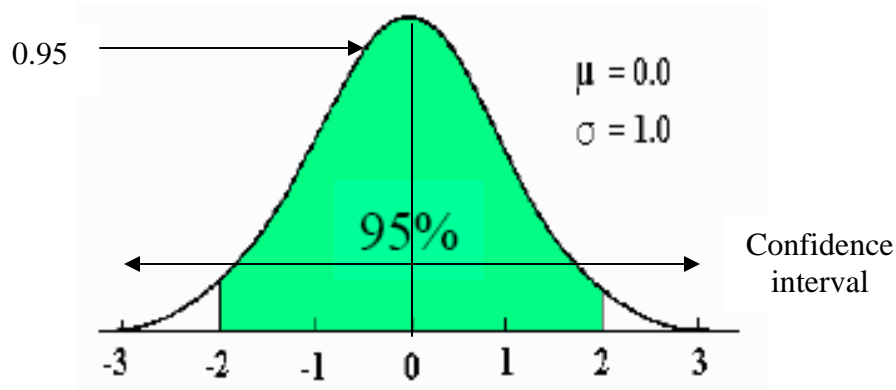


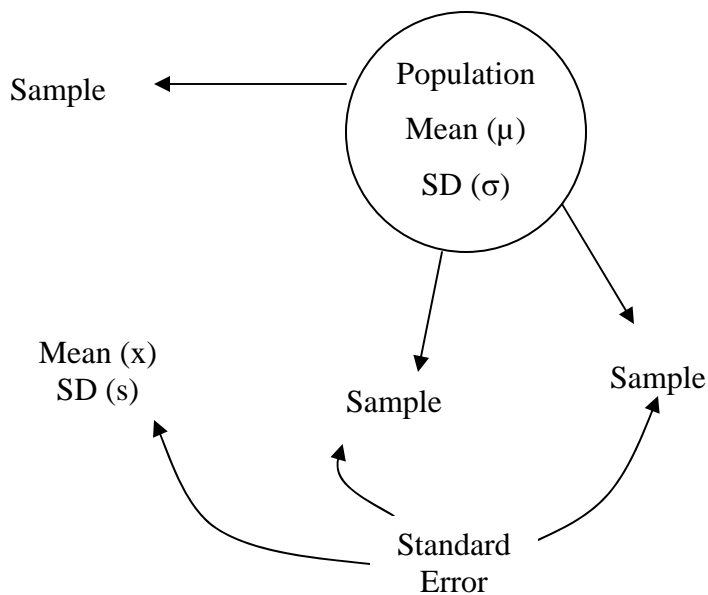
CONFIDENCE INTERVAL

1. Relationship between confidence interval and hypothesis test



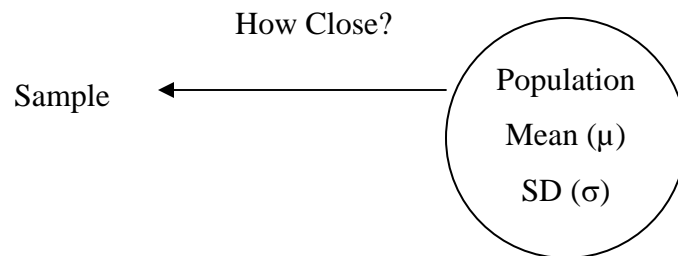
2. Confidence Interval

- Standard Deviation (SD) vs. Standard Error (SE)

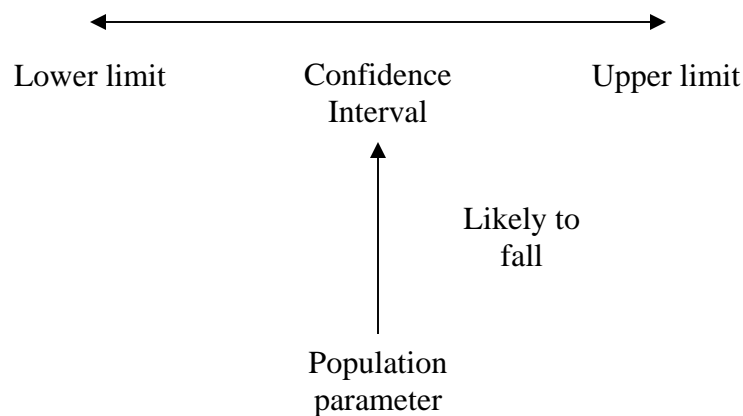


- SD – a measure of the variability of individual observation
- SE – a measure of variability of summary statistics
 - E.g. variability of the sample mean or sample proportion

- SE (SEM) – a special type of standard deviation (the standard deviation of a sample statistics), depend on
 - Standard deviation
 - Sample size
- Sample mean varies from sample to sample (as measured by SE)

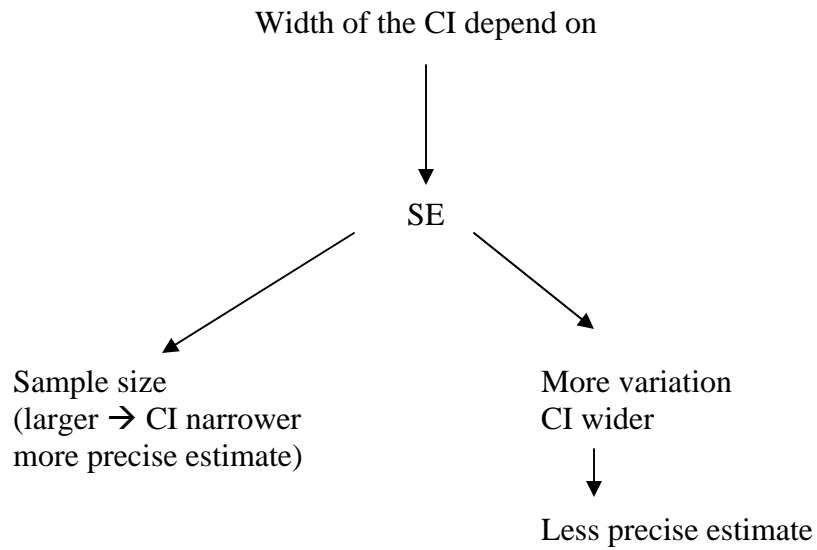


- Sample to sample variation of the statistic (sample statistic)



3. General Comments on Confidence Interval

- As a measure of an estimate of a population parameter (a measure of the precision of a sample statistic)
- Confidence interval = estimate \pm k x (standard error)
- 90% CI, 95% CI, 99% CI
 - 95% CI interpretation – 95% certain that the population parameter lies within its limits.



- Confidence Interval can be calculated:
 - Mean
 - Relative risk
 - Odds ratio
 - Hazards ratio
 - Correlation coefficient
 - Regression coefficient
 - Etc...