

Instituto Privado Mixto

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Carrera: Administración de Empresas

Grado: Cuarto

Curso: Estadística

Trabajo: Actividad #8 III Bloque

Ciclo Escolar: 2,021

ACTIVIDAD #8

Instrucciones: Realice lo que a continuación se le pide

1) Ordene los datos

Puntos de 25 alumnos en un examen de Contabilidad de Sociedades

49 55 65 66 66 70 72 72 72 74
75 75 76 76 77 78 79 80 81 81
81 81 83 84 90

2) K

$$\begin{aligned} K &= 1 + 3.322 \text{ Log}(n) \\ K &= 1 + 3.322 \text{ Log}(25) \\ K &= 1 + 3.322 (1.39794) \\ K &= 1 + 4.64 \\ K &= 5.64 \end{aligned}$$

3) R

$$\begin{aligned} R &= D_{ma} - D_{me} + 1 \\ R &= 90 - 49 + 1 \\ R &= 41 + 1 \\ R &= 42 \end{aligned}$$

4) i

$$I = \frac{R}{K} \qquad I = \frac{42}{5.64}$$

$$I = 7.45$$

$$I = 7$$



5) Tabla con intervalo (columnas K, L.A, Lri, Lrs, Xs, f, fa y fxs)

K	L.A	Lri	Lrs	Xs	f	fa	fxs
1	49 - 55	48.5	55.5	52	2	2	104
2	56 - 62	55.5	62.5	59	0	2	0
3	63 - 69	62.5	69.5	66	3	5	198
4	70 - 76	69.5	76.5	73	9	14	657
5	77 - 83	76.5	83.5	80	9	23	720
6	84 - 90	83.5	90.5	87	2	25	174

$$\Sigma fxs = 1,853$$

6) Calcule Media aritmética, mediana y moda

$$\bar{X} = \frac{\Sigma fxs}{N}$$

$$\bar{X} = \frac{1853}{25} = 74.12$$

$$Md = Lri + \left(\frac{\frac{N}{2} - faa}{f} \right) i$$

$$Md = 69.5 + \left(\frac{12.5 - 5}{9} \right) 7$$

$$Md = 69.5 + \left(\frac{7.5}{9} \right) 7$$

$$Md = 69.5 + (0.83) 7$$

$$Md = 69.5 + 5.81$$

$$Md = 75.31$$

$$\frac{25}{2} = 12.5$$



$$M_o = L_{ri} + \left(\frac{\Delta_1}{\Delta_1 + \Delta_2} \right) i$$

$$\Delta_1 = 9 - 3 = 6$$

$$\Delta_2 = 9 - 9 = 0$$

$$M_o = 69.5 + \left(\frac{6}{6 + 0} \right) 7$$

$$M_o = 69.5 + \left(\frac{6}{6} \right) 7$$

$$M_o = 69.5 + (1) 7$$

$$M_o = 69.5 + 7$$

$$M_o = 76.5$$



7) Calcule Cuartiles 1, 2 y 3

$$Q_1 = L_{ri} + \left(\frac{N/4 - f_{aa}}{f} \right) 7 \quad \frac{25}{4} = 6.25$$

$$Q_1 = 69.5 + \left(\frac{6.25 - 5}{9} \right) 7$$

$$Q_1 = 69.5 + \left(\frac{1.25}{9} \right) 7$$

$$Q_1 = 69.5 + (0.14) 7$$

$$Q_1 = 69.5 + 0.98$$

$$Q_1 = 70.48$$



$$Q2 = Lri + \left(\frac{2N/4 - faa}{f} \right) i$$

$$\frac{2 \times 25}{4} = 12.5$$

$$Q2 = 69.5 + \left(\frac{12.5 - 5}{9} \right) 7$$

$$Q2 = 69.5 + \left(\frac{7.5}{9} \right) 7$$

$$Q2 = 69.5 + (0.83) 7$$

$$Q2 = 69.5 + 5.81$$

$$Q2 = 75.31$$

$$Q3 = Lri + \left(\frac{3N/4 - faa}{f} \right) i$$

$$\frac{3 \times 25}{4} = 18.75$$

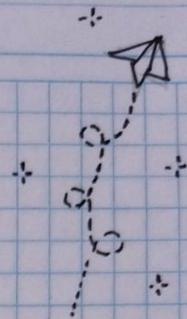
$$Q3 = 76.5 + \left(\frac{18.75 - 14}{9} \right) 7$$

$$Q3 = 76.5 + \left(\frac{4.75}{9} \right) 7$$

$$Q3 = 76.5 + (0.53) 7$$

$$Q3 = 76.5 + 3.71$$

$$Q3 = 80.21$$



8) Calcule deciles 2, 6 y 9

$$D_2 = L_{ri} + \left(\frac{\frac{N_2}{10} - f_{aa}}{f} \right) i$$

$$\frac{25 \times 2}{10} = 5$$

$$D_2 = 62.5 + \left(\frac{5 - 2}{3} \right) 7$$

$$D_2 = 62.5 + \left(\frac{3}{3} \right) 7$$

$$D_2 = 62.5 + (1) 7$$

$$D_2 = 62.5 + 7$$

$$D_2 = 69.5$$

$$D_6 = L_{ri} + \left(\frac{\frac{N_6}{10} - f_{aa}}{f} \right) i$$

$$\frac{25 \times 6}{10} = 15$$

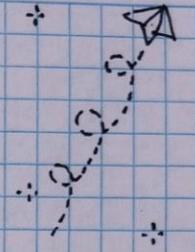
$$D_6 = 76.5 + \left(\frac{15 - 14}{9} \right) 7$$

$$D_6 = 76.5 + \left(\frac{1}{9} \right) 7$$

$$D_6 = 76.5 + (0.11) 7$$

$$D_6 = 76.5 + 0.77$$

$$D_6 = 77.27$$



$$D_9 = L_{ri} + \left(\frac{\frac{N_9}{10} - f_{aa}}{f} \right) 7$$

$$\frac{25 \times 9}{10} = 22.5$$

$$D_9 = 76.5 + \left(\frac{22.5 - 14}{9} \right) 7$$

$$D_9 = 76.5 + \left(\frac{8.5}{9} \right) 7$$

$$D_9 = 76.5 + (0.94) 7$$

$$D_9 = 76.5 + 6.58$$

$$D_9 = 83.08$$

9) Calcule percentiles 15, 70 y 95

$$P_{15} = L_{ri} + \left(\frac{\frac{N_{15}}{100} - f_{aa}}{f} \right) i$$

$$\frac{25 \times 15}{100} = 3.75$$

$$P_{15} = 62.5 + \left(\frac{3.75 - 2}{3} \right) 7$$

$$P_{15} = 62.5 + \left(\frac{1.75}{3} \right) 7$$

$$P_{15} = 62.5 + (0.58) 7$$

$$P_{15} = 62.5 + 4.06$$

$$P_{15} = 66.56$$



$$P_{70} = Lr_i + \left(\frac{N_{70}}{100 - f} f a a \right) i$$

$$\frac{25 \times 70}{100} = 17.5$$

$$P_{70} = 76.5 + \left(\frac{17.5 - 14}{a} \right) 7$$

$$P_{70} = 76.5 + \left(\frac{3.5}{a} \right) 7$$

$$P_{70} = 76.5 + (0.39) 7$$

$$P_{70} = 76.5 + 2.73$$

$$P_{70} = 79.23$$

$$P_{95} = Lr_i + \left(\frac{N_{95}}{100 - f} f a a \right) i$$

$$\frac{25 \times 95}{100} = 23.75$$

$$P_{95} = 83.5 + \left(\frac{23.75 - 23}{2} \right) 7$$

$$P_{95} = 83.5 + \left(\frac{0.75}{2} \right) 7$$

$$P_{95} = 83.5 + (0.38) 7$$

$$P_{95} = 83.5 + 2.66$$

$$P_{95} = 86.16$$



10) Elabore un polígono de frecuencias

Polígono de frecuencias, puntajes de 25 alumnos en un examen de Contabilidad de Sociedades

