

Coursework 7: STAT 570

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1. Create a binary variable Z_i , with $Z_i = 0$ corresponding to $Y_i \in \{0, 1\}$ and $Z_i = 1$ corresponding to $Y_i \in \{2, 3\}$. Let $q_i(x_i) = \mathbb{P}(Z_i = 1 \mid x_i)$, with $\mathbf{x}_i = (1, x_{1i}, x_{2i})$, represent the probability of mental impairment being *Moderate* or *Impaired*, given covariates \mathbf{x}_i , $i = 1, \dots, n = 40$. Provide a single plot that shows the association between $q_i(x_i)$ and x_{1i} and x_{2i} , on a response scale you feel is appropriate. Comment on the plot.

Solution: