

PRACTICE PROJECT · DATA SCIENCE & EDA

GDP per Capita: Bangladesh, India & Pakistan

A Comparative Analysis (2005–2025)

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1. Executive Summary

This report presents a comparative analysis of GDP per capita (US\$) trends across Bangladesh, India, and Pakistan from 2005 to 2025. The data was sourced from the **World Bank**. The analysis tracks economic growth trajectories of three major South Asian economies over two decades.

The findings reveal diverging growth patterns, with India maintaining the highest GDP per capita throughout the period, while Bangladesh demonstrates a notable acceleration in recent years — even overtaking India and maintaining a lead for a window of approximately five years.

2. Why This Project

This is the first project undertaken, intended as a practice exercise towards computational science and data engineering workflows. The scope of practice was:

- **Python Scripting** — using Python scripts for extracting data, cleaning data and saving it in a usable format, performing analytics, and creating visualizations of the results.
- **Documentation** — using documentation tools for academic or enterprise style documentation and presentations (Quarto, Typst).

3. Methodology

The project followed a simple workflow, each stage handled by a dedicated Python script.

3.1. Data Acquisition — [download_data.py](#)

Data was downloaded programmatically from the World Bank API using the **requests** library, covering GDP per capita (current US\$) for Bangladesh, India, and Pakistan from 2005 to 2025.

3.2. Data Cleaning — [clean.py](#)

The raw data was cleaned and restructured into a tidy usable format — handling missing values, renaming columns, dropping whitespaces and anomalous formatting, then saving the output as a CSV file ready for analysis.

3.3. Visualization — [plot.py](#)

The cleaned data was plotted using **matplotlib** and **seaborn**, producing a multi-line chart comparing GDP per capita (US\$) trends across the three countries over the full time period.

3.4. Project Structure

```
GDP_perCapita_BD-IND-PAK/  
├─ download_data.py  
├─ clean.py  
├─ plot.py  
├─ GDP_per_capita_BD_IND_PAK_2005_2025.csv  
├─ GDP_per_capita_BD_IND_PAK_2005_2025_clean.csv
```

All scripts and data files can be found [here on GitHub](#).

4. Results

4.1. GDP per Capita Trends (2005–2025)

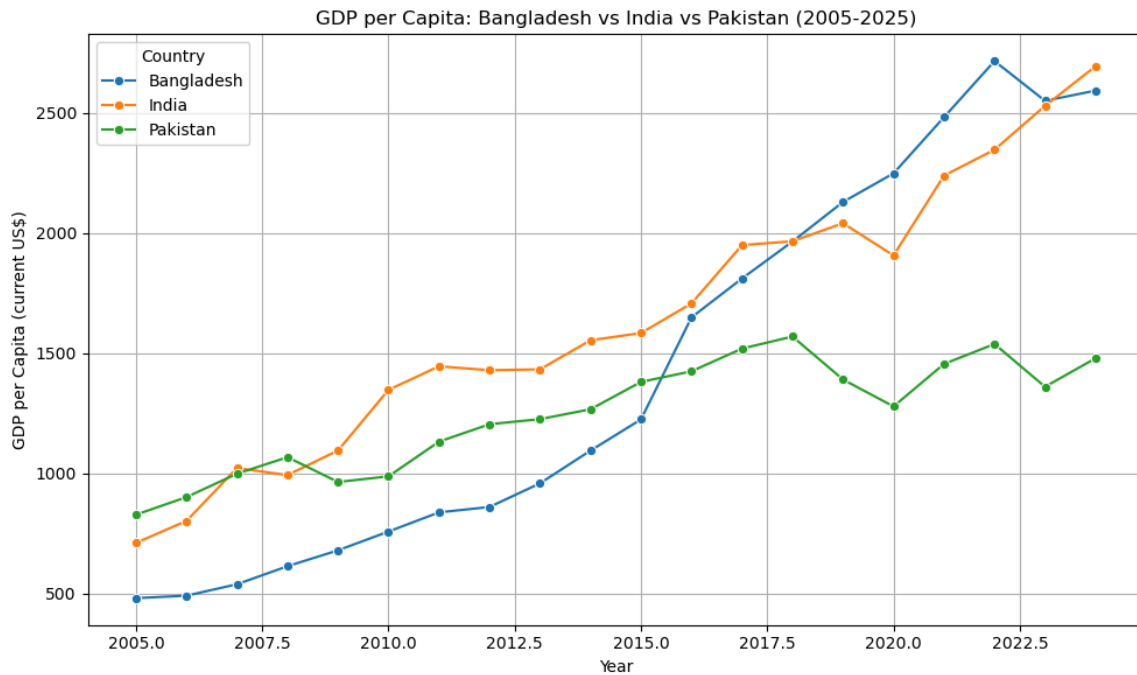


Figure 1: GDP per Capita — Bangladesh, India & Pakistan (2005–2025).

5. Insights

- **India** consistently maintained the highest GDP per capita among the three nations overall.
- **Bangladesh** showed a remarkable acceleration in growth since 2015, briefly overtaking India from roughly 2018 to 2023, maintaining a lead for approximately five years — a significant achievement for a country considered one of the lower-income ones, liberated only in 1971 with a very dense population.
- **Pakistan** showed comparatively slower and more stagnant growth over the two decades. Pakistan’s internal and external conflicts evidently play a role in this trajectory.
- The diverging trajectories suggest differing economic policies, export performance, and development strategies across the three nations.

6. Author’s Note

This was very much an introductory project designed to familiarize myself with:

- Practical usage of **Python scripting** in various fields.
- The process of completing a project by starting from sourcing data all the way to finding indicative insights.
- Using documentation tools like **Quarto** and **Typst** to write different types of documentation and styling.

I humbly ask the reader not to critique this work by putting it under the same category as impactful data science research respected by the community. For deeper rooted work, check out my [PracticeProjects](#) repo, where there are other practice projects done to develop the necessary skillsets: progressively bigger and more complex. Other original research ideas and development projects are currently in pursuit.

This work has been a good introductory project that has led me to pursue newer goals and ideas.

7. References

World Bank. *World Development Indicators: GDP per capita (current US\$)*. Retrieved from data.worldbank.org.