

Characteristics or Essentials of a Good Average

1. **Good Average should be based on all the observations:** Only those averages, where all the data are used give best result, whereas the averages which use less data are not representative of the whole group.
2. **Good Average should not be unduly affected by extreme value:** No term should affect the average too much. If one or two very small or very large items unduly affect the average, then the average cannot be really typical of the entire group. Thus extreme terms may distort the average and reduce its usefulness. As if in example given, we are to find average of 6, 8, 10, we get mean as 8, but if another item, having value 200 is taken, the average comes out to be 56. Hence it can't be called a good average as with only one new item, it has increased from 8 to 56.
3. **Good Average should be rigidly defined:** There should be no confusion about the meaning or description of an average. It must have a rigid or to the point definition.
4. **Good Average should be easy to calculate and simple to understand:** If the calculation of an average involves too much mathematical processes, it will not be easily understood and its use will be limited only to a limited number of persons. This average cannot be a popular average. It should be easy to understand.
5. **Good Average should be capable of further algebraic treatment:** Measures of central tendency are used in many other techniques of statistical analysis like measures of Dispersion, Correlation etc.
6. **Good Average should be found by graphic methods also:** That average is considered a good average which can be found by arithmetic as well as by graphic method.
7. **Good Average should not be affected by variations of sampling:** A good average will be least affected by sampling fluctuations. If a few samples are taken from the same universe, the average should be such as has the least variation in values derived in the individual samples. The results obtained will be considered to be the true representative of the universe in this case.
8. **Good Average should not be affected by skewness:** We will not call an average good one if it is affected by skewness present in the distribution.
9. **Good Average should be popular:** A popular average which is known to common people will be more useful as a simple person will be able to understand it. Otherwise its use will be limited to higher section of people only.
10. **Good average should have a Clear and Stable Definition:** A good average should have a clear and stable definition.

11. **Good average should be Absolute Number:** A good average should be absolute in character.
12. **Good average should be Possible to find central Tendency for open end class intervals:** In many distributions' ends are open. So, a good average is one which can be calculated even in open end class intervals.

8.0 MERITS AND DEMERITS OF STANDARD DEVIATION

8.1 Merits of Standard Deviation

- Standard deviation is rigidly defined and its value is always definite.
- It is based on all the observation of the data.
- It is amenable to algebraic treatment and possesses many mathematical properties. It is on account of these properties that standard deviation is used in many advanced studies.
- It is less affected by the fluctuations of sampling than most other measures of dispersion.
- The squaring of deviations makes them positive and the difficulty about algebraic signs which was experienced in case of mean deviation is not found here.

8.2 Demerits of Standard Deviation

- Standard deviation is not easy to calculate, nor is it easily understood. In any case it is more cumbersome in its calculation than either quartile deviation or mean deviation.
- It gives more weight to extreme items and less to those which are near the mean, because the squares of the deviations, which are big in size, would be proportionately greater than the squares of those deviations which are comparatively small. Thus, deviation 2 and 8 are in the ratio of 1:4 but their square i.e, 4 and 64 would be in the ratio of 1:16.