**Final Report for Stakeholders**

**Insights**

1. **Data Overview**:

    - The dataset contains information about 1630 intermediate colleges in Pakistan.

    - Key columns include Name, Location, Study Program, Sector, and Rating.

2. **Missing Values**:

    - The 'Sector' column had missing values which were imputed using the mode.

    - The 'Location' column had missing values which were handled by dropping the rows.

    - The 'Affiliation' column had more than 50% missing values and was dropped.

3. **Data Cleaning**:

    - The 'Rating' column contained '\*' symbols which were removed.

    - The datatype of the 'Rating' column was converted to float for analysis.

4. **Sector Distribution**:

    - The dataset includes both public and private sector colleges.

    - A pie chart shows the distribution of colleges between the public and private sectors.

5. **Rating Distribution**:

    - A histogram shows the distribution of ratings among the colleges.

    - The ratings range from 0 to 5, with a significant number of colleges having a rating of 0.

6. **Top Cities**:

    - The top cities with the highest number of colleges include Chakwal, Bhimber, and Bhakkar.

7. **Popular Study Programs**:

    - The most popular study programs based on the number of colleges offering them are FSc Pre Engineering, FSc Pre Medical, and ICS Computer Science.

8. **Top-Rated Colleges**:

    - A subset of the dataset shows the top 10 colleges with a rating of 5.0.

    - These colleges are predominantly in the public sector.

**Recommendations**

1. **Addressing Missing Data**:

    - For future data collection, ensure that all fields, especially 'Affiliation', are filled to avoid significant data loss.

2. **Improving Ratings**:

    - Investigate the reasons behind low ratings (0) for many colleges and implement measures to improve their quality and performance.

3. **Sector Analysis**:

    - Conduct a deeper analysis to understand the differences in performance and facilities between public and private sector colleges.

4. **Geographical Expansion**:

    - Focus on expanding educational facilities in cities with fewer colleges to ensure equitable access to education across the country.

5. **Program Popularity**:

    - Encourage colleges to offer a diverse range of study programs to cater to different student interests and career paths.

**Suggestions**

1. **Data Collection**:

    - Implement a standardized data collection process to ensure consistency and completeness of information.

2. **Quality Assurance**:

    - Regularly monitor and evaluate the performance of colleges to maintain high educational standards.

3. **Stakeholder Engagement**:

    - Engage with stakeholders, including students, parents, and educators, to gather feedback and make informed decisions.

4. **Policy Development**:

    - Develop policies that support the growth and improvement of both public and private sector colleges.

5. **Resource Allocation**:

    - Allocate resources effectively to address the needs of underperforming colleges and support their development.

By following these insights, recommendations, and suggestions, stakeholders can make informed decisions to enhance the quality and accessibility of intermediate education in Pakistan.