

Given all the parameters, infer the distribution a word is from...

Is **“text”** more likely from θ_d or θ_B ?

From θ_d ($Z=0$)?

$$p(\theta_d)p(\text{“text”}|\theta_d)$$

From θ_B ($Z=1$)?

$$p(\theta_B)p(\text{“text”}|\theta_B)$$

$$p(z = 0 | w = \text{“text”}) =$$

$$\frac{p(\theta_d)p(\text{“text”}|\theta_d)}{p(\theta_d)p(\text{“text”}|\theta_d) + p(\theta_B)p(\text{“text”}|\theta_B)}$$

$P(w | \theta_d)$

text 0.04
mining 0.035
association 0.03
clustering 0.005
...
the 0.000001

$p(w | \theta_B)$

the 0.03
a 0.02
is 0.015
we 0.01
food 0.003
...
text 0.000006

$$p(\theta_d) + p(\theta_B) = 1$$

$$P(\theta_d) = 0.5$$

$$P(\theta_B) = 0.5$$

Topic Choice