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Statistik Lanjut

.Tugas Pemahaman dan review

Ujilah data di bawah ini apakah berdistribusi normal atau tidak

Nilai	Fi	x_i	x_i^2	$fi.x_i$	$fi.x_i^2$
50-59	22	54,5	2970,25	1.199	505.345,5
60-69	16	64,5	4160,25	1032	66.564
70-79	7	74,5	5550,25	521,5	38851,75
80-89	2	84,5	7140,25	169	14.280,5
90-99	3	94,5	8930,25	283,5	843908,625
Jumlah	50			3205	1.468.950,375

$n = 50$

$$\bar{x} = \frac{\sum fixi}{\sum fi}$$

$$\bar{x} = \frac{3.205}{50}$$

$$\bar{x} = 64,1$$

$$SD = \sqrt{\frac{\sum fi.xi^2}{n} - \left(\frac{\sum fixi}{n}\right)^2}$$

$$= \sqrt{\frac{1.468.950,375}{50} - \left(\frac{3.205}{50}\right)^2}$$

$$= \sqrt{29.379,015 - 4108,81}$$

$$= \sqrt{25.270,205}$$

$$= 158,96605$$

No.

Date

Tabel Bantu

Batas Interval kelas	Z	Pi	Oi	Ei	$\frac{(Oi-Ei)^2}{Ei}$
49,5 dan 59,5	-0,09 dan -0,02	0,0279	22	1,395	304,34841
59,5 dan 69,5	-0,02 dan 0,03	0,004	16	0,2	1248,2
69,5 dan 79,5	0,03 dan 0,09	0,0239	7	1,195	28,19918
79,5 dan 89,5	0,09 dan 0,15	0,0237	2	1,185	0,560527
89,5 dan 99,5	0,15 dan 0,22	0,0275	3	1,375	1,92045

$Z = \frac{xi - \bar{x}}{SD} = \frac{49,5 - 64,1}{158,96605} = -0,0918435$ (bawah)

$Z = \frac{xi - \bar{x}}{SD} = \frac{59,5 - 64,1}{158,96605} = -0,028937$ (Atas)

Pi = 0,0359
0,0080 −
0,0279

Ei = Pi × n

= 0,0279 × 50

= 1,395

$= \frac{(Oi - Ei)^2}{Ei}$

$= \frac{(22 - 1,395)^2}{1,395}$

= 304,34841

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$$z = \frac{xi - \bar{x}}{SD} = \frac{59,5 - 64,1}{158,96605} = -0,028 \text{ (Bawah)}$$

$$z = \frac{xi - \bar{x}}{SD} = \frac{69,5 - 64,1}{158,96605} = 0,0339695 \text{ (Atas)}$$

$$Pi = 0,0080$$
$$0,0120 -$$
$$0,004$$

$$Ei = Pi \times n$$

$$= 0,004 \times 50$$

$$= 0,2$$

$$= \frac{(Oi - Ei)^2}{Ei}$$

$$= \frac{(16 - 0,2)^2}{0,2}$$

$$= 1.248,2$$

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$$z = \frac{x_i - \bar{x}}{SD} = \frac{69,5 - 64,1}{158,96605} = 0,0339695 \text{ (Bawah)}$$

$$z = \frac{x_i - \bar{x}}{SD} = \frac{79,5 - 64,1}{158,96605} = 0,096876 \text{ (Atas)}$$

$$P_i = 0,0120 - 0,0359 = 0,0239$$

$$E_i = P_i \times n$$

$$= 0,0239 \times 50$$

$$= 1,195$$

$$= \frac{(O_i - E_i)^2}{E_i}$$

$$= \frac{(7 - 1,195)^2}{1,195}$$

$$= 28,19918$$

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$$Z = \frac{xi - \bar{x}}{SD} = \frac{79,5 - 64,1}{158,96605} = 0,096876 \text{ (Bawah)}$$

$$Z = \frac{xi - \bar{x}}{SD} = \frac{89,5 - 64,1}{158,96605} = 0,159783 \text{ (Atas)}$$

$$Pi = 0,0359 - 0,0596 = 0,0237$$

$$Ei = Pi \times n$$

$$= 0,0237 \times 50$$

$$= 1,185$$

$$= \frac{(Oi - Ei)^2}{Ei}$$

$$= \frac{(2 - 1,185)^2}{1,185}$$

$$= 0,560527$$

$$Z = \frac{xi - \bar{x}}{SD} = \frac{89,5 - 64,1}{158,96605} = 0,159783 \text{ (Bawah)}$$

$$Z = \frac{xi - \bar{x}}{SD} = \frac{99,5 - 64,1}{158,96605} = 0,222689 \text{ (Atas)}$$

$Pi = 0,0596$

$0,0871 -$

$0,0275$

$Ei = Pi \times n$

$= 0,0275 \times 50$

$= 1,375$

$$= \frac{(Oi - Ei)^2}{Ei}$$

$$= \frac{(3 - 1,375)^2}{1,375}$$

$= 1,92045$

No.

Date

Tentukan x^2

$$x^2 = \sum \left(\frac{(Oi - Ei)^2}{Ei} \right)$$

$$= 1583,228567$$

cari x^2 tabel

$x^2 (\alpha, dk)$

$dk = 5 - 3$

$dk = 2$

$\alpha = 5\%$

x^2 tabel $= 5,99$

kesimpulan

x^2 hitung $\geq x^2$ tabel, H_1 diterima

$1583,228567 \geq 5,99$, H_1 diterima

Data tidak berdistribusi normal