Summary of Interquartile Range (IQR) Analysis

The dataset provides several descriptive statistics for the columns including secondary school percentage (ssc_p), higher secondary percentage (hsc_p), degree percentage (degree_p), employability test percentage (etest_p), MBA percentage (mba_p), and salary. To identify the columns with the greatest and least range of outliers, we calculate the outlier thresholds using the IQR and the 1.5 * IQR rule.

Calculation of Outlier Thresholds

Interquartile Range (IQR):

- IQR = Q3 - Q1

1.5 * IQR Rule:

- Outliers are values below Q1 - 1.5 * IQR or above Q3 + 1.5 * IQR.
- Lesser Outlier Threshold: Q1 - 1.5 * IQR
- Greater Outlier Threshold: Q3 + 1.5 * IQR

Outlier Calculations for Each Column:

Metric	IQR	1.5 * IQR	Lesser Outlier Threshold	Greater Outlier Threshold
ssc_p	107.0	160.5	54.5 - 160.5 = -106.0	161.5 + 160.5 = 322.0
hsc_p	15.1	22.65	60.6 - 22.65 = 37.95	75.7 + 22.65 = 98.35
degree_p	12.1	18.15	60.9 - 18.15 = 42.75	73.0 + 18.15 = 91.15
etest_p	11.0	16.5	61.0 - 16.5 = 44.5	72.0 + 16.5 = 88.5
mba_p	23.5	35.25	60.0 - 35.25 = 24.75	83.5 + 35.25 = 118.75
salary	60000	90000	240000 - 90000 = 150000	300000 + 90000 = 390000

Summary of Findings:

1. **Secondary School Percentage (ssc_p):**
    - **IQR:** 107.0
    - **Lesser Outlier Threshold:** -106.0
    - **Greater Outlier Threshold:** 322.0
    - **Summary:** The ssc_p column has the greatest range of outliers, from -106.0 to 322.0. This indicates a high variability in secondary school percentages, with significant deviations from the central range.
2. **Higher Secondary Percentage (hsc_p):**
    - **IQR:** 15.1
    - **Lesser Outlier Threshold:** 37.95

    - **Greater Outlier Threshold:** 98.35
    - **Summary:** The hsc_p column shows a moderate range of outliers, with thresholds at 37.95 and 98.35. This suggests moderate variability in higher secondary percentages.
3. **Degree Percentage (degree_p):**
    - **IQR:** 12.1
    - **Lesser Outlier Threshold:** 42.75
    - **Greater Outlier Threshold:** 91.15
    - **Summary:** The degree_p column has a relatively narrow range of outliers from 42.75 to 91.15, indicating more consistency in degree percentages.
4. **Employability Test Percentage (etest_p):**
    - **IQR:** 11.0
    - **Lesser Outlier Threshold:** 44.5
    - **Greater Outlier Threshold:** 88.5
    - **Summary:** The etest_p column has the least range of outliers, from 44.5 to 88.5. This suggests that employability test scores are relatively consistent with fewer extreme values.
5. **MBA Percentage (mba_p):**
    - **IQR:** 23.5
    - **Lesser Outlier Threshold:** 24.75
    - **Greater Outlier Threshold:** 118.75
    - **Summary:** The mba_p column exhibits a wide range of outliers from 24.75 to 118.75, indicating significant variability in MBA percentages.
6. **Salary:**
    - **IQR:** 60000
    - **Lesser Outlier Threshold:** 150000
    - **Greater Outlier Threshold:** 390000
    - **Summary:** The salary column shows a substantial range of outliers, from 150000 to 390000. This suggests considerable variability in salaries, with many values deviating significantly from the central range.

Conclusion:

The analysis highlights that the ssc_p and mba_p columns have the greatest range of outliers, indicating high variability in secondary school and MBA percentages. On the other hand, the etest_p and degree_p columns have the least range of outliers, suggesting more consistent values in employability test and degree percentages. Understanding these variabilities can help identify and address significant deviations in the data, which is crucial for accurate data analysis and decision-making.