

Analysis of Titanic data

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$$\begin{aligned} p(A, B) &= p(A|B)p(B) \\ p(B, A) &= p(B|A)p(A) \end{aligned} \tag{1}$$

and

$$p(A, B) = p(B, A) \tag{2}$$

meaning

$$p(A|B) = \frac{p(B|A)p(A)}{p(B)} \tag{3}$$

$$p(\text{survival}|\text{gender}) = \frac{p(\text{gender}|\text{survival})p(\text{survival})}{p(\text{gender})} \tag{4}$$

Parameter distributions



