

Department of Public Administration, University of Karachi

First Year Morning SBM- 332 Sport Business Statistics

Max Marks: 25

Deadline: 1st Nov' 2024

Instructions

- Make sure to read each question thoroughly to understand what is being asked.
- For statistical calculations: use the appropriate formulas, for graphs: label all axes properly and mark the class intervals and frequencies clearly, for questions involving interpretation: provide a clear and concise explanation
- Ensure your name and roll number are written at the top of the first page.
- All assignments must be hand written.

Plagiarism Warning

All work submitted must be your own. Plagiarism will result in disciplinary action.

Section A: Theoretical Questions

1. Introduction to Sport Business and Statistical Terms

- a. Define "Sport Business Statistics" and explain how it is applied in the sport industry.
- b. Differentiate between descriptive and inferential statistics. Provide sport-related examples for each.

2. Types of Data & Measurement Scales

- a. Explain the four types of measurement scales (nominal, ordinal, interval, and ratio). Give an example from the sports industry for each scale.
- b. Distinguish between qualitative and quantitative data with examples from a sports business perspective.

3. Measures of Central Tendency

- a. Define mean, median, and mode. In what sport business scenarios might each measure be more appropriate?
- b. Why is the median often preferred over the mean in highly skewed distributions in sports data?

4. Measures of Dispersion

- a. Explain the importance of understanding data variability in sport business statistics.
- b. Define range, variance, and standard deviation. How do these measures help in analyzing team performance variability?

Section B: Numerical Problems

5. Frequency Distribution, Histogram, and Frequency Polygon

The following data shows the revenue (in millions of dollars) generated by a sports team in 30 events:

250, 320, 400, 280, 450, 370, 390, 410, 460, 480, 500, 350, 330, 340, 420, 310, 440, 290, 470, 300, 360, 410, 430, 390, 510, 520, 490, 280, 450, 430.

- Construct a frequency distribution table using the data above with class intervals of size 50.
- Construct class boundaries and mid points
- Draw a histogram and a frequency polygon to represent the distribution.
- Calculate the mean, variance and standard deviation of the revenue.
- Interpret each of these measures in the context of the team's revenue generation.

6. Quartiles - Training Hours of Athletes

A coach tracked the number of training hours put in by 8 athletes during a training camp:

18, 22, 20, 25, 30, 28, 24, 26.

- Find the first quartile (Q1) and third quartile (Q3) of training hours.
- Interpret the training habits of the athletes based on these quartiles.

7. Percentiles - Ticket Sales Data

The number of tickets sold by 20 sales agents during a football championship is as follows:

180, 220, 250, 190, 230, 240, 210, 200, 260, 270, 290, 280, 300, 310, 320, 330, 340, 360, 350, 370.

- Calculate the 30th, 60th, and 80th percentiles of ticket sales.
- What does the 30th percentile tell you about the sales performance of the agents?

8. Ungrouped Raw Data of Player Salaries in a Basketball Team

The annual salaries (in thousands of dollars) of 10 players in a basketball team are as follows:

850, 920, 780, 860, 950, 880, 890, 910, 920, 880.

- Calculate the mean, median, and mode of the player salaries.
- Find the variance and standard deviation of the salaries.
- Interpret the results of each measure in terms of salary distribution in the team.