

ASSIGNMENT

Comparing Data Using Mean (μ) and Standard Deviation

Given Data

$$\mu = 55$$

Data Sets: 04, 04, 048, 10, 04, 15

Introduction

In statistics, the mean (μ) represents the average value of a dataset, while the spread of the data is measured using standard deviation. When comparing datasets, the “better” one is usually the dataset whose values are more consistent and closer to the mean. This helps in understanding stability and reliability of the data.

1. Understanding the Given Data

The mean is given as 55. The dataset values are small and vary significantly from each other. Some values are very low (like 04), while others are relatively higher (like 48 and 15). This indicates that the data is not evenly distributed around the mean and may have high variation.

2. Concept of Consistency

A dataset is considered better when its values are closer to the mean and have less variation. If the values are spread out too much, it indicates inconsistency. In real-life situations like student marks or performance analysis, consistent data is more reliable than highly fluctuating data.

3. Checking Deviation from Mean

Each value in the dataset is far from the mean value of 55.

For example:

04 is very far from 55

10 and 15 are also far

48 is closer but still not equal to the mean

This shows that most values deviate significantly from the mean, indicating high dispersion.

4. Interpretation of the Data

Since the values are not clustered around the mean, the dataset is not balanced. A better dataset would have values like 50, 55, 60, etc., which are close to the mean. Here, the values are mostly lower than the mean, showing imbalance and lack of uniformity.

5. Conclusion

The given dataset is not ideal because:

Values are far from the mean

There is high variation

Data is not consistent

A better dataset would be one where values are closer to 55 with less variation. Hence, this dataset is not better compared to a more uniformly distributed dataset.