

Social Sciences Intro to Statistics

Week 4.1 Sampling Distribution

Week 4: Learning goal - Apply understanding of central limit theorem and sampling distributions towards how to evaluate inferential statistics in R.

Introduction

Load packages:

```
library(tidyverse)
library(ggplot2)
```

Resources used to create this lecture:

Central Limit Theorem

Central Limit Theorem (CLT) describes the behavior of the average of a large number of independent and identically distributed random variables. It states that, regardless of the shape of the original distribution, the distribution of the sum (or average) of these variables approaches a normal (Gaussian) distribution as the sample size increases, provided that the sample size is sufficiently large.

A key point is the idea that as the sample size increases, the distribution of the sample mean approaches a normal distribution. This holds true regardless of the shape of the original distribution.