• How should potential respondents for a survey be selected?

• What methods and sources are available, and when should they be used?

• Aim for a broad understanding, rather than details of sampling theory
Agenda

- Qualitative & Quantitative
- Universe and Coverage
- Sampling Methods
- Sample Size
- Error and Bias
Qualitative Research

“FOCUS GROUPS”

• To test and develop ideas

• For in-depth understanding

• To develop quantitative questionnaire

• Use a guide rather than a structured questionnaire
Quantitative Research

• To **measure** behaviour or opinions

• To **compare** data from different groups, or across time

• For segmentation - define different groups within a population

• Use a structured questionnaire, with limited open-ended content
Aims of Sampling

- To avoid bias
- To sample in a cost-effective manner; minimum error for a given cost
Universe & Coverage

• Need a clear statement of who should be interviewed

• Alternatives:
  - Representative sample - for description and measurement
  - Restrict to key groups only - for diagnostic understanding
  - Booster samples where extra clarity needed
  - Tracking and continuous surveys
Sampling Methods

- Random (Probability)
- Stratification
- Clustered Samples
- Quota
- Random Location
- Random Route
Random Samples

• Need a universe listing, from which individuals can be selected with equal probability

• Statistically ‘pure’, but may not be representative, and not cost-efficient for face-to-face

• Sample controlled because specific individuals are selected
Improvements to Random Sampling?

• Almost never use a pure random sample

• Stratification - to ensure a representative sample

• Clustering - to ensure face-to-face interviewing can be carried out efficiently
Stratification - sorting the universe list first, on one or more key variables, to ensure a representative sample.

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Stratification

- For face-to-face, often stratify sampling points by region and geodemographics.

- If sampling from a database, can stratify by 3 or 4 key characteristics to ensure they are represented correctly.
Clustered Samples

- First sample geographic areas from a stratified list, then select several individuals within each area
- More cost-efficient for face-to-face, especially with callbacks
Quota Samples

• Select a representative set of (large) areas

• Interviewer can select any eligible respondent

• **Controlled** by quotas - simple, multiple, interlocking
Random Location

• Select Census Enumeration Districts from a list stratified by Region and geodemographics

• Interviewer can select any eligible resident within ED

• Controlled by selection of representative areas (and quotas)
Random Route

- Select a representative set of areas
- Identify a starting address in each area
- Devise instructions for route and selection process
- Controlled by selection of specific individuals, and quotas
Sampling Methods - The choice

- Random samples, with stratification and/or clustering are closer to theory, and allow errors to be calculated.

- Quota samples are generally much cheaper, and give flexibility for minority samples.

- Random Location largely avoids interviewer selection and allows close control of design.
Sample Size

Depends on:

- Accuracy required
- Degree of variation within population
- Budget available
- Level of subgroup analysis
Sampling theory shows that with a large number of samples, the sample estimates for a single figure will have a normal distribution

For this distribution:

- Mean = True Population Figure

- $\pm 2$ Standard Deviations contain 95% of all samples
Sample Bias

Due to:

• Incomplete coverage - due to sampling frame, or by choice

• Non-response (to survey or item)

• Non-availability

• Boosted subgroups - need to re-weight
Summary

• Define target population accurately

• Consider appropriate survey design

• Investigate sample sources

• Which sampling method is most suitable?

• Sample size v. Cost & accuracy

• Will sample source or fieldwork problems cause bias?