ADD IN MEANINGFUL TITLE HERE

STA304 - Winter 2025 - Assignment 1

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```
# Loading packages

library(tidyverse)
```

```
-- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
v dplyr     1.1.4     v readr     2.1.5
v forcats   1.0.0     v stringr   1.5.1
v ggplot2   3.5.0     v tibble    3.2.1
v lubridate 1.9.3     v tidyr     1.3.1
v purrr     1.0.2
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to beco
```

```
library(ggplot2)
library (dplyr)
library(knitr)
```

1 Introduction

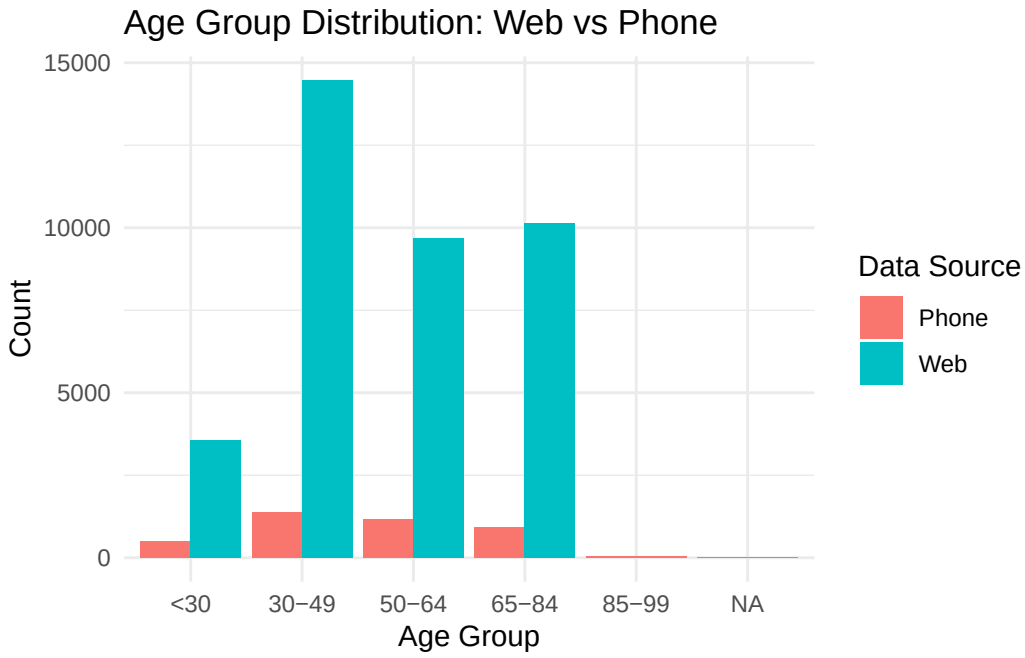
In this section you will briefly describe your report. Explain the importance of the subsequent analysis and prepare the reader for what they will read in the subsequent sections. Explain the goal/topic of the survey/study and the TWO variables you selected of interest here. It might be helpful to explain why you chose your particular demographic variable and your particular outcome variable to investigate. Be sure to give rationale as to why investigating these variables is important to the study/inference. If you wish to **bold** or *italicize* your variable names, please do. Define the target, frame and sample population.

2 Data

Briefly introduce the data and key variables of interest. If you do any general data cleaning or data processing you should describe it (in a reproducible manner) here. It might be helpful to clearly define the variables of interest (i.e., the ones you will present in the subsequent sections) here, along with any data cleaning you did to these variables.

3 Demographic Variables

Clearly state what your demographic variable is, and give a brief explanation of why you chose it. Create a visualization the same visualization of the distribution of the demographic variable across the two surveys (phone vs. web



Include a clear description of each of the plot(s)/visualization(s). Be sure to highlight any key differences and/or similarities between the two plots and how this relays to the population(s). Comment on the effects of measuring the target, frame and sample population.

4 Outcome of Interest

Clearly state what your outcome variable is, and give a brief explanation of why you chose it. You will analyze this outcome in both datasets. For each survey (phone and web) the formula

used for the confidence interval should also be presented and referenced [2]:

$$\hat{p} \pm z \cdot SE$$

In Table 1 I present both confidence intervals of... Compare the confidence intervals of the same outcome of the two surveys. Be sure to highlight any key differences and/or similarities between the two CIs and how this relays to the populations at hand (i.e., about the Canadian electorate's behavior or opinions).

Table 1: The proportions and 95% confidence intervals of outcome variable of interest calculated for both the Canadian Election Study 2019 phone and web survey data.

	Proportion of Outcome Variable	95% Confidence Interval of Outcome Variable
Phone Survey	0.34	(lower bound, upper bound)
Web Survey	0.25	(lower bound, upper bound)

5 Comparative Analysis

Here you will write a few paragraphs with a general reflection commenting on: demographic differences, biases/errors, and implications for analysis.

6 Generative AI Statement

Here is where you can explain your usage of Generative AI tool(s). Be sure to reference it.

Alternatively, if you did not use Generative AI, please include a brief statement outlining your workflow for completing this assignment.

7 Bibliography

1. Grolemund, G. (2014, July 16) *Introduction to R Markdown.* RStudio. https://rmarkdown.rstudio.com/articles_intro.html. (Last Accessed: April 4, 1991)
2. Dekking, F. M., et al. (2005) *A Modern Introduction to Probability and Statistics: Understanding why and how.* Springer Science & Business Media.
3. Allaire, J.J., et. el. *References: Introduction to R Markdown.* RStudio. https://rmarkdown.rstudio.com/docs/. (Last Accessed: April 4, 1991)