UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER 2007

TITLE OF PAPER : RESEARCH METHODS

COURSE CODE : ST332

TIME ALLOWED : 2 (TWO) HOURS

REQUIRMENTS : NONE

INSTRUCTIONS : ANSWER <u>BOTH</u> QUESTIONS IN PART ONE
AND ANY <u>THREE</u> QUESTIONS IN PART TWO.
ALL QUESTIONS CARRY EQUAL MARKS.

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN
GRANTED BY THE INVIGILATOR**

PART ONE
ANSWER BOTH QUESTIONS

QUESTION ONE.   [4 x 5 = 20 marks]

For each of the following problems, three possible conclusions are given. Choose the most correct one and justify your choice:

1.1   A factory manager is concerned about the daily number of absentees. A system of monitoring attendance is introduced and thereafter the number of absentees is recorded every day. Finding that the number of absentees is low, the manger concludes that the monitoring system is a success.

(a)   The manager's conclusion is correct.
(b)   The manager's conclusion is not acceptable, because the manager did not use any kind of random sampling.
(c)   The manager's conclusion is not justified, because he ignored the absentee rate of the period before the monitoring system was introduced.

1.2   A comparison of rural communities which have relatively few young men and peri-urban communities with their large numbers of young men, reveals that the peri-urban communities tend to have a higher incidence of alcoholism than the rural ones. One researcher uses this finding to demonstrate that young men are more likely than other groups within the community to abuse alcohol.

(a)   The researcher correctly used the results of comparison study.
(b)   The researcher is right because that more young man live in the peri-urban area and have the easy accessibility of drink.
(c)   The researcher has made an error of drawing conclusions about individuals when the comparison study examines groups of people in two communities.

1.3   In one study, the Educational Testing Services needed a representative sample of college students. To draw the sample, they first divided up the population of all colleges and universities into several relatively homogenous groups (one group consisted of all public universities with 25,000 or more students; another group consisted of all private four-year colleges with 1,000 or fewer students; and so on). Then, they used their judgment to choose two representative colleges from each group. That created a sample of colleges. Each college in the sample was then asked to pick a random sample of 100 students.

(a)   This sample was drawn using two-stage cluster sampling.
(b)   This sample was drawn using stratified sampling.
(c)   This sample was drawn using non-probability sampling.

1.4   The age distribution of all students in the Faculty of Social Science is unknown. Suppose we are interested in finding the proportion of students over age 21. However, in a simple random sample of 200 students, it turned out the 120 were over the age of 21. Therefore, we know that

(a)   60% is the value of the parameter.
(b)   60% is the value of the statistic.
(c)   60% is the estimate of the statistic.

1.4   A researcher is studying the relationship between the two variables; the "faculty of students" and their "performance at the year-end examination". Assume that the first variable uses 1 for Science faculty, 2 for Agriculture faculty, 3 for Commerce faculty, etc. and performances are measured by the average marks of all the courses taken at the year-end examination. The researcher found a correlation coefficient of -0.87 between these two variables. With this result, the researcher concluded that

(a)   he made an error in computing correlation coefficient.

(b)   those students with a low numerical code for faculty would tend to have high average marks at the year-end examination.

(c)   these two variables are not suitable for computing a correlation coefficient.

QUESTION TWO.   [6 + 8 + 3 + 3 marks]

Suppose that a researcher would like to investigate the health condition of orphans aged below 10 years in the capital city, using a probability sampling. The main purpose of the study is to estimate the proportion of orphans with HIV positive. It is unlikely that a list of all these orphans in the capital city exists and so she must needs to use a complex probability sampling. Therefore, the researcher chooses five townships, excluding the commercial and industrial districts, using a simple random sampling from all existing townships as per the municipal council definition. From each of the five townships selected, she obtains a list of "blocks", a smaller unit in terms of geographical area. She uses again simple random sampling to select 10 blocks from each selected townships.

At block level, the researcher compiles, with the help of some local residences, a list of all orphans under ten years of age living in each of those selected blocks. She decided to select 10 orphans randomly from each blocks. Based on the above facts, answer the following questions:

2.1   State the following for the above study:
  (a)   Population and its size.
  (b)   Sampling methods and sample size.
  (c)   Parameter and Statistic.

2.2   (a)   State the sampling frame(s) used in the above survey in each stage of the survey.

       (b)   If your answer in 2.1(b) is Simple Random Sampling, explain the suitability of the sampling method. If not, then explain why it was not suitable in this situation.

2.3   You know that the survey design excluded the commercial and industrial districts of the capital city, explain whether this exclusion have any effect on the validity of the survey results.

2.4   Suppose you are asked to do the same investigation, which sampling method will you choose? Explain your answer.

PART TWO
ANSWER ANY THREE QUESTIONS

QUESTION THREE.   [8 + 12 marks]

3.1   Selecting and formulating a research problem is one of the most important aspects of doing research in any field. Discuss the appropriateness of the above statement.

3.2   Identify and discuss the potential sources of research problem.

QUESTION FOUR.   [12 + 8 marks]

4.1   State the purpose of survey research. Describe the four categories of surveys classified according to their scope and subject matter.

4.2   Discuss the advantages and disadvantages of the interview as a data-gathering technique.

QUESTION FIVE.   [12 + 8 marks]

5.1   Discuss the principles that the researchers should keep in mind when interpreting results of their studies.

5.2   List all the important components, in proper sequences, of writing a research report.

QUESTION SIX.   [12 + 8 marks]

6.1   State three probability sampling techniques and three non-probability sampling techniques. Pick any research survey and discuss the suitability of those stated sampling techniques.

6.2   Discuss the common weaknesses in research proposal.

QUESTION SEVEN.   [20 marks]

Discuss the differences between the following pairs of terms:

7.1   Experimental Research and Descriptive Research.
7.2   Stratified Sampling and Cluster Sampling.
7.3   Validity and Reliability of Questionnaires.
7.4   Data Analysis and Data Organization.
7.5   Results of the Study and Conclusions of the Study.