STUDENT ADMISSIONS ANALYSIS

Understanding the Impact of Economic and Social Variables on Student Enrollment

Report: Analysis of Student Admissions in Relation to Economic and Social Factors (2019-2024)

0. Idea

The **Student Admissions Analysis** project utilizes student admission data collected from various sources, which is not owned by me. To maintain privacy, the names in the dataset are partially anonymized, displaying only the first letter of each name. This admission data is employed to investigate the frequency of English letters, providing insights into linguistic patterns within the dataset.

Additionally, the project analyzes the correlation between student admissions and several key factors, including GDP growth, average salaries, the impact of COVID-19, and advancements in artificial intelligence (AI). By examining these relationships, the project aims to uncover trends and insights that can inform educational policies and strategies in the context of economic and social changes.

1. Introduction

This project aims to analyse the trends in student admissions in India from 2019 to 2024 and their correlation with various economic and social factors, including GDP growth, advancements in artificial intelligence (AI), the impact of COVID-19, and average salaries. Understanding these relationships can provide insights into the factors influencing educational enrolment and help policymakers and educational institutions make informed decisions.

2. Data Overview

2.1 Student Admissions Data

The student admissions data for the years 2019 to 2024 is as follows:

- 2019 - 15
- 2020 - 8
- 2021 - 8
- 2022 - 5
- 2023 - 12
- 2024 - 26

2.2 Economic and Social Factors

The following factors were analyzed in relation to student admissions:

- **GDP Growth**:

  - 2019: 4.0%

  - 2020: -6.6%

  - 2021: 8.9%

  - 2022: 7.2%

  - 2023: 6.3%

  - 2024: 7.0%

- **AI Developments**: Correlation with admissions was analyzed based on advancements in AI technologies.

- **New COVID-19 Cases**: The impact of the pandemic on admissions was assessed.

- **Average Salaries**:

  - 2019: ₹600,000

  - 2020: ₹700,000

  - 2021: ₹800,000

  - 2022: ₹900,000

  - 2023: ₹1,000,000

  - 2024: ₹1,200,000

2.3 Letter Frequency Analysis

The project also includes an analysis of the frequency of English letters compared to the first letters of the names of admitted students. The frequency of letters in the English language is well-documented, and this analysis aims to determine if the distribution of first letters in the dataset aligns with or deviates from this expected frequency.

	Student Name Frequency (%)	English Letter Frequency (%)
A	28.0	8.20
B	2.0	1.50
C	0.0	2.80
D	6.0	4.30
E	0.0	12.70
F	0.0	2.20
G	2.0	2.00
H	0.0	6.10
I	0.0	7.00
J	2.0	0.15
K	2.0	0.80
L	2.0	4.00
M	4.0	2.40
N	4.0	6.70

O	0.0	7.50
P	12.0	1.90
Q	0.0	0.10
R	6.0	6.00
S	18.0	6.30
T	6.0	9.10
U	6.0	2.80
V	0.0	1.00
W	0.0	2.40
X	0.0	0.20
Y	0.0	2.00
Z	0.0	0.10

Comparison of First Letter Frequencies
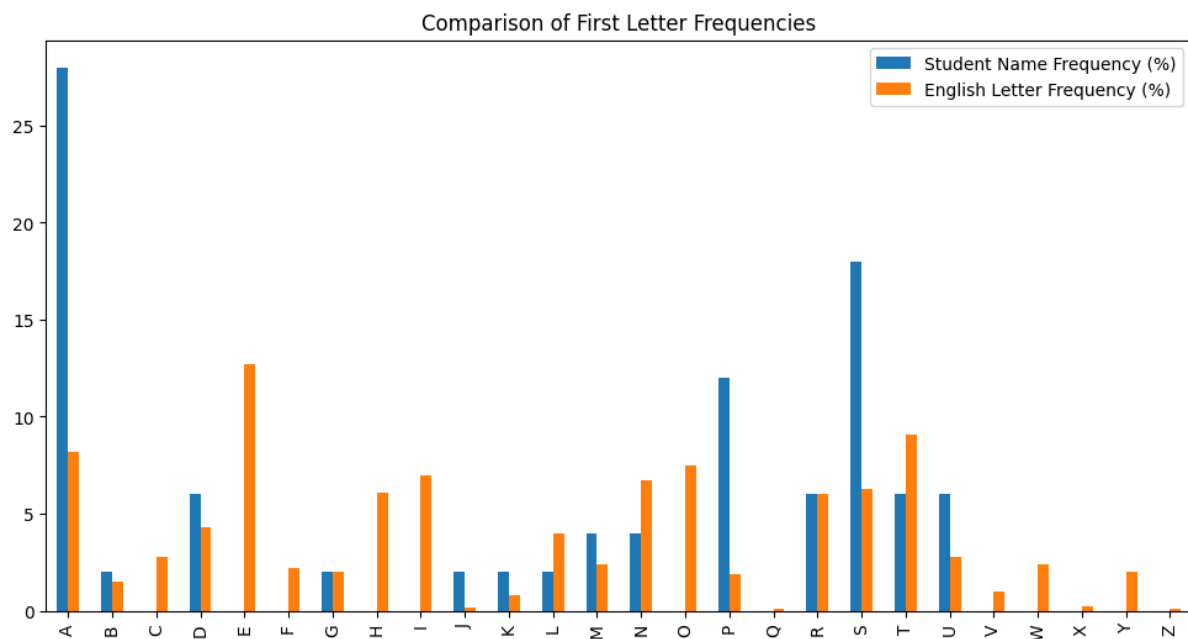
3. Methodology

3.1 Data Collection

Data was collected from various sources, including government reports, educational institutions, and economic databases. The data was then organized into structured formats for analysis.

3.2 Data Analysis

The following analyses were conducted:

- Calculation of correlation coefficients between student admissions and each of the factors.

- Visualization of trends using bar plots and scatter plots to illustrate relationships.

3.3 Correlation Coefficients

The correlation coefficients calculated were as follows:

- **Admissions and GDP Growth**: 0.1943 (Weak Positive Correlation)

- **Admissions and AI Developments**: -0.4935 (Moderate Negative Correlation)

- **Admissions and New COVID-19 Cases**: -0.5972 (Strong Negative Correlation)

- **Admissions and Salaries**: 0.5597 (Moderate Positive Correlation)

4. Results

4.1 Trends in Student Admissions

- A significant decline in student admissions was observed from 2019 to 2021, primarily due to the COVID-19 pandemic.

- A recovery in admissions is projected for 2023 and 2024, indicating a potential rebound in the education sector.

4.2 Correlation Analysis

- **GDP Growth**: A weak positive correlation suggests minimal impact on admissions.

Correlation between Student Admissions and GDP Growth in India
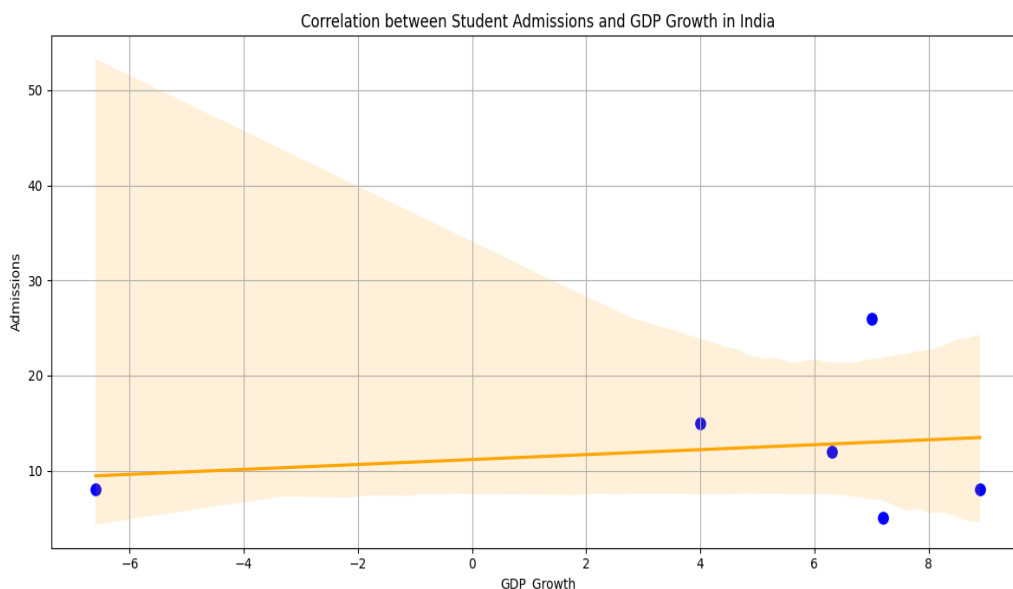
- **AI Developments**: A moderate negative correlation indicates that increased focus on AI may be diverting students from traditional educational paths.
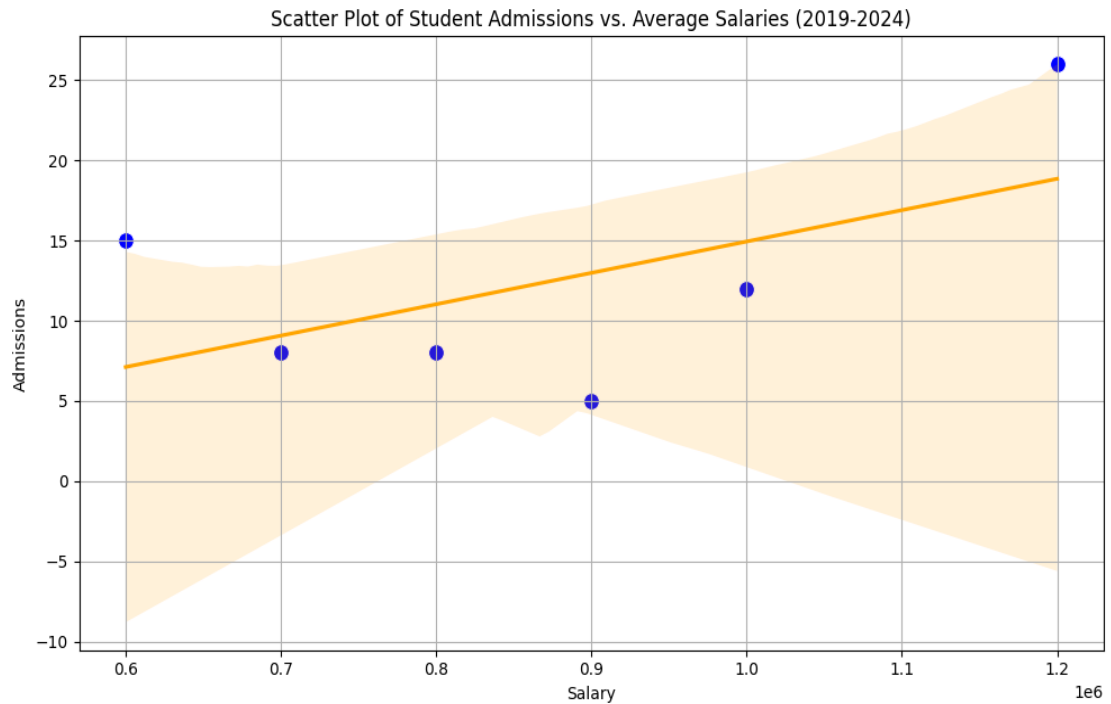
Correlation between Student Admissions and AI Developments in India
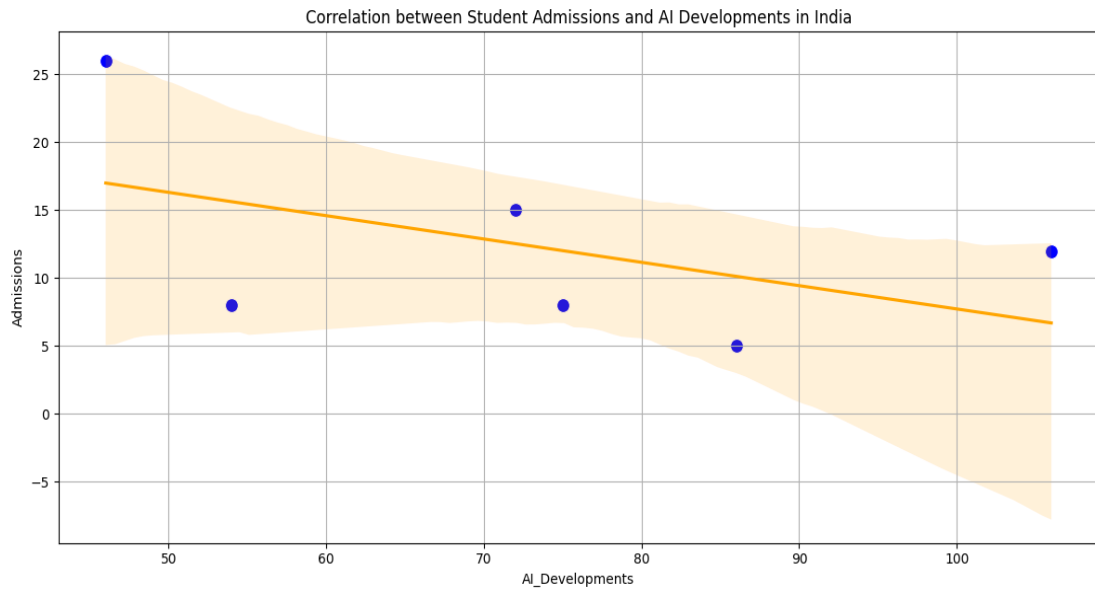
- **New COVID-19 Cases**: A strong negative correlation highlights the significant impact of the pandemic on student enrollment.

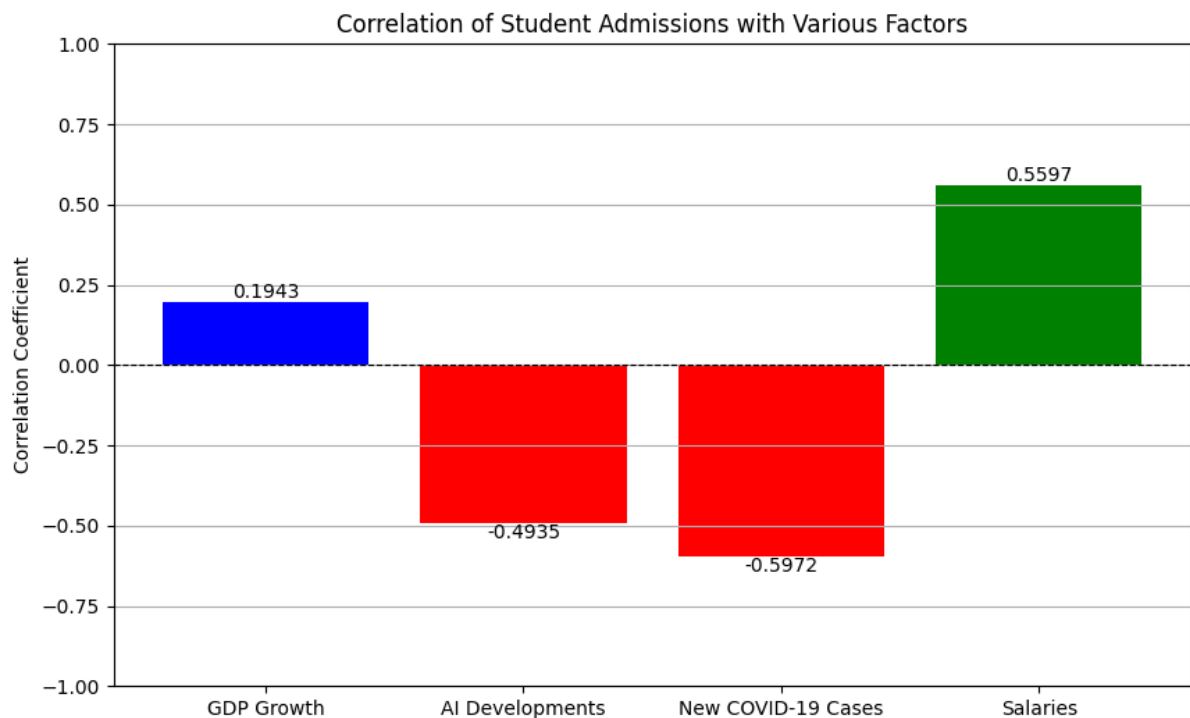Correlation between Student Admissions and New COVID-19 Cases in India
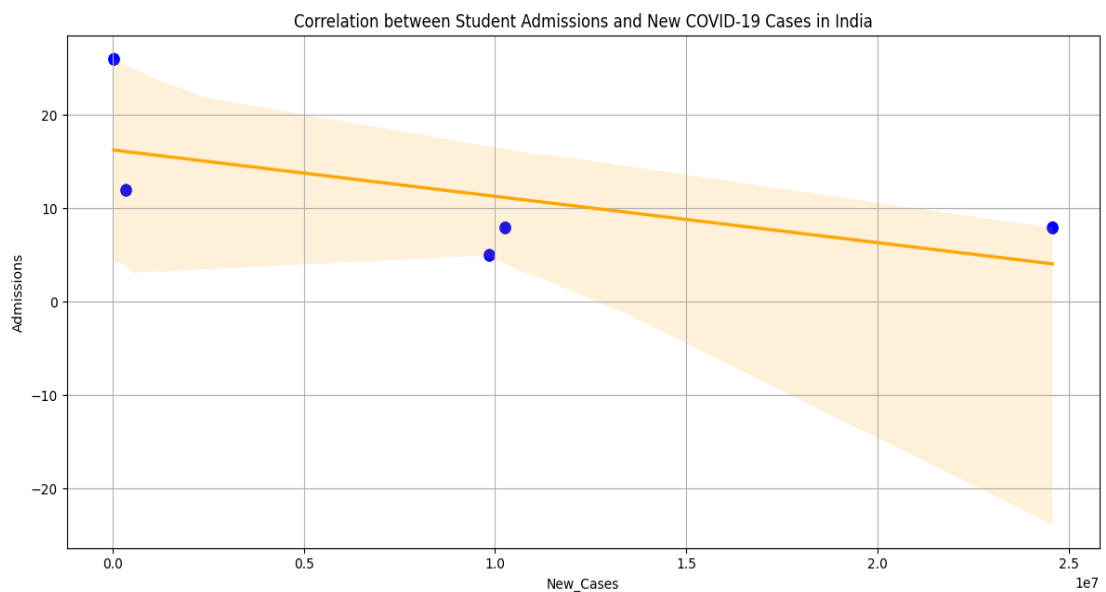
- **Salaries**: A moderate positive correlation suggests that higher salaries may attract more students to pursue higher education.

Scatter Plot of Student Admissions vs. Average Salaries (2019-2024)

4.3 Visualizations

Graphs were created to visualize the correlations and trends, providing a clear representation of the relationships between student admissions and the various factors.

Correlation of Student Admissions with Various Factors

5. Conclusion

The analysis reveals complex relationships between student admissions and various economic and social factors. The strong negative correlation with new COVID-19 cases underscores the pandemic's impact on education, while the moderate positive correlation with salaries suggests that financial prospects play a role in enrollment decisions. The findings can inform educational institutions and policymakers in developing strategies to enhance student enrollment and adapt to changing economic conditions.

6. Recommendations

- **For Educational Institutions**: Align curricula with market demands and focus on areas with high job prospects, such as AI and technology.

- **For Policymakers**: Implement measures to support the education sector during economic downturns and pandemics to ensure stability in student admissions.

7. Future Work

Further research could explore the long-term effects of the pandemic on educational trends and the evolving job market's impact on student choices. Additionally, a more granular analysis of specific fields of study and their correlation with job