

PSICOMETRÍA, GRUPO C, TIPO A

EJERCICIO 1

a) KR₂₀ - Items dicotómicos
Diferente dificultad

$$KR_{20} = \frac{n}{n-1} \left(1 - \frac{\sum pq}{S_x^2} \right) = \frac{6}{6-1} \left(1 - \frac{1.19}{1.61} \right) = \frac{6}{5} (1 - 0.74) = 1.2 \cdot 0.26 = 0.31$$

	1	2	3	4	5	6	X	X ²
A	1	1	1	0	0	0	3	9
B	1	0	0	0	0	1	2	4
C	1	0	1	0	1	1	4	16
D	1	1	0	0	1	1	4	16
E	1	0	0	1	1	0	3	9
F	1	1	1	1	1	0	5	25
G	1	1	1	1	1	1	6	36
H	1	1	1	1	0	1	5	25
I	1	1	1	0	0	0	3	9
J	1	1	0	0	0	0	2	4
P	1	0.7	0.6	0.4	0.5	0.5	3.7	153
q	0	0.3	0.4	0.6	0.5	0.5		
P·q	0	0.21	0.24	0.24	0.25	0.25	25.94	

$$S_x^2 = \frac{\sum X^2}{N} - \bar{X}^2 = \frac{153}{10} - 3.7^2 = 15.3 - 13.69 = 1.61$$

$$\bar{X} = \frac{\sum X}{N} = \frac{37}{10} = 3.7$$

$$r_{XV} = \sqrt{r_{XX'}} = \sqrt{0.31} = 0.56$$

EJERCICIO 2

X=3

NC=95% → Zc=1.96

a) Lim = V ± E_{max} = 3.48 ± 1.14 < $\begin{matrix} 4.62 \\ 2.34 \end{matrix}$

$$V' = r_{XX'}(X - \bar{X}) + \bar{X} = 0.31(3 - 3.7) + 3.7 = 0.31(-0.7) + 3.7 = -0.22 + 3.7$$

$$V' = 3.48$$

$$E_{max} = Zc \cdot S_{VX} = 1.96 \cdot 0.58 = 1.14$$

$$S_{yx} = S_x \sqrt{1 - r_{xx'}} \sqrt{r_{xx'}} = 1.27 \sqrt{1 - 0.31} \sqrt{0.31} = 1.27 \cdot 0.83 \cdot 0.55 = 0.58$$

$$S_x^2 = 1.61 \rightarrow S_x = \sqrt{1.61} = 1.27$$

$$b) R_{xx'} = \frac{n \cdot r_{xx'}}{1 + (n-1) r_{xx'}} = \frac{2 \cdot 0.31}{1 + (2-1) 0.31} = \frac{0.62}{1.31} = 0.47$$

EJERCICIO 3

$$CD = r_{xy}^2 = 0.49$$

$$a) r_{xy} = \sqrt{0.49} = 0.7$$

$$b) CD = 0.49$$

$$c) CVP = 1 - \sqrt{1 - r_{xy}^2} = 1 - \sqrt{1 - 0.49} = 1 - \sqrt{0.51} = 1 - 0.71 = 0.29$$

$$d) z_{y'} = r_{xy} \cdot z_x = 0.7 \cdot 1 = 0.7$$

EJERCICIO 4

Para que coincida con formato de la teoría:

		X	
		NO	SI
Y	NO	13	1
	SI	5	1

		X		
		SI	NO	
Y	SI	1 A	5 C	6
	NO	1 B	13 D	14
		2	18	N=20

$$a) k = \frac{F_c - F_a}{N - F_a} = \frac{14 - 13.2}{20 - 13.2} = \frac{0.8}{6.8} = 0.12$$

$$F_c = 13 + 1 = 14$$

$$F_a = \frac{2 \cdot 6}{20} + \frac{18 \cdot 14}{20} = \frac{12}{20} + \frac{252}{20} = 0.6 + 12.6 = 13.2$$

$$b) RS = \frac{A+B}{N} = \frac{2}{20} = 0.1$$

$$c) S = \frac{A}{A+C} = \frac{1}{6} = 0.17$$