (high test score versus low), controlling for age, sex, religiosity, political views, and whether they worked from home. As shown in Figure 3, this analysis revealed that people who had higher vocabulary test scores were more likely to spent more hours on the internet per week, b = 0.12, SE = 0.02, z(602) 4.20, p < .001, SMD=0.108. The estimates for the full model are provided in Table 1.



Figure 3. Vocabulary questions correct (wordsum) predicting probability of hours spent on the internet