ETW1001 Introduction to Statistical Analysis

Assignment 2

Semester 1 2021

A. How it works

- This assignment will be undertaken in small groups, involving analysis of a set of data using the techniques you learned in this unit.
- The final product will be a **recording** of short group presentation due in Week 11.
- Groups will be formed by tutors by merging two pairs that you worked for assignment 1. There will be 3-4 members to each group. Please discuss with your tutor if you have any problem with grouping.
- The assignment is worth 20% of your final mark.
- The assignment is assessed based on the quality and content of your presentation slides (PowerPoint or equivalent) and your oral presentation in the recording.
- All group members must contribute to the oral presentation. There will also be opportunity to give feedback on the contributions of other members of your group, and this feedback will be taken into account when allocating the final mark for this assessment.

B. The Topic

You are to undertake a small investigation of some data from households in Africa, to learn something about the social and economic conditions these households face. The data set comprises the results of a household survey undertaken in 2014 of more than 1,700 poor, rural households in Kenya, Uganda and Tanzania. These households are all in rural villages and small farms, relying on their small piece of land for most of their food, income and daily needs.

There are 3 choices for a topic to study.

Topic 1: Household Crop production

Poor, rural households rely on production of food crops for most of their food needs, and also to earn a little income to buy more food and other essentials. You are to investigate the total production of crops among these households, looking at the following questions:

- What are the characteristics of the households in this study? What indicators are there of poverty among households?
- What are the characteristics of the farms these households live on? What do they produce? How much land do they have?
- Are households producing enough crops to meet their daily food needs?
- Does having more land mean households produce more food?
- What is the effect of household composition on crop production? Does having more children mean less is produced? Or more elderly? Or working age population?
- What are the implications of your findings for priorities in programs to improve the livelihoods of poor, rural households in Africa?

Topic 2: The experience of food shortages

- What are the characteristics of the households in this study? What indicators are there of the level of poverty among households?
- What are the characteristics of the farms these households live on? What do they produce? How much land do they have?
- Are households experiencing food shortages? How often?
- Do households that are producing more crops experience less food shortages?
- Are wealthier households (with more land, better houses) less vulnerable to food shortages?
- What is the effect of household composition on the experience of food shortages? Does having more children mean there are more shortages? Or more elderly? Or working age population?
- What are the implications of your findings for priorities in programs to improve the food security of poor, rural households in Africa?

Topic 3: Children and Schooling

- What are the characteristics of the households in this study? What indicators are there of the level of poverty among households?
- What are the characteristics of the farms these households live on? What do they produce? How much land do they have?
- Are school-aged children attending school?
- Are households experiencing food shortages? How often?
- How does the education level of the household head affect attendance at school?
- Are children from wealthier households (with more land, better houses) attending school more?
- What is the effect of household composition on attendance at school? Does having more children mean attendance is better? Or more elderly? Or working age population?
- What are the implications of your findings for priorities in programs to improve education for poor, rural households in Africa?

C. What to do?

- Choose a topic.
- Download the spreadsheet file of the data. Use a 'random number generation' from data analysis in Excel to randomly select 1,400 households as the sample to use in your analysis.
- Looking at the list of variables in the data set, choose some variables that describe the characteristics of the households and their farms. Prepare a brief summary using percentages, summary measures, histograms, etc.
- Given your topic, identify the relevant "outcome" variable(s). Describe the characteristics of the sample for this variable.
- Perform some cross-tabulations of this variable with some of the other variables that might be relevant to the questions given above.
- Estimate a multiple linear regression model to try and address some of the questions.

- After interpreting results, draw brief implication for development programs.

D. The Final Product

- A 15-minute recording showing the results of your analysis. Your submission should include 2 files (powerpoint for slides, and excel file that you worked on).
- The link of your recording should be inserted in the last slide.
- An instruction to record your presentation is prepared in a separate file in Moodle.
- **All group members** must appear in the camera and participate in presentation.
- One member of your group should upload the files, then all other members must click 'submit' button to accept that the submission is done as a group.

E. Assessment Criteria

There are three components to how we will assess your presentation.

1. **Content:**
- Your analysis should include a range of techniques that have been covered in this Unit.
- We will look for a good understanding and interpretation of the techniques that you use. The choice of techniques needs to be appropriate for the type of data and questions of interest.
- We will look for quality, not quantity. Do not report many, many results. Concentrate on reporting a few things clearly and well, but showing a variety of techniques.

2. **Presentation:**
- The presentation should follow a logical flow from introducing the issues, to explaining the analysis, discussing the results and drawing implications.
- Your presentation slides should be clear, readable and well laid out.

3. **Participation:**
- A portion of your mark will be allocated to how the assessment of your peers on two things: how much you contributed to the group project, and the extent to which you were a good team person.

  For further information of peer-review survey, please refer to the 'peer evaluation instruction' document.

  N.B. If your group experiences major difficulties working together on the project, please contact your tutor discuss the situation. Your argument must be backed up by some evidence. Do not leave it too late to deal with problems.

For any issues regarding attending your presentation, you must contact your tutor as soon as possible.