The two types of variable types include Nominal Variables (Gender, Marital Status) and Continuous Variables (tax income, tax sales, tax others)

The study design of the survey was multi stage stratified, random sampling this is because data was stratified by country and there after each country created strata based on the different agro ecological zones from which households were randomly selected There may be sources of bias are infrequent behavior will not be captured, Non-response bias where selected respondents are unwilling or unable to participate in a study or survey and respondents differ significantly from the non-respondents, measurement errors due to different interpretations of the data, memory and recall biases will also be a source of errors

2 Key research questions that I was able to come up with are,

- Net revenue per hectare for smallholder and commercial farms in Africa can be affected by climate change

- Farmers in Africa have switched crops due to climate change

The statistical analysis for Key Question 1 will be simple linear regression analysis since we are predicting the outcome between a set of independent and dependent continuous variables, I will use the t-test to test for the significance the coefficient, because I am examining the relation between the two. I will determine the significance of the t test using a 95% confidence interval

The Key hypothesis

Ho : Net Revenue per hectare for small holder and commercial farms in Africa are affected by climate change

H1 : Net Revenue per hectare for small holder and commercial farms in Africa are not affected by climate change

Ho : Switching of crops by African farmers is due to climate Change

H1 : Switching of crops by African farmers is not due to climate Change

if a significant effect was computed then the null hypothesis would be true and if the result was not significant then you would accept the alternative hypothesis

Three types of visualizations that may be uses for the unique/different types of variables identified in the dataset provided are

* Histogram for continuous data the histogram will help show the distribution of data set is symmetric or skewed, will further bring an understanding on the data ranges, and also identify where most of the values fall
* Categorical data can be plotted using a pie chart to show distribution
* Box Plot can be used to plot for discrete data and can be used to identify outliers in data

The data was compared to the national average values from the FAO and world bank inorder to reduce on the non-sampling error, this is mainly because of a missing consistent procedure on how to deal with common issues such as outliers , missing data and missing causes of the errors,The comparison between the data and the latter would help reduce on the bias