SUMMATIVE ASSESSMENT STATISTICS

Answers:

1.

1. Nominal – Gender (Male, Female)
2. Ordinal – Farm Type (Small, Medium, Large)

2.

- It was sampled using multi-stage stratified random sampling.
- Yes, the multi-stage method of sampling allows for a large population to be broken down in stages based on their similarities, by simultaneously implementing stratified sampling, this allows for further division into groups of shared characteristics.
- There is nonresponse bias present

3.

1. What role does gender play in agricultural production and its ability to cope with short term climate change?
2. What role does religion play in agricultural production?

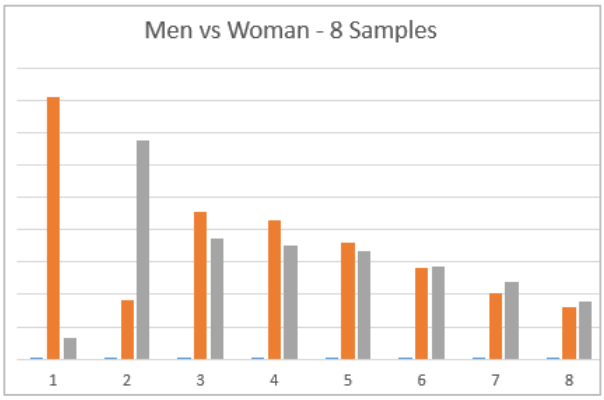
4.

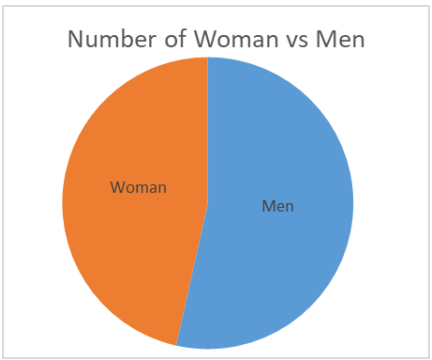
What role does gender play in its ability to cope with adaptation for climate change?

Null Hypothesis: Gender plays no role in the ability to cope with adaptation for climate change
Alternative Hypothesis: Gender plays a role in the ability to cope with adaptation for climate change

Data Comprises of:
Those that answer Male; Female; or NA, to the question of what gender to they identify as.
The Yes or No answer to the Questions based on whether adaptation to climate change was being done.

8 samples were taken from 8 countries: The percentage difference between the number of men and number of woman in farming is 4%.





After checking the gender against the adaptation questions I found:

The test I would use to test this hypothesis is: Paired T- Test and Chi-squared Test.
The Paired T-Test: I am exploring Difference between matched pairs; Men as farmers and their Adaptation to climate change; Woman as farmers and their adaptation to climate change.

The Chi-Squared Test: I am assessing the goodness of fit between two categories and an associated variable.

These two tests were appropriate as I was able to find the fit between a two sets of observed values and to observe if the mean difference was zero.

I explored three variables from the adaptation options and compared them to the number of woman and the number of men that implemented adaption methods and men and woman that didn't.

- Adaptation to climatic variation
- Adaptation temperature change
- Adaptation precipitation change

I found that the p-value was approx. 0.02 therefore statistically significant as it is less than 0.05.

5.

1) A significant effect resulted

I can conclude that gender does play a role in the ability to adapt to climate change, with regard to the population.

6.

1. I would use a Contingency Table to show the number of Men and Woman in Farming
2. Bar Plot graph to show the visualisation of gender category vs Adaptation variables
3. Pie chart can also be used to show the data

7.

Yes, this is important for research, fertiliser is widely used in farming and has a significant impact on climate change. One of the key composites of fertilizer is nitrogen. Nitrous oxide is a very potent gas and is more effective in trapping heat in the atmosphere than carbon dioxide, directly impacting climate change. Nitrogen boosts the growth of algae, leading to water pollution.