CODE BASICS

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KEY TAKEAWAYS

CHAPTER TITLE | Central Limit Theorem

LECTURE TITLE | Random Sampling & Sample Bias

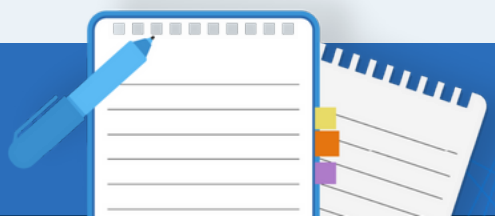
1. **Sample bias** occurs when a sample is **not representative of the population.**

2. **Trial** participants should be **representative of the population.**

3. **Participation bias** occurs when the individuals who choose to participate in a study **differ significantly** from those who do not.

4. **Language bias** is the influence of **language on perception and decision-making,** often leading to skewed interpretations or conclusions.

5. **Survivorship bias** happens when we only **look at the success stories** and **ignore the failures,** leading to a misleading view of reality.



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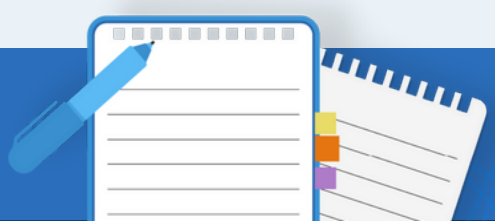
KEY TAKEAWAYS

CHAPTER TITLE | **Central Limit Theorem**

LECTURE TITLE | **The Law of Large Numbers**

1 The **Law of Large Numbers** states that as the **number of trials increases**, the average of the trial result gets **closer to the theoretical or real average**.



KEY TAKEAWAYS

CHAPTER TITLE | **Central Limit Theorem**

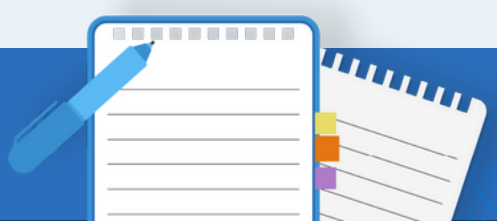
LECTURE TITLE | **Central Limit Theorem, Sampling Distribution**

1. **Central Limit Theorem** states that as the **sample size increases**, the distribution of sample means approaches a **normal distribution**, regardless of the population's original distribution.

2. A **sample distribution** is the distribution calculated from **multiple samples of a population.**

3. For **sample sizes of 30 or more**, sample means and proportions tend to follow **a nearly normal distribution.**

4. **Population distribution** means how a particular characteristic or variable is **spread out** among all the people or units in a population.



KEY TAKEAWAYS

CHAPTER TITLE | **Central Limit Theorem**

LECTURE TITLE | **Standard Error**

1. **Confidence intervals** provide a range of values within which we expect the **true population parameter (like the mean)** to fall, with a certain **level of confidence.**

2. **Confidence Interval Formula:** $\bar{x} \pm z^*$(sample standard deviation)