



ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF LAW, BUSINESS INTELLIGENCE AND ECONOMICS

DEPARTMENT OF ECONOMICS, MARKETING AND ENTREPRENEURSHIP

EXAMINATION PAPER

MODULE CODE : MBA522/MSTM516
MODULE TITLE : BUSINESS RESEARCH METHODS
DURATION : 3 Hours
LEVEL : 5.2/5.1

26 SEP 2025

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Use of silent, non-programmable calculators is allowed
3. Answer question number **one (1)** in Section A (Compulsory) and any other **two (2)** questions in Section B.
4. Begin each question on a new page.
5. The number of marks for each question or part question is shown in brackets []
6. Show all workings, where applicable.

SECTION A

Question 1:

Sakarombe, Tshuma and Chagwedera (2025) investigated the optimal Value Added Tax (VAT) rate for Zimbabwe, an economy with limited resources that faces serious economic and developmental issues. The summary of the methods and the findings is given below:

This study uses a quadric regression model to represent the Laffer curve (a theoretical model for optimal tax rate) to estimate the turning point of the VAT-revenue relationship:

$$VAT\ Revenue_t = \alpha + \beta_1 VAT\ Rate_t + \beta_2 TVAT\ Rate_t^2 + \epsilon_t$$

Where:

VAT Revenue_t is total revenue in year t.

VAT Rate_t is the statutory VAT rate.

ϵ_t is the error term.

The optimal VAT rate is estimated where the marginal increase in revenue equals zero, derived from the first derivative of the regression equation.

Regression analysis results: the quadratic Laffer curve model

Variable	Coefficient	Std. Error	t-value	p-value
Intercept (a)	-15.0346	8.491	-1.771	0.098
VAT Rate _t	100.6924	53.649	1.877	0.082
$\beta_2 TVAT\ Rate_t^2$	40.8332	21.774	1.875	0.082

$$R_t = -15.03 + 100.69T_t + 40.83T_t^2$$

Where the revenue maximizing rate is (T^*) is derived as:

$$T^* = \frac{100.69}{40.83} = 1.233 \cong 123\%$$

The coefficients are marginally significant at the 10% level (p-values just above 0.08). R-squared is 0.201. The model explains 20.1% of the variation of tax revenue. F-statistics are 3.522 with a corresponding p-value of 0.0816 implying that not statistically significant at the 5% level, but marginally significant at the 10% level.

- (a) Develop a research topic that best suits this research and justify by a problem statement. [8 marks]
- (b) Using the results presented, interpret the meaning of the following:
- i. Estimated coefficients. [6 marks]
 - ii. R-squared. [2 marks]
- (c) The reviewer of the article believed that the results are unrealistic as the optimal tax rate of 123% may be too high. As a research student, write an advisory note to the authors on how they can respond to the comment. You may include the need to verify the consistency of the research design used. [12 marks]
- (d) Discuss possible recommendations that could have been proffered given that the current tax rate is 15%. [12 marks]

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SECTION B

Question 2

- (a) Describe some of the important research designs used in experimental hypothesis-testing research study. [8 marks]
- (b) Comment on the following sampling designs (consider the sampling technique and its appropriateness):
- (i) An advertising executive suggests that advertising effectiveness be tested in the real world. A one-page ad is placed in a magazine. One-half of the space is used for the ad itself. On the other half, a short questionnaire requests that readers comment on the ad. An incentive will be given for the first thousand responses. [4 marks]
- (ii) A research company obtains a sample for a focus group through organized groups such as church groups, clubs, and schools. The organizations are paid for securing respondents; no individual is directly compensated. [4 marks]
- (iii) A researcher suggests replacing a consumer diary panel with a sample of customers who regularly shop at a supermarket that uses optical scanning equipment. The burden of recording purchases by humans will be replaced by computerized longitudinal data. [4 marks]

Question 3

Design a short questionnaire to determine the factors that influence the frequency of people shopping at a particular supermarket, allowing analysis by gender, age and socio-economic grouping. [20 marks]

Question 4

- (a) Explain the concept of correlation testing. [7 marks]
- (b) Using an example, describe the steps in correlation testing. [13 marks]

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