BUSI 1450 Statistics

Tutorial 4

Due 7:00 PM – May 29, 2024

Total 20 marks

Please use the time efficiently and effectively to practice the use of excel and upload your work to the designated area on Canvas. This practice tutorial is worth 3.3% of your final mark covering work submission at the end of the tutorial session.

Q1. Consider the Canadian RRSP Contribution Database. Compute the population mean and standard deviation for the **annual median RRSP contribution**. Now take a random sample of 30 years of median RRSP contributions. You may use any of the sampling techniques discussed and explain rationale for your choice. Now, compute the sample mean. **(10 marks)**

The Population mean is 2754.487

The Standard deviation is 672.084

I used the stratified sampling technique because I felt like it was the best way to get a fair random sample of the population because the population would be divided into non overlapping subpopulations. The random sample of 30 years of median RRSP contribution I got was 2202. 26

Using techniques presented in this chapter, determine the probability of getting a sample mean that is **less than the calculated sample mean**. Work this problem both with and without the finite correction factor and compare the results by discussing the differences in answers. **(10 marks)**

Standard Error = $\sigma / \sqrt{30}$

z = 672.084 / √30

= 122.7051891

Z = 2202.26 - 2751.487 / 122.7051891

= -549.277/ 122.7051891

=-4.475988375 = -4.5

P(x <−4.5) 0.0000034 or 0.00034%

With the finite correction factor

$\sigma_{\bar{x}} = 120.86220.26 - 2754.487$

$= 120.86 - 552.227$

≈ -4.57

When I used the finite correction factor I realized that the answers were close in numbers but slightly off by a decimal point and were smaller without the finite correction factor.