



NATIONAL STATISTICAL SERVICE

National Statistical Seminar Series



SUPER SAMPLES

**Presented by
Statistical Clearing House**

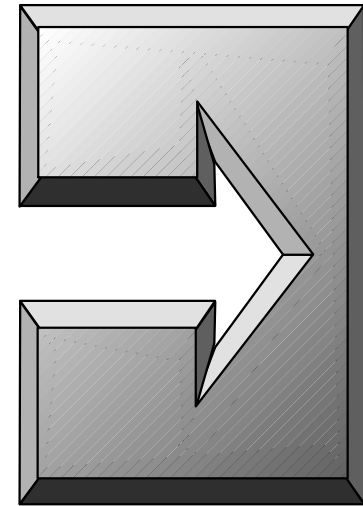
**Today 9am - 9.40am
9.45 - 10 Morning Tea
10 - 10.30 Panel Discussion**

Knibbs Auditorium



Seminar Plan

- **Survey Design Considerations**
- **Census vs Sample**
- **Sample Considerations**
- **Types of Sample Selections**
- **Importance of the Frame**
- **Determining a Sample Size**
- **Non-Sampling Error and Sampling Error**
- **Letters**
- **Further Suggestions**



- **This seminar is aimed at people who are planning or are conducting a sample survey.**
- **This seminar will outline the different types of samples, the importance of an effective frame, factors to take into account in determining a sample size, an overview of sampling error and methods to improve response rates.**
- **Practical examples will be presented.**
- **This seminar is pitched at the beginner level - i.e., those that have little or no experience in determining sample sizes.**

→ **Survey Design Considerations**

→ **The Set up Stage**

→ **Aims and Objectives**

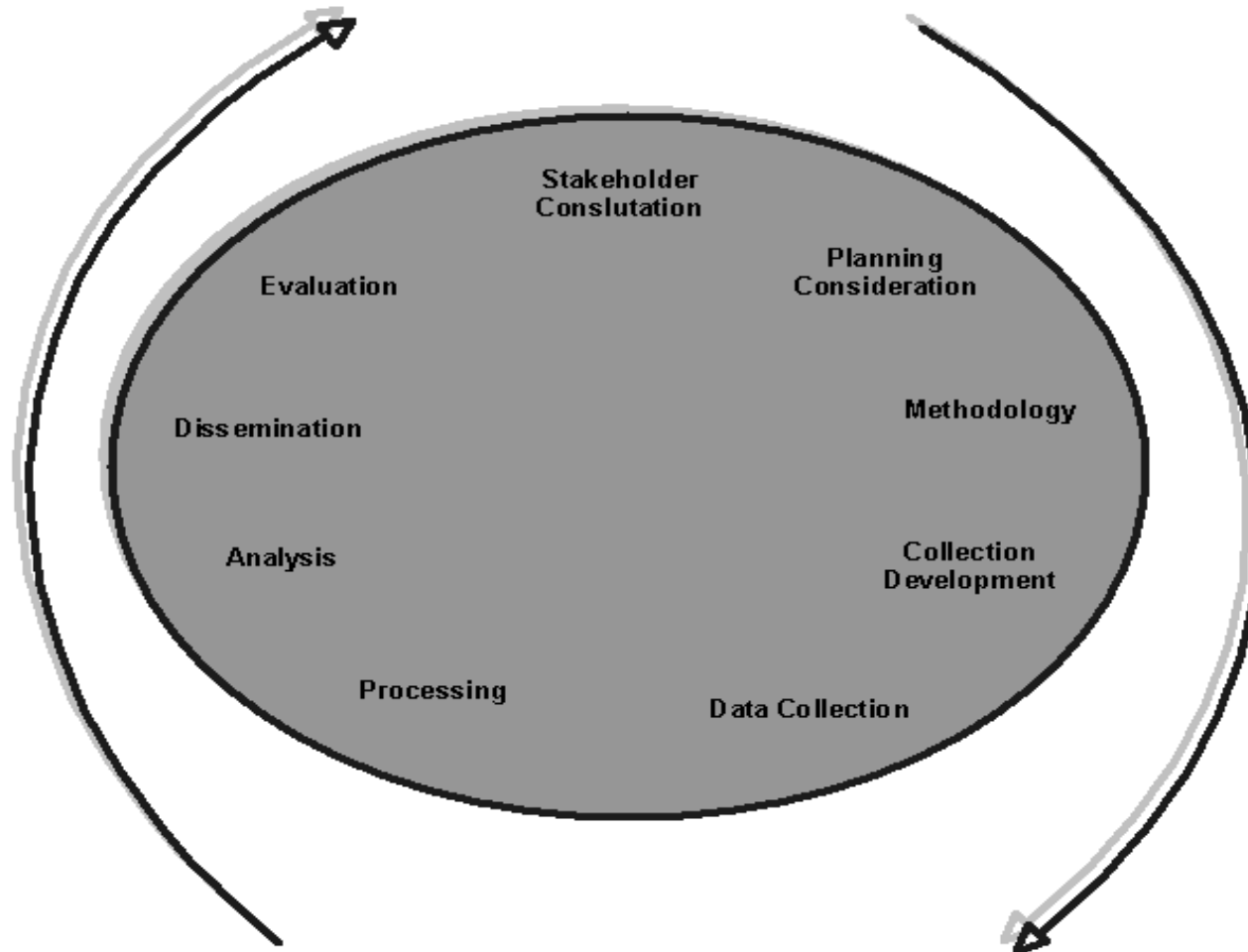
→ **The Target Population**

→ **Preliminary Research**

→ **Establishing Data Requirements**

→ **Financial Constraints**

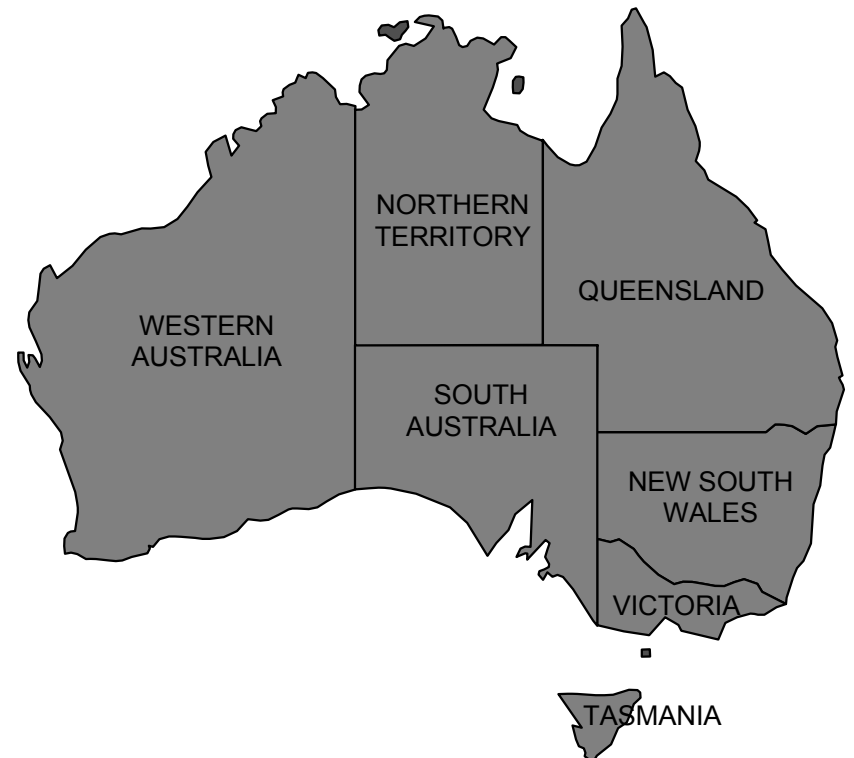
→ The Survey Statistical Cycle



→ **Census =**



→ **Sample =**

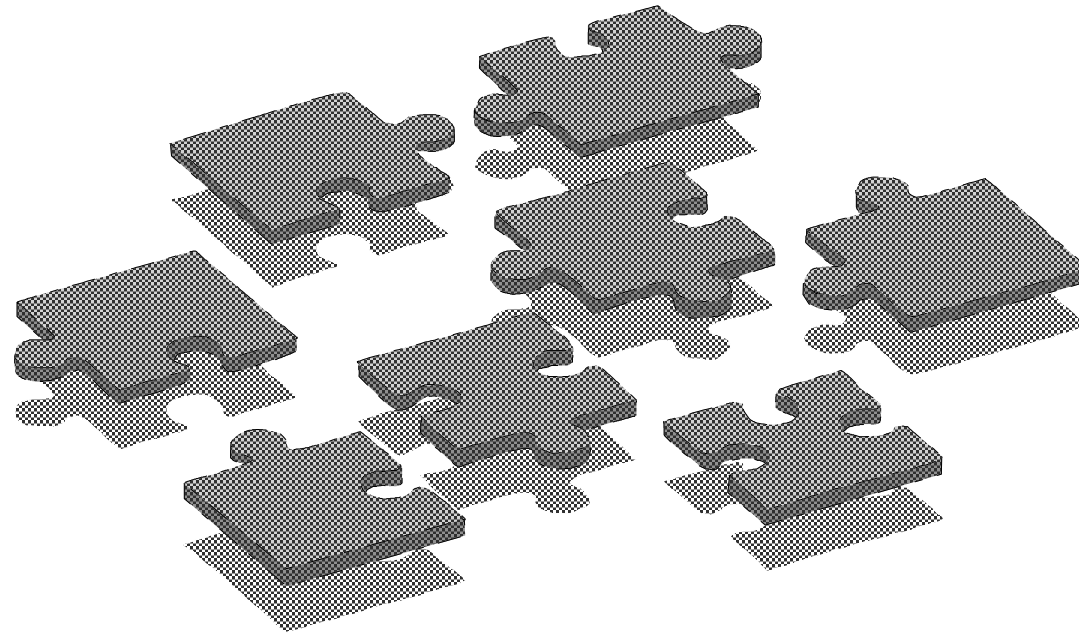


→ Census vs Sample



→ Sample Considerations

→ What is a Sample Design



→ **Types of Sample Selections**

→ **Non- Probability Samples**

→ **Quota**

→ **Convenience**

→ **Judgement**

→ **Types of Sample Selections**

→ **Probability Samples**

→ **Random**

→ **Systematic**

→ **Stratified**

→ **Cluster**

→ **Multi-Stage**

→ Types of Sample Selections

→ Choosing between Probability and Non-probability Samples

P vs NP

→ **Activity...**

→ **Which Sample is Demonstrated?**

→ **Non-probability:**

- **Quota**
- **Convenience**
- **Judgement**

→ **Probability**

- **Random**
- **Systematic**
- **Stratified**
- **Cluster**
- **Multi-Stage**

→ Importance of the Frame

→ Population

→ Frame

→ List Frames

→ Area Frames

→ Importance of the Frame

→ Frame Problems

→ Missing Units

→ Out -of -Scope (or Foreign) Units

→ Duplications

→ Deaths

→ Nils

→ Frame Solutions

→ Determining a Sample Size

Sample Size Calculator

Confidence Level	<input checked="" type="radio"/> 95% <input type="radio"/> 99%	1
Population Size	<input type="text"/>	2
Proportion (p)	<input type="text"/>	3
<input type="radio"/> Confidence Interval: $p \pm$	<input type="text"/>	4
Upper	<input type="text"/>	
Lower	<input type="text"/>	
<input type="radio"/> Standard Error	<input type="text"/>	4
<input checked="" type="radio"/> Relative Standard Error	<input type="text"/> %	
<input type="radio"/> Sample Size	<input type="text"/>	
<input type="button" value="Calculate"/> <input type="button" value="Clear"/>		5

→ **Non-Sampling Error**

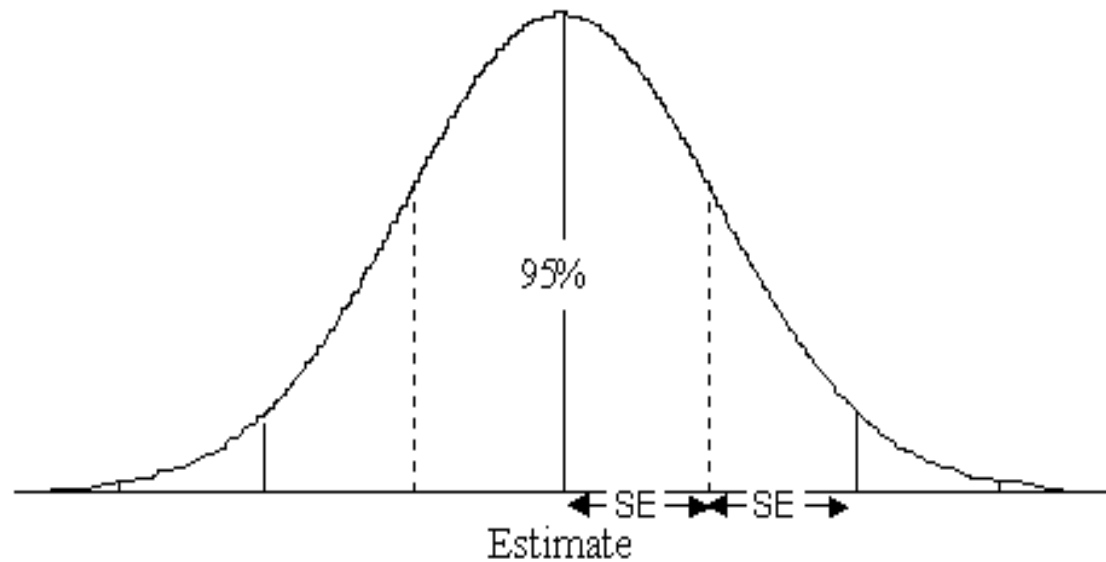
- **Questionnaire**
- **Time period bias**
- **Processing errors**
- **Misinterpretation of results**
- **Interviewer bias**
- **Respondent bias**
- **Non-response bias**

→ **Sampling Error**

- **Sample Size**
- **Sampling Fraction (proportion of units in the sample)**
- **Variability within the population (variable populations give rise to sampling errors)**
- **Sample Design**

→ Sampling Error

$$\text{RSE} = \frac{\text{SE}}{\text{Estimate}} \times 100\%$$



→ Letters

Items to include	Pre-Approach Letter	Cover Letter	Reminder Letter	Thank You Letter
What is the survey about, and what will happen	★	★		
Why it is important/useful	★	★	★	★
When and how they should expect the questionnaire and how will it be sent	★			
Elements which cover authority	★	★	★	★
Keep the letter short (max 1 page)	★	★	★	★
Explain if voluntary	★			
A confidentiality statement	★	★	★	
The due date (indicated in bold)	★	★	★	
Details of who to contact with queries	★	★	★	★
Details on how the letter should be returned		★	★	
Ensure the letter is grammatically correct	★	★	★	★
Second reminder include copy of questionnaire			★	
Stamped reply paid envelope (if relevant)		★	★	
Thankyou for participating letter		★	★	★

→ Further Suggestions

→ Introduction to Sample Surveys

1299.0 - An Introduction to Sample Surveys: A User's Guide, 1999

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1299.01999?OpenDocument>

→ Are there further experiences, ideas, suggestions you'd like to share with the group?

The End

