

The
Management
University
of Africa



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POSTGRADUATE UNIVERSITY EXAMINATIONS

SCHOOL OF MANAGEMENT AND LEADERSHIP

**DEGREE OF DOCTOR OF PHILOSOPHY IN
MANAGEMENT AND LEADERSHIP**

DML 902: ADVANCED RESEARCH METHODOLOGY

DATE: 7TH APRIL 2026

DURATION: 3 HOURS

MAXIMUM MARKS: 50

INSTRUCTIONS:

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **FOUR (4)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **TWO** questions.
6. Question **ONE** carries **30 MARKS** and the rest carry **10 MARKS** each.
7. **Write all your answers in the Examination answer booklet provided.**

QUESTION ONE

Read the Case Study below carefully and answer the questions that follow:

UNIVERSITY RESEARCH OUTPUT AND SOCIETAL IMPACT

In the contemporary knowledge-driven economy, universities are increasingly expected not only to generate knowledge but also to translate research outputs into tangible societal, economic, and technological value. Stakeholders such as industry players, government agencies, civil society organizations, and communities have heightened expectations regarding the relevance, applicability, and accessibility of university research. The term “industry” in this context extends beyond manufacturing firms to include service organizations, public institutions, agricultural enterprises, and development partners that utilize research outputs.

Empirical studies indicate that universities that maintain strong partnerships with external stakeholders tend to demonstrate superior performance in innovation, graduate employability, and societal impact. Knowledge transfer mechanisms such as collaborative research, consultancy, joint publications, and technology commercialization have become central to university competitiveness. Reports by international bodies emphasize that sustainable research ecosystems require mutual trust, aligned incentives, and institutional support structures to facilitate collaboration. However, universities in developing economies often face structural and resource-related constraints that limit effective engagement with industry. Heavy teaching workloads, limited research funding, weak incentive systems, and inadequate research infrastructure have contributed to declining research productivity and publication output among academic staff. As student enrolments expand, faculty members increasingly prioritize teaching and income-generating activities at the expense of rigorous research.

Performance measurement in universities has also evolved, moving beyond traditional financial indicators to include non-financial dimensions such as learning and growth, internal processes, stakeholder satisfaction, and innovation outcomes. Strategic management theories suggest that universities can achieve sustained competitive advantage by leveraging unique internal resources, capabilities, and strategic positioning within their environments. Nonetheless, there remains limited empirical evidence on how research–industry linkages influence overall university performance in the African context, particularly using integrated performance measurement frameworks.

Required:

- a) Drawing from the case study, critically analyze the conceptual gaps, methodological gaps, and contextual gaps that could justify the formulation of a research problem.

(9 Marks)

- b) Identify and clearly explain the key study variables that could form the basis of a conceptual framework derived from the case study. Using these variables, describe a possible conceptual model and explain the expected relationships among the variables.

(8 Marks)

- c) Using the variables identified in Question 1(b), formulate:

- i. Three specific research objectives **(3**

Marks)

- ii.* Three corresponding null hypotheses. **(3**

Marks)

- d) Descriptive survey designs are widely applied in social science research. Distinguish three major types of descriptive survey designs, and justify the most appropriate descriptive survey design for investigating the research problem presented in the case study.

(7 Marks)

QUESTION TWO

- a) You are conducting a nationwide study on the performance of small and medium enterprises (SMEs).

- i.** Explain the concept of population homogeneity (2.5 Marks)
- ii.** Discuss how stratified random sampling can be applied to enhance representativeness and precision in such a study. (2.5 Marks)

b) Employee engagement is a critical determinant of organizational commitment and long-term performance. Organizations that invest in employee development, empowerment, and communication tend to experience lower turnover and higher productivity. While prior studies have examined the influence of engagement on commitment independently, limited research has compared the relative effects of different engagement dimensions. This study adopts a cross-sectional survey design and targets medium-sized service firms. Data are collected using structured questionnaires administered to employees.

Required:

Guided by the principles of questionnaire design, construct any five relevant questionnaire items that could be used to collect data for the study. (5 Marks)

QUESTION THREE

An educational researcher seeks to determine whether participation in two different instructional enrichment programmes influences learners' academic outcomes. One programme emphasizes problem-solving and analytical reasoning, while the other focuses on repetition and content recall. The researcher hypothesizes that learners exposed to the problem-solving programme will demonstrate superior academic performance.

Required:

a) Recommend an appropriate statistical test for analyzing this hypothesis and justify your choice. Further, explain the statistical evidence that would guide decision-making regarding the hypothesis. **(3 Marks)**

b) Briefly explain the concepts of qualitative research and quantitative research.

**(2
Marks)**

c) Provide a detailed discussion highlighting the key differences between qualitative and quantitative research approaches.

(5 Marks)

QUESTION FOUR

a) In hypothesis testing, researchers may arrive at either correct or incorrect decisions. Using an illustrative example, analyze situations that lead to:

i. Correct decisions **(2.5
Marks)**

ii. Type I and Type II errors. **(2.5
Marks)**

b) Interpretation of results is a critical component of thesis and dissertation writing. Explain why interpretation demands advanced analytical skills, and discuss the systematic steps involved in effective interpretation of research results.

(5 Marks)