

Changes in Life Expectancy Report

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I. Introduction

[Gapminder](#) is an independent educational non-profit organization based out of Stockholm, Sweden that focuses on informing global audiences in areas related to long-term global development and progress. They provide learning tools, fact-based resources, and statistics that aim to elevate understanding of the global world and fight misconceptions about it.

II. An Overview of the Data

For this report in particular, we will focus entirely on looking at values of life expectancy at birth across different countries from one year to another. We will use the `gapminder` package in R, which has a subset of the entire **Gapminder** data set.

The entire `gapminder` data set has 1704 rows with the following four columns (out of six in total) that we will focus on primarily for this report:

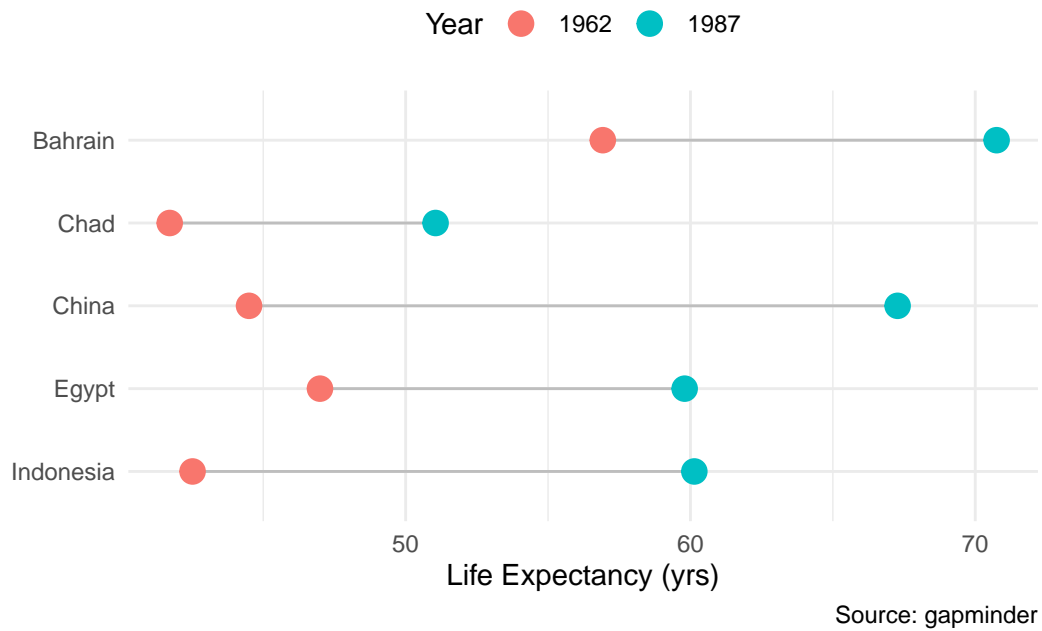
- **country**: a factor with 142 nominal levels with each level name being the name of a country
- **continent**: a factor with five nominal levels (i.e., Africa, Americas, Asia, Euorpe, Oceania)
- **lifeExp**: the life expectancy at birth in years
- **year**: the year in which data was recorded. Note that this column ranges from 1952 to 2007 in five-year increments (i.e., 1952, 1957, 1962, etc)

III. Data Results

a. Dumbbell Plot

For the year(s) **1962** and **1987**, we have selected the *five* countries **Bahrain**, **Chad**, **China**, **Egypt**, and **Indonesia**.

Given the selections made, we have the following dumbbell plot:



b. Summary Statistics

Here are summary statistics across the life expectancies of the *five* countries **Bahrain**, **Chad**, **China**, **Egypt**, and **Indonesia** for the year(s) **1962** and **1987**:

Metric	1962	1987
Minimum	41.72	51.05
1st Quantile	42.52	59.80
Median	44.50	60.14
Mean	46.53	61.80
3rd Quantile	46.99	67.27
Maximum	56.92	70.75
Standard Deviation	6.16	7.62

For the year **1962**, the **maximum** life expectancy came from the country **Bahrain** with the value of **56.923 years**.

The **minmium** life expectancy for that year came from the country **Chad** with the value of **41.716 years**.

For the year **1987**, the **maximum** life expectancy came from the country **Bahrain** with the value of **70.75 years**.

The **minimium** life expectancy for that year came from the country **Chad** with the value of **51.051 years**.

c. Widened Data Subset

For the year(s) **1962** and **1987**, we have the full data subset consisting of a pair of life expectancy values (in years) for each of the *five* countries below:

Continent	Country	Life Expectancy in 1962 (yrs)	Life Expectancy in 1987 (yrs)
Africa	Chad	41.72	51.05
Africa	Egypt	46.99	59.80
Asia	Bahrain	56.92	70.75
Asia	China	44.50	67.27
Asia	Indonesia	42.52	60.14

Data Source

The `gapminder` package in R contains a subset of the Gapminder data set available at <https://www.gapminder.org/data/>. This data subset has 142 countries with columns for a country's life expectancy, Gross Domestic Product (GDP) per capita, and population in five-year increments from 1952 to 2007.