

Task Data Analytics Day 2

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1. Suppose a company offers three different delivery methods for their products: standard delivery, express delivery, and same-day delivery. 60% of customers choose standard delivery, 30% choose express delivery, and 10% choose same-day delivery. The delivery success rates are 95% for standard delivery, 90% for express delivery, and 85% for same-day delivery. If a customer's delivery fails, what is the probability that they chose express delivery?

Jawab:

express delivery = $30/100 \times 90/100 = 27/100 = 0,27$ (express delivery success)
 $0,3$ (peluang express delivery) – $0,27 = 0,03 = 3\%$ kemungkinan customer express delivery fails.

Misal:

Terdapat 1000 customers → 30% customers memilih express delivery → 300 customers memilih express delivery

Dari 300 customers → 90% success → 270 customers → probability customers memilih express delivery dan success → $270/1000 \rightarrow 0,27 \rightarrow 27\%$

Dari 300 customers → 10% fails → 30 customers → probability customers memilih express deliver dan fails → $30/1000 \rightarrow 0,03 \rightarrow 3\%$

2. If a medical test is 95% accurate in detecting a disease and 1% of the population has the disease. Calculate the probability of having the disease given a positive test result!

Jawab:

$95\% \times 1\% = 0,95\%$ (dari probability 1% terkena penyakit, ada kemungkinan 5% salah diagnose)

Misal:

Terdapat 1000 orang dalam 1 populasi.

Probability sakit = $1\% = 10$ orang

Dari 10 orang, yang benar terdeteksi sakit $95\% = 9,5$ orang

Jadi, probabilitas orang yang terdeteksi sakit secara akurat adalah $9,5/1000 = 0,0095 = 0,95\%$