

②

$$\begin{array}{|c|c|c|c|c|c|c|} \hline & 1 & 0 & 0 & 1 & 1 & -1 & 1 & \Sigma \\ \hline & & & & & & & & 3 \end{array} \quad | = \frac{(N-1)\Sigma X + N \cdot \Sigma X - \Sigma X^2}{2(N-1)n} = \frac{(4-1)3 + 4 \cdot 3 - 3}{2(4-1) \cdot 7} =$$

N = 4 dimensiones
n = 7 jueces

$$= \frac{9 + 12 - 3}{6 \cdot 7} = \frac{18}{42} = 0,43$$

③ 0.5 (criterio de Osterlind) $0,43 < 0,5 \rightarrow$ Excluido

⑤

	1	2	3	4	5 ^{ss}	6	7	8	9	10
f _i	5	3	3	1	1	2	4	3	5	3
F _i	5	8	11	12	13	15	19	22	27	30
		Q ₁				Mdn				

$$Mdn = L_i + \frac{1}{f_i} \left(\frac{n}{2} - F_i \right) = 5,5 + \frac{1}{2} (15 - 13) = 5,5 + 1 = 6,5$$

$$n/2 = 30/2 = 15$$

$$⑦ Q_1 = L_i + \frac{1}{f_i} \left(\frac{n}{4} - F_i \right) = 1,5 + \frac{1}{3} \left(\frac{30}{4} - 5 \right) = 2,33$$

$$\frac{n}{4} = \frac{30}{4} = 7,5$$

$$⑧ CA = Q_3 - Q_1 = 9 - 2,33 = 6,67$$

⑩ 6,67 > 3 - Ambiguo. Debe excluirse.

$$⑪ N = 42 + 25 + 23 = 90$$

$$p = \frac{a}{N} = \frac{42}{90} = 0,47$$

$$⑬ p_c = \frac{A - \frac{E}{k-1}}{N} = \frac{42 - \frac{48}{3-1}}{90} = \frac{42 - 24}{90} = 0,2$$

$$⑭ \chi^2 = \sum \frac{(F_T - F_O)^2}{F_T} = \frac{(24 - 25)^2}{24} + \frac{(24 - 23)^2}{24} = \frac{2}{24} = 0,08$$

$$F_T = \frac{23 + 23}{2} = \frac{46}{2} = 23$$

$$(15) \chi^2(\alpha, k-1) = \chi^2(0,05, 1) = 3,84$$

nº distractores = 2

$$(16) \chi^2_{emp} \quad \chi^2_{tea}$$

$$0,08 < 3,84 \quad \text{--- Ho} \quad \text{Son estadísticamente iguales}$$

$$(17) Se = S_x \sqrt{1 - r_{xx'}} = 6 \sqrt{1 - 0,8} = 6 \cdot 0,45 = 2,7$$

$$S_x = 6$$

$$r_{xx'} = 0,8$$

$$(18) S_{VX} = Se \sqrt{r_{xx'}} = 2,7 \sqrt{0,8} = 2,7 \cdot 0,89 = 2,4$$

$$(19) S_{x_1, x_2} = Se \sqrt{2} = 2,7 \cdot 1,41 = 3,81$$

$$(20) Sep = Se \sqrt{1 + r_{xx'}} = 2,7 \sqrt{1 + 0,8} = 2,7 \cdot 1,34 = 3,62$$

$$(21) R_{xx'} = \frac{n r_{xx'}}{1 + (n-1) r_{xx'}} = \frac{0,6 \cdot 0,8}{1 + (0,6-1) 0,8} = \frac{0,48}{1 - 0,32} = 0,71$$

$$n = \frac{EF}{E1} = \frac{60}{100} = 0,6$$

$$E1 = 100$$

$$EF = 100 - 40 = 60$$

$$(22) r_{22} = 1 - \frac{S_1^2}{S_2^2} (1 - r_{11}) = 1 - \frac{36}{49} (1 - 0,8) = 1 - 0,73 \cdot 0,2 = 1 - 0,146 = 0,85$$

$$S_1^2 = 6^2 = 36$$

$$S_2^2 = 7^2 = 49$$

$$(23) E_{max} = z_c \cdot S_{VX} = 1,96 \cdot (2,4) = 4,7$$

pregunta 18

$$NC 95\% \rightarrow z_c = 1,96$$

$$(24) Lim = V' \pm E_{max} = 13,6 \pm 4,7 < \begin{matrix} 18,3 \\ 8,9 \end{matrix}$$

$$V' = r_{xx'} (x - \bar{x}) + \bar{x} = 0,8 (14 - 12) + 12 = 1,6 + 12 = 13,6$$

$$\bar{x} = 12$$

$$x = 14$$

25

X	Y	XY	X ²	Y ²
10	7	70	100	49
1	5	5	1	25
7	9	63	49	81
4	8	32	16	64
2	7	14	4	49
10	9	90	100	81
34	45	274	270	349

$$r_{xy} = \frac{N \sum XY - \sum X \sum Y}{\sqrt{[N \sum X^2 - (\sum X)^2] [N \sum Y^2 - (\sum Y)^2]}}$$

$$r_{xy} = \frac{6 \cdot 274 - 34 \cdot 45}{\sqrt{[6 \cdot 270 - 34^2] [6 \cdot 349 - 45^2]}}$$

$$r_{xy} = \frac{1644 - 1530}{\sqrt{[1620 - 1156] [2094 - 2025]}}$$

$$r_{xy} = \frac{114}{\sqrt{464 \cdot 69}} = \frac{114}{\sqrt{32016}} = \frac{114}{178.93} = 0,64$$

26 $\hat{y} = a + bX \rightarrow \hat{y} = 6,08 + 0,25X$

$$a = \bar{y} - b\bar{x} = 7,5 - 0,25 \cdot 5,67 = 7,5 - 1,42 = 6,08$$

$$\bar{y} = \frac{\sum Y}{N} = \frac{45}{6} = 7,5$$

$$b = r_{xy} \cdot \frac{S_y}{S_x} = 0,64 \cdot \frac{1,39}{3,58} = 0,64 \cdot 0,39 = 0,25$$

$$S_y = \sqrt{\frac{\sum Y^2}{N} - \bar{y}^2} = \sqrt{\frac{349}{6} - 7,5^2} = \sqrt{58,17 - 56,25} = \sqrt{1,92} = 1,39$$

$$S_x = \sqrt{\frac{\sum X^2}{N} - \bar{x}^2} = \sqrt{\frac{270}{6} - 5,67^2} = \sqrt{45 - 32,15} = \sqrt{12,85} = 3,58$$

$$\bar{x} = \frac{\sum X}{N} = \frac{34}{6} = 5,67$$

27 $S_{y \cdot x} = S_y \sqrt{1 - r_{xy}^2} = 1,39 \sqrt{1 - \frac{0,64^2}{0,41}} = 1,39 \sqrt{0,59} = 1,39 \cdot 0,77 = 1,07$

28 $Lim = Y' \pm E_{max} = 8,58 \pm 2,1 < \begin{matrix} 10,68 \\ 6,48 \end{matrix}$

$$Y' = a + bx \rightarrow Y' = 6,08 + 0,25 \cdot 10 = 6,08 + 2,5 = 8,58$$

$$E_{max} = z_c \cdot S_{y \cdot x} = 1,96 \cdot 1,07 = 2,1$$

$$(29) \quad CA = \sqrt{1 - r_{xy}^2} = \sqrt{1 - 0,64^2} = 0,77$$

$$(30) \quad CVP = 1 - CA = 1 - 0,77 = 0,23$$