1 LINEAR REGRESSION

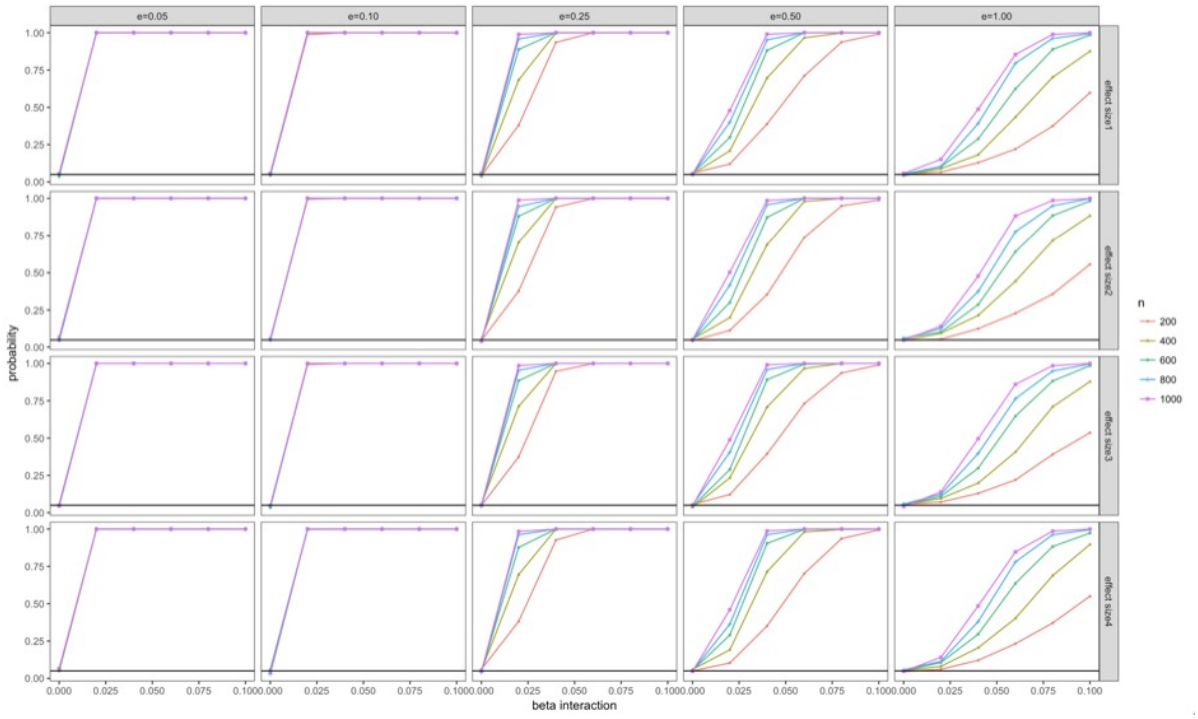

Figure1: Estimated $\hat{P}(p < 0.05)$ (y-axis) as a function of Interaction Strength $\delta \in [0, 0.1]$ (x-axis) under the framework of linear regression. **Effect size1**: coefficients for $X1 \in [2,5]$, coefficients for $X2 \in [1,3]$; **Effect size2**: coefficients for $X1 \in [6,15]$, coefficients for $X2 \in [3,9]$; **Effect size3**: coefficients for $X1 \in [10,25]$, coefficients for $X2 \in [5,15]$; **Effect size4**: coefficients for $X1 \in [20,50]$, coefficients for $X2 \in [10,30]$.
Horizontal line marks the test's significance level (0.05). When $\delta = 0$, $\hat{P}$ should be around this line.

2 RIDGE REGRESSION

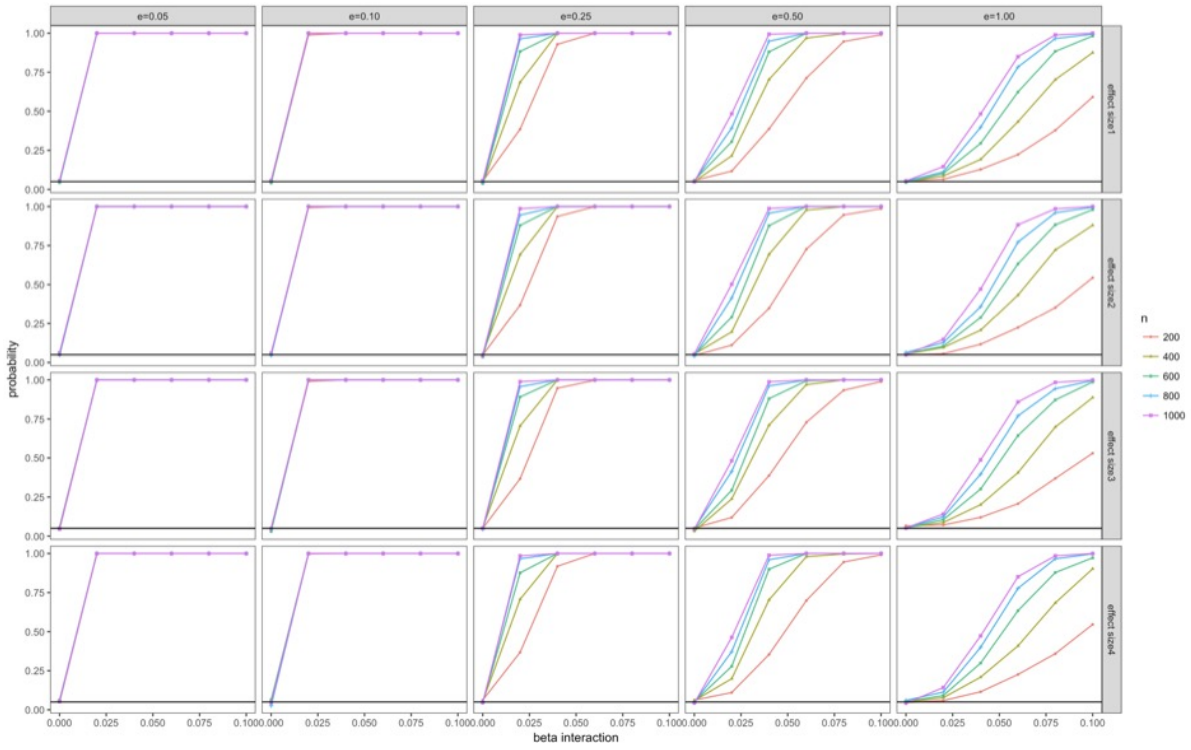

Figure2: Estimated $\hat{P}(p < 0.05)$ (y-axis) as a function of Interaction Strength $\delta \in [0, 0.1]$ (x-axis) under the framework of ridge regression. **Effect size1**: coefficients for $X1 \in [2,5]$, coefficients for $X2 \in [1,3]$; **Effect size2**: coefficients for $X1 \in [6,15]$, coefficients for $X2 \in [3,9]$; **Effect size3**: coefficients for $X1 \in [10,25]$, coefficients for $X2 \in [5,15]$; **Effect size4**: coefficients for $X1 \in [20,50]$, coefficients for $X2 \in [10,30]$.
Horizontal line marks the test's significance level (0.05). When $\delta = 0$, $\hat{P}$ should be around this line.