**Best Visualization Types by Metric**

| **Metric** | **Recommended Visuals** | **Purpose** |
| --- | --- | --- |
| **Population (thousands)** | - Column chart (by country/region) - Map (filled or bubble map) - Line chart (over years) | To show total population across geographies or over time. |
| **Annual population growth rate (%)** | - Line chart - Bar chart - KPI card | To compare growth across regions or track it annually. |
| **Annual number of births (thousands)** | - Area chart (over time) - Bar chart - Treemap (by country/region) | To highlight birth volumes and compare regions. |
| **Total fertility rate (births/woman)** | - Scatter plot (vs life expectancy or urban share) - Bar chart | To assess reproductive trends across regions. |
| **Dependency ratios** | - Clustered bar/column (stacked for child + old age) - Line chart (trend over years) - Donut chart (to compare types) | To evaluate the economic pressure from dependents. |
| **Life expectancy at birth** | - Line chart - Box plot (distribution) - Map | To show health/longevity trends and disparities. |
| **Share of urban population (%)** | - Doughnut or bar chart - Map | To highlight urbanization levels by country. |
| **Urban population growth rate (%)** | - Line chart (trend) - Slicer to compare countries | To analyze how urban areas are growing. |
| **Net migration rate (per 1,000)** | - Waterfall chart (net change) - Line chart - Diverging bar chart (positive vs negative net migration) | To visualize migration impact, especially comparisons. |

Yes, if your mentor doesn’t prefer **bar charts**—especially because they show **absolute values** when sliced—you can use alternative visuals that maintain **relative comparisons** or are better at **handling single selections**.

Here are effective alternatives to bar charts that work well with **slicers and percentage-based or normalized data**:

### ✅ ****1. KPI Card****

* **Best for:** Displaying single values like population, fertility rate, or life expectancy.
* **Why:** Very clean and readable when a single country is selected.
* **Extra:** You can include indicators like arrows or color coding (↑↓) to show trends.

### ✅ ****2. Line Chart or Area Chart****

* **Best for:** Showing trends over time (e.g., population growth, migration rate).
* **Why:** Works well even with a single country and provides historical insight.
* **Tip:** Overlay multiple metrics for better context (e.g., total fertility + life expectancy).

### ✅ ****3. Scatter Plot (Bubble Chart)****

* **Best for:** Comparing two metrics (e.g., fertility rate vs. life expectancy) with bubble size as population.
* **Why:** Even with one country selected, it can show where it stands compared to global trends (you can retain global data in the background for reference).

### ✅ ****4. Radial Gauge / Circular Gauge****

* **Best for:** Indicators with clear limits like fertility rate or urban share.
* **Why:** Great visual appeal and works well with percentages.
* **Caution:** Avoid clutter; best for 1–2 key metrics per page.

### ✅ ****5. Treemap****

* **Best for:** Distribution-based data (e.g., total births by region or urban share).
* **Why:** Still visualizes parts-to-whole even if one item is selected via slicer, and size/color gradients help.

### ✅ ****6. Card with Sparkline (Small Line Inside)****

* **Best for:** Showing a metric and its trend together.
* **Why:** Great single-country snapshot + historical context in one card.

### ✅ ****7. Decomposition Tree****

* **Best for:** Exploring causes or contributors (e.g., what drives population growth).
* **Why:** Interactive and can explore different dimensions (like age, gender, urban/rural) if available.

### 📌 ****Design Tip****

Instead of filtering the entire page with a slicer, consider:

* Keeping global data visible in the background (e.g., in light gray) to show relative position of the selected country.
* Using **tooltips** and **dynamic titles** that change based on the slicer to keep context.

### ****Best Metrics to Use with Card View****

Here are the metrics from your dataset that are suitable for Card views:

| **Metric** | **Why It’s Suitable** |
| --- | --- |
| **Total Population (thousands)** | Key value for any selected country/year |
| **Annual Population Growth Rate (%)** | A critical growth indicator |
| **Annual Number of Births (thousands)** | Shows country’s birth volume |
| **Total Fertility Rate (births/woman)** | A core demographic indicator |
| **Life Expectancy at Birth (years)** | Important health/longevity metric |
| **Share of Urban Population (%)** | Urbanization indicator |
| **Annual Urban Growth Rate (%)** | Indicates speed of urban expansion |
| **Net Migration Rate (per 1,000)** | Shows population change from migration |
| **Dependency Ratios** | Can use: total, child, or old-age ratio |