CHL8010: Week 5 In-class Assignment

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Analysis of final data

```
glimpse(data_2000)
```

```
Rows: 186
Columns: 21
$ country_name   <chr> "Afghanistan", "Albania", "Algeria", "Andorra", "Angola~
$ ISO            <chr> "AFG", "ALB", "DZA", "AND", "AGO", "ATG", "ARG", "ARM",~
$ region         <chr> "Southern Asia", "Southern Europe", "Northern Africa", ~
$ Year           <int> 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2~
$ gdp1000        <dbl> NA, 1.1266833, 1.7803759, 21.6204850, 0.5568842, 11.010~
$ OECD           <int> 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0~
$ OECD2023       <int> 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0~
$ popdens        <dbl> 14.136539, 33.083680, 27.912075, 29.119765, 1.769693, 3~
$ urban          <dbl> 16.2532406, 27.3883597, 36.1909049, 41.8537452, 31.0204~
$ agedep         <dbl> 108.34663, 59.65730, 61.50088, 38.87967, 95.57541, 53.9~
$ male_edu       <dbl> 2.762086, 8.961755, 4.498256, 11.679305, 4.420013, 8.54~
$ temp           <dbl> 12.699593, 13.739201, 17.481728, 9.557965, 21.335268, 2~
$ rainfall1000   <dbl> 0.27637041, 0.79717491, 0.27408241, 0.85228706, 1.05222~
$ totaldeath     <int> 5065, 6, 1168, 0, 2666, 0, 0, 0, 0, 0, 18, 0, 14, 0, 0,~
$ armed_conflict <int> 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
$ Earthquake     <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0~
$ Drought        <int> 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0~
$ matMor         <int> 1450, 23, 161, NA, 827, 44, 66, 43, 7, 6, 47, 27, 434, ~
$ infMor         <dbl> 90.5, 24.1, 33.9, 7.3, 121.5, 12.6, 17.5, 27.0, 5.1, 4.~
$ neoMor         <dbl> 60.9, 12.1, 21.1, 3.8, 50.3, 9.7, 11.0, 16.1, 3.5, 3.1,~
$ under5Mor      <dbl> 129.2, 27.2, 39.7, 8.2, 204.4, 15.5, 19.6, 30.6, 6.2, 5~
```

Table 1 for armed conflict paper

```
data_2000$armed_conflict <-
  factor(data_2000$armed_conflict, levels=c(0,1),
         labels=c("No conflict",
                  "Yes conflict"))

# covariate
data_2000$OECD <-
  factor(data_2000$OECD, levels=c(0,1),
         labels=c("non-OECD Member",
                  "OECD Member"))

data_2000$gdp1000_group <- cut(
  data_2000$gdp1000,
  breaks = c(-Inf, 1.2383, 4.0719, 13.1531, Inf),
  labels = c("Very Low GDP", "Low GDP", "Medium GDP", "High GDP"),
  right = FALSE  # left-closed intervals
)

label(data_2000$armed_conflict)       <- "Armed conflict"
label(data_2000$OECD)       <- "OECD"
label(data_2000$gdp1000_group)       <- "GDP"
label(data_2000$urban) <- "Urban residence"
```

```
caption  <- "Table 1. Description of data used in the study."
footnote <- "Data given as count (proportion in %) or median [Min, Max]. <br>
1No conflict: <25 battle-related deaths per country-conflict-year. <br>
2Yes conflict: more than 25 battle-related deaths per country-conflict-year."

table1( ~ gdp1000_group + OECD + urban | armed_conflict, data = data_2000,
        overall=c(Right="Total"), caption=caption, footnote=footnote)
```

	No conflict	Yes conflict	Total
	(N=147)	(N=39)	(N=186)
GDP			
Very Low GDP	46 (31.3%)	28 (71.8%)	74 (39.8%)
Low GDP	39 (26.5%)	7 (17.9%)	46 (24.7%)
Medium GDP	29 (19.7%)	2 (5.1%)	31 (16.7%)
High GDP	30 (20.4%)	0 (0%)	30 (16.1%)

	No conflict	Yes conflict	Total
Missing	3 (2.0%)	2 (5.1%)	5 (2.7%)
OECD			
non-OECD Member	118 (80.3%)	38 (97.4%)	156 (83.9%)
OECD Member	29 (19.7%)	1 (2.6%)	30 (16.1%)
Urban residence			
Mean (SD)	29.9 (18.7)	26.4 (12.0)	29.1 (17.6)
Median [Min, Max]	28.9 [0.106, 91.6]	24.1 [3.80, 49.3]	28.0 [0.106, 91.6]
Missing	1 (0.7%)	0 (0%)	1 (0.5%)

Descriptive figure

Write a Quarto script that creates a figure that shows the trend in maternal mortality for countries that had an increase from 2000 to 2017.

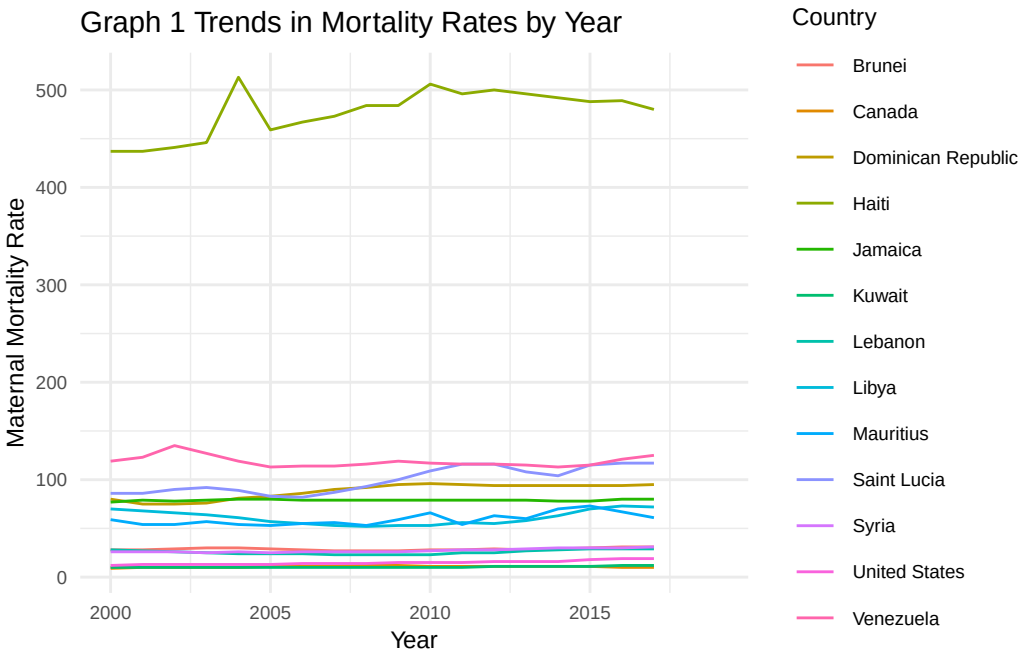
```
mat_data <- final_data %>% group_by(ISO) %>%
  filter(Year %in% c(2000,2017)) %>% select(ISO, Year, matMor)

# make it wide table, rename 2000 -> X2000, 2017 -> X2017
mat_data_wide <- mat_data %>% pivot_wider(names_from = Year, values_from = matMor) %>%
  rename(X2000 = `2000`, X2017 = `2017`)

ISO_list <- mat_data_wide %>% mutate(diff = X2017 - X2000) %>%
  filter(diff > 0) %>% select(ISO) %>% pull()
```

```
filtered_data <- final_data %>% filter(ISO %in% ISO_list)

filtered_data %>% ggplot(aes(x=Year, y=matMor, color=factor(country_name))) +
  geom_line() +
  labs(
    title = paste("Graph 1 Trends in Mortality Rates by Year"),
    x = "Year",
    y = "Maternal Mortality Rate",
    color = "Country"
    ) +
  theme_minimal() +
  theme(text = element_text(size=9))
```


Graph 1 Trends in Mortality Rates by Year
Maternal Mortality Rate
500
400
300
200
100
0
2000
2005
2010
2015
Year
Country
Brunei
Canada
Dominican Republic
Haiti
Jamaica
Kuwait
Lebanon
Libya
Mauritius
Saint Lucia
Syria
United States
Venezuela