

Likelihood Function: $p(d)=?$

$$p(d) = p(\theta_1)p(d | \theta_1) + p(\theta_2)p(d | \theta_2)$$

$$= p(\theta_1) \prod_{i=1}^L p(x_i | \theta_1) + p(\theta_2) \prod_{i=1}^L p(x_i | \theta_2)$$

$d = x_1 x_2 \dots x_L$

How is this different from a topic model?

topic model: $p(d) = \prod_{i=1}^L [p(\theta_1)p(x_i | \theta_1) + p(\theta_2)p(x_i | \theta_2)]$

