Technical exercise for Data Scientist position (Part I)

To analyze changes and potential trends in the use of at least basic sanitation services (% of population), as well as the variance between income groups, I retrieved the relevant indicator from the World Bank API, transformed it into tabular form, joined information about a country's respective income level to the indicator data, and generated a chart from the combined indicator/income group data.

The below chart displays the time range for which data was available via the API on the x-axis and the share of a population that is using at least basic sanitation services on the y-axis. The lines indicate the average share of the population using at least basic sanitation services by income group for a given point in time. The bands on either side of each line are confidence intervals.

The chart indicates that the use in at least basic sanitation services has indeed been changing with a positive trend throughout all income groups. However, large differences between income groups can be observed in the indicator's level at the outset of the data collection period, as well as how severely it changed over the observation period. Countries associated with a high-income level have the highest share of their populations using at least basic sanitation services, while countries associated with a low-income level score lowest. Changes in the indicator are more prevalent for the middle- and lower-income countries, with countries classified as 'Lower middle income' increasing most.