


Tema: TRABAJO FINAL

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 - CARRERA: Lic. En Administración de Empresas.
 - CUATRIMESTRES: 3er
 - MATERIA: Estadística Descriptiva

COMITÁN DE DOMINGUEZ CHIAPAS, A JUNIO DE 2020.

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INSTRUCCIONES: COMPLETE LA SIGUIENTE TABLA PARA DATOS AGRUPADOS

DATOS	fi	fire	mc	fi . mc	fr	fir
15-35	8	8	25	200	0.166	16.6%
35-55	4	12	45	180	0.083	8.3%
55-75	12	24	65	780	0.25	25%
75-95	8	32	85	680	0.166	16.6%
95-115	7	39	105	735	0.145	14.5%
115-135	3	42	125	375	0.062	6.2%
135-155	6	48	145	870	0.125	12.5%

$$n = 48$$

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INSTRUCCIONES:

DADA LA SIGUIENTE TABLA CALCULE:

CUARTIL 1, 2, 3

DECIL 3, 7, 9

PERCENTIL 40, 57, 78

DATOS	f_i	F_i
25-35	8	8
35-45	4	12
45-55	12	24
55-65	8	32
65-75	7	39
75-85	3	42
85-95	6	48

= 48

Primer Cuartil

$$Q_k = L_i + A \left(\frac{\frac{kn}{4} - F_{i-1}}{F_i - F_{i-1}} \right)$$

$$\frac{kn}{4} = \frac{1 \times 48}{4} = 12$$

$$F_{i-1} = 8$$

$$L_i = 35$$

$$F_i = 12$$

$$A = L_s - L_i = 10$$

$$Q_1 = 35 + 10 \left(\frac{12 - 8}{12 - 8} \right)$$

$$Q_1 = 35 + 10 \left(\frac{4}{4} \right)$$

$$Q_1 = 35 + 10$$

$$Q_1 = 45$$

Segundo Cuartil

$$\frac{Kn}{4} = \frac{2 \times 48}{4} = 24$$

$$Fi-1 = 12 \quad Li = 45$$

$$Fi = 24 \quad A = Ls - Li = 10$$

$$Q_2 = 45 + 10 \left(\frac{24 - 12}{24 - 12} \right)$$

$$Q_2 = 45 + 10 \left(\frac{12}{12} \right)$$

$$Q_2 = 45 + 10$$

$$Q_2 = 55$$

Tercer Cuartil

$$\frac{Kn}{4} = \frac{3 \times 48}{4} = 36$$

$$Fi-1 = 32 \quad Li = 65$$

$$Fi = 39 \quad A = Ls - Li = 10$$

$$Q_3 = 65 + 10 \left(\frac{36 - 32}{39 - 32} \right)$$

$$Q_3 = 65 + 10 \left(\frac{4}{7} \right)$$

$$Q_3 = 65 + 5.71$$

$$Q_3 = 70.71$$

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Tercer Decil

$$D_k = Li + A \left(\frac{\frac{kn}{10} - f_{i-1}}{f_i - f_{i-1}} \right)$$

$$\frac{kn}{10} = \frac{3 \times 48}{10} = 14.4$$

$$\begin{aligned} f_{i-1} &= 12 & Li &= 45 \\ f_i &= 24 & A = L_s - Li &= 10 \end{aligned}$$

$$D_3 = 45 + 10 \left(\frac{14.4 - 12}{24 - 12} \right)$$

$$D_3 = 45 + 10 \left(\frac{2.4}{12} \right)$$

$$D_3 = 45 + 2$$

$$D_3 = 47$$

Séptimo Decil

$$\frac{kn}{10} = \frac{7 \times 48}{10} = 33.6$$

$$\begin{aligned} f_{i-1} &= 32 & Li &= 65 \\ f_i &= 39 & A = L_s - Li &= 10 \end{aligned}$$

$$D_7 = 65 + 10 \left(\frac{33.6 - 32}{39 - 32} \right)$$

$$D_7 = 65 + 10 \left(\frac{1.6}{7} \right)$$

$$D_7 = 65 + 2.28$$

$$D_7 = 67.28$$

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Noveno Decil

$$\frac{Kn}{10} = \frac{9 \times 48}{10} = 43.2$$

$$F_{i-1} = 42 \quad L_i = 85$$

$$F_i = 48 \quad A = L_s - L_i = 10$$

$$D_9 = 85 + 10 \left(\frac{43.2 - 42}{48 - 42} \right)$$

$$D_9 = 85 + 10 \left(\frac{1.2}{6} \right)$$

$$D_9 = 85 + 2$$

$$D_9 = 87$$

Percentil 40

$$P_k = L_i + A \cdot \left(\frac{\frac{kn}{100} - F_{i-1}}{F_i - F_{i-1}} \right)$$

$$\frac{kn}{100} = \frac{40 \times 48}{100} = 19.2$$

$$F_{i-1} = 12 \quad L_i = 45$$

$$F_i = 24 \quad A = L_s - L_i = 10$$

$$P_{40} = 45 + 10 \left(\frac{19.2 - 12}{24 - 12} \right)$$

$$P_{40} = 45 + 10 \left(\frac{7.2}{12} \right)$$

$$P_{40} = 45 + 6$$

$$P_{40} = 51$$

Percentil 57

$$\frac{kn}{100} = \frac{57 \times 48}{100} = 27.36$$

$$F_{i-1} = 24 \quad L_i = 55$$

$$F_i = 32 \quad A = L_s - L_i = 10$$

$$P_{57} = 55 + 10 \left(\frac{27.36 - 24}{32 - 24} \right)$$

$$P_{57} = 55 + 10 \left(\frac{3.36}{8} \right)$$

$$P_{57} = 55 + 4.2$$

$$P_{57} = 59.2$$

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Percentil 78

$$\frac{Kn}{100} = \frac{78 \times 48}{100} = 37.44$$

$$F_{i-1} = 32 \quad L_i = 65$$

$$F_i = 39 \quad A = L_s - L_i = 10$$

$$P_{78} = 65 + 10 \left(\frac{37.44 - 32}{39 - 32} \right)$$

$$P_{78} = 65 + 10 \left(\frac{5.44}{7} \right)$$

$$P_{78} = 65 + 7.77$$

$$P_{78} = 72.77$$