

Problem Set #2

EH6105 - Quantitative Methods

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This homework makes use of data available in `{stevedata}` and implies the use of `{tidyverse}` to answer the questions. `{tidyverse}` is not necessary to answer these questions though it will assuredly make the process easier. Load these two libraries to get started answering these questions.

```
library(tidyverse)
library(stevedata)
```

Modeling Coups in Africa, 1960 to 1975 (1982)

This homework will refer to the `african_coups` data set that is available in `{stevedata}`. This data set is an approximate reconstruction of Jackman's (1978) analysis on understanding the correlates of coup d'état susceptibility in Sub-Saharan African states. It additionally incorporates information from Johnson et al. (1984) about understanding the involvement of the military in successful or attempted coups along with new cases they consider in their expanded temporal domain. You should consult Jackman (1978) and Johnson et al. (1984) about these data, though you might find Jackman et al. (1986) informative/interesting about how big of a debate/controversy this was.

- Jackman, Robert W. 1978. "The Predictability of Coups d'état: A Model with African Data." *American Political Science Review* 72(4): 1262-75.
- Johnson, Thomas H., Robert O. Slater, and Pat McGowan. 1984. "Explaining African Military Coups d'Etat, 1960-1982." *American Political Science Review* 78(3): 622-40.
- Jackman, Robert W., Rosemary H. T. O'Kane, Thomas H. Johnson, Pat McGowan, and Robert O. Slater. 1986. "Explaining African Coups d'Etat." *American Political Science Review* 80(1): 225-49.

You can find out more information about the data by visiting [this part of the package's website](#), or with the following command.¹

```
?african_coups
```

Here's a little preview of these data.

```
african_coups
```

```
## # A tibble: 45 x 11
##   iso3c country      jci  tmis agperc indperc literacy_cnts literacy_ba leperc
##   <chr> <chr>      <dbl> <dbl> <dbl>   <dbl>         <dbl>   <dbl>
##
```

¹You really should always look at the codebook, and definitely here.

```
## 1 ANG Angola NA 3 66.5 13 NA 8 38
## 2 BDI Burundi 20 20 88.6 3.45 9 10 80
## 3 BEN Dahomey (B~ 46 42 52.1 10.4 8 5 55.5
## 4 BFA Upper Volta 12 20 89.2 6.95 8.2 7 50
## 5 BWA Botswana NA 0 89.4 3.2 19.6 30 97
## 6 CAF Central Af~ 7 26 92.7 2.15 14.6 5 31
## 7 CIV Ivory Coast 3 3 86.6 2.35 11.4 20 27
## 8 CMR Cameroon 2 0 77.2 5.3 8.8 10 27
## 9 COD Zaire 35 20 81.4 9.8 19.2 40 34
## 10 COG Congo-Braz~ 31 33 46.8 19.2 16.4 23 47
## # i 35 more rows
## # i 2 more variables: partydom <dbl>, turnout <dbl>
```

Answer these questions. A successful answer of these question must include the R code you used to help you answer the question.

1. What is the median and mean of the coup index that Jackman (1978) calculates as the dependent variable in his statistical analysis?
2. What is the median and mean of the total military involvement score that Johnson et al. (1984) calculate as the dependent variable in their reanalysis of Jackman (1978)?
3. Get a histogram and density plot of Jackman's (1978) coup index or Johnson et al. (1984) military involvement score. Describe the distribution of this variable in two complete sentences.
4. What country has the highest coup index score calculated by Jackman (1978)? What country has the highest military involvement score calculated by Johnson et al. (1984)?
5. Jackman's (1978) analysis converts the variable for the percentage size of the largest ethnic group into a dummy variable (labeled as *c* in his model) if it is above a certain value. Show me the code you would use to create such a variable in these data.²
6. Jackman (1978) likewise dichotomizes the turnout variable into a dummy variable (labeled as *p* in his model) if it is above a certain value. Show me the code you would use to create such a variable in these data.³
7. Jackman's (1978) primary explanatory variable of interest (labeled as *m* in his model) is one he creates, which he uses as a proxy for a phenomenon he calls "social mobilization" (by way of Deutsch [1961]). The data I provide can allow you to basically recreate this from his description on p. 1265. Show me how you'd create this variable.⁴
8. For this variable you created above, 1) calculate the mean and median, 2) identify the county that scores highest, and 3) identify the country that scores lowest.

²A successful answer here will require you to consult either Jackman (1978) or Johnson et al. (1984). The particular value in question is made clear in both of these articles.

³See the footnote for the previous prompt. The same issue applies.

⁴Read the codebook I provide with the data, either in RStudio or on the package's website. This is a case where Jackman (1978, 1265) says one thing ("nonagricultural") but seems to mean another. Of the two literacy variables, use the one provided by Morrison et al. (1989) in their *Black Africa* handbook. The codebook basically says that anyway.