

Placement Report - IQR

Manual IQR Calculation:

	sl_no	ssc_p	hsc_p	degree_p	etest_p	mba_p	salary
Mean	108.0	67.303395	66.333163	66.370186	72.100558	62.278186	288655.405405
Median	108.0	67.0	65.0	66.0	71.0	62.0	265000.0
Mode	1	62.0	63.0	65.0	60.0	56.7	300000.0
Q1:25%	54.5	60.6	60.9	61.0	60.0	57.945	240000.0
Q2:50%	108.0	67.0	65.0	66.0	71.0	62.0	265000.0
Q3:75%	161.5	75.7	73.0	72.0	83.5	66.255	300000.0
99%	212.86	87.0	91.86	83.86	97.0	76.1142	NaN
Q4:100%	215.0	89.4	97.7	91.0	98.0	77.89	940000.0
IQR	107.0	15.1	12.1	11.0	23.5	8.31	60000.0
1.5 rule	160.5	22.65	18.15	16.5	35.25	12.465	90000.0
Lesser	-106.0	37.95	42.75	44.5	24.75	45.48	150000.0
Greater	322.0	98.35	91.15	88.5	118.75	78.72	390000.0
Min	1	40.89	37.0	50.0	50.0	51.21	200000.0
Max	215	89.4	97.7	91.0	98.0	77.89	940000.0

1. Ssc_p outlier calculation:

Min = 40.89; Max = 89.4

$$\text{IQR} = Q3 - Q1 = 75.7 - 60.6 = 15.1$$

$$\text{Lesser outlier} = Q1 - 1.5 * \text{IQR} = 60.6 - 1.5(15.1) = 37.95$$

$$\text{Greater outlier} = Q3 + 1.5 * \text{IQR} = 75.7 + 1.5(15.1) = 98.35$$

Result: ssc_p has no lesser outlier and greater outlier.

2. hsc_p outlier calculation:

Min = 37.0; Max = 97.7

$$\text{IQR} = Q3 - Q1 = 73 - 60.9 = 12.1$$

$$\text{Lesser outlier} = Q1 - 1.5 * \text{IQR} = 60.9 - 1.5(12.1) = 42.75$$

$$\text{Greater outlier} = Q3 + 1.5 * \text{IQR} = 73 + 1.5(12.1) = 98.35$$

Result: hsc_p has lesser outlier but no greater outlier.

3. degree_p outlier calculation:

Min = 50.0; Max = 91.0

IQR = Q3 - Q1 = 72 - 61 = 11

Lesser outlier= Q1 - 1.5 * IQR = 61 - 1.5(11) = 44.5

Greater outlier= Q3 + 1.5*IQR = 72 + 1.5(11) = 88.5

Result: degree_p has no lesser outlier but has greater outlier.

4. etest_p outlier calculation:

Min = 50; Max = 98

IQR = Q3 - Q1 = 83.5 - 60 = 23.5

Lesser outlier= Q1 - 1.5 * IQR = 60 - 1.5(23.5) = 24.75

Greater outlier= Q3 + 1.5*IQR = 83.5 + 1.5(23.5) = 118.75

Result: etest_p has no lesser outlier and greater outlier.

5. mba_p outlier calculation:

Min = 51.21; Max = 77.89

IQR = Q3 - Q1 = 66.255 - 57.945 = 8.31

Lesser outlier= Q1 - 1.5 * IQR = 57.945 - 1.5(8.31) = 45.48

Greater outlier= Q3 + 1.5*IQR = 66.255 + 1.5(8.31) = 78.72

Result: mba_p has no lesser outlier and greater outlier.

6. Salary outlier calculation:

Min = 200000; Max = 940000

IQR = Q3 - Q1 = 300000 - 240000 = 60000

Lesser outlier= Q1 - 1.5 * IQR = 240000 - 1.5(60000) = 150000

Greater outlier= Q3 + 1.5*IQR = 300000 + 1.5(60000) = 390000

Result: Salary has no lesser outlier but has greater outlier.

