

University of Fort Hare

Supplementary Examinations

January 2019

AGE 406 / 506 / 604

Research Methods in Agricultural Economics

Time: 3 Hours

Marks: 100

This paper consists of **three** pages, excluding the cover page

Internal Examiner:
Prof M Aliber

External Examiner:
Mrs CL Muchopa

Instructions:

Answer ALL the questions
Note the different marks allocations between questions.

QUESTION 1 (40 Marks)

Suppose you have decided to pursue a research project of which the title is, "Men's and women's livestock ownership patterns in Ganda village".

- a) State an appropriate main objective for such a study. (6)
- b) State two appropriate specific objectives for such a study. (8)
- c) Differentiate between a *longitudinal* (time series) study and a *cross-sectional* research design, and state and motivate which one you would choose for the above-mentioned study. (6)
- d) Suppose you wish to conduct a survey as part of your study, therefore you need some kind of strategy for deciding who to interview. A particular question is whether you should conduct a sample survey or conduct a census survey. Explain:
 - the difference between the two
 - the advantages and disadvantages of each, and
 - how you would decide which one to employ(15)
- e) In addition to the survey mentioned above, name at least one other kind of fieldwork activity you might include in your study, and explain why. (5)

QUESTION 2 (20 Marks)

- a) In the context of a research project, for what reasons is it important to conduct a literature review? (10)
- b) What errors of context are most often made in a Literature Review? Give examples. (5)
- c) Referring again to the study mentioned in Question 1, explain whether or not your literature review would be confined to other studies based in Ganda village, and if not, then to what geographical area. (5)

QUESTION 3 (15 Marks)

- a) Make up an example of a research project in which you might rely only on *Secondary Data*, and explain where the data might come from. (7)
- b) What are the advantages and disadvantages of using random sampling rather than non-probability sampling? (8)

QUESTION 4 (25 Marks)

Consider the following data from the 1971 census of commercial agriculture:

| Obs | District | Farms | Workers Regular | Workers Casual/ Seasonal | Workers Total | Hectares Irrigated |
|-----|----------------|--------|-----------------|--------------------------|---------------|--------------------|
| 1 | Amersfoort | 206 | 1 922 | 3 021 | 4 943 | 217 |
| 2 | Balfour | 510 | 4 623 | 4 449 | 9 072 | 1 744 |
| 3 | Barberton | 341 | | 6 297 | 6 297 | 32 756 |
| 4 | Belfast | 422 | 2 479 | 3 120 | 5 599 | 4 258 |
| 5 | Carolina | 404 | 3 473 | 3 102 | 6 575 | 4 429 |
| 6 | Delmas | 465 | 5 069 | 5 698 | 0 | 1 405 |
| 7 | Ermelo | 770 | 10 717 | 9 177 | 19 894 | 2 520 |
| 8 | Groblersdal | 653 | 5 700 | 11 697 | 17 397 | 26 909 |
| 9 | Lydenburg | 466 | 3 586 | 4 746 | 8 332 | 17 985 |
| 10 | Middelburg | 803 | 5 742 | 8 861 | 14 603 | 5 913 |
| 11 | Nelspruit | 247 | 5 364 | 1 360 | 6 724 | 9 444 |
| 12 | Pelgrimsrus | 168 | 8 281 | 1 743 | 10 024 | 6 251 |
| 13 | Piet Retief | 0 | 9 669 | 4 745 | 14 414 | 10 331 |
| 14 | Standerton | 24 818 | 8 986 | 9 837 | 501 | 2 461 |
| 15 | Volksrust | 252 | 2 010 | 2 962 | 4 972 | 731 |
| 16 | Wakkerstroom | 178 | 1 733 | 1 918 | 3 651 | 797 |
| 17 | Waterval-Boven | 127 | 761 | 618 | 1 379 | 2 552 |
| 18 | Witbank | 372 | 3 104 | 4 260 | 7 364 | 2 186 |
| 19 | Witrivier | 246 | 4 142 | 1 541 | 5 683 | 7 037 |

- a) You wish to understand the relationship between employment and irrigation. The first step is to look at your dataset and determine whether there are possibly any problems with it. Do you observe any problems? Please describe each and every problem you find, mentioning the observation number, and explain what you would do about each one. (10)
- b) After adjusting/cleaning your data in a reasonable fashion, you calculate a table of Pearson correlation coefficients (ρ =‘rho’) for all of the numerical fields.

| | <i>Farms</i> | <i>Workers Regular</i> | <i>Workers Cas/Seas</i> | <i>Workers Total</i> | <i>HA Irrigated</i> |
|------------------|--------------|------------------------|-------------------------|----------------------|---------------------|
| Farms | 1.000 | | | | |
| Workers Regular | 0.484 | 1.000 | | | |
| Workers Cas/Seas | 0.840 | 0.482 | 1.000 | | |
| Workers Total | 0.779 | 0.846 | 0.875 | 1.000 | |
| HA Irrigated | 0.221 | -0.008 | 0.463 | 0.278 | 1.000 |

- i. Why are there no values in the upper-right triangle? (2)
- ii. What can you say about the relationship between numbers of casual/seasonal workers and numbers of farms? (4)

- iii. Given that the number of farms tends to decline over time, what does your answer to (ii) suggest about likely trends in the numbers of casual/seasonal workers? (4)
- c) Make a scatter plot of your (cleaned) data, specifically of the 'HA Irrigated' variable and the 'Workers Casual/Seasonal' variables. (Note: the scatter plot is not expected to be accurate or beautiful; Hint: consider which variable should be plotted on which axis.) What do you observe about the nature of the relationship between the two variables? (5)

*** END ***