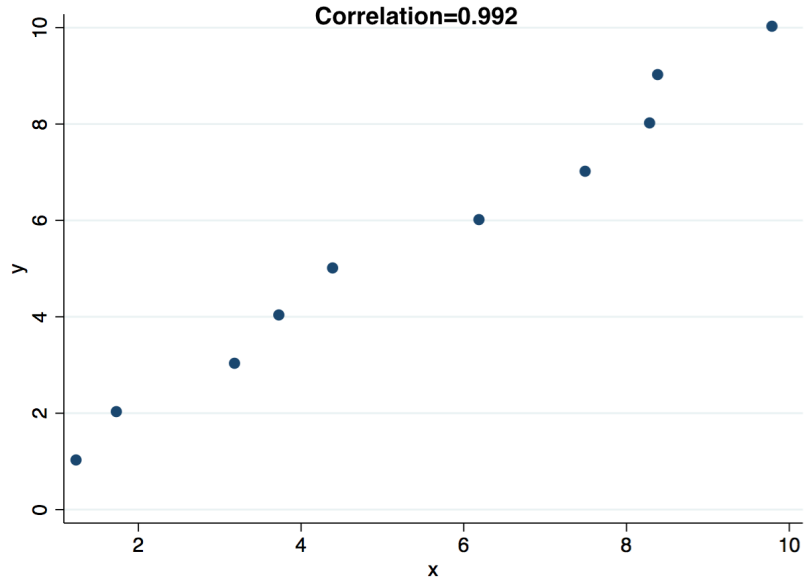
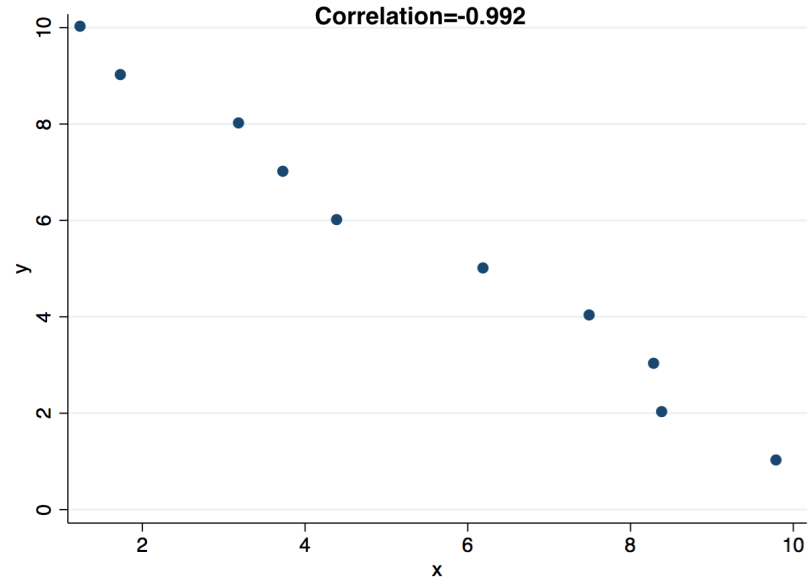
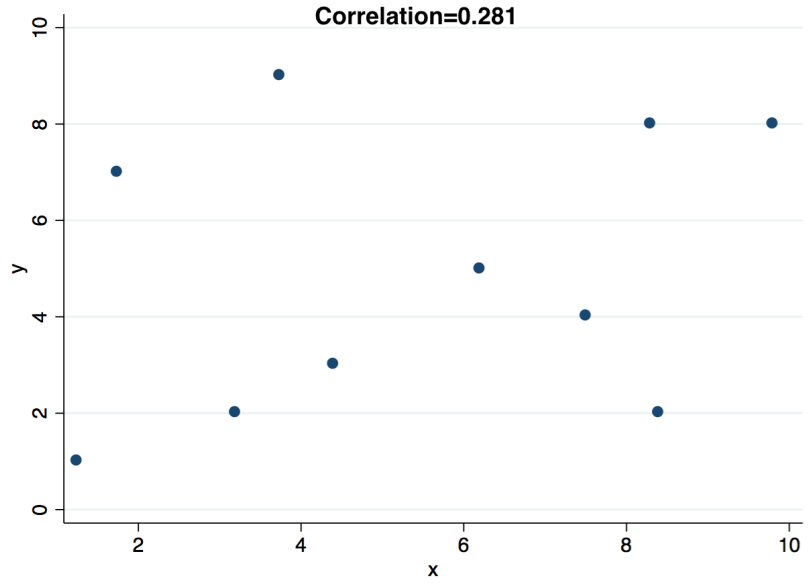
Correlations



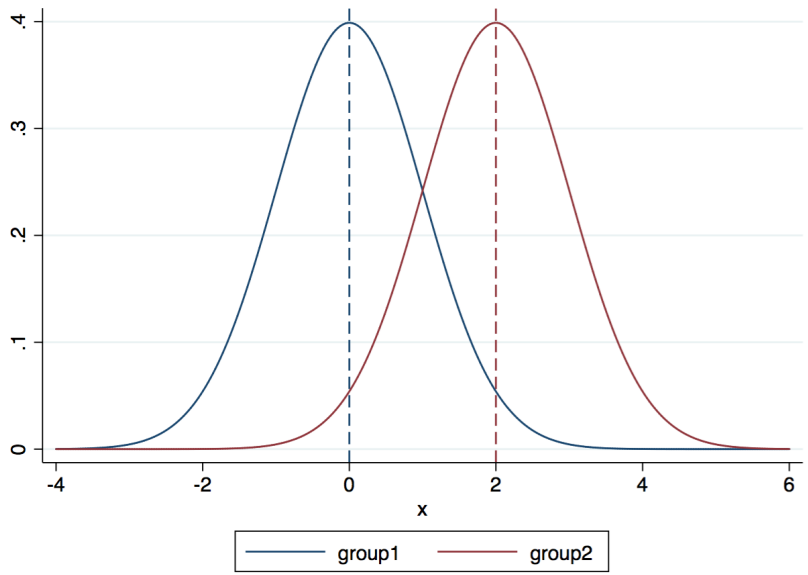


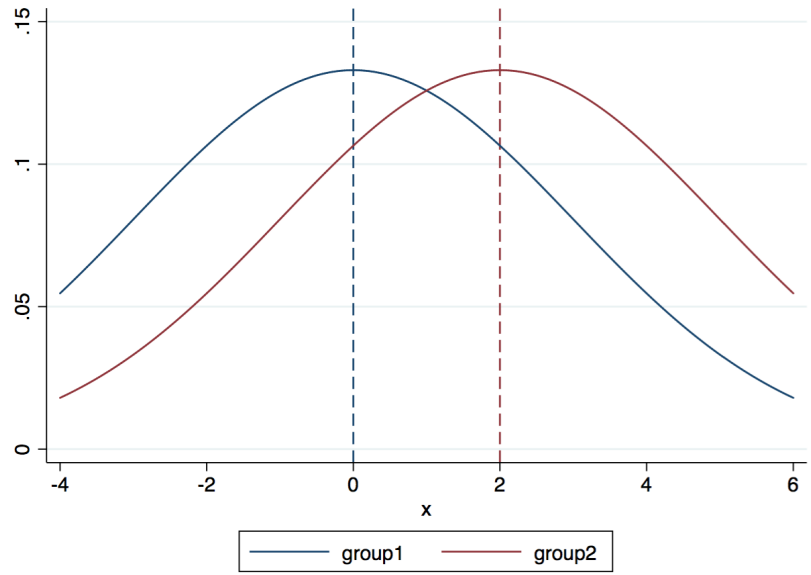


Two Sample T-Test

$$\frac{\text{signal}}{\text{noise}} = \frac{\text{difference between group means}}{\text{variability of groups}}$$

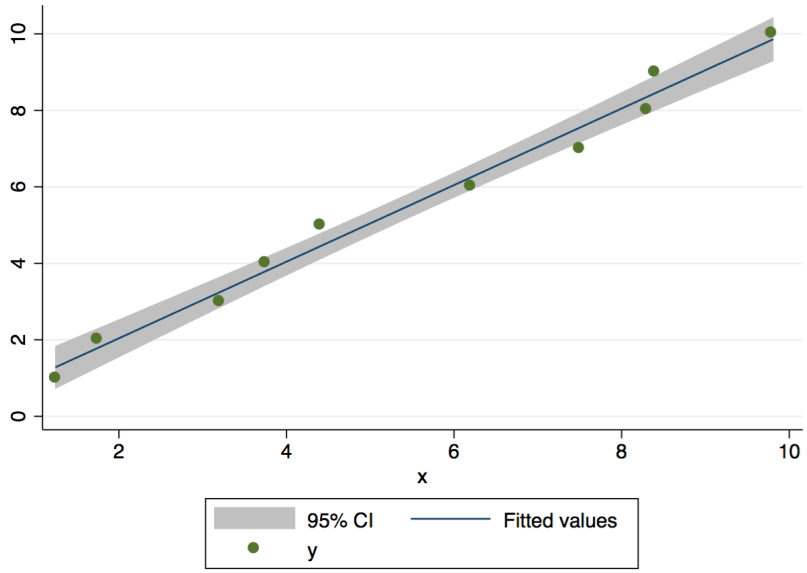
$$= \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\text{Var}(X_1)+\text{Var}(X_2)}{n_1+n_2}}}$$



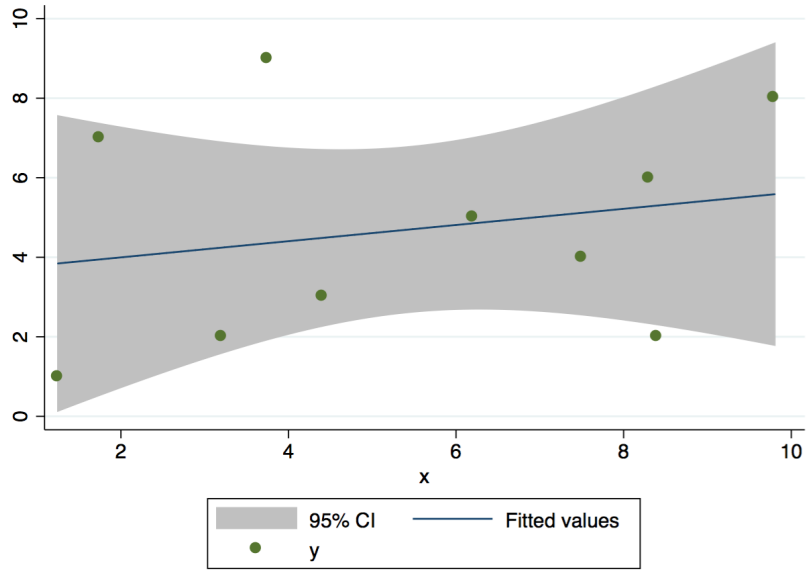


Linear Regression

$$y = \alpha + \beta x + \varepsilon$$



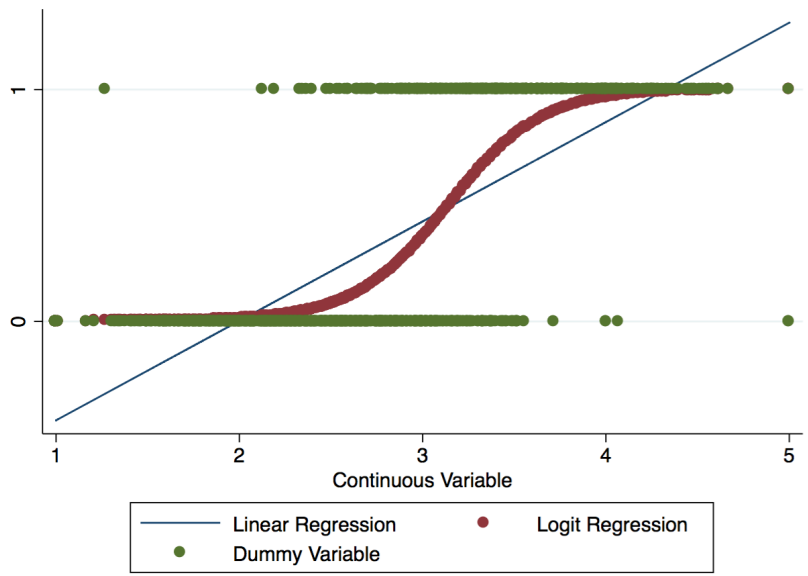
(a) $y = .04 + 1.0x$
95% CI: [.90 1.11]



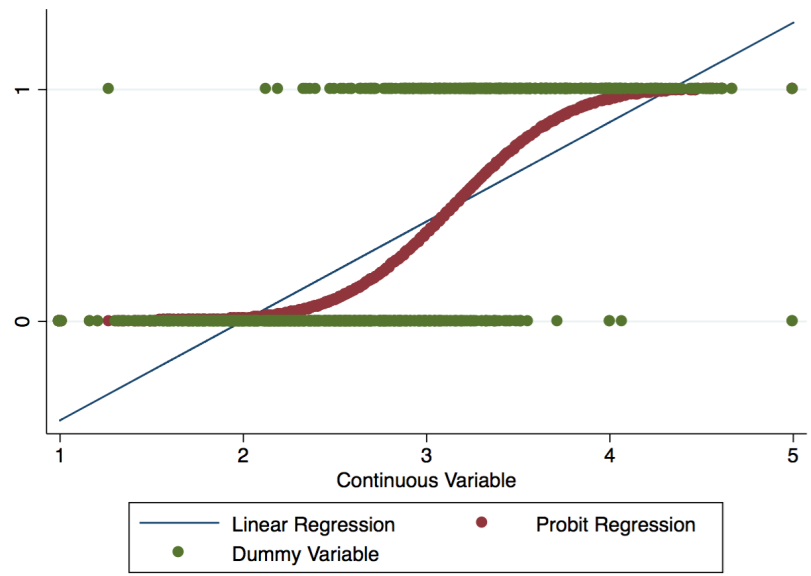
(b) $y = 3.60 + .20x$
95% CI: [-.53 .93]

Probit and Logit Regression

$$y = \begin{cases} 1 & \beta_0 + \beta_1 x + \varepsilon > 0 \\ 0 & \text{else} \end{cases}$$



(c) ε distributed by standard logit



(d) ε distributed by standard normal