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Question :- Write Notes on - TESTING THE STM SIGNIFICANCE OF MEAN OF RANDOM SAMPLING ?

Definition of "Random sampling"

Random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen. A sample chosen randomly is meant to be an unbiased representation of the total population. If for some reason, the sample does not represent the population, the variation is called a sampling error.

Description :- Random sampling is one of the simplest forms of collecting data from the total population. Under random sampling process. For example, the total workforce in organisations is 300 and to conduct a survey, a sample group of

30 employees is selected to do the survey. In this case, the population is the total number of employees in the company and the sample group of 30 employees is the sample. Each member of the workforce has an equal opportunity of being chosen because all the employees which were chosen to be part of the survey were selected randomly. But, there is always a possibility that the group or the sample does not represent the population as a whole, in that case, any random variation is termed as a sampling error.

An unbiased random samples is important for drawing conclusions. For example when we took out the sample of 30 employees from the total population of 300 employees, there is always a possibility that a researcher might end up picking over 25 men even if the population consists of 200 men and 100 women. Hence, some variations when drawing results can come up, which is known as a sampling (is the fact) error. one of the disadvantages of random sampling is the fact that

if requires a complete list of population. For example, if a company wants to carry o/ out a survey and intends to deploy random sampling, in that case, there should be total number of employees and there is a possibility that all the employees are spread across different regions which make the process of survey little difficult.

Random sampling ensures that results obtained from your sample should approximate what would have been obtained if the entire population has been measured (Shadish et al., 2002). The simplest random sample allows all the units in the population to have an equal chance of being selected.

Statistical Significance :-

Statistical significance refers to the claim that a result from data generated by testing or experimentation is not likely to occur randomly or by chance but is instead likely to be attributable to a specific cause.

Understanding Statistical significance:-

The calculation of statistical significance (significance testing) is subject to a certain degree of error. The researcher must define in advance the probability of a sampling error, which exists in any test that does not include the entire population.

Sample size is an important component of statistical significance in that larger samples are less prone to flukes. Only random, representative samples should be used in significance testing. The level at which one can accept whether an event is statistically significant is known as the significance level.

The opposite of the significance level, calculated as 1 minus the significance level, is the confidence level. It indicates the degree of confidence that the statistical result did not occur by chance or by sampling error. The customary confidence level in many statistical tests is 95 percent, leading to a customary significance level or p-value of 5 percent.