

Sampling Distribution

Inference: statistic (sample, \bar{x}) --> parameter (population, μ)

CLT: large $n \rightarrow \bar{x} \sim N(\mu, \sigma/\sqrt{n})$ - as n increases, \bar{x} approaches μ

Sample Proportion: mean = p and s.d. = $\sqrt{p(1-p)/n}$

Z-statistic: when $n > 30$, $z = (\bar{x} - \mu) / (\sigma/\sqrt{n}) \rightarrow z$ -table

T-statistic: when $n < 30$, d.f. = $n - 1 \rightarrow t$ -table

Statistical Inference

Inference	Confidence Interval	Tests of Significance
- probability - -> trustworthy?	estimate +/- MoE	H0: "no effect"
- sample --> population	$\bar{x} \pm z \cdot (\sigma/\sqrt{n})$	Ha: what we are testing
- based on sampling distribution	MoE $\downarrow = \sigma \downarrow =$ $n \uparrow =$ confidence \downarrow	Assume H0 --> what is the P of a result as/more extreme than statistic --> reject if $P \leq \alpha$



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