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Probability & Statistics B

① Jika kunci dibuang

$$\hookrightarrow \frac{1}{n-1} \times \frac{1}{n-2} \times \dots \times \frac{1}{n-k}$$

Jika kunci tidak dibuang

$$\hookrightarrow \left(\frac{1}{n}\right)^k$$

② Semi sal \rightarrow

I \ S			
	< 10 jt	≥ 10 jt	
U = 500	< 10 jt	a	b
	≥ 10 jt	c	d

$$a. \text{ Suami } < 10 \text{ jt ? } \rightarrow \frac{a+c}{U} = \frac{208+39}{500}$$

$$= 0,494$$

b. probabilitas bersyarat bahwa istri menghasilkan ≥ 10 jt mengingat suami menghasilkan lebih dari ini

$$\begin{aligned} \hookrightarrow P(C) &= \frac{P(A \cap B)}{P(A)} = \frac{d/s}{b+d/s} \\ &= \frac{51/\cancel{500}}{202 + 51/\cancel{500}} = \frac{51}{253} \\ &\sim 0,201 \end{aligned}$$

c. Sama dengan b, namun suami berproduksi kurang dari jumlah ini.

$$\begin{aligned} \frac{P(A \cap B)}{P(A)} &= \frac{c/s}{c+a/s} = \frac{39/500}{39 + 200/\cancel{500}} \\ &\sim 0,157 \end{aligned}$$

$$\begin{aligned} \textcircled{3} \text{ Kemungkinan gagal} &= 1 - \text{Kemungkinan berhasil} \\ &= 1 - 0,7 \\ &= 0,3 \end{aligned}$$

$$\begin{aligned} &= 1 - P(F_1 \cap F_2 \cap F_3 \cap \dots \cap F_n) \\ &= 1 - (1 - P_1)(1 - P_2)(1 - P_3) \dots (1 - P_n) \\ &= 1 - 0,3 \cdot 0,3 \cdot \dots \cdot 0,3 \\ &= 1 - (0,3 \cdot n) \end{aligned}$$

④ $d \rightarrow$ dominan, $r \rightarrow$ resesif

	d	r
d	dd	dr
r	dr	rr

kemungkinan memiliki
gen dominan

$$\rightarrow p(dd) + 2p(dr)$$

$$\rightarrow \frac{1}{4} + \frac{2}{4}$$

$$\rightarrow \frac{3}{4}$$

⑤ $\sigma = 75$

$$\mu = 2000$$

$$X = ?$$

$$Z = \frac{X - \mu}{\sigma}$$

$$Z = \frac{X - 2000}{75}$$

$$(\text{from table}) -1,64 = \frac{X - 2000}{75}$$

$$X = (-1,64 \cdot 75) + 2000$$

$$X = 1877$$

$$⑥ \quad p(8) = \frac{10!}{8! 2!} (0,75)^8 (0,25)^2 = 0,281$$

$$p(9) = \frac{10!}{9! 1!} (0,75)^9 (0,25)^1 = 0,187$$

$$p(10) = \frac{10!}{10! 0!} (0,75)^{10} (0,25)^0 = 0,056$$

$$p(+6+) = 0,281 + 0,187 + 0,056 = 0,524$$