Descriptive Statistics

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Course

Date

**Descriptive Statistics**

**Question 1**

We need to study the variation of data collection because the standard deviation of various data collection comes from different samples, proportions, and populations. On the other hand, the average itself is inadequate simply because the average will only give one value representing the entire data in a population (Mishra et al., 2019). In addition to the measure of central tendency, we require how the data is dispersed around the mean, and we are a force to used different units of measurements (Zhao et al., 2020). For this reason, the average is not adequate because the unit used in measurements is different, so there is a need to use another parameter where the units do not necessarily matter.

There is a significant difference between range, standard deviation, and a box and whisker plot measuring data variation. The range represents the difference between the largest and smallest values of the data presented. Standard deviation is the measure of how far the data points are spread together, while box and whisker plot is a visual representation with concern to how much data is there and how the data is spread. All these measures are similar in the aspect that they measure the spread of data.

**Question 2**

The coefficient of variation is essential in situations where we have a comparison of variables of different units. In a nutshell, the coefficient of data assists us in understanding the concept of standard deviation in the context of the mean of data (Abdi, 2010). When we say that the coefficient of variation has no units, we mean that it represents the ratio of standard deviation by mean, and ratios do not have units. Without units, it assists in comparison between distributions of values with no comparable scale of measurements. Relative size is vital in giving reliable conclusions about the data variability.

References

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