



ZIMBABWE EZEKIEL GUTI UNIVERSITY

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FACULTY OF LAW, BUSINESS INTELLIGENCE AND ECONOMICS

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DEPARTMENT OF ECONOMICS, MARKETING AND ENTREPRENEURSHIP

EXAMINATION PAPER

MODULE CODE : MBA613  
MODULE TITLE : ENTREPRENEURSHIP BUSINESS STATISTICS

DURATION : 3 Hours

LEVEL : 2.1

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 **three** (3) 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.

**Question 1:****[40 marks]**

1. The Table shows the advertising expenses and net operating profits in a random sample for six pharmacies.

Advert Expenses\$ (x)	1.5	1.0	2.8	0.4	1.3	2.0
Net profit \$ (y)	3.6	2.8	5.4	1.9	2.9	4.3

- a) Write 3 uses of correlation analysis in your organisation **(3 marks)**
- b) Present the findings on a scatter plot and comment **(8 marks)**
- c) Calculate the Pearson's correlation co-efficient and interpret it. **(12 marks)**
- d) Establish the equation of regression y on x. **(10 marks)**
- e) Predict the net profit for an advert that costs \$3.00 **(5 marks)**
- f) Suggest 2 management strategies based on these findings. **(2 marks)**

**SECTION B Answer 3 questions, each question carries [20 marks]****Question 2:**

The speed of cars at a certain section of a curved road are recorded in the table below

Speed (km/h)	10-20	21-25	26-40	41-60
Number of cars	11	20	15	10

- a) Present the data on a frequency density graph.
- b) Calculate and interpret (i) mean  
(ii) mode  
(iii) median  
(iv) standard deviation

**[20 marks]**

**Question 3:**

Differentiate between nominal, ordinal, interval, and ratio data. Provide a business-related example for each type and explain how understanding these types of data assists in statistical analysis.

[20 marks]

**Question 4:**

Describe random, stratified, and cluster sampling methods. Discuss the advantages and disadvantages of each method, providing a business scenario for each.

[20 marks]

**Question 5:**

An estate agent records the size (in square meters) and the asking price (in £ thousands) for a sample of 8 apartments in a city.

[20 marks]

**Data:**

Size (m <sup>2</sup> )	45	62	58	81	73	55	65	70
Price (£k)	225	320	290	470	390	260	350	415

a) Calculate the covariance between property size and price.

(5 marks)

b) Using the regression line  $\hat{y} = 50 + 5x^*$ , calculate the predicted price for a 60m<sup>2</sup> apartment and find the residual for the actual 62m<sup>2</sup> apartment which sold for £320k.

(5 marks)

c) The agent finds another apartment that is 90m<sup>2</sup>. Explain why it would be inappropriate to use this model to predict its price.

(3 marks)

d) A colleague suggests that correlation implies causation and says "This proves that increasing your apartment's size will always cause its price to go up." Critically evaluate this statement.

(7 marks)

and  
6/1