Nuclear Arms Races. Who Is More Responsible?

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Abstract

Write your abstract here.

Read the README.md file in the project folder for more information.

1 Introduction

The second world war ended in 1945 with two nuclear explosion in Japan, Nagasaki and Hiroshima. After that situation, the importance of nuclear power was understood by allied powers that were able to be named as winners of the second world war. After that war, the cold war began. Old allies became new enemies. In order to win the arms race, two enemies started developing nuclear weapons and tested them in deserts, oceans, islands and etc (Jacobs, 2013). Different explosion methods, different nuclear energy sources were used in order to find perfect way to create the perfect Armageddon weapon. Luckily, there has been no usage of nuclear power to destroy a nation. However, as I have said before, these weapons were tested and these tests have harmed our environment in a very bad way. In my article, my aim is to find which country is more responsible for these harmful actions that have been created by nuclear explosions. I have found my data from https://github.com/rfordatascience/tidytuesday/tree/master/data and the name of my data is "nuclear explosions" This data include 1,382 observations with 16 columns. These columns include country names, nuclear explosion sources, year, purpose and the others. I have selected this data to figure out which country harmed most by creating nuclear explosions. To put my purpose, aim into reality, I have chosen my research question as **Which country is more responsible for the damage to the environment that live in and living life forms due to nuclear explosions?** I have found academic articles that are relevant to my question and help to reach my aim, however I have chosen four of them to review.

*20080399, Github Repo

1.1 Literature Review

It is a very well documented fact that nuclear explosions destroy our environment and our own bodies Arda (2006). It can be understood from the data I have chosen and the Ruff (2015) that the huge majority of nuclear explosions have happened due to testing nuclear weapons. Ruff (2015) says quote: "Apart from the two bombs dropped on Hiroshima and Nagasaki, and 150 explosions which were ostensibly "peaceful", 3 the rest have been for the purpose of developing new nuclear weapons (making them more destructive, more compact and more deliverable), understanding their effects and developing plans for their use." Because of these test people that have lived in these test regions, **Pacific Ocean**, may develop genetic mutations and these mutations can trigger genetic disorders such as cancer. The test made around Pacific Ocean, were done by three countries, **U.K**, **France**, and **U.S**. However, U.s. made the majority of these tests. In addition to harmful and hazardous effect on human health, these nuclear explosions have harmed our environment. Mostly, nuclear test were done in oceans. Ongoing observations and research indicate that Pacific and Atlantic Oceans were detected higher radioactivity than other Oceans. Aarkrog (2003). It can be understood that these two oceans were often used for nuclear experiments so the highest percentage of nuclear radioactivity from these oceans belongs to nuclear explosions made by humans. In addition to oceans, our world's atmosphere can also be effected from nuclear explosions badly. Radioactivity that occurs when a nuclear explosion takes place can play an important role on climate changes that occur due to chancing the balance of elements in **atmosphere** and radioactive pollution. Prăvălie (2014) quote: "The indirect transfer of radionuclides into the geospheres and their accumulation in living cells, by way of the food chain, was yet another form of radioactive contamination of the marine and terrestrial ecosystems. One of the most representative examples is the isotope 14C released into the atmosphere during nuclear tests, which is later integrated into the CO2, and then reaches the marine environment, by means of the ocean–atmosphere gas exchange, or the biosphere through the process of photosynthesis." In this article it is also quoted that most of these nuclear test and the most harmful ones were conducted by **Soviet Union**, a socialist union consisted of 15 countries, collapsed in 1991, and the **U.S**. When all articles that I have reviewed taken into account, the hazard of nuclear explosions for both living creatures and environment can be understood easily. However, since the research question, **Who is more responsible**, is not that easy. When the article Yang et al. (2003) is examined, quote: "Since then there is evidence that 2039 additional explosions have been conducted by seven countries (China, France, India, Pakistan, the Soviet Union, the United Kingdom, and the United States) during 1945-1998, according to information in the Nuclear Explosion Database at the Center for Monitoring Research (CMR)." 1056 nuclear explosions were made by U.S and 715 by the Soviet Union, it is clear and easy to say by accordance of numerical observations made and recorded the U.s seems to be responsible for biological and environmental damage that occurred due to explosions. Since, in the article Prăvălie (2014) clears that the areas the **U.S** made nuclear test in its own mainland some disorders that have a huge relations with radioactivity such as **Thyroid Cancer** has been more common since the nuclear test had begun. However, to speak in more certain terms, more research and observations are needed.

2 Data

In this section, discuss the source of the data set you use in your study, if you have done any operation on the raw data, these operations and the summary statistics about the data set. In this section, it is mandatory to have a table (Table 1) containing summary statistics (mean, standard deviation, minimum, maximum, etc. values) of all variables. Make the necessary references to your tables as shown in the previous sentence (**perkins:1991?**).

R codes for the analysis should start in this section. In this section, you should include the codes that imports the data set into R and the codes that generate summary statistics.

```
library(tidyverse)
library(here)
survey <- read_csv(here("data/survey.csv"))
```

Note that code options are edited in some of the code chunks in the Rmd file.

With the `echo=FALSE` option, prevent the codes from appearing in the derived pdf file and report your results in tables.

Table 1: Summary Statistics

	Mean	Std.Dev	Min	Median	Max
credits	5.01	0.60	4.00	5.00	6.50
handedness	0.66	0.41	-0.88	0.73	1.00
handspan	20.60	2.18	14.00	20.50	27.00
height	67.55	4.44	58.00	67.00	78.00

3 Methods and Data Analysis

In this section describe the methods that you use to achieve the purpose of the study. You should use the appropriate analysis methods (such as hypothesis tests and correlation analysis) that we covered in the class. If you want, you can also use other methods that we haven't covered. If you think some method is more suitable for the purpose of the analysis and the data set, you can use that method (**newbold:2003?**; **verzani:2014?**; **wickham:2014?**; **wooldridge:2015a?**).

For example, if you are performing regression analysis, discuss your predicted equation in this section. Write your equations and mathematical expressions using $LaTeX$.

$$Y_t = \beta_0 + \beta_N N_t + \beta_P P_t + \beta_I I_t + \varepsilon_t$$

This section should also include different tables and plots. You can add histograms, scatter plots (such as Figure 1), box plots, etc. Make the necessary references to your figures as shown in the previous sentence.

```r
survey %>%
  ggplot(aes(x = handedness, y = handspan)) +
  geom_point() +
  geom_smooth() +
  scale_x_continuous("Handedness") +
  scale_y_continuous("Handspan")
```

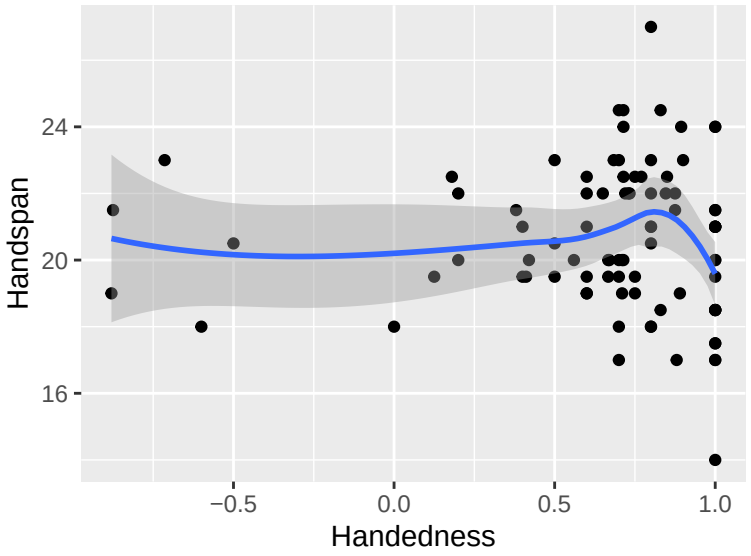

Figure 1: An Awesome Plot

4 Conclusion

Summarize the results of your analysis in this section. Discuss to what extent your results responded to the research question you identified at the beginning and how this work could be improved in the future.

References section is created automatically by Rmarkdown. There is no need to change the references section in the draft file.

You shouldn't delete the last 3 lines. Those lines are required for References section.

5 References

Aarkrog, A. (2003). Input of anthropogenic radionuclides into the world ocean. *Deep Sea Research Part II: Topical Studies in Oceanography*, *50*(17-21), 2597–2606.

Arda, C. (2006). Nükleer silahlar ve radyasyon. *Türk Hijyen Ve Deneysel Biyoloji Dergisi*, *63*(1), 2.

Jacobs, R. (2013). Nuclear conquistadors: Military colonialism in nuclear test site selection during the cold war. *Asian Journal of Peacebuilding*, *1*(2), 157.

Prăvălie, R. (2014). Nuclear weapons tests and environmental consequences: A global perspective. *Ambio*, *43*(6), 729–744.

Ruff, T. A. (2015). The humanitarian impact and implications of nuclear test explosions in the pacific region. *International Review of the Red Cross*, *97*(899), 775–813.

Yang, X., North, R., Romney, C., & Richards, P. G. (2003). Worldwide nuclear explosions. *International Geophysics Series*, *81*(B), 1595–1600.