Statistics Project

1. Quantitative (SHU Students GPA)

* The purpose of this study was to observe the average GPA of all Siena Heights University Students. The question that I would like to be answered is if the mean GPA is above a 3.0.
* The population is the 2200 undergraduate students at SHU.
* I surveyed the students in my classes asking what their GPA’s were.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2.7 | 3.0 | 2.1 | 2.1 | 2.9 |
| 3.2 | 2.9 | 1.7 | 2.4 | 3.0 |
| 3.5 | 2.1 | 3.6 | 2.6 | 2.1 |
| 2.1 | 2.4 | 2.7 | 4.0 | 3.6 |
| 4.0 | 2.5 | 3.5 | 3.6 | 4.0 |
| 3.7 | 3.5 | 3.8 | 3.8 | 3.9 |
| 3.5 | 4.0 | 2.6 | 2.5 | 2.4 |

* Center
  + Mean: 3.03
  + Median: 3.0
  + Mode: 2.1
* Shape
  + The data is Left Skewed
* Variability
  + Standard Deviation: .697
  + Variance: .486
  + Range: 2.3
* Hypothesis
  + Test H0≠3.0 at a 99% Significance level.
  + t= .242
  + The population mean could be 3.0 GPA because we fail to reject the hypothesis at a 99% significance level
* 95% Confidence Interval
  + Use a t because we don’t know the population standard deviation
  + 2.79˂µ˂3.27
  + I am 95% confident that the population mean falls between 2.79 and 3.27

2. Qualitative (Male/Female)

* The purpose of this study was to find the proportion of males to females at Siena Heights University.
* The population is the 2200 undergraduate students at SHU.
* I surveyed the students in my class.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| M | F | M | M | F |
| M | M | M | F | F |
| F | M | F | F | M |
| M | M | F | F | F |
| F | F | F | M | M |
| F | M | M | M | F |
| M | M | F | M | M |

* The proportion of males was 19/35
* Hypothesis
  + Ho≠21/35
  + z=-.69
  + The population proportion could be 21/35 because we fail to reject the hypothesis at a 99% significance level.
* 99% Confidence Interval
  + .326˂P˂.760
  + I am 99% confident that the population proportion of males is between .326 and .760