Chapter 3

Research Design

Learning Objectives

- To understand what research design is and why it is significant
- To appreciate areas of ethical sensitivity in research design
- To learn how exploratory research design helps the researcher gain a feel for the problem by providing background information, suggesting hypotheses, and prioritizing research objectives

Learning Objectives

- To know the fundamental questions addressed by descriptive research and the different types of descriptive research
- To explain what is meant by causal research and to describe types of experimental research designs
- To know the different types of test marketing and how to select test-market cities

WHERE WE ARE

1. Establish the need for marketing research.
2. Define the problem.
3. Establish research objectives.
4. Determine research design.
5. Identify information types and sources.
6. Determine methods of accessing data.
7. Design data-collection forms.
8. Determine the sample plan and size.
9. Collect data.
10. Analyze data.
11. Prepare and present the final research report.

Research Design

- **Research design** is a set of advance decisions that make up the master plan specifying the methods and procedures for collecting and analyzing the needed information.

Why Is Research Design Important?

- Good research design is the "first rule of good research."
- Knowledge of the needed research design allows advance planning so that the project may be conducted in less time and typically at a cost savings due to efficiencies gained in preplanning.

Objectives of Research Design

- To gain background information and to develop hypotheses
- To measure the state of a variable of interest
- To test hypotheses that specify the relationships between two or more variables

Research Design: A Caution

- In many cases, research is an iterative process.
- By conducting one research project, we learn that we may need additional research, which may result in using multiple research designs.

Three Types of Research Designs

- Exploratory
- Descriptive
- Causal

Exploratory Research

- **Exploratory research** is usually conducted at the outset of research projects.
- It is usually conducted when the researcher does not know much about the problems.

Uses of Exploratory Research

- Gain background information
- Define terms
- Clarify problems and hypothesis
- Establish research priorities

Exploratory Research Methods

- **Secondary data analysis**: the process of searching for interpreting existing information relevant to the research topic
- **Experience surveys**: refer to gathering information from those to be knowledgeable on the issues relevant to the research problem
  - **Key-informant technique**: gathering information from those thought to be knowledgeable on the issues relevant to the problem
  - **Lead-user survey**: used to acquire information from lead users of a new technology

Exploratory Research Methods

- **Case analysis**: a review of available information about a former situation(s) that has some similarities to the current research problem
- **Focus groups**: small groups brought together and guided by a moderator through an unstructured, spontaneous discussion for the purpose of gaining information relevant to the research problem

Descriptive Research

- **Descriptive research** is undertaken to describe answers to questions of who, what, where, when, and how.
- It is desirable when we wish to project a study's findings to a larger population, if the study's sample is representative.

Descriptive Research Classifications

- **Cross-sectional** studies
- **Longitudinal** studies

Descriptive Research Studies

- **Cross-sectional studies** measure units from a sample of the population at only one point in time (or "snapshot").
  - Sample surveys are cross-sectional studies whose samples are drawn in such a way as to be representative of a specific population.
  - These studies are usually presented with a margin of error.

Descriptive Research Studies

- **Longitudinal studies** repeatedly measure the same sample units of a population over time.
- Since they involve multiple measurements over time, they are often described as “movies” of the population.

Descriptive Research Studies

- **Continuous panels** ask panel members the same questions on each panel measurement.
- **Discontinuous panels** vary questions from one panel measurement to the next.
  - These are sometimes referred to as **omnibus panels** (omnibus meaning "including or covering many things or classes").

Discontinuous Panels

- **Discontinuous panels** are demographically matched to some larger entity, implying representativeness.
- Discontinuous panels represent sources of information that may be quickly accessed for a wide variety of purposes.

Continuous Panels

- **Brand-switching studies**: studies examining how many consumers switched brands
- **Market-tracking studies**: those that measure some variable(s) of interest—such as market share or unit sales—over time

TABLE 4.1 Results of Two Cross-Sectional Studies "Which Brand of Chocolate Chip Cookie Did You Most Recently Purchase?"

Brand	Cross-Sectional Survey 1	Cross-Sectional Survey 2
Famous Amos	100	75
Pepperidge Farm	200	200
Nabisco	200	225
Total Families	500	500

TABLE 4.2 Results of Two Waves of a Longitudinal Study "Which Brand of Chocolate Chip Cookie Did You Most Recently Purchase?"

Wave 1 Brand	Wave 2 Brand			
	Famous Amos	Pepperidge Farm	Nabisco	Totals, Wave 1
Famous Amos	50	50	0	100
Pepperidge Farm	25	150	25	200
Nabisco	0	0	200	200
Totals, Wave 2	75	200	225	

Causal Research

- **Causality** may be thought of as understanding a phenomenon in terms of conditional statements of the form "If x, then y."
- Causal relationships are often determined by the use of experiments.

Experiments

- An **experiment** is defined as manipulating an independent variable to see how it affects a dependent variable while also controlling the effects of additional extraneous variables.

Independent Variable

- **Independent variables** are those variables that the researcher has control over and wishes to manipulate—the 4 P's.
- Examples are level of ad expenditure, type of ad appeal, display location, method of compensating salespersons, price, and type of product.

Dependent Variables

- **Dependent variables** are those variables that we have little or no direct control over but a strong interest in changing.

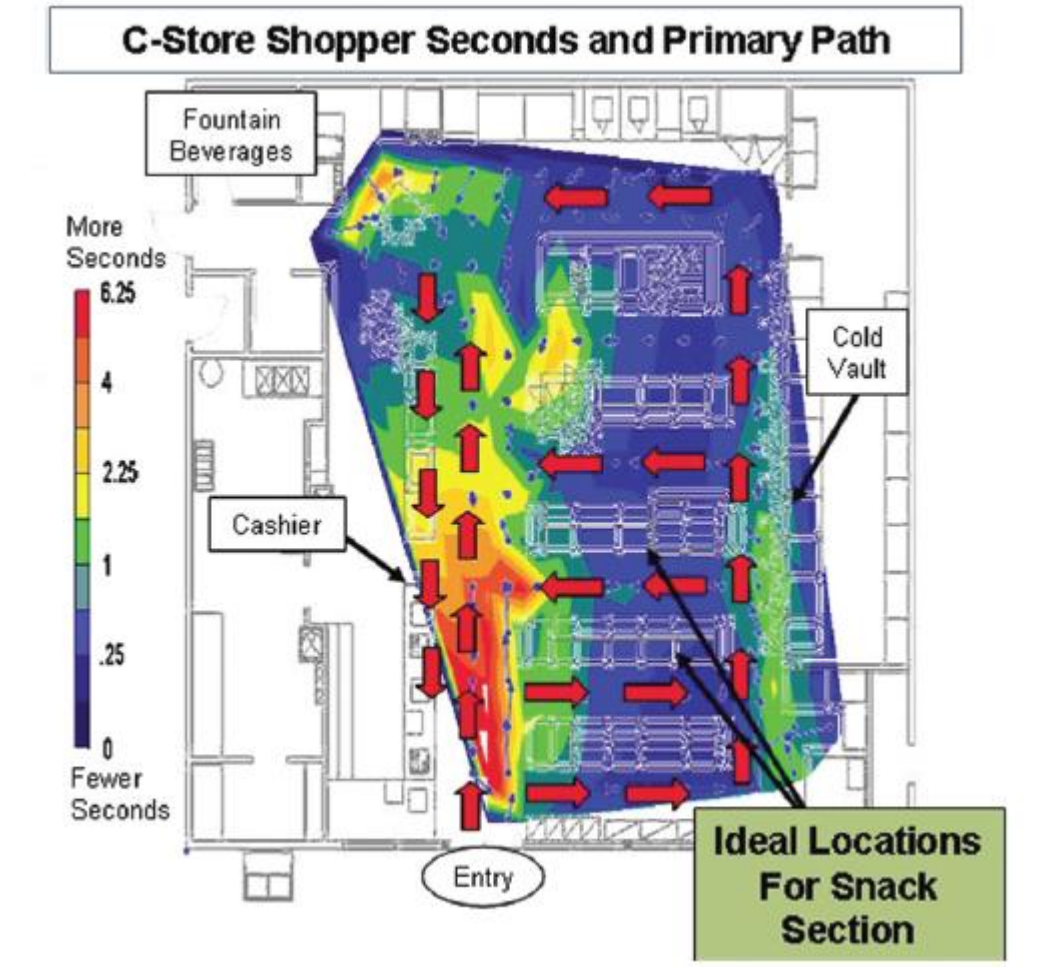
Extraneous Variables

- **Extraneous variables** are those variables that may have some effect on a dependent variable yet are not independent variables.

Experimental Design

- **Experimental design** is a procedure for devising an experimental setting such that a change in a dependent variable may be attributed solely to the change in an independent variable.

Example Store Experiment



Symbols of Experimental Design

- O = **measurement**, or observation, of a dependent variable
- X = **manipulation**, or change, of an independent variable
- R = **random assignment** of subjects to experimental and control groups
- E = **experimental effect** (change in the dependent variable due to the independent variable)

Pretest and Posttest

- **Pretest** refers to the measurement of the dependent variable taken prior to changing the independent variable.
- **Posttest** refers to measuring the dependent variable after changing the independent variable.

Experimental Design

- A **"true" experimental design**: isolates the effects of the independent variable on the dependent variable while controlling for the effects of any extraneous variables.
- **Quasi-experimental design**: ones that do not properly control for the effects of extraneous variables on our dependent variable.

Experimental Design

- **Before-after with control group** design may be achieved by randomly dividing subjects of the experiment in two groups:
  - The **control group**
  - The **experimental group**

Experimental Design

- **Control group**: control of extraneous variables typically achieved by the use of a second group of subjects
- **Experimental group**: the group that has been exposed to a change in the independent variable

How Valid Are Experiments?

- An experiment is **valid** if the following are true:
  - The observed change in the dependent variable is due to the independent variable.
  - The results of the experiment apply to the "real world" outside the experimental setting.

How Valid are Experiments?

- Two forms of validity are used to assess the validity of an experiment:
  - **Internal validity** is concerned with the extent to which the change in the dependent variable is actually due to the change in the independent variable.
  - **External validity** refers to the extent that the relationship observed between the independent and dependent variables during the experiment is generalizable to the "real world."

Types of Experiments

- **Laboratory experiments** are those in which the independent variable is manipulated and measures of the dependent variable are taken in a contrived, artificial setting for the purpose of controlling the many possible extraneous variables that may affect the dependent variable.

Types of Experiments

- **Field experiments** are those in which the independent variables are manipulated and the measurements of the dependent variable are made on test units in their natural setting.

Test Marketing

- **Test marketing** is the phrase commonly used to indicate an experiment, study, or test that is conducted in a field setting.
- Main uses of test markets:
  - To test sales potential for a new product or service
  - To test variations in the marketing mix for a product or service

Types of Test Markets

- The **standard test market** is one in which the firm tests the product or marketing-mix variables through the company's normal distribution channels.
- **Controlled test markets** are conducted by outside research firms that guarantee distribution of the product through prespecified types and numbers of distributors.

Types of Test Markets

- **Electronic test markets** are those in which a panel of consumers has agreed to carry identification cards that each consumer presents when buying goods and services.
- **Simulated test markets** (STMs) are those in which a limited amount of data on consumer response to a new product is fed into a model containing certain assumptions regarding planned marketing programs, which generates likely product sales volume.

Selecting Test-Market Cities

- Three main criteria:
  - Representativeness
  - Degree of isolation
  - Ability to control distribution and promotion

Pros and Cons of Test Marketing

- Advantages:
  - Test marketing allows for the most accurate method of forecasting future sales, and it allows firms the opportunity to pretest marketing-mix variables.

Pros and Cons of Test Marketing

- Disadvantages:
  - Test markets do not yield infallible results.
  - Competitors may intentionally try to sabotage test markets.
  - Test markets bring about exposure of the product to the competition.
  - Test markets may create ethical problems.