Lecture Guide

for

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Essentials of Marketing Research 4e

- 297 Slides
- Written by the textbook authors
- Use as flash cards for terminology & concept review
- Use for notes during instructor lectures
- Affordable: $7.95

General Rules of Data Collection

- Do Not Interview Friends or Acquaintances
- Adhere to the Study Specifications
- Follow All Study Procedures and Instructions
- Mixed modes (telephone and internet) of data collection may cause discontinuity of data trends.

Sample Pages Follow
Chapter 9

Sampling Methods and Sample Size
What Is Sampling?

Sampling consists of obtaining information from a portion of a larger group or population.
Sampling Concepts

- **Population/universe**: the group of interest in a given study
- **Census**: all of the members of that group
- **Sample**: refers to those surveyed any time the survey is NOT administered to all members of the population or universe
Why Sampling Is Used

1. Cost savings
2. Time economy
3. More in-depth information
4. Less total error
5. Greater practicality
6. Greater security
Sampling Error versus Non-sampling Error

- **Sampling Error**
  - The error that occurs when a sample does not represent the population under study.

- **Sampling Bias**
  - Is introduced into a sample when the sample varies in some systematic way from the larger population.

- **Non-sampling Error**
  - The error that is introduced into the research results from any source other than sampling either intentionally or unintentionally.
1. Define the population or universe
   - The target population of the study. Defining a population improperly can introduce bias into the study.

2. Determine the sampling frame
   - A listing of the members of the target population.
3. Select the sampling method

- The initial consideration in the selection of a sample is whether or not to employ a probability sampling procedure or a non-probability sampling procedure.
Probability samples are those samples where each element has a known chance to be included in the sample. A random or a systematic chance-based procedure is used to select the study elements. They are more objective and allow use of statistical techniques.
1. Simple random sample:
   - Technique that allows each element of the population an equal and known chance of being selected as part of the sample.
2. Stratified samples:

- Used when subgroups of the population are of special interest to the researcher. Characterized by the fact that total population is:
  - Divided into mutually exclusive subgroups (strata)
  - A simple random sample is chosen from each subgroup
Probability Sampling

3. Cluster Samples

- Used when stratified sampling is not possible or feasible.
- Population is divided into mutually exclusive subgroups.
- Random sample of subgroups is selected.
- Associated with area sampling—each cluster is a different geographic area, census tract, or block.
4. Systematic Samples

- Every element has a known but not equal chance of being selected
- Is an attempt to increase efficiency at favorable costs
- Is initiated by randomly selecting a digit, $n$, and then selecting a sample at every $n^{th}$ interval
Non-probability samples are defined as any sampling technique that do not involve the selection of sample elements by chance. Choices are made by convenience, expert judgment, or other criteria.
1. Convenience Samples

- Least expensive and least time-consuming
- Main problem is the inability to know if the sample is representative of the target population
- Does not follow pre-designated method-sampling error cannot be calculated
- Frequently used in exploratory research
2. Judgment Samples

- Expert opinion
- Representativeness depends on the experience, skill, knowledge, and insight of the choosing sample
- “Snowball Sample”– relies on the researcher’s ability to locate an initial group of respondents with desired characteristics. Additional respondents are identified on referral basis
3. Quota Samples

- Divides the target population into a number of subgroups
- Selects quotas for each subgroup
- Sampling error cannot be calculated
- Projection of total population is risky
- Often used in market research projects
Sampling Decision Model

4. Determine Sample Size: this will be a function of the accuracy of the sample. Two criteria are used:
   - margin of error: tolerated error range
   - Level of confidence: probability that the sample will fall within that tolerated error range
Statistical determination of sample size: depends on the standard deviation, the precision desired from the estimate, and the desired degree of confidence associated with the estimate. The size of standard error is the function of the standard deviation of the population values and the size of the sample.

- $\sigma$ = standard error
- $\sigma$ = standard deviation
- $n$ = sample size
Main Factors Influencing the Size of a Sample

- The desired degree of confidence associated with the estimate
- The size of error the researcher is willing to accept
1. Select the appropriate level of confidence
2. Determine the width of the plus–or–minus interval that is acceptable and calculate standard error
3. Estimate the variability (standard deviation) of the population based on a pilot study or previous experience of the researcher with the population
4. Calculate sample size (solve for n)
Non-statistical Determination of Sample Size

- Use previous sample sizes
- Use “typical” sample sizes
- Use a “magic” number
- Use of resource limitations
- Ask an expert
5. Select the Sample: once the target population has been identified, an appropriate sampling frame determined or compiled, all sampling procedures selected, and sample size determined, it is time for the final step in the sampling decision model.