Lived Years of Prime Ministers of Australia*

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This paper presents a case study examining the lifespan of Australian Prime Ministers, correlating their longevity with the years of their birth.

1 Introduction

The paper presents research into the lifespan among Australian Prime Ministers, with a focus on the correlation between their birth years and longevity by using tool R(R Core Team (2022)). The research methodology includes extracting biographical data from Wikipedia through the rvest(Wickham (2022)) tool and tidy the dataset. Finally, using a visual analysis through graphing the cleaned data elucidates the historical longevity trends among Australia's prime leaders.

2 Data

load rvest and then download the page using read_html() First I load rvest(Wickham (2022)) and then download the page using read_html().The using too SelectorGadget to pick and choose the elements that we want use.Next, using separate()(Wickham, Vaughan, and Girlich (2024)) and str_extract()(Wickham (2023)) to further clean data. Lastly, I clean up the columns to get a completely and ideally table.

In qmd document, using kable function from knitr(Xie (2023)) to create a table@tbl-prime that has a row for each prime minister, a column for their name, and a column each for the birth and death years.

*Code and data are available at: https://github.com/Victor1114/TUT-5.git

Table 1: Australia Prime Ministers, by how old they were when they died

Prime Minister	Birth year	Death year	Age at death
Edmund Barton	1849	1920	71
Alfred Deakin	1856	1919	63
Chris Watson	1867	1941	74
George Reid	1845	1918	73
Andrew Fisher	1862	1928	66
Joseph Cook	1860	1947	87
Billy Hughes	1862	1952	90
Stanley Bruce	1883	1967	84
James Scullin	1876	1953	77
Joseph Lyons	1879	1939	60
Earle Page	1880	1961	81
Robert Menzies	1894	1978	84
Arthur Fadden	1894	1973	79
John Curtin	1885	1945	60
Frank Forde	1890	1983	93
Ben Chifley	1885	1951	66
Harold Holt	1908	1967	59
John McEwen	1900	1980	80
John Gorton	1911	2002	91
William McMahon	1908	1988	80
Gough Whitlam	1916	2014	98
Malcolm Fraser	1930	2015	85
Bob Hawke	1929	2019	90
Paul Keating	1944	NA	NA
John Howard	1939	NA	NA
Kevin Rudd	1957	NA	NA
Julia Gillard	1961	NA	NA
Tony Abbott	1957	NA	NA
Malcolm Turnbull	1954	NA	NA
Scott Morrison	1968	NA	NA
Anthony Albanese	1963	NA	NA

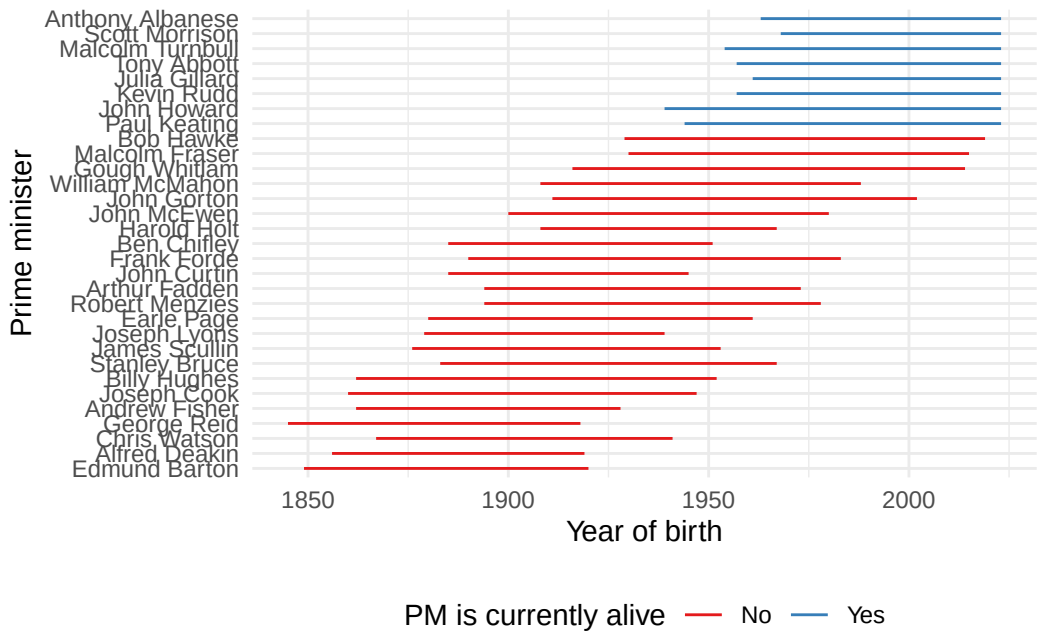
Next, making a graph@fig-prime that illustrates how long each prime minister lived and using different colors to show whether they are alive or not.

```
#| label: fig-prime
#| fig-cap: How long each prime minister of the Australia lived
#| echo: false
```

```
#| warning: false
#| message: false

cleaned_data <- read_csv(here::here("outputs/data/cleaned_data.csv"), show_col_types = FAL

cleaned_data |>
  mutate(
    still_alive = if_else(is.na(died), "Yes", "No"),
    died = if_else(is.na(died), as.integer(2023), died)
  ) |>
  mutate(name = as_factor(name)) |>
  ggplot(
    aes(x = born, xend = died, y = name, yend = name, color = still_alive)
    ) +
  geom_segment() +
  labs(
    x = "Year of birth", y = "Prime minister", color = "PM is currently alive"
    ) +
  theme_minimal() +
  scale_color_brewer(palette = "Set1") +
  theme(legend.position = "bottom")
```



3 Findings

- The most recent Prime Ministers who born in the mid-20th century on wards, are still living.That suggesting a trend for current and future leaders toward longer life expectancies
- The earlier prime ministers generally having shorter lifespans compared to those born later.
- There is a larger number of recent Prime Ministers still alive.

The longevity trends among Australian Prime Ministers reveal a compelling story of changing times and improved living standards. The early statesmen of the 19th century had lifespans typical of their era, often not exceeding much beyond 70 years. However, as time moved forward, so did the age at which these leaders lived, reflecting the broader societal advancements in health and well-being. It's striking to see the shift from red to blue on the graph, indicating those who have passed compared to those still with us.It illustrate the improvement of medical level and also social.

4 Personal Feelings

I spend more time on debug of my codes than I expect. It's difficult even imitating the code for different materials and hard to image to do a project without any instruction and code. But I feel interesting when I solve the tiny bug one by one. It's not only feeling a sense of accomplishment, but also makes me more familiar with R code. And when I fished it, I feel I solve all problems i faced is an amazing feeling. In this project, I feel it improve my ability of solving the problem in R,and I will keep humble and trying to do better project. Moreover, doing the project earlier next time.

5 References

https://en.wikipedia.org/wiki/List_of_prime_ministers_of_Australia

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