Appendix 1. Feeding Families in COVID-19 Quarantined Wuhan

Model 1 is

\[
\text{logit}(\text{Difficulty}) = \ln \frac{P(\text{Difficulty})}{1-P(\text{Difficulty})} = \beta_0 + \beta_1 \cdot \text{Gender} + \beta_2 \cdot \text{Age} + \beta_3 \cdot \text{Education} + \beta_4 \cdot \text{Wuhan Registration} + \beta_5 \cdot \text{Dependent Children} + \beta_6 \cdot \text{Rent} + \varepsilon
\]

In Model 2 we include the interacting effect of Gender and Age. Model 2 is

\[
\text{logit}(\text{Difficulty}) = \ln \frac{P(\text{Difficulty})}{1-P(\text{Difficulty})} = \beta_0 + \beta_1 \cdot \text{Gender} + \beta_2 \cdot \text{Age} + \beta_3 \cdot \text{Education} + \beta_4 \cdot \text{Wuhan Registration} + \beta_5 \cdot \text{Dependent Children} + \beta_6 \cdot \text{Rent} + \beta_7 \cdot \text{Gender} \cdot \text{Age} + \varepsilon
\]

Therefore, the marginal effect of Gender on the probability of experiencing Difficulty is

\[
\left( \frac{\partial \text{Difficulty}}{\partial \text{Gender}} \right) = \beta_1 + \beta_7 \cdot \text{Age}
\]

And the standard error of the marginal effect of Gender is

\[
s.e. \left( \frac{\partial \text{Difficulty}}{\partial \text{Gender}} \right) = \sqrt{V(\beta_1) + V(\beta_7) \cdot (\text{Age})^2 + 2 \cdot \text{Cov}(\beta_1, \beta_7) \cdot \text{Age}}
\]

In Model 3 we include the interacting effect of Gender and Education. Model 3 is

\[
\text{logit}(\text{Difficulty}) = \ln \frac{P(\text{Difficulty})}{1-P(\text{Difficulty})} = \beta_0 + \beta_1 \cdot \text{gender} + \beta_2 \cdot \text{Age} + \beta_3 \cdot \text{Education} + \beta_4 \cdot \text{Wuhan registration} + \beta_5 \cdot \text{Dependent Children} + \beta_6 \cdot \text{Rent} + \beta_7 \cdot \text{Gender} \cdot \text{Education} + \varepsilon
\]

Therefore, the marginal effect of Gender on the probability of experiencing Difficulty is

\[
\left( \frac{\partial \text{Difficulty}}{\partial \text{Gender}} \right) = \beta_1 + \beta_7 \cdot \text{Education}
\]

And the standard error of the marginal effect of Gender is

\[
s.e. \left( \frac{\partial \text{Difficulty}}{\partial \text{Gender}} \right) = \sqrt{V(\beta_1) + V(\beta_7) \cdot (\text{Age})^2 + 2 \cdot \text{Cov}(\beta_1, \beta_7) \cdot \text{Education}}
\]
In Model 4, we include the interacting effect of Gender and Dependent Children. Model 4 is

\[
\text{logit}(\text{Difficulty}) = \ln \frac{p(\text{Difficulty})}{1 - p(\text{Difficulty})} = \beta_0 + \beta_1 \cdot \text{Gender} + \beta_2 \cdot \text{Age} + \beta_3 \cdot \text{Education} + \\
\beta_4 \cdot \text{Wuhan Registration} + \beta_5 \cdot \text{Dependent Children} + \beta_6 \cdot \text{Rent} + \\
\beta_7 \cdot \text{Gender} \cdot \text{Dependent Children} + \epsilon
\]

Therefore, the marginal effect of Gender on the probability of experiencing Difficulty is

\[
\left( \frac{\partial \text{Difficulty}}{\partial \text{Gender}} \right) = \beta_1 + \beta_7 \cdot \text{Dependent Children}
\]

And the standard error of the marginal effect of Gender is

\[
s.e.\left( \frac{\partial \text{Difficulty}}{\partial \text{Gender}} \right) = \sqrt{V(\beta_1) + V(\beta_7) \cdot (\text{Age})^2 + 2 \cdot \text{Cov}(\beta_1, \beta_7) \cdot \text{Dependent Children}}
\]