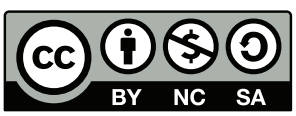
RESEARCH METHODS

For Business and Marketing

GEORGE SELF

January, 2019 – Edition 1

George Self: *Research Methods,* For Business and Marketing, January, 2019



FOREWORD

I have taught BASV 316, *Introductory Methods of Analysis*, online for the University of Arizona in Sierra Vista since 2010 and enjoy working with students on research methodology. I wanted a textbook that presented research in a practical way so students could use the lessons learned in their own research projects. I found an excellent book but over the years the cost of that book increased to the point that I felt like it was an unfair burden on students.

I began by looking for an acceptable "open source" book since authors make those available to students free of charge and I could modify the book to meet my own objectives. I could not find any that were focused on business research though I tried for several years—and keep looking to this day. I did, though, find a few open source books about research in the social and psychological sciences that were reasonably close to what I needed. So, I modified those books to emphasize business research and then provided my work to students free of charge.

Bhattacherjee[3], Blackstone[5], and Price[30] all released books about research that formed the major sources for this book. Those books are all open source and published under a Creative Commons license that permitted me to copy and modify them.

Three goals shaped the choices made about the topics covered by the text and how those topics are presented.

- The topics must have relevance for business students.
- Both qualitative and quantitative research methods are given roughly equal attention since both types of research are used in business.
- The text is engaging and readable.

While the book is useful in its current form, I will continually update it based on emerging trends in research.

This book is published under a Creative Commons Attribution-NonCommercial-ShareAlike license, just like the books that provided its foundation. The source is available at my GitHub account: `http://bit.ly/2xIjzXL`. It is my hope that students can use this book to learn about business research and other instructors can modify and use it for their own classes.

— George Self

BRIEF CONTENTS

CONTENTS

LIST OF FIGURES

LIST OF TABLES

LISTINGS

ACRONYMS

IRB Institutional Review Board

Part I

BACKGROUND

Research methods are grounded in philosophy, statistics, sociology, and many other disciplines. The chapters in this section introduce these background concepts.

1 INTRODUCTION

Objectives
1. Identify the various sources of knowledge
2. Define "science"
3. Describe the scientific method and relate that to business research
4. Identify the three types of science research (exploratory, descriptive, and explanatory)

1.1 KNOWING

In general, people want to know about things. Most people are curious about the world around them but business owners are interested in specifically how people can be persuaded to make a purchase. Understanding how one person can walk past a candy store without even the slightest thought about going inside while another cannot seem to walk in the same block without stopping in for a treat is valuable information for the owner of the candy store. In general, business owners are eager to know about people and what drives their behavior.

The goal of this book is to teach students how research can be used to help business owners make good decisions. More specifically, the book examines the ways that researchers come to understand the impetus that drives purchases. The research methods considered in this book are a systematic process of inquiry designed to learn something of value about a business problem. Before considering research methods, though, it is useful to contemplate other sources of knowledge.

1.1.1 *Different Sources of Knowledge*

As an introduction to the field of research, it is useful to briefly consider common sources of knowledge.

- **Assumptions**. Many people assume that children without siblings are rather spoiled and unpleasant. In fact, many people believe that the social skills of only children will not be as well developed as those of people who were reared with siblings. However, sociological research shows that children who

grow up without siblings are no worse off than those with siblings when it comes to developing good social skills[7]. Researchers consider precisely these types of assumptions that "everyone knows" when investigating their worlds. Sometimes the assumptions are correct and other times not so much.

- **Direct Experience**. One source of knowledge is direct experience. Mark Twain observed that "... the cat that sits down on a hot stove-lid ... will never sit down on a hot stove-lid again..."[41]. Direct experience may be a source of accurate information, but only for those who experience it. The problem is that the observation is not deliberate or formal; rather, it comes as an accidental by-product of life. Even worse, the lesson learned may be wrong. Without a systematic process for observing and evaluating those observations any conclusions drawn are suspect.

- **Tradition**. Another source of knowledge is tradition. There is an urban legend about a woman who for years used to cut both ends off of a ham before putting it in the oven\{}footnote{See Snopes: http://www.snopes.com/weddings/newlywed/secret.asp}. She baked ham that way because that was the way her mother did it, so clearly that was the way it was supposed to be done. Her mother was the authority, after all. After years of tossing cuts of perfectly good ham into the trash, however, she learned that the only reason her mother ever cut the ends off ham before cooking it was that her baking pan was not large enough to accommodate the ham without trimming it. Tradition may or may not be a good source of knowledge.

- **Authority**. Many people rely on the government, teachers, and other authority figures to dispense knowledge. Unfortunately, authority figures may or may not be a source of accurate knowledge.

- **Observation**. People rely on their own informal observations of their worlds. Occasionally, someone will decide to "investigate" something, perhaps an odd sound, and their observations will become more selective. Unfortunately, these types of observations are not systematic and may easily lead to incorrect conclusions.

- **Generalization**. Often a broad pattern is observed and people draw a conclusion that the pattern is true for all instances. This can be the source of prejudice where the actions of a few bad actors may bias peoples' knowledge of the whole.

While there are many ways that people come to know what they know, some of those ways are more reliable than others. The goal of

formal research is to ferret out an accurate answer to the questions people have — to provide a reliable source of knowledge.

1.1.2 *What is science?*

Most research methods used for business and marketing are based on methods used in the various social sciences and this section of the book describes how that scientific research is conducted.

Many students assume that "science" is a craft practiced by highly educated experts wearing white lab coats and pouring boiling liquids into test tubes. Unfortunately, that is not an accurate definition of "science." Etymologically, the word "science" is derived from the Latin word *scientia*, which means knowledge. "Science," then, is a systematic and organized body of knowledge acquired by using a specific, rigorous method in any field of inquiry. The sciences can be grouped into two broad categories: natural and social. Natural science is the science of naturally occurring objects or phenomena, such as light, objects, matter, earth, celestial bodies, or the human body. Natural sciences are further classified into the physical sciences, earth sciences, life sciences, and others. In contrast, social science is the science of people or collections of people, such as groups, firms, societies, or economies, and their individual or collective behaviors. Social sciences can be classified into disciplines such as psychology (the science of human behaviors), sociology (the science of social groups), and economics (the science of markets and economies).

Sciences are also classified by their purpose. Basic sciences, also called pure sciences, are those that explain the most basic objects and forces, relationships between them, and laws governing them. Examples include physics, mathematics, and biology. Applied sciences, also called practical sciences, are sciences that apply scientific knowledge from basic sciences to a physical environment. For instance, engineering is an applied science that applies the laws of physics and chemistry to practical applications such as building stronger bridges or fuel efficient combustion engines, while medicine is an applied science that applies the laws of biology to relieving human ailments.

Scientific knowledge is a generalized body of laws and theories acquired using the scientific method to explain a phenomenon or behavior of interest. Closely related to laws and theories are hypotheses.

- Laws are observed patterns of phenomena or behaviors and are based on repeated experimental observations. They are generalized rules that explain observations and are, typically, theories that have been repeatedly tested and believed to be true. As an example, the Newtonian Laws of Motion describe what happens when an object is in a state of rest or motion (Newton's First Law), what force is needed to move a stationary object or stop a moving object (Newton's Second Law), and what hap-

pens when two objects collide (Newton's Third Law). Collectively, the three laws constitute the basis of classical mechanics — a theory of moving objects.

- Theories are systematic explanations of underlying phenomenon or behavior. Theories are typically based on hypotheses that have been tested and found to be true, but the testing has been incomplete or not rigorous enough to classify the theory as a law. It is important to note that theories are not "wild guesses" but are, instead, the result of experimental observations that found to be true in the instances tested. It is also important to note that theories can be falsifiable, that is, there are ways to prove that the theory is not true. As examples, the theory of optics explains the properties of light and how it behaves in different media, electromagnetic theory explains the properties of electricity and how to generate it, quantum mechanics explains the properties of subatomic particles, and thermodynamics explains the properties of energy and mechanical work.

- Hypotheses are a well-guessed explanation of some phenomena or a prediction about what will happen in the future. Hypotheses are generally the beginning of an investigation that will either support or reject the hypotheses. As an example, a researcher may hypothesize that products in red boxes sell better than products in blue boxes. To test the hypothesis an experiment can be set up where the same product is sold in two identical boxes, except that one box is red and the other blue.

The pure science of economics and its applied science of business includes a body of both laws and theories. For example:

- Law of Supply and Demand. While this is often described as a "model" it is also usually categorized as a law since it has been shown to be true in repeated observations. This law basically states that there is a relationship between a product's demand and its supply.

- Law of Diminishing Returns. This law states that at some point increasing a single production factor will yield less profit-per-unit produced. In other words, the return on the investment is not worth the cost.

- The 2009 Nobel Prize for economics was for the theory that groups work together to manage common resources, like water, by using collective property rights.

- The theory of marginalism attempts to explain the discrepancy in the value of goods by looking at their secondary, or marginal, utility. The price of diamonds is greater than water because of

a marginal "satisfaction" of owning diamonds when compared to water, even though water is far more utilitarian.

The goal of scientific research is to discover laws and postulate theories that can explain natural or social phenomena, or in other words, build scientific knowledge. It is important to understand that this knowledge may be imperfect or even quite far from the truth. It is important to understand that theories, upon which scientific knowledge is based, are explanations of a particular phenomenon and some tend to fit the observations better than others. The progress of science is marked by progression over time from poorer theories to better theories through enhanced observations using more accurate instruments and more informed logical reasoning.

Scientific laws or theories are derived through a process of logic and evidence. Logic (theory) and evidence (observations) are the two, and only two, pillars upon which scientific knowledge is based. In science, theories and observations are interrelated and one cannot exist without the other. Theories provide meaning and significance to what we observe and observations help validate or refine existing theory or construct new theory. Any other means of knowledge acquisition, such as faith or authority, cannot be considered science.

1.1.3 *Scientific Research*

Scientific research moves easily between theory and observations, each reinforcing the other. Theory drives the research of some phenomenon but observations made by the research further refine the underlying theory. Relying solely on observations for making inferences while ignoring theory is not scientific research, it is simple observation. The application of theories and observations lead to two primary types of scientific research: theoretical and empirical. Theoretical research is concerned with developing abstract concepts about natural or social phenomena while empirical research is concerned with testing theoretical concepts to see how well they reflect reality in our observations.

Depending on a researcher's training and interest, scientific inquiry may take one of two forms: **`inductive research`** or **`deductive research`**. The goal of inductive research is to infer theoretical concepts and patterns from observed data. In contrast, the goal of deductive research, is to test theory using empirical data. Hence, inductive research is sometimes called theory-building research while deductive research is called theory-testing research. Note here that the goal of theory-testing is not just to test a theory, but to refine, improve, and extend it.

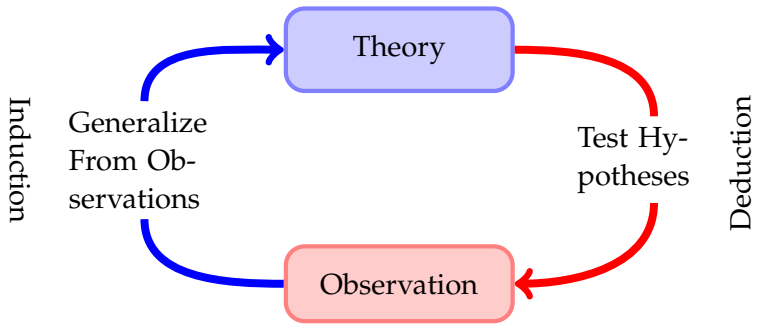


Figure 1: Scientific Research Model

Figure 1 illustrates the complementary nature of inductive and deductive research; they are two halves of a research cycle that constantly iterates. It is important to understand that theory-building (inductive research) and theory testing (deductive research) are both critical for the advancement of science[1]. Elegant theories are not valuable if they do not match reality. Likewise, mountains of data are also useless until they can contribute to the construction of meaningful theories. Rather than viewing these two processes in a circular relationship, as shown in Figure **??**, perhaps they can be better viewed as a helix, with each iteration between theory and data contributing to improved observations of the phenomena and the resulting improved theory. Though both inductive and deductive research are important for the advancement of science, it appears that inductive (theory-building) research is more valuable when there are few prior theories or explanations, while deductive (theory-testing) research is more productive when there are many competing theories of the same phenomenon and researchers are interested in knowing which theory works best and under what circumstances.

Theory building and theory testing are particularly difficult in business and marketing, given the imprecise nature of the theoretical concepts and the presence of many unaccounted factors that can influence the phenomenon of interest. It is also very difficult to refute theories that do not work. For instance, Karl Marx's theory of communism as an effective economic engine withstood for decades before it was finally discredited as being inferior to capitalism in promoting growth. Erstwhile communist economies like the Soviet Union and China eventually moved toward more capitalistic economies characterized by profit-maximizing private enterprises. However, the recent collapse of the mortgage and financial industries in the United States demonstrates that capitalism also has its flaws and is not as effective in fostering economic growth and social welfare as previously presumed. Unlike theories in the natural sciences, marketing theories are rarely perfect, which provides numerous opportunities for

1 Both inductive and deductive research is covered more thoroughly in Chapter 2.

researchers to improve those theories or build their own alternative theories.

Conducting scientific research, therefore, requires two sets of skills, theoretical and methodological, needed to operate in the theoretical and empirical levels respectively. Methodological skills ("know-how") are relatively standard, invariant across disciplines, and easily acquired through various educational programs. However, theoretical skills ("know-what") is considerably harder to master, requiring years of observation and reflection, and are tacit skills that cannot be taught but rather learned though experience. All of the greatest scientists in the history of humanity, such as Galileo, Newton, and Einstein were master theoreticians, and they are honored for the theories they postulated that transformed the course of science.

1.1.4 *Scientific Method*

If science is knowledge acquired through a scientific method then what is the "scientific method?" Scientific method refers to a standardized set of techniques for building scientific knowledge, such as how to make valid observations, how to interpret results, and how to generalize those results. The scientific method allows researchers to independently and impartially test preexisting theories and prior findings, and subject them to open debate, modifications, or enhancements. The scientific method must satisfy four characteristics:

replicability. Others should be able to independently replicate or repeat a scientific study and obtain similar, if not identical, results.

precision. Theoretical concepts, which are often hard to measure, must be defined with such precision that others can use those definitions to measure those concepts and test that theory.

falsifiability. A theory must be stated in a way that it can be disproven. Theories that cannot be tested or falsified are not scientific theories and any such knowledge is not scientific knowledge. A theory that is specified in imprecise terms or whose concepts are not accurately measurable cannot be tested, and is therefore not scientific. Sigmund Freud's ideas on psychoanalysis fall into this category and is therefore not considered a "theory" even though psychoanalysis may have practical utility in treating certain types of ailments.

parsimony. When there are multiple explanations of a phenomenon, scientists must always accept the simplest or logically most economical explanation. This concept is called parsimony or "Occam's razor." Parsimony prevents scientists from pursuing overly

> complex or outlandish theories with endless number of concepts and relationships that may explain a little bit of everything but nothing in particular.

Any branch of inquiry that does not allow the scientific method to test its basic laws or theories cannot be called "science." For instance, art is not science because artistic ideas (such as the value of perspective) cannot be tested by independent observers using a replicable, precise, falsifiable, and parsimonious method. Similarly, music, literature, humanities, and law are also not considered science, even though they are creative and worthwhile endeavors.

The scientific method, as applied to business and marketing, includes a variety of research approaches, tools, and techniques, such as qualitative and quantitative data, statistical analysis, experiments, field surveys, case research, and so forth. Most of this book is devoted to learning about these different methods. However, recognize that the scientific method operates primarily at the empirical level of research, i.e., how to make observations and analyze and interpret these observations. Very little of this method is directly pertinent to the theoretical level, which is really the more challenging part of scientific research.

Finally, business researchers must bear in mind that the natural sciences are different from the social sciences in several important respects. The natural sciences are very precise, accurate, deterministic, and independent of the person making the observations. For instance, a scientific experiment in physics, such as measuring the speed of sound through a certain medium, should always yield the same results, irrespective of the time or place of the experiment. However, the same cannot be said for the social sciences, which tend to be less accurate and more ambiguous. For instance, an economist may want to measure the impact of some factor on a city's economy. Unfortunately, the outcome of that research may depend on the background and experience of the researcher, the indexes used to measure the impact, and the interpretation of those measures. In other words, there is a high degree variability in all social science research. While natural scientists agree totally on the speed of light or the gravitational attraction of the earth, there is no agreement among economists on questions like the impact of immigration and how much of a nation's economy should be earmarked for reducing carbon emissions. Researchers in business and marketing must be comfortable with handling high levels of ambiguity, uncertainty, and error that come with research in such sciences.

1.1.5 *Types of Science Research*

Depending on the purpose of research, scientific research projects can be grouped into three types: exploratory, descriptive, and explanatory.

1.1.5.1 *Exploratory*

Exploratory research is often conducted in new areas of inquiry, where the goals of the research are:

1. to scope out the magnitude or extent of a particular phenomenon, problem, or behavior
2. to generate some initial ideas (or "hunches") about that phenomenon
3. to test the feasibility of undertaking a more extensive study regarding that phenomenon.

For instance, if the citizens of a country are generally dissatisfied with governmental policies during an economic recession, exploratory research may be directed at measuring the extent of citizens' dissatisfaction. It would consider how the dissatisfaction is manifested and the presumed causes of such dissatisfaction. Such research may include examination of publicly reported figures, such as estimates of economic indicators like gross domestic product (GDP), unemployment, and consumer price index. This research may not lead to a very accurate understanding of the target problem, but may be worthwhile in determining the nature and extent of the problem and serve as a useful precursor to more in-depth research.

1.1.5.2 *Descriptive*

Descriptive research is directed at making careful observations and detailed documentation of a phenomenon of interest. These observations must be based on the scientific method and therefore, are more reliable than casual observations by untrained people. Examples of descriptive research are tabulation of demographic statistics by the United States Census Bureau who use validated instruments for estimating factors like employment by sector. If any changes are made to the measuring instruments, estimates are provided with and without the changed instrumentation to allow the readers to make a fair before-and-after comparison regarding population or employment trends. Other descriptive research may include projects like chronicling reports of gang activities among adolescent youth, the persistence of religious, cultural, or ethnic practices in select communities, and the role of technologies in the spread of democracy movements.

1.1.5.3 *Explanatory*

Explanatory research seeks explanations of observed phenomena, problems, or behaviors. While descriptive research examines what, where, and when of a phenomenon, explanatory research seeks answers to why and how. It attempts to "connect the dots" in research, by identifying causal factors and outcomes of the target phenomenon. Examples include understanding the reasons behind gang violence with the goal of prescribing strategies to overcome such societal ailments. Most academic or doctoral research belongs to the explanation category, though some amount of exploratory and/or descriptive research may also be needed during initial phases of a research project. Seeking explanations for observed events requires strong theoretical and interpretation skills, along with intuition, insights, and personal experience.

1.1.6 *Specific Considerations for Business/Marketing Research*

It is important to keep in mind that business researchers attempt to explain patterns in the habits of customers. A pattern does not explain every single person's experience, a fact that is both fascinating and frustrating. Individuals who create a pattern may not be the same over time and may not know one another, but they collectively create a pattern. Those new to business research may find these patterns frustrating because they expect various patterns to describe a group's characteristic but that often does not translate into an actual experience. A pattern can exist among a cohort without a specific individual being 100% true to that pattern.

As an example of patterns and their exceptions, consider the impact of social class on peoples' educational attainment. In fact, Ellwood & Kane[14] found that the percentage of children who did not receive any postsecondary schooling was four times greater among those in the lowest quartile income bracket than those in the upper quartile (that is, children from high-income families were far more likely than low-income children to go to college). These research findings detected patterns in society, but there are certainly many exceptions. Just because a child grows up in a household with little wealth does not keep that child from pursuing a college degree. People who object to research findings tend to cite evidence from their own personal experience, insisting that no patterns actually exists. The problem with this response, however, is that objecting to a social pattern on the grounds that it does not match a specific person's experience misses the point about patterns.

Another matter that social scientists must consider is where they stand on the value of basic as opposed to applied research. In essence, this has to do with questions of for whom and for what purpose research is conducted. We can think of basic and applied research as

resting on either end of a continuum. In marketing, basic research studies marketing for marketing's sake — nothing more, nothing less. Sometimes researchers are motivated to conduct research simply because they happen to be interested in a topic and the goal may be to learn more about a topic. Applied research lies at the other end of the continuum. In marketing, applied research studies marketing for some purpose beyond a researcher's interest in a topic. Applied research is often client focused, meaning that the researcher is investigating a question posed by someone other than her or himself.

One final consideration for business and marketing researchers is the difference between qualitative and quantitative methods. Qualitative methods generally involve words (like letters, memos, or policies) or pictures and common methods used include field research, interviews, and focus groups. Quantitative methods, on the other hand, generally involve numbers and common methods include surveys, content analysis, and experimentation. While qualitative methods aim to gain an in-depth understanding of a relatively small number of cases, quantitative methods offer less depth but more breadth because they typically focus on a much larger number of cases.

Sometimes these two methods are presented or discussed in a way that suggests they are somehow in opposition to one another. The qualitative/quantitative debate is fueled by researchers who may prefer one approach over another, either because their own research questions are better suited to one particular approach or because they happened to have been trained in one specific method. While these two methodological approaches differ in goals, strengths, and weaknesses, they both attempt to answer a researcher's question and are equally viable. This text operates from the perspective that qualitative and quantitative methods are complementary rather than competing and both will be covered.

1.1.7 *Summary*

- There are many different sources of knowledge and some are more valuable than others for formulating theories and practices.
- Science is the discipline of using formalized processes to create theories to explain observed phenomena.
- Scientific research is a process with a goal of using reproducible methods to create a theory or validate the tenants of an existing theory.
- Scientific research can be divided into three types: exploratory, descriptive, and expanatory.

- Business research has specific considerations to meet the sometimes disparate objectives of theory-building and practical application.

2

FOUNDATIONS

2.1 INTRODUCTION

This chapter explores the connection between paradigms, theories, and research methods and how the researcher's analytic perspective might shape methodological choices.

2.1.1 *Ontology and Epistemology*

The principles of business research, like those of sociology and psychology research, are founded on two major branches of philosophy: **`ontology`** and **`epistemology`**. Ontology concerns the nature of reality and the researcher's ontological position shapes the sorts of research questions posed and how those questions are researched. Ontology posits two fundamental positions:

- **`Objectivism`**: Things are real and exist regardless of any sort of social activity. This is often reflected in research about societal organization. Objectivists take the position that people may differ in their perception of reality but there is only one true reality and a researcher's job is to discover that reality.
- **`Constructivism`**: Things do not just exist apart from the society that observes them. This is often reflected in research about culture and its influence on human activities. Constructivists take the position that reality is shaped individually and that a researcher's job is to understand others' view of reality.

Like ontology, epistemology has to do with knowledge. Rather than dealing with questions about *what is*, epistemology deals with questions of *how we know*.

Four main branches of epistemology are frequently encountered in business research, and the researcher's beliefs concerning these branches will shape the research design.

- **Pragmatism** accepts both personal experience and measured data as sources of knowledge. These researchers will usually design applied research projects that use different perspectives to help answer a question.
- **Positivism** relies only on findings gained through measurement. These researchers tend to focus on causality and try to reduce phenomena to its simplest elements.

- **Realism** relies on observations rather than precise measures to provide credible facts and data. These researchers would use tools like structured interviews to gain an understanding of a phenomenon.
- **Interpretivism** uses subjective explanations of social phenomena. These researchers use tools like ethnographic studies to attempt to understand an entire social structure.

Burrell and Morgan (1979), in their seminal book *Sociological Paradigms and Organizational Analysis*, suggested that epistemology shapes a researcher's approach to a project, e. g., should an objective or subjective approach be used, while ontology shapes the researcher's interpretation of the findings, e. g.does the world consist mostly of social order or radical change. Using these two sets of assumptions, Burrell and Morgan categorized research as in Figure 2.

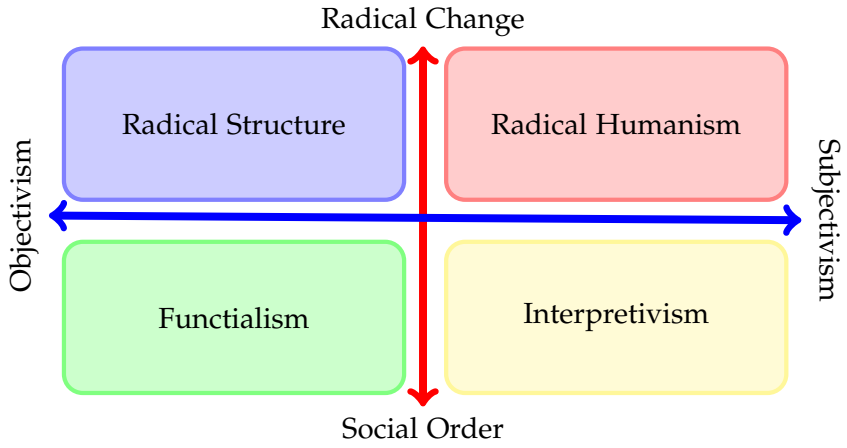


Figure 2: Research Paradigm

- **Functionalism** is the mindset adopted by researchers who...
  - Ontology: view the world as orderly and consisting of patterns of ordered events or behaviors.
  - Epistemology: believe that the best way to study the world is to use an objective approach that is independent of the person conducting the observation by using standardized collection tools like surveys.
- **Interpretivism** is the mindset adopted by researchers who...
  - Ontology: view the world as orderly and consisting of patterns of ordered events or behaviors.

  - Epistemology: believe that the best way to study the world is though the subjective interpretation of participants involved using techniques like interviewing participants and then reconciling differences using their own subjective perspectives.

- **Radical Structure** is the mindset adopted by researchers who...
  - Ontology: view the world as constantly changing, often radically, with few unvarying patterns or behaviors.
  - Epistemology: believe that the best way to study the world is to use an objective approach that is independent of the person conducting the observation by using standardized collection tools like surveys.

- **Radical Humanism** is the mindset adopted by researchers who...
  - Ontology: view the world as constantly changing, often radically, with few unvarying patterns or behaviors.
  - Epistemology: believe that the best way to study the world is though the subjective interpretation of participants involved using techniques like interviewing participants and then reconciling differences using their own subjective perspectives.

To date, the majority of business research has emulated the natural sciences and adopted functionalist techniques. Thus, researchers tend to believe that social patterns can be understood in terms of their functional components so they study those components in detail using objective techniques like surveys and experimental research. However, a small but growing number of researchers are adopting interpretivist techniques and are attempting to understand social order using subjective tools such as interviews and ethnographic studies. Radical structuralism and radical humanism represents a negligible proportion of business research because researchers are primarily concerned with understanding generalizable patterns of behavior rather than idiosyncratic or changing events. However, social and organizational phenomena generally consists of elements of both order and change. For instance, organizational success depends on formalized business processes, work procedures, and job responsibilities, while being simultaneously constrained by a constantly changing mix of competitors, competing products, suppliers, and customer base in the business environment. Therefore, to obtain a holistic understanding of phenomena like the success of some businesses and failure of others may require a multi-modal approach.

2.2 PARADIGMS AND THEORIES

The terms **paradigm** and **theory** are often used interchangeably in business and marketing research although experts disagree about whether these are identical or distinct concepts. This text makes a slight distinction between the two ideas because thinking about each concept as analytically distinct provides a useful framework for understanding the connections between research methods and scientific ways of thinking.

2.2.1 *Paradigm*

The researcher's own frames of reference, or believe systems, form a paradigm. Thus, if a researcher is, generally, functionalist in outlook then that would be the paradigm used to design and conduct research projects. Paradigms are usually quite complex and include facets of upbringing, family influence, societal norms, and many other factors. Paradigms are often hard to recognize, because they are implicit, assumed, and taken for granted. However, recognizing paradigms is key to making sense of and reconciling differences in peoples' perceptions of the same social phenomenon. For instance, why do liberals believe that the best way to improve secondary education is to hire more teachers, but conservatives believe that privatizing education (using such means as school vouchers) are more effective in achieving the same goal? The differences in two paradigms explains this conflict, liberals believe more in labor (i.e., in having more teachers and schools) while conservatives place more faith in competitive markets (i.e., in free competition between schools competing for education dollars).

Paradigms are like "colored glasses" that govern how people structure their thoughts about the world. As one other example, imagine that a certain technology was successfully implemented in one organization but failed miserably in another. A researcher using a "rational lens" will look for rational explanations of the problem such as inadequate technology or poor fit between technology and the task context where it is being utilized. Another research looking at the same problem through a "social lens" may seek out social deficiencies such as inadequate user training or lack of management support. Yet another researcher seeing it through a "political lens" will look for instances of organizational politics that may subvert the technology implementation process. Hence, subconscious paradigms often constrain the concepts that researchers attempt to measure and their subsequent interpretations of those measures. However, it is likely that all of the above paradigms are at least partially correct and a fuller understanding of the problem may require an application of multiple paradigms.

Two paradigms are commonly found in business research:

- **Positivism**. This is the framework that usually comes to mind when people think about scientific research[1]. Positivism is guided by the principles of objectivity, knowability, and deductive logic[2]. The positivist framework operates from the assumption that society can and should be studied empirically and scientifically. Positivism also calls for value-free research where researchers attempt to abandon their own biases and values in a quest for objective, empirical, and knowable truth. Positivism is based on the works of French philosopher Auguste Comte (1798 - 1857) and was the dominant scientific paradigm until the mid-20th century. Unfortunately, positivism eventually evolved to empiricism or a blind faith in observed data and a rejection of any attempt to extend or reason beyond observable facts. Since human thoughts and emotions could not be directly measured, there were not considered to be legitimate topics for scientific research.

- **Postmodernism**. Frustrations with the strictly empirical nature of positivist philosophy led to the development of postmodernism during the mid-late 20th century. Postmodernism argues that one can make reasonable inferences about a phenomenon by combining empirical observations with logical reasoning. Postmodernists view science as not certain but probabilistic (i.e., based on many contingencies), and often seek to explore these contingencies to understand social reality better. The postmodernist camp has further fragmented into subjectivists, who view the world as a subjective construction of our minds rather than as an objective reality, and critical realists, who believe that there is an external reality that is independent of a person's thinking but we can never know such reality with any degree of certainty.

2.2.2 *Theory*

2.2.2.1 *Definition*

Theories are explanations of a natural or social behavior, event, or phenomenon. More formally, a scientific theory is a system of constructs (concepts) and propositions (relationships between those constructs) that collectively presents a logical, systematic, and coherent explanation of a phenomenon of interest within some assumptions and boundary conditions[1] It is important to note that people not familiar with scientific research often view a theory as some sort of speculation, a "guess," and statements like "it's only a theory" are common. However, a scientific theory is well-researched and based

1 Positivism was also discussed as one of the main branches of epistemology but since it is so common in the research community it is also recognized as a paradigm.

2 Deductive and inductive logic methods are discussed later in this chapter.

on repeated observations of some phenomenon. As an example, plate tectonics is a theory which indicates that the continents are slowly moving across the earth's surface. This is a well-established theory based on research spanning decades of observations, not just some sort of idle speculation. A good scientific theory should be well supported using observed facts and also have practical value. Famous organizational research Kurt Lewin once said, "Theory without practice is sterile; practice without theory is blind." Hence, both theory and practice are essential elements of research.

Theories should explain *why* things happen rather than just describe or predict. Note that it is possible to predict events or behaviors using a set of predictors without necessarily explaining why such events are taking place. For instance, market analysts predict fluctuations in the stock market based on market announcements, earnings reports of major companies, and new data from the Federal Reserve and other agencies, based on previously observed correlations. Prediction requires only correlations while explanations require causations. Establishing causation requires three conditions:

1. Correlations between two constructs
2. Temporal precedence (the cause must precede the effect in time)
3. Rejection of alternative hypotheses (through testing)

It is also important to understand what theory is not. Theory is not data, facts, typologies, taxonomies, or empirical findings. A collection of facts is not a theory, just as a pile of stones is not a house. Likewise, a collection of constructs (e.g., a typology of constructs) is not a theory, because theories must go well beyond constructs to include propositions, explanations, and boundary conditions. Data, facts, and findings operate at the empirical or observational level, while theories operate at a conceptual level and are based on logic rather than observations.

There are many benefits to using theories in research. First, theories provide the underlying logic explaining the occurrence of phenomena by describing the key drivers, outcomes, and underlying processes that are responsible for that phenomenon. Second, theories aid in sense-making by synthesizing prior findings within a framework. Third, theories provide guidance for future research by helping identify constructs and relationships that are worthy of further research. Fourth, theories contribute to the cumulative body of knowledge and bridge gaps between other theories by reevaluating those theories in a new light.

However, theories can also have their own share of limitations. As simplified explanations of reality, theories may not always provide adequate explanations of the phenomena of interest. Theories are designed to be simple and parsimonious explanations, while reality is

usually significantly more complex. Furthermore, theories may impose blinders or limit researchers' "range of vision," causing them to miss out on important concepts that are not defined by the theory.

2.2.2.2 *Building Blocks of a Theory*

David Whetten[42] suggests that there are four building blocks of a theory:

1. **`Constructs`** capture the "what" of theories (i.e., what concepts are important for explaining a phenomenon). They are abstract concepts specified at a high level of abstraction that are chosen specifically to explain the phenomenon of interest. Constructs may be unidimensional (i.e., embody a single concept), such as weight or age, or multi-dimensional (i.e., embody multiple underlying concepts), such as personality or culture. While some constructs, such as age, education, and firm size, are easy to understand, others, such as creativity, prejudice, and organizational agility, may be more complex and abstruse, and still others such as trust, attitude, and learning, may represent temporal tendencies rather than steady states. Nevertheless, all constructs must have clear and unambiguous operational definition that should specify exactly how the construct will be measured and at what level of analysis (individual, group, organizational, etc.). Measurable representations of abstract constructs are called variables. For instance, intelligence quotient (IQ score) is a variable that is purported to measure an abstract construct called intelligence. As noted earlier, scientific research proceeds along two planes: a theoretical plane and an empirical plane. Constructs are conceptualized at the theoretical plane, while variables are operationalized and measured at the empirical (observational) plane. Furthermore, variables may be independent, dependent, mediating, or moderating. The distinction between constructs (conceptualized at the theoretical level) and variables (measured at the empirical level) is shown in Figure 4.1.

2. **`Propositions`** capture the "how" (i.e., how are these concepts related to each other). They are associations postulated between constructs based on deductive logic. Propositions are stated in declarative form and should ideally indicate a cause-effect relationship (e.g., if X occurs, then Y will follow). Note that propositions may be conjectural but *must* be testable, and should be rejected if they are not supported by empirical observations. However, like constructs, propositions are stated at the theoretical level, and they can only be tested by examining the corresponding relationship between measurable variables of those constructs. The empirical formulation of propositions, stated as relationships between variables, is called hypotheses. The

distinction between propositions (formulated at the theoretical level) and hypotheses (tested at the empirical level) is depicted in Figure 4.1.

3. **Logic** represents the "why" (i.e., why are these concepts related). Logic provides the basis for justifying the propositions as postulated. Logic acts like a "glue" that connects the theoretical constructs and provides meaning and relevance to the relationships between these constructs. Logic also represents the "explanation" that lies at the core of a theory. Without logic, propositions will be ad hoc, arbitrary, and meaningless, and cannot be tied into a cohesive "system of propositions" that is the heart of any theory.

4. **Boundary Conditions/Assumptions** examines the "who, when, and where" (i.e., under what circumstances will these concepts and relationships work). All theories are constrained by assumptions about values, time, and space, and boundary conditions that govern where the theory can be applied and where it cannot be applied. For example, many economic theories assume that human beings are rational (or boundedly rational) and employ utility maximization based on cost and benefit expectations as a way of understand human behavior. In contrast, political science theories assume that people are more political than rational, and try to position themselves in their professional or personal environment in a way that maximizes their power and control over others. Given the nature of their underlying assumptions, economic and political theories are not directly comparable, and researchers should not use economic theories if their objective is to understand the power structure or its evolution in a organization. Likewise, theories may have implicit cultural assumptions (e.g., whether they apply to individualistic or collective cultures), temporal assumptions (e.g., whether they apply to early stages or later stages of human behavior), and spatial assumptions (e.g., whether they apply to certain localities but not to others). If a theory is to be properly used or tested, all of its implicit assumptions that form the boundaries of that theory must be properly understood. Unfortunately, theorists rarely state their implicit assumptions clearly, which leads to frequent misapplications of theories to problem situations in research.

2.2.2.3 *Variables*

A term frequently associated with, and sometimes used interchangeably with, a construct is a variable. Etymologically speaking, a variable is a quantity that can vary (e.g., from low to high, negative to positive, etc.), in contrast to constants that do not vary (i.e., remain

constant). However, in scientific research, a variable is a measurable representation of an abstract construct. As abstract entities, constructs are not directly measurable, and hence, we look for proxy measures called variables. For instance, a person's intelligence is often measured as his or her IQ (intelligence quotient) score, which is an index generated from an analytical and pattern-matching test administered to people. In this case, intelligence is a construct (a concept), and the IQ score is a variable that measures that construct. Whether IQ scores truly measures one's intelligence is anyone's guess (though many believe that they do), and depending on whether how well it measures intelligence, the IQ score may be a good or a poor measure of the intelligence construct.

Depending on their intended use, variables may be classified as

INDEPENDENT. Explain other variables.

DEPENDENT. Are explained by other variables.

MODERATING. Influence the relationship between independent and dependent variables.

MEDIATING. Are explained by independent variables while also explain dependent variables.

CONTROL. Variables that are not pertinent to explaining a dependent variable so must be controlled.

To understand the differences between these different variable types, consider the example shown in the following figure.

If the researcher believes that intelligence influences students' academic achievement, then a measure of intelligence such as an IQ score would be the independent variable while a measure of academic success, grade point average, would be the dependent variable. If it is father believed that the effect of intelligence on academic achievement is also dependent on the students' effort then "effort" becomes a moderating variable. Incidentally, it would be reasonable to also view effort as the independent variable and intelligence as a moderating variable.

2.2.2.4 *Attributes of a Good Theory*

Theories are simplified and often partial explanations of complex social reality. As such, there can be good explanations or poor explanations, and consequently, there can be good theories or poor theories. How can we evaluate the "goodness" of a given theory? Different criteria have been proposed by different researchers, the more important of which are listed below:

- Logical consistency: Are the theoretical constructs, propositions, boundary conditions, and assumptions logically consistent with

each other? If some of these "building blocks" of a theory are inconsistent with each other (e.g., a theory assumes rationality, but some constructs represent non-rational concepts), then the theory is a poor theory.

- Explanatory power: How much does a given theory explain (or predict) reality? Good theories obviously explain the target phenomenon better than rival theories, as often measured by variance explained (R-square) value in regression equations.

- Falsifiability: British philosopher Karl Popper stated in the 1940's that for theories to be valid, they must be falsifiable. Falsifiability ensures that the theory is potentially disprovable, if empirical data does not match with theoretical propositions, which allows for their empirical testing by researchers. In other words, theories cannot be theories unless they can be empirically testable. Tautological statements, such as "a day with high temperatures is a hot day" are not empirically testable because a hot day is defined (and measured) as a day with high temperatures, and hence, such statements cannot be viewed as a theoretical proposition. Falsifiability requires presence of rival explanations it ensures that the constructs are adequately measurable, and so forth. However, note that saying that a theory is falsifiable is not the same as saying that a theory should be falsified. If a theory is indeed falsified based on empirical evidence, then it was probably a poor theory to begin with!

- Parsimony: Parsimony examines how much of a phenomenon is explained with how few variables. The concept is attributed to 14th century English logician Father William of Ockham (and hence called "Ockham's razor" or "Occam's razor"), which states that among competing explanations that sufficiently explain the observed evidence, the simplest theory (i.e., one that uses the smallest number of variables or makes the fewest assumptions) is the best. Explanation of a complex social phenomenon can always be increased by adding more and more constructs. However, such approach defeats the purpose of having a theory, which are intended to be "simplified" and generalizable explanations of reality. Parsimony relates to the degrees of freedom in a given theory. parsimonious theories have higher degrees of freedom, which allow them to be more easily generalized to other contexts, settings, and populations.

2.2.2.5 *Approaches to Theorizing*

How do researchers build theories? Steinfeld and Fulk[37] recommend four such approaches. The first approach is to build theories inductively based on observed patterns of events or behaviors. Such

approach is often called "grounded theory building," because the theory is grounded in empirical observations. This technique is heavily dependent on the observational and interpretive abilities of the researcher, and the resulting theory may be subjective and non-confirmable. Furthermore, observing certain patterns of events will not necessarily make a theory, unless the researcher is able to provide consistent explanations for the observed patterns.

The second approach to theory building is to conduct a bottom-up conceptual analysis to identify different sets of predictors relevant to the phenomenon of interest using a predefined framework. One such framework may be a simple input-process-output framework, where the researcher may look for different categories of inputs, such as individual, organizational, and/or technological factors potentially related to the phenomenon of interest (the output), and describe the underlying processes that link these factors to the target phenomenon. This is also an inductive approach that relies heavily on the inductive abilities of the researcher, and interpretation may be biased by researcher's prior knowledge of the phenomenon being studied.

The third approach to theorizing is to extend or modify existing theories to explain a new context, such as by extending theories of individual learning to explain organizational learning. While making such an extension, certain concepts, propositions, and/or boundary conditions of the old theory may be retained and others modified to fit the new context. This deductive approach leverages the rich inventory of social science theories developed by prior theoreticians, and is an efficient way of building new theories by building on existing ones.

The fourth approach is to apply existing theories in entirely new contexts by drawing upon the structural similarities between the two contexts. This approach relies on reasoning by analogy, and is probably the most creative way of theorizing using a deductive approach. For instance, Markus[26] used analogic similarities between a nuclear explosion and uncontrolled growth of networks or network-based businesses to propose a critical mass theory of network growth. Just as a nuclear explosion requires a critical mass of radioactive material to sustain a nuclear explosion, Markus suggested that a network requires a critical mass of users to sustain its growth, and without such critical mass, users may leave the network, causing an eventual demise of the network.

2.3 PROPOSITIONS, HYPOTHESIS, AND MODELS

In seeking explanations to an observed phenomenon it is not adequate just to identify key constructs underlying that phenomenon, it is important to also state the patterns of the relationships between constructs. Such patterns of relationships are called propositions. A

proposition, thus, is a conjectural relationship between constructs that is stated in a declarative form. An example of a proposition is: "An increase in student intelligence leads to an increase in academic achievement." A proposition does not need to be true but it must be testable so its truth can be determined. Propositions are generally derived from either logic (deduction) or observation (induction).

Because propositions are associations between abstract constructs, they cannot be tested directly. Instead, they are tested indirectly by examining the relationship between the corresponding measures (variables) of those constructs. The formulation of a proposition is called a hypotheses. Since IQ scores and grade point average are operational measures of intelligence and academic achievement respectively, the proposition stated above can be specified in form of a hypothesis: "An increase in students' IQ score leads to an increase in their grade point average." Propositions are generated from theory while hypotheses are generated from empirical evidence. Hence, hypotheses are testable using observed data and may be rejected if the data do not support them.

Hypotheses are said to be either strong or weak. "Students' IQ scores are related to their academic achievement" is an example of a weak hypothesis since it indicates neither the directionality of the hypothesis (i.e., whether the relationship is positive or negative) nor its causality (i.e., whether intelligence causes academic achievement or academic achievement causes intelligence). A stronger hypothesis is "students' IQ scores are positively related to their academic achievement," which indicates the directionality but not the causality. A still better hypothesis is "students' IQ scores have positive effects on their academic achievement," which specifies both the directionality and the causality (i.e., intelligence causes academic achievement, and not the reverse).

Also note that hypotheses should clearly specify independent and dependent variables. In the hypothesis, "students' IQ scores have positive effects on their academic achievement," it is clear that intelligence is the independent variable (the "cause") and academic achievement is the dependent variable (the "effect"). Further, it is also clear that this hypothesis can be evaluated as either true (if higher intelligence leads to higher academic achievement) or false (if higher intelligence has no effect on or leads to lower academic achievement). Statements such as "students are generally intelligent" or "all students can achieve academic success" are not hypotheses because they do not specify independent and dependent variables nor do they specify a directional relationship that can be evaluated as true or false.

2.3.1 *Theories and Models*

A term often used in conjunction with theory is "model." A model is a representation of all or part of a system that is constructed to study that system (e.g., how the system works or what triggers the system). While a theory tries to explain a phenomenon, a model tries to represent a phenomenon in an understandable way. Models are often used to make important decisions that are based on a given set of inputs. For instance, marketing managers may use models to decide how much money to spend on advertising for different product lines based on parameters such as prior year's advertising expenses, sales, market growth, and competing products. Likewise, weather forecasters use models to predict future weather patterns based on parameters such as wind speeds, wind direction, temperature, and humidity. While these models are useful, they do not explain the theory behind advertising budgets or weather forecasting.

Models may be of different kinds, such as mathematical models, network models, and path models. Models can also be descriptive, predictive, or normative. Descriptive models are frequently used for representing complex systems, for visualizing variables and relationships in such systems. Predictive models (e.g., a regression model) allow forecast of future events. Normative models are used to guide activities along commonly accepted norms or practices. Models may also be static if it represents the state of a system at one point in time or dynamic if it represents a system's evolution over time.

The process of theory or model development may involve both inductive and deductive reasoning, as described in Chapter 1, as shown in the following figure. Induction occurs when we observe a fact and ask, "Why is this happening?" while deduction occurs when we have a theory and ask, "Is this supported by observable facts?" Both induction and deduction leads to preliminary conclusions that are then tested in order to develop a final model of the phenomenon. Researchers must be able to move back and forth between inductive and deductive reasoning if they are to post extensions or modifications to a given model or theory, or built better ones, which are the essence of scientific research.

2.4 INDUCTIVE OR DEDUCTIVE APPROACHES

Theories are used to structure research at the same time that the research structures theory. The reciprocal relationship between theory and research becomes more evident to researchers as they determine whether an inductive or deductive approach is best. Often, researchers find that a single approach is not ideal and projects iterate over many cycles of inductive/deductive approaches. It is common for a researcher to start with an inductive approach and postulate a

new theory then switch to a deductive approach to test that theory. Later the researcher may return to an inductive approach to expand and refine the theory, followed by another round of deductive methods to test the new theory.

2.4.1 *Inductive Approaches*

Saying that inductive research leads to a "theory" may be a bit of a stretch. More accurately, it leads to empiracal generalizations.

In an inductive approach to research, a researcher begins by collecting data that are relevant to the topic of interest. Once a substantial amount of data have been collected, the researcher will start to look for trends or correlations and then develop the theory that explains those patterns. Thus, an inductive approach moves from data to theory, or from specific instances to general explanations and is often referred to as a "bottom-up" approach. Figure 3 broadly outlines the process used with an inductive approach to research.

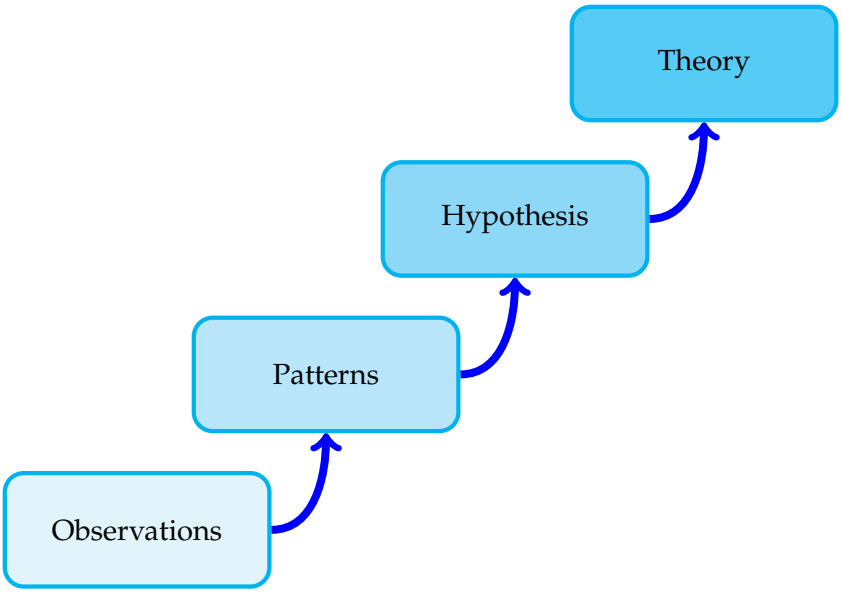


Figure 3: Inductive Reasoning

Inductive methods are commonly applied to qualitative research projects and are frequently criticized for being too subjective. The goal is, generally, to attempt to understand the dynamics of business practices and use that understanding to draw general conclusions that may apply to other businesses. The result of many qualitative research projects is what is called **`Grounded Theory`**[3] where the researcher starts with no preconceived notions and generates a new theory from the data analysis.

3 Grounded theory was first discussed by Glaser and Strauss in the late 1960's but has been discussed in many journal articles and books. See, for example, Strauss, Anselm, and Juliet Corbin[38].

Following are three examples of inductive methods research.

- Bansal, Pratima, and Roth[2] conducted a study concerning why corporations "go green." They collected data from 53 firms in the United Kingdom and Japan and analyzed that data to formulate a theory.
- Sharma[34] sent surveys to $3-5$ senior managers of 110 Canadian oil and gas companies with annual sales in excess of $20. The surveys were analyzed and the researcher concludes that managers of these companies must be influenced to embrace environmental issues as a corporate goal, but that must be done within the context of the corporate structure.
- Sia and Gopa[36] used an inductive method to analyze effect on diversity of the "psychological contract" between a corporation and its employees. A psychological contract is described as what the employee "...believes he or she has agreed to..." rather than what is actually in the employment contract. They administered two different surveys to 207 managers of public sector units in Orrisa, India. They found that certain minority groups tended to "...protect each other when required, particularly during the time of crisis." However, members of the dominant group did not engage in that type of behavior, leading to "...a feeling of non-inclusiveness."

In addition to the research studies discussed above, several papers have been recently published by various journals encouraging inductive research methods, especially in analyzing case studies. For example, Eisenhardt and Graebner[13] published an article in the *Academy of Management Journal* that suggested a process for generating theory from multiple case studies and encouraged management researchers to consider the role of theory-generation in their case studies.

2.4.2 *Deductive Approaches*

In a deductive approach to research, a researcher begins with a theory of interest and then collects data to test that theory. Thus, a deductive approach moves from a general explanation of some phenomenon to specific instances that prove, or disprove, the phenomenon and is often referred to as a "top-down" approach. Figure 4 broadly outlines the process used with a deductive approach to research.

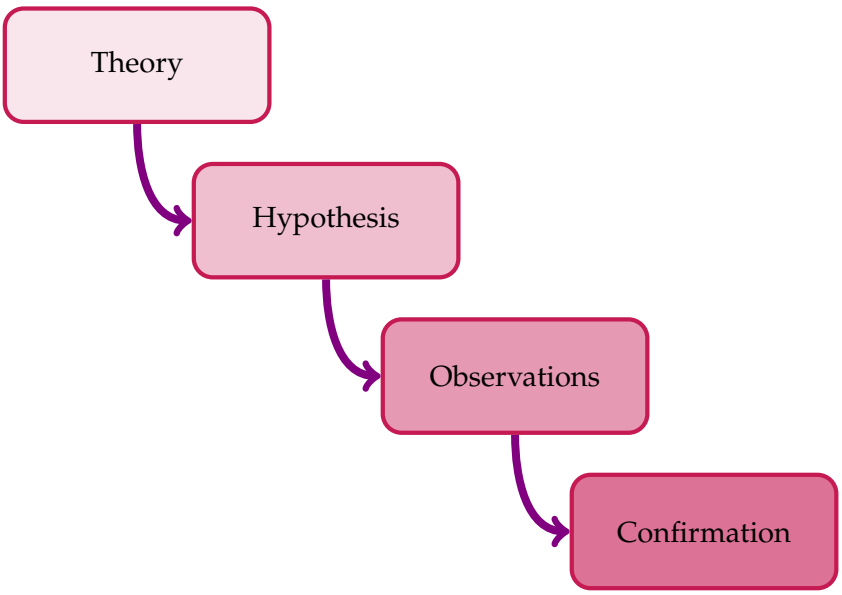


Figure 4: Deductive Reasoning

Deductive methods are commonly applied to quantitative research projects and are often considered the "gold standard" of methods, especially among researchers in the natural sciences. The goal is, generally, to test existing theories to see if they are valid in cases that have not been previously considered. Following are a few example studies that use a deductive approach.

- Parboteeah, Paik, and Cullen[28] studied the influence of religion on the workplace. They used data from more then 44 thousand individuals in 39 countries to determine if Buddhism, Christianity, Hindusim, and Islam influenced both extrinsic and intrinsic work values. They found that the results "...generally support the posited hypotheses, confirming that religion is positively related to work values." Because the study began with hypotheses and tested those hypotheses against gathered data this is a deductive methodology.

- Hackman and Oldham[18] used existing theory to develop a model to predict the conditions that will motivate employees to perform effectively on their jobs. They tested 658 employees who worked at 62 different jobs in seven organizations and found that the results support the validity of their model.

- Delaney and Huselid[12] investigated the relationship between human resource management and perceptions of organizational performance. They came up with two hypotheses and then gathered data to test those hypotheses. The result of their study is that positive human resources practices (like training programs)

have a positive correlation with the perception of the organizational performance.

2.4.3 *Complementary Approaches*

While inductive and deductive approaches to research seem quite different, they are complementary in the sense that one approach creates theories and the other tests theories. In some cases, researchers plan for their research to include multiple phases, one inductive and the other deductive. In other cases, a researcher might begin a study with the plan to only conduct either inductive or deductive research but then discover that the other approach is needed to develop a full picture.

One such example is a research project completed by Lawrence Sherman and Richard Berk[35]. They conducted an experiment to test two competing theories of the effects of punishment on deterring domestic violence. Specifically, Sherman and Berk hypothesized that deterrence theory would provide a better explanation of the effects of arresting accused batterers than labeling theory. Deterrence theory predicts that arresting an accused spouse batterer will reduce future incidents of violence while labeling theory predicts that arresting accused spouse batterers will increase future incidents.

Sherman and Berk found, after conducting an experiment with the help of local police in one city, that arrest did in fact deter future incidents of violence, thus supporting their hypothesis that deterrence theory would better predict the effect of arrest. After conducting this research, they and other researchers went on to conduct similar experiments in six additional cities but the results from these follow-up studies were mixed. In some cases, arrest deterred future incidents of violence but in other cases, it did not. This left the researchers with new data that they needed to explain. The researchers next took an inductive approach in an effort to make sense of their latest empirical observations. The new studies revealed that arrest seemed to have a deterrent effect for those who were married and employed but that it led to increased offenses for those who were unmarried and unemployed. In the end, the researchers turned to control theory and predicted that having some stake in conformity through the social ties provided by marriage and employment would deter future violence.

2.5 QUALITATIVE VS. QUANTITATIVE DATA

In Chapter 1, the differences between qualitative and quantitative research methods was discussed. This is revisited here because this distinction is relevant to how researchers design their projects.

2.6 SUMMARY

Theories, paradigms, levels of analysis, and the order in which one proceeds in the research process all play an important role in shaping what we ask about the business, how we ask it, and in some cases, even what we are likely to find. A microlevel study of employment practices will look much different than a macrolevel study. A researcher's theoretical perspective will also shape a study. In particular, the theory invoked will likely shape not only the way a question about a topic is asked but also which topic gets investigated in the first place.

This does not mean that business research is biased or corrupt. One of the main preoccupations of researchers is to recognize and address the biases that creep into the research process. It is human nature to prefer a particular approach to a research project but understanding the strengths and weaknesses of that approach is crucial for not only successfully completing a research-based investigation but also for intelligently reading and understanding research reports.

3

RESEARCH ETHICS

3.1 INTRODUCTION

Ethics is defined by Webster's dictionary as conformance to the standards of conduct of a given profession or group. Such standards are often defined at a disciplinary level though a professional code of conduct, and sometimes enforced by university committees called an *Institutional Review Board*. Even if not explicitly specified, scientists are still expected to be aware of and abide by general agreements shared by the research community on what constitutes acceptable and non-acceptable behaviors in the professional conduct of their disciplines. For instance, researchers should not manipulate their data collection, analysis, and interpretation procedures in a way that contradicts the principles of science or the scientific method or advances their personal agenda.

Why is research ethics important? Because, science has often been manipulated in unethical ways by people and organizations to advance their private agenda and engaging in activities that are contrary to the norms of scientific conduct. A classic example is pharmaceutical giant Merck's drug trials of Vioxx, where the company hid the fatal side-effects of the drug from the scientific community, resulting in 3468 deaths of Vioxx recipients, mostly from cardiac arrest. In 2010, the company agreed to a $4.85 billion settlement and appointed two independent committees and a chief medical officer to monitor the safety of its drug development process. Merck's conduct was unethical and violation the scientific principles of data collection, analysis, and interpretation. This incident was reported by Ronald Green[17].

Ethics is the moral distinction between right and wrong and what is unethical may not necessarily be illegal. A scientist's conduct may not be culpable in the eyes of the law but may still lead to disciplinary hearings, professional notoriety, and even job loss on the grounds of professional misconduct. These ethical norms may vary from one society to another and this book uses the ethical standards as applied to scientific research in Western countries.

3.2 ETHICAL PRINCIPLES

Some of the expected tenets of ethical behavior that are widely accepted within the scientific community include:

3.2.1 *Voluntary Participation*

Subjects in a research project must be aware that their participation in the study is voluntary, that they have the freedom to withdraw from the study at any time without unfavorable consequences, and they are not harmed as a result of their participation or non-participation in the project. The most flagrant violations of the voluntary participation principle are probably forced medical experiments conducted by Nazi researchers on prisoners of war during World War II, as documented in the post-War Nuremberg Trials (these experiments also originated the term "crimes against humanity"). Less known violations include the Tuskegee syphilis experiments[31] conducted by the U.S. Public Health Service between 1932 – 1972, in which nearly 400 impoverished African-American men suffering from syphilis were denied treatment even after penicillin was accepted as an effective treatment of syphilis, and subjects were presented with false treatments such as spinal taps as cures for syphilis. Even if subjects face no mortal threat, they should not be subjected to personal agony as a result of their participation. In 1971, psychologist Philip Zambardo created the *Stanford Prison Experiment*, where Stanford students recruited as subjects were randomly assigned to roles such as prisoners or guards. When it became evident that student prisoners were suffering psychological damage as a result of their mock incarceration and student guards were exhibiting sadism that would later challenge their own self-image the experiment was terminated.

As a less egregious example, instructors often ask students to fill out a questionnaire of some sort and inform the students that their participation is voluntary. This activity must be designed in such a way that students do not fear that their non-participation will hurt their grade in any way. For instance, it is unethical to provide bonus points for participation and no bonus points for non-participation because it places non-participants at a distinct disadvantage. To avoid such circumstances, instructors may provide an alternate task for non-participants so that they can earn the same number of bonus points without participating in the research study or by providing bonus points to everyone irrespective of their participation or non-participation.

3.2.2 *Informed Consent*

All participants in a study must receive and sign an Informed Consent form that clearly describes their right to not participate and right to withdraw, before their responses in the study can be recorded. In a medical study, this form must also specify any possible risks to subjects from their participation. For subjects under the age of 18, this form must be signed by their parent or legal guardian. Researchers

must retain these informed consent forms for a period of time (often three years) after the completion of the data collection process in order comply with the norms of scientific conduct in their discipline or workplace.

The consent form, itself, must not waive, or even appear to waive, any of the subject's legal rights. Subjects also cannot release a researcher or institution from any legal liability should something go wrong during the course of their participation in the research. Because sociological research does not typically involve asking subjects to place themselves at risk of physical harm by, for example, taking untested drugs or consenting to new medical procedures, sociological researchers do not often worry about potential liability associated with their research projects. However, their research may involve other types of risks. For example, if a researcher intentionally or accidentally reveals the identity of subjects who admit unusual sexual behavior the subject's social standing, marriage, custody rights, or employment could be jeopardized.

In some cases, subjects are asked to sign a physical consent form indicating that they have read it and fully understand its contents. In other cases, subjects are simply provided a copy of the consent form and researchers are responsible for making sure that subjects have read and understand the form before proceeding with any kind of data collection.

One last point to consider when preparing to obtain informed consent is that not all potential research subjects are considered equally competent or legally allowed to consent to participate in research. These subjects are sometimes referred to as members of vulnerable populations, people who may be at risk of experiencing undue influence or coercion. The rules for consent are more stringent for vulnerable populations. For example, minors must have the consent of a legal guardian in order to participate in research. In some cases, the minors themselves are also asked to participate in the consent process by signing special, age-appropriate consent forms designed specifically for them. Prisoners and parolees also qualify as vulnerable populations. Concern about the vulnerability of these subjects comes from the very real possibility that prisoners and parolees could perceive that they will receive some highly desired reward, such as early release, if they participate in research. While gaining consent from vulnerable populations can be challenging failing to work with those groups ensures that their stories are never told. While there is no easy solution to this double-edged sword, an awareness of the potential concerns associated with research on vulnerable populations is important for identifying whatever solution is most appropriate for a specific case.

3.2.3 *Confidentiality*

To protect subjects' interests and future well-being, their identity must be protected in a scientific study. This is done using the dual principles of anonymity and confidentiality. Anonymity implies that the researcher or readers of the final research report or paper cannot identify a given response with a specific respondent. An example of anonymity in scientific research is a mail survey in which no identification numbers are used to track who is responding to the survey and who is not. In studies of deviant or undesirable behaviors, such as drug use or illegal music downloading by students, truthful responses may not be obtained if subjects are not assured of anonymity. Further, anonymity assures that subjects are insulated from law enforcement or other authorities who may have an interest in identifying and tracking such subjects in the future.

In some research designs such as face-to-face interviews, anonymity is not possible. In other designs, such as a longitudinal field survey, anonymity is not desirable because it prevents the researcher from matching responses from the same subject at different points in time for longitudinal analysis. Under such circumstances, subjects should be guaranteed confidentiality, in which the researcher can identify a person's responses, but promises not to divulge that person's identify in any report, paper, or public forum. Confidentiality is a weaker form of protection than anonymity, because social research data do not enjoy the "privileged communication" status in United State courts as do communication with priests or lawyers. For instance, two years after the Exxon Valdez supertanker spilled ten million barrels of crude oil near the port of Valdez in Alaska, the communities suffering economic and environmental damage commissioned a San Diego research firm to survey the affected households about personal and embarrassing details about increased psychological problems in their family. Because the cultural norms of many Native Americans made such public revelations particularly painful and difficult, respondents were assured confidentiality of their responses. When this evidence was presented to court, Exxon petitioned the court to subpoena the original survey questionnaires (with identifying information) in order to cross-examine respondents regarding their answers that they had given to interviewers under the protection of confidentiality and was granted that request. Luckily, the Exxon Valdez case was settled before the victims were forced to testify in open court, but the potential for similar violations of confidentiality still remains. Ann Cummings[11] wrote an excellent review of this incident.

In one extreme case, Rik Scarce, a graduate student at Washington State University, conducted participant observation studies of animal rights activists, and chronicled his findings in a 1990 book

called *Ecowarriors: Understanding the Radical Environmental Movement*. In 1993, Scarce was called before a grand jury to identify the activists he studied. The researcher refused to answer grand jury questions, in keeping with his ethical obligations as a member of the *American Sociological Association*, and was forced to spend 159 days at Spokane County Jail. To protect themselves from travails similar to Rik Scarce, researchers should remove any identifying information from documents and data files as soon as they are no longer necessary. In 2002, the United States Department of Health and Human Services issued a "Certificate of Confidentiality" to protect participants in research project from police and other authorities. Not all research projects qualify for this protection, but this can provide an important support for protecting participant confidentiality in many cases.

3.2.4 *Disclosure*

Usually, researchers have an obligation to provide some information about their study to potential subjects before data collection to help them decide whether or not they wish to participate in the study. For instance, researchers have an obligation to answer questions about who is conducting the study, for what purpose, what outcomes are expected, and who will benefit from the results. However, in some cases, disclosing such information may potentially bias subjects' responses. For instance, if the purpose of a study is to examine to what extent subjects will abandon their own views to conform with "groupthink" and they participate in an experiment where they listen to others' opinions on a topic before voicing their own, then disclosing the study's purpose before the experiment will likely sensitize subjects to the treatment. Under such circumstances, even if the study's purpose cannot be revealed before the study, it should be revealed in a debriefing session immediately following the data collection process, with a list of potential risks or harm borne by the participant during the experiment.

3.2.5 *Reporting*

Researchers also have ethical obligations to the scientific community on how data is analyzed and reported in their study. Unexpected or negative findings should be fully disclosed, even if they cast some doubt on the research design or the findings. Similarly, many interesting relationships are discovered after a study is completed by chance or data mining. It is unethical to present such findings as the product of deliberate design. In other words, hypotheses should not be designed in positivist research after the fact based on the results of data analysis, because the role of data in such research is to test hypotheses, and not build them. It is also unethical to "carve" their data into

different segments to prove or disprove their hypotheses of interest, or to generate multiple papers claiming different data sets. Misrepresenting questionable claims as valid based on partial, incomplete, or improper data analysis is also dishonest. Science progresses through openness and honesty and researchers can best serve science and the scientific community by fully disclosing the problems with their research so that they can save other researchers from similar problems.

3.3 RESEARCH ON HUMANS

The U.S. Department of Health and Human Services defines a human subject as "...a living individual about whom an investigator (whether professional or student) conducting research obtains (1) Data through intervention or interaction with the individual, or (2) Identifiable private information.[1]." In some states, human subjects also include deceased individuals and human fetal materials.

Nonhuman research subjects, on the other hand, are objects or entities that investigators manipulate or analyze in the process of conducting research. In business research, nonhuman subjects typically include sources like newspapers, historical documents, advertisements, television shows, buildings, and even garbage.

Unsurprisingly, research on human subjects is regulated much more heavily than research on nonhuman subjects. However, there are ethical considerations that all researchers must consider regardless of their research subject.

3.3.1 *A Historical Look at Research on Humans*

Research on humans has not always been regulated in the way that it is today. The earliest documented cases of research using human subjects are of medical vaccination trials. One such case took place in the late 1700s, when scientist Edward Jenner exposed an eight-year-old boy to smallpox in order to identify a vaccine for the devastating disease, as reported by Stefan Riedel[32]. Medical research on human subjects continued without much law or policy intervention until the mid-1900s when, at the end of World War II, a number of Nazi doctors and scientists were put on trial for conducting human experimentation during the course of which they tortured and murdered many concentration camp inmates, as reported by Ruth Faden[16]. The trials, conducted in Nuremberg, Germany, resulted in the creation of the Nuremberg Code, a Ten-point set of research principles designed to guide doctors and scientists who conduct research on human subjects. Today, the Nuremberg Code guides medical and other research conducted on human subjects, including social scientific research.

1 https://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46/index.html#46.102.

Medical scientists are not the only researchers who have conducted questionable research on humans. In the 1960s, psychologist Stanley Milgram[2] conducted a series of experiments designed to understand obedience to authority in which he tricked subjects into believing they were administering an electric shock to other subjects. In fact, the shocks were not real at all but some participants experienced extreme emotional distress after the experiment. The realization that one is willing to administer painful shocks to another human being just because someone who looks authoritative has told you to do so might indeed be traumatizing even if you later learn that the shocks were not real.

Around the same time that Milgram conducted his experiments, sociology graduate student Laud Humphreys[21] was collecting data for his dissertation research on the tearoom trade, the practice of men engaging in anonymous sexual encounters in public restrooms. Humphreys wished to understand who these men were and why they participated in the trade. To conduct his research, Humphreys offered to serve as a "watch queen," the person who keeps an eye out for police and gets the benefit of being able to watch the sexual encounters, in a local park restroom where the tearoom trade was known to occur. What Humphreys did not do was identify himself as a researcher to his research subjects. Instead, he watched his subjects for several months, getting to know several of them, learning more about the tearoom trade practice and, without the knowledge of his research subjects, jotting down their license plate numbers as they pulled into or out of the parking lot near the restroom. Some time after participating as a watch queen, with the help of several insiders who had access to motor vehicle registration information, Humphreys used those license plate numbers to obtain the names and home addresses of his research subjects. Then, disguised as a public health researcher, Humphreys visited his subjects in their homes and interviewed them about their lives and health. Humphreys' research dispelled a good number of myths and stereotypes about the tearoom trade and its participants. He learned, for example, that over half of his subjects were married to women and many of them did not identify as gay or bisexual. However, once Humphreys's work became public, the result created a major controversy at his home university, among sociologists in general, and among members of the public, as it raised public concerns about the purpose and conduct of sociological research.

These and other studies[3] led to increasing public awareness of and concern about research on human subjects. In 1974, the U.S. Congress enacted the *National Research Act*, which created the *National Commission for the Protection of Human Subjects in Biomedical and Behavioral Research*. The commission produced *The Belmont Report*[4], a document

2 http://www.ernestoamaral.com/docs/dcp033-102/Milgram(1963).pdf
3 http://www.journalnma.org/article/S0027-9684(15)30517-4/pdf

outlining basic ethical principles for research on human subjects. The *National Research Act* also required that all institutions receiving federal support establish Institutional Review Boards (IRBs) to protect the rights of human research subjects. Since that time, many organizations that do not receive federal support but where research is conducted have also established review boards to evaluate the ethics of the research that they conduct.

3.3.2 *Institutional Review Boards*

The Institutional Review Board (IRB) is tasked with ensuring that the rights and welfare of human research subjects will be protected at all institutions, including universities, hospitals, nonprofit research institutions, and other organizations that receive federal support for research. IRBs typically consist of members from a variety of disciplines, such as sociology, economics, education, social work, and communications. Most IRBs also include representatives from the community in which they reside. For example, representatives from nearby prisons, hospitals, or treatment centers might sit on the IRBs of nearby universities. The diversity of membership helps to ensure that the complex ethical issues that may arise from human subjects research will be considered fully by a knowledgeable and experienced panel. Investigators conducting research on human subjects are required to submit proposals outlining their research plans to IRBs for review and approval prior to beginning their research.

The IRB approval process requires completing a structured application providing complete information about the research project, the researchers (principal investigators), and details on how the subjects' rights will be protected. Additional documentation such as the Informed Consent form, research questionnaire or interview protocol may be needed. The researchers must also demonstrate that they are familiar with the principles of ethical research by providing certification of their participation in an research ethics course. Data collection can commence only after the project is cleared by the IRB review committee.

Even students who conduct research on human subjects must have their proposed work reviewed and approved by the IRB before beginning any research (though, at some universities exceptions are made for student projects that will not be shared outside of the classroom).

It may be surprising to find out that IRBs are not always popular or appreciated by researchers. In some cases, researchers are concerned that the local IRB has expertise in biomedical and experimental research but not business or social fields. Unfortunately, business research is often open-ended and that can be problematic for an IRB. The members of IRBs often want to know in advance exactly who will be observed, where, when, and for how long, whether and how they

will be approached, exactly what questions they will be asked, and what predictions the researcher has for her or his findings. Providing this level of detail for a year-long participant observation within an activist group of 200-plus members, for example, would be extraordinarily frustrating for the researcher in the best of cases and most likely would prove to be impossible. Of course, IRBs do not intend to have researchers avoid studying controversial topics or avoid using certain methodologically sound data-collection techniques, but, unfortunately, that is sometimes the result. The solution is not to do away with review boards, which serve a necessary and important function, but instead to help educate IRB members about the variety of research methods and topics covered by business, sociology, and other social scientists.

3.4 PROFESSIONAL CODE OF ETHICS

Most professional associations have established and published formal codes of conduct describing what constitute acceptable and unacceptable professional behavior of their member researchers. The following codes are examples for researchers engaging in business research.

- Academy of Management (AoM) Code of Ethical Conduct. http://www.aomonline.org/governanceandethics/aomrevisedcodeofethics.pdf
- Chartered Association of Business Schools https://charteredabs.org/wp-content/uploads/2015/02/abs_ethics_guide_-_2012.pdf
- Market Research Society https://www.mrs.org.uk/standards/code_of_conduct/

It may also be useful to consider the codes developed by social science researchers.

- Social Research Association (SRA) http://the-sra.org.uk/research-ethics/ethics-guidelines/
- American Sociological Association (ASA) http://www.asanet.org/membership/code-ethics
- American Psychological Association (APA) http://www.apa.org/ethics/code/index.aspx

As an example, following is the summarized *Marketing Research Association's* (MRA) "Code of Marketing Research Standards"[4]. The code is a 20 page document that includes 42 principles and is divided into three articles, an enforcement FAQ, and two appendices.

4 The complete code of conduct is available online at http://www.insightsassociation.org/issues-policies/mra-code-marketing-research-standards

1. Article I: Responsibility to Respondents and Prospective Respondents.
    - General Conduct. This article focuses on how to treat the respondents in a research project. It includes requirements like protect their right to drop out of a research project and their right to privacy.
    - Purpose of Use. This article requires researchers to obtain a consent form and protect respondent information from improper use, like solicitations.
    - Transparancy. This article requires researchers to be honest with respondents and make the research method transparant. It includes things like not collecting information without the respondent's knowledge and keeping an internal "do not call" list so respondents can opt out of future contacts.
    - Technical Compliance. This article focuses on legal and other matters, like adhering to all state laws for projects that cross state borders and being especially careful with vulnerable populations, like children.
2. Article II: Responsibilities to Clients and Vendors. This article requires researchers to maintain a trusted relationship with clients and vendors and refrain from engaging in unacceptable practices with any research partner.
3. Article III: Professional Responsibilities. Researchers are required to report research results accurately and honestly and not falsify or omit data.

3.5 AN ETHICAL CONTROVERSY

Target stores received considerable negative publicity for using data mining and market basket analysis to identify women who are pregnant[5].

Market Basket analysis is attempting to determine the types of products that are typically purchased together, they are in the same "market basket." For example, beer and potato chips are often purchased together so if a store were running a special sale on beer it my also have a promotion for potato chips. Of course, formal market basket analysis is much more in-depth than that and can find odd relationships between numerous products. When market basket analysis gets personal the results can be ethically interesting.

5 This incident was widely reported in the popular press, including Forbes https://www.forbes.com/sites/kashmirhill/2012/02/16/how-target-figured-out-a-teen-girl-was-pregnant-before-her-father-did/#25e2ed896668 and the New York Times http://www.nytimes.com/2012/02/19/magazine/shopping-habits.html?_r=1&hp=&pagewanted=all.

For example, Target, Inc., like many large chains, have customer loyalty programs where customers can use a card or phone number to get special discounts on certain items. Of course, the entire shopping trip is then recorded in the company's database and market basket analysis can determine what this one specific customer is likely to purchase.

Target's problem began when a father in Minneapolis complained that his teen-aged daughter had received pregnancy-related coupons. He felt that the coupons were inappropriate and promoted teen pregnancy. He later found out that his daughter was, in fact, pregnant and apologized to the store manager. Target had been able to use market basket research to determine that the girl was purchasing the types of items that pregnant women purchase so they sent her targeted ads for things pregnant women need.

To build its predictive models, Target focused on women who had signed up for the baby registry. They then compared those women's purchases with all customers. Twenty-five variables were found that could identify pregnant women and even when their babies were due to an amazing degree of accuracy. The variables included things like buying large quantities of unscented lotions, supplements like calcium, magnesium, and zinc, and washcloths. The analytics were good enough that Target found that pregnant women tend to buy more hand sanitizers and washcloths as they get close to their delivery date. Target used these predictions to identify which women should receive specific coupons.

After that particular controversy settled down, Target used the same analytics to predict when people were getting married and they would send out invitations to join the bridal registry before the marrying couple had a chance to tell their parents.

In response to the negative press, Target no longer sends out ads for only one specific item, but they have become much more devious. If they know, for example, that some woman is pregnant then the circular going to that particular house will have ads for garden implements and coffee, but there will be a number of prominent ads for items that a pregnant woman would need. The house next door would get a different circular with prominent ads for, maybe, party items.

The market basket analysis being done by Target, and other stores, is perfectly legal; however, it does raise ethical questions concerning customer privacy and informed consent.

3.6 SUMMARY

Students who are embarking on a research project within a university setting should follow the code of ethics from the IRB of their institution. Researchers who are working independently should join

an appropriate professional organization (depending on the type of research they are conducting) adopt the code of ethics from that organization.

4

RESEARCH DESIGN

4.1 INTRODUCTION

A research project always starts with someone who is curious about something observed. A grocery store clerk notices that cereal in red boxes seems to come through the checkout line more frequently than cereal in blue boxes and wonders why. An economist notices that during certain times of the year the motels seem to be full when other times they are not and wonders what causes that pattern. A driver on a delivery service wonders if there is a more efficient route for the daily deliveries.

Researchers typically "start where they are," an idea eloquently described by Kristin Esterberg[15]. She stated, "Instead of thinking of yourself as a neutral, disinterested observer, think about the connections that you bring to what you plan to study." (page 12.) Whether it was thinking about a question they had pondered for some time, identifying a question about their own interests and hobbies, or taking a look at patterns in their everyday life, every researcher identifies a research question that was interesting and then collect and analyze data that helped answer that question. This chapter concerns creating a worthwhile question and planning a research project. Later chapters are devoted to collecting and analyzing data to answer a question.

Once researchers become curious about some topic of interest they must determine how they feel about the topic. An honest introspection is in order as they ask themselves what they may already believe about the topic and whether they believe that their perspective is the only valid one. If they determine that they have a preconceived notion that they think is the wisest perspective then that could be a problem. Researchers must also consider how they would react if their research proves them wrong about some believe. If they would be comfortable examining, and perhaps changing, what may be cherished notions based on their research then that is one thing, but if they would deny the research, hide the outcomes, or even change the data, then that would be a different problem altogether. Of course, just because a researcher feels strongly about a topic does not mean that it should be avoided; sometimes, the best topics to research are those about which someone feels strongly.

Researchers who are prepared to accept all findings, even those that may be unflattering or challenging, may want to intentionally study a topic that evokes strong feelings. Sociology professor Kathleen Blee[6] has taken this route in her research. She studies hate movement par-

ticipants and the people whose racist ideologies she does not share. Blee's research is successful because she was willing to report her findings and observations honestly, even those with which she may have personally taken strong issue.

One final step at this first stage is for researchers to think about what they already know about the topic of interest. There are many sources of knowledge, some are more prone to creating bias than others[1]. For example, researchers may know of a topic from family history, a television program, or through casual conversations with friends. These could all introduce bias in the researcher's mind and it is important that researchers think about how they know what they know to help identify and correct biases that they may bring to the research project.

The purpose of this chapter is to outline a process that can be used to design a research project. To be sure, this is not the only possible way to design research, in fact, it may not even be the best way for a given research project, but it would work as a starting point for many research investigations.

4.2 FIRST CONSIDERATIONS

Before starting the research design process, it would be helpful for the researcher to consider certain philosophical aspects of the project. While a failure to consider these items would not doom a research project, making these decisions early on may help to avoid messy re-starts.

4.2.1 *Exploration, Description, Explanation*

Three general goals for a research project are exploratory, descriptive, and explanatory. Researchers conducting exploratory research are typically at the early stages of examining a topic. Exploratory research is often designed to determine the feasibility a more extensive study. Descriptive research describes or defines a particular phenomenon. As an example, an economist publishing the gasoline prices in various parts of a city is conducting descriptive research. Finally, research that answers "why" questions is referred to as explanatory research. In this case, the researcher is trying to identify the causes and effects of an observed phenomenon.

Although research can be exploratory, descriptive, or explanatory, most business research tends to be either descriptive or explanatory. Economists frequently produce research reports that describe the state of the economy without necessarily proposing some experiment to test that description. On the other hand, business and marketing re-

1 See Chapter 1.1.1, page 3, for more information about sources of knowledge.

search is frequently explanatory and is designed to develop concepts and theories that explain some observed phenomenon.

4.2.2 *Is The Topic Empirical?*

An empirical topic is one that can be investigated by observation or experience rather than one that concerns only opinions or theories. As an example, if a researcher investigated the cost of health care in order to answer the question, "What is the best way to fund health care?" that would not make an appropriate empirical study since the definition of "best way" is nebulous. The question, though, could be answered if it were re-framed a bit to simply how health care was funded then that would be a topic that could be measured and reported.

As a second example, in 2005 the Christian group *Focus on the Family* denounced Spongebob Squarepants because they believe that he is a pro-gay activist as reported by David Kirkpatrick[22]. Could a researcher determine if Spongebob is immoral? Of course not; this is an ethical question, not empirical. A researcher could gather facts about people's opinions concerning Spongebob and even interview the creators of the program to see what they intended, but answering the question of morality belongs to the world of ethicists or theologians, not business researchers.

4.2.3 *The Research Question*

Once a researcher finds a topic that is empirical then the next step is to write the research question. Following are the qualities of a good research question.

1. Question. It may be rather obvious, but it must be written in the form of a question. To say that the research question is "child-free adults" or "movies" would not be a question.

2. Focused. A research question must be focused on one topic of interest and not something that is trying to explore many areas and hope that one of them "sticks."

3. Open-ended. A research question should not be answered with a simple yes or no. For example, if a researcher asks, "Does location influence the price of a real estate sale" then there is nothing left to say once the "yes" or "no" answer is determined. Rather, a question like "How does location influence the price of a real estate sale" would be much better.

4. Several answers. A good research question should have more than one plausible answer. If the question only has one possible answer then there is really nothing to research.

4.2.4 *Hypotheses*

The purpose of positivist research[2] is to test a theory and in order to do that a researcher must create a hypothesis that is derived from the theory. A hypothesis is a statement, sometimes causal, describing a researcher's expectation regarding the anticipated result of the investigation. Often, hypotheses are written to describe the expected relationship between two variables. Hypotheses are typically based on a theory and describe how an independent variable is expected to affect some dependent variable. If the theory accurately reflects the phenomenon it is designed to explain then the researcher's hypotheses should be verified.

As an example, Social Exchange Theory postulates, among other things, that positive outcomes from social exchanges over time increases trust and commitment[25]. A researcher may hypothesize that brand loyalty increases due to positive outcomes from social exchanges and then design some sort of investigation to test that hypothesis.

Sometimes, researchers hypothesize that a relationship will take a specific direction so an increase in one variable might lead to an increase in another; the variables are correlated. For example, a researcher may study the relationship between age and consumers' preference for sustainable products. The hypothesis may be something like "younger consumers tend to prefer sustainable products more than older consumers." The research would be designed to determine if there is a difference in product preference by age.

Note that researchers never say that they have proven a hypotheses. A statement that bold implies that a relationship has been shown to exist with absolute certainty and that there is no chance that there are conditions under which the hypothesis would not bear out. Instead, researchers tend to say that their hypotheses have been supported (or not). This more cautious way of discussing findings allows for the possibility that new evidence or new ways of examining a relationship will be discovered. Researchers may also discuss a "null hypothesis," one that predicts no relationship between the variables being studied. If a researcher "rejects the null hypothesis," then it means that the variables in question are somehow related to one another.

4.2.5 *Feasibility*

In Chapter 3, RESEARCH ETHICS, ethical considerations were discussed that may make some research projects unfeasible. Certainly, no researcher is going to design an experiment where a business enterprise would intentionally injure children in order to test some theory. There are, though, a few practical matters related to the feasi-

2 Researchers engaged in interpretive projects may not start with a hypothesis, but one would likely be developed as the research project proceeded.

bility of a study that researchers should consider before beginning a project.

Gaining unfettered access to a population could be problematic. For example, a project that included exploring the day-to-day experiences of maximum security prisoners may not be feasible due to the limited access a researcher would have to that population. On a more practical level, even research about something as common as children's behavior concerning snacks can raise interesting research issues. For example, Marshall, O'Donohoe, and Kline[27] conducted a study where they interviewed $8-11$ year-old children to explore their exposure to food advertising and subsequent snack preference. While it is, generally, no trouble to find children that age to interview, there are questions about how honest children are with adults in a formal interview setting. While children do not necessarily intentionally lie, their responses to interview questions are almost certainly influenced by the fact than an adult is asking. What children say to each other during play would, no doubt, be far different from what they tell an adult during an interview. It may be impossible for an adult to ever truly enter the world of a child to observe what they say and do.

Another consideration would be the limits imposed by time. Suppose a researcher wants to investigate how shopping habits change in a community that is becoming gentrified. Sullivan[39] conducted surveys to determine the demographic characteristics of shoppers who were purchasing organic food in gentrified neighborhood. Bridge and Dowling[9] considered gentrification from the perspective of the retail landscape in several gentrified neighborhoods. However, to understand the *change* that gentrification brings a researcher may need to observe a neighborhood for many years and record the demographics of the families who are shopping, interview them to find out what they are thinking and experiencing, and even analyze what they purchase. Unfortunately, researchers rarely have decades to devote to a single project so this type of longitudinal study becomes unfeasible.

The funding available for a study is also potentially limiting. Medical research often requires the use of very expensive equipment, like particle accelerators (more than $100 million), Computerized Axial Tomography (CAT) Scanners (up to $2.5 million), and Magnetic Resonance Imaging machines(about $1 million). Even surveys that use equipment no more expensive than paper and pencil require researchers to spend time in markets or other locations interviewing shoppers. If the research project involves a team of survey-takers fanning out over a wide geographic ares over several weeks then the personnel cost could easily top $100 thousand. Even something as inexpensive as offering a participant a cup of coffee during an interview has a small, but quantifiable, cost that must be met.

In sum, the feasibility of a research project must be considered when deciding what, where, when, and how to complete the project, or even if the project can be completed at all.

4.2.6 *Idiographic or Nomothetic?*

In general terms, research can be described as *idiographic* or *nomothetic*, as described y Joseph Ponterotto[29]. These terms derive from Kantian philosophy and are frequently found in research reports, especially in psychology and sociology. However, understanding these concepts is beneficial in the planning stage for for research in any field.

- Idiographic. This term comes from the Greek *idios*, which refers to an individual. Idiographic research concerns a single case or entity with no expectation that the research would be applicable to a wider application. Idiographic research sacrifices breadth of application for deeper, richer understanding of a single case. Many case studies are idiographic in the sense that only a single individual or location is studied and applicability beyond that case is not reasonable. Much of the small business research being done is idiographic in nature.
- Nomothetic. This term comes from the Greek *nomos* and refers to the population in general. The goal of nomothetic research is to predict or explain general phenomena rather than a single case. Nomothetic research sacrifices understanding of single cases for a broader application across an entire industry. Much economic research is nomothetic in nature since it attempts to explain broad trends in an entire population. For example, an economist may predict that the economy will begin to improve but that does not guarantee that a specific business will benefit.

4.2.7 *Applied or Basic?*

The contribution that a researcher hopes to make to the body of knowledge is expressed in whether the research is applied or basic. Applied research can be immediately applied to a specific case. Applied research would help a small business owner made changes in advertising that would improve the number of customers entering the store. Basic research, on the other hand, is designed to create, or validate, theories and would be useful to a legislator considering some change in the business laws of a state.

4.2.8 *Units of Analysis*

Another point to consider when designing a research project, and which might differ slightly in qualitative and quantitative studies, has to do with units of observation and units of analysis. These two items concern what the researcher observes in the course of data collection and what can later be said about those observations. A unit of observation is the item (or items) that are actually observed, measured, or collected in the course of of the research study. A unit of analysis is the entity that is reported at the end of the study, or the "main focus" of the study. In a given study, the unit of observation might be the same as the unit of analysis, but that is not always the case. What is required, however, is for researchers to be clear about how they define their units of observation and analysis, both to themselves and to their audiences.

One common unit of analysis is an individual. A research project designed to look at the shopping habits of people would use the individual as the unit of analysis. Market basket research, where the content of a shopper's basket is analyzed, uses the individual as the unit of analysis. A researcher may be interested in how some particular product makes a person feel or what thought process someone used to select a given product. One example of an individual unit of analysis can be found in investigating the role of social marketing on sales and services, as investigated by Alan Bright[10] and Philip Kotler[23].

A second common unit of analysis is groups. Groups, of course, vary in size and almost no group is too small or too large to be of interest to researchers. Families, friendship groups, and civic clubs (like *Rotary*) are a few common groups examined by researchers. As examples, researchers might study how norms of workplace behavior vary across professions or how children's sporting clubs are organized. A rich and vast body of research has been done on small businesses and this would be using a group unit of analysis[43][20].

Organizations are yet another potential unit of analysis that social scientists might wish to say something about. Organizations are large groups where the members are not necessarily as homogeneous as in a small group and includes entities like corporations, colleges and universities, and even night clubs.

As examples, researchers might study the economic impact of globalization or how unions influence the behavior of industry leadership, as researched by diana Hechavarria[19] and Randall Schuler[33].

Social phenomena are a potential unit of analysis. Social phenomena such as voting and even cell phone gadget use or misuse would be phenomena that could be researched.

Finally, researchers examine policies and principles in businesses and those are typically contained in documents. In this case, then, the

unit of observation would be a document while the unit of analysis is the business. This is also a good example of where the unit of observation and unit of analysis are different.

In sum, there are many potential units of analysis that a sociologist might examine, but some of the most common include:

1. Individuals
2. Groups
3. Organizations
4. Social phenomena
5. Policies and principles

There are also many topics that could be studied from more than one level of analysis, though that would become a more complex study. As an example, Kuruvilla and Ranganathan researched the way micro and macro human resource policies influenced economic development strategy in India[24].

4.3 THE RESEARCH PROCESS

Broadly speaking, research methods can be grouped into two broad categories: positivist and interpretive.

4.3.1 *Positivism*

- Goal: theory testing
- Methods: laboratory experiments and surveys
- Approach: deductive, starts from theory and generates empirical data to test the theory
- Data: quantitative in nature: numeric
- Analysis: statistical

4.3.2 *Interpretivism*

- Goal: theory building
- Methods: action research and ethnography
- Approach: inductive, starts from observations and generates theory
- Data: qualitative in nature: textural
- Analysis: coding

4.3.3 *Iterative Design*

At its core, all scientific research is an iterative process of observation, rationalization, and validation. In the observation phase, researchers observe a natural or social phenomenon, event, or behavior of interest. In the rationalization phase, they try to make sense of the observed phenomenon, event, or behavior by logically connecting the different pieces of the puzzle; which, in some cases, may lead to the construction of a theory. Finally, in the validation phase, those theories are scientifically tested using a process of data collection and analysis and that often leads to a modification of the initial theory. However, research designs vary based on whether the researcher starts at observation and attempts to generate a theory (interpretive research) or starts at a theory and attempts to validate it with observations (positivist research).

Most traditional research tends to be positivist in nature. Figure 5 provides a schematic view of such a research project. This figure depicts a series of activities to be performed, categorized into three phases: exploration, research design, and research execution.

This generalized design does not fit all research and it should be modified to fit the needs of a specific project.

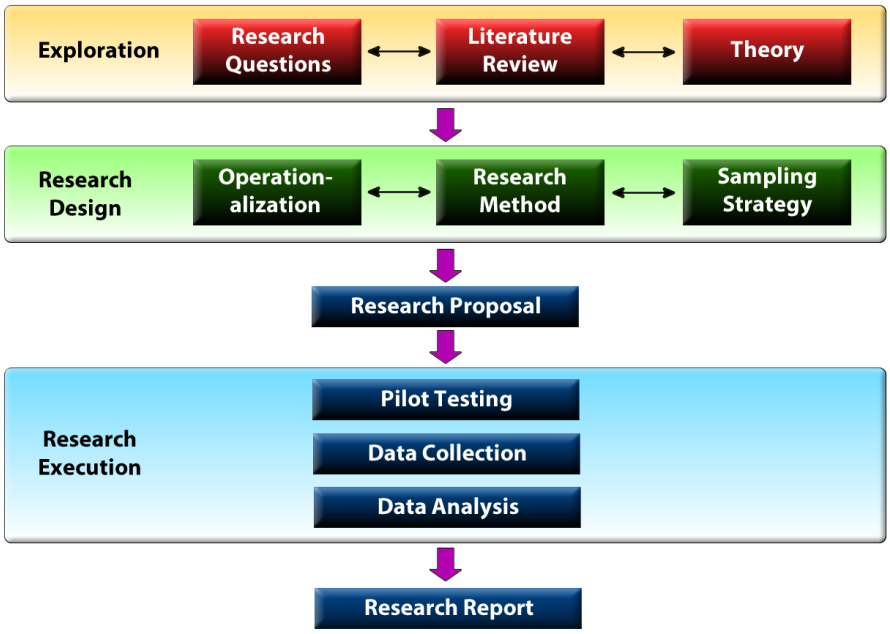


Figure 5: Positivist Research Process

1. **Exploration**. The first phase is exploration, which includes exploring and selecting research questions for further investigation, examining the published literature in the area of inquiry to understand the current state of knowledge in that area, and identifying theories that may help answer the research questions of interest. The diagram makes it clear that these three steps often run concurrently and researchers typically shift back-

and-forth between them as needed. For example, a literature review is designed to uncover pertinent theories but finding those theories may lead to further literature review.

- The first step in the exploration phase is identifying one or more research questions that deal with a specific behavior, event, or phenomena of interest. Examples include what factors motivate consumers to purchase goods and services online without knowing the vendors of these goods or services, how can high school students become more creative, and why do some people commit terrorist acts. More interesting research questions are those that appeal to a broader population (e.g., "how can firms innovate" is a more interesting research question than "how can Chinese firms innovate in the service-sector"), address real and complex problems (in contrast to hypothetical problems), and where the answers are not obvious. Narrowly focused research questions (often with only a *yes/no* answer) tend to be less useful and interesting, and generally lead to unpublishable research findings.
- The next step is to conduct a literature review of the domain of interest. The purpose of a literature review is threefold: 1) to survey the current state of knowledge in the area of inquiry, 2) to identify key authors, articles, theories, and findings in that area, and 3) to identify gaps in the knowledge that a research project may be able to fill. Once a shortlist of relevant articles is generated from a search the researcher must then manually browse through each article, or at least its abstract, to determine the suitability of that article for a detailed review. Literature reviews should be reasonably complete and not restricted to only a few journals, a few years, or a specific methodology. Reviewed articles may be summarized in the form of tables and can be further structured using organizing frameworks such as a concept matrix. A well-conducted literature review should indicate whether the initial research questions have already been addressed in the literature (which would obviate the need to study them again), whether there are newer or more interesting research questions available, and whether the original research questions should be modified or changed in light of findings of the literature review. The review can also provide some intuitions or potential answers to the questions of interest and/or help identify theories that have previously been used to address similar questions. Reading scholarly literature is different from reading a textbook or novel. Scholarly literature is typically divided into predictable sections. One of the eas-

Literature review is commonly done using searches in online databases.

iest to find is the abstract, which is a short paragraph at the beginning of an article that summarizes the research question, methods used to answer the question, and key findings. The abstract often shows whether the article is relevant to the research project. Most scholarly articles contain these sections: introduction, literature review, methodology, findings, and discussion. After the abstract, reading the discussion section is usually the next most productive. Finally, the methodology section may include important clues about a productive way to approach a research project.

- Since positivist research involves theory-testing, the third step is to identify one or more theories that can help address the desired research questions. While the literature review may uncover a wide range of concepts or constructs potentially related to the phenomenon of interest, a theory will help identify which of these constructs is logically relevant to the target phenomenon and how. Failing to identify relevant theories may result in measuring a wide range of less relevant, marginally relevant, or irrelevant constructs, while also minimizing the chances of obtaining results that are meaningful and not by pure chance. In positivist research, theories can be used as the logical basis for postulating hypotheses needed in a later step. Obviously, not all theories are well-suited for studying all phenomena. Theories must be carefully selected based on their fit with the target problem and the extent to which their assumptions are consistent with that of the target problem.

2. **Research Design**. The next phase in the research process is research design. This process creates a blueprint of research activities that will satisfactorily answer the questions identified in the exploration phase. This includes selecting a research method, operationalizing constructs of interest, and devising an appropriate sampling strategy.

    - Operationalization is the process of designing precise measures for abstract theoretical constructs. This is a major problem in business and marketing research given that many of the constructs, like "average family" and "organizational culture," are hard to define and challenging to measure. Operationalization starts with specifying an "operational definition" (or "conceptualization") of the constructs of interest. Next, the researcher searches the literature to see if there are existing measures that can be modified to measure the constructs of interest. If such measures are not available or if they reflect a different conceptualiza-

tion than that intended by the researcher then new instruments may have to be designed. This can easily be a long and laborious process, with multiple rounds of pretests and modifications before the newly-designed instrument can be accepted as "scientifically valid."

- Simultaneously with operationalization, the researcher must also decide what research method to employ for collecting data that will address the research question. Informing this stage of the process are the answers to philosophical questions like whether the research be exploratory, descriptive, or explanatory; will the approach be interpretive or positivist; is the goal to have some direct application or contribute more generally to the field; and what unit of analysis and observation will be used. Research methods may include experimentation, surveys, case studies, and others, or combinations of several methods in order to triangulate an answer. The selected method must then be further refined, for example, surveys could be administered by mail, telephone, web, or a combination. This book contains information about several types of common research methods and the decisions that a researcher must make before employing any of them.
- Researchers must also carefully choose the target population and a sampling strategy for data collection. While selecting a sample, care should be taken to avoid a biased sample that may generate biased observations. Sampling is covered in depth in a later chapter.

3. **Proposal**. At this stage, it is often a good idea to write a research proposal detailing all of the decisions made in the preceding stages of the research process and the rationale behind each decision. This multi-part proposal should address the research questions being studied and why, the current state of knowledge, theories and hypotheses to be tested, how the constructs will be measured, the research method to be employed and why, and sampling strategy. Funding agencies typically require a detailed proposal in order for them to select which to fund. Even if funding is not sought for a research project, a proposal may serve as a useful vehicle for seeking feedback from other researchers and identifying potential problems with the research project before starting data collection. This initial feedback is invaluable because it is often too late to correct critical problems after data is collected in a research study.

4. **Research Execution**. Having decided who to study (subjects), what to measure (concepts), and how to collect data (research method), the researcher is now ready to proceed to the research

execution phase. This includes pilot testing the measurement instruments, data collection, and data analysis.

- Pilot testing is an often overlooked but extremely important part of the research process. It helps detect potential problems in the research design and instrumentation (e.g., whether survey questions are intelligible to the targeted sample), and to ensure that the measurement instruments used in the study are reliable and valid measures of the constructs of interest. The pilot sample is usually a small subset of the target population. After a successful pilot testing, the researcher may then proceed with data collection using the sampled population.
- Next comes the actual collection of data. At this phase of the investigation the researcher would conduct surveys, visit field sites, interview subjects, read corporate documents, or generate whatever other data is specified by the plan.
- Following data collection, the data are analyzed and interpreted for the purpose of drawing conclusions regarding the research questions. Depending on the type of data collected (quantitative or qualitative), data analysis may be quantitative (e.g., employ statistical techniques such as regression or structural equation modeling) or qualitative (e.g., coding or content analysis).

5. **Research Report**. The final phase of research involves preparing the final research report documenting the entire research process and its findings in the form of a research paper, dissertation, or monograph. The report should outline in detail all the choices made during the research process (e.g., theory used, constructs selected, measures used, research methods, sampling, etc.) and why, as well as the outcomes of each phase of the research process. The research process must be described in sufficient detail so as to allow other researchers to replicate the study, test the findings, or assess whether the inferences derived are scientifically acceptable. Research is of no value unless the process and outcomes are documented for future generations and such documentation is essential for the progress of science.

4.4 MIXED METHODS

Up to this point, the research design has been treated as if it is an either/or proposition. Either a research project is positivist and numeric data are gathered or it is interpretative and textural data are gathered. In truth, researchers do not necessarily have to choose one

approach over another. In fact, some of the most highly regarded business and marketing investigations combine approaches in an effort to gain the most complete understanding of their topic possible. Using a combination of multiple and different research strategies is called mixed methods because the goal is to focus on "truth" from several different approaches.

Imagine that a researcher were interested in finding out how college students used electronic gadgets on campus. Instead of just conducting one type of research, maybe a survey, two research techniques could be used, a survey and individual interviews. Finally, add to the project a content analysis of campus policies and observations of students in their natural environments[3]. Researchers would end up with a comprehensive understanding of how students use electronic gadgets on campus. The drawback, of course, is that a mixed method project requires a larger number of resources, time, and expertise to complete. Also, along with gaining the benefit of the strengths of each type of research is the potential of the combined weaknesses becoming a problem.

4.5 COMMON RESEARCH MISTAKES

The research process is fraught with problems and pitfalls, and novice researchers often find, after investing substantial amounts of time and effort into a research project, that their research questions were not sufficiently answered, or that the findings were not interesting enough, or that the research was not of "acceptable" scientific quality. Such problems typically result in research papers being rejected by journals.

- Insufficiently motivated questions. Often times, researchers choose "pet" problems that are interesting to the individual but not to the scientific community at large, i.e., it does not generate new knowledge or insight about the phenomenon being investigated. Because the research process involves a significant investment of time and effort on the researcher's part, the researcher must be certain (and be able to convince others) that the research questions they seek to answer in fact deal with real problems (and not hypothetical problems) that affect a substantial portion of a population and has not been adequately addressed in prior research.
- Pursuing research fads. Another common mistake is pursuing "popular" topics with limited shelf life. A typical example is studying technologies or practices that are popular today but

3 For information about using a mixed method type of research design, see John Brewer[8] and Charles Teddlie[40].

may be obsolete in just a few years (or months). Because research takes several years to complete and publish, it is possible that popular interest in these fads may die down by the time the research is completed and submitted for publication. A better strategy may be to study "timeless" topics that have persisted through the years.

- Unresearchable problems. Some research problems may not be answered adequately based on observed evidence alone or currently accepted methods and procedures. Such problems are best avoided. However, some unresearchable, ambiguously defined problems may be modified or fine tuned into well-defined and useful researchable problems.

- Favored research methods. Many researchers have a tendency to recast a research problem so that it is amenable to their favorite research method (e. g., survey research). This is an unfortunate trend. Research methods should be chosen to best fit a research problem, and not the other way around.

- Blind data mining. Some researchers have the tendency to collect data first (using instruments that are already available), and then figure out what to do with it. In reality, data collection is only one step in the long process of planning, designing, and executing research. In fact, a series of other activities are needed in a research process prior to data collection. If researchers jump into data collection without such elaborate planning, the data collected will likely be irrelevant, imperfect, or useless, and their data collection efforts may be entirely wasted. An abundance of data cannot make up for deficits in research planning and design, and particularly, for the lack of interesting research questions.

- Ecological fallacy. This occurs when claims about one lower-level unit of analysis are made based on data from some higher-level unit of analysis. In many cases, this occurs when claims are made about individuals, but only group-level data have been gathered.

- Reductionism. This occurs when claims about some higher-level unit of analysis are made based on data from some lower-level unit of analysis. In this case, claims about groups are made based on individual-level data.

4.6 RESEARCH DESIGNS

As noted on page 52, research designs can be classified into two categories, positivist and interpretive, depending upon the researcher's

goal. Positivist designs are meant for theory testing while interpretive designs are meant for theory building. Popular examples of positivist designs include experimental (both laboratory and field), surveys, secondary data analysis, and case research while interpretive designs include case research, phenomenology, and ethnography. Note that case research can be used for both theory building and theory testing, though not at the same time. Some techniques, such as focus groups, are best suited for exploratory research, others such as ethnography are best for descriptive research, and still others such as laboratory experiments are ideal for explanatory research.

4.6.1 *Experimental*

Experimental studies are those that are intended to test cause-effect relationships (hypotheses) in a tightly controlled setting by separating the cause from the effect in time, administering the cause to one group of subjects (the "treatment group") but not to another group ("control group"), and observing how the mean effects vary between subjects in these two groups. For instance, if a laboratory experiment is designed to test the efficacy of a new drug in treating a certain ailment then a random sample of people afflicted with that ailment is found and they are randomly assigned to one of two groups (treatment and control). The drug is administered to subjects in the treatment group while a placebo is given to the control group. Finally, the two groups are monitored over a period of time to see if the treatment group has a better response than the control group. More complex designs may include multiple treatment groups, such as low versus high dosage of the drug, and multiple treatments, such as combining drug administration with dietary interventions.

In an experimental design the subjects are randomly assigned to a group. It is ideal if the researcher knows whether individuals are in the treatment or control groups but the scientists actually administering the treatment are not sure if a specific subject is receiving the drug under test or a placebo. This type of design is called a "double-blind" study since neither the subject nor the person administering the treatment are sure if they are in the treatment group.

If random assignment is not possible for some reason then the research design becomes "quasi-experimental."

Experiments can be conducted in a laboratory setting such as at a university (laboratory experiments) or in a field settings such as in an organization where the phenomenon of interest is actually occurring (field experiments). Laboratory experiments allow the researcher to isolate the variables of interest and control for extraneous variables which may not be possible in field experiments. Hence, inferences drawn from laboratory experiments tend to be stronger in internal

validity, but those from field experiments tend to be stronger in external validity.

Experimental data are analyzed using quantitative statistical techniques. The primary strength of the experimental design is its strong internal validity due to its ability to isolate, control, and intensively examine a small number of variables, while its primary weakness is limited external generalizability since real life is often more complex (i.e., involve more extraneous variables) than contrived lab settings. Furthermore, if the research does not identify relevant extraneous variables and control for those variables it may decrease internal validity and lead to spurious correlations.

4.6.2 *Surveys*

Field surveys are non-experimental designs that do not control for or manipulate independent variables or treatments but measure these variables and test their effects using statistical methods. Field surveys capture snapshots of practices, beliefs, or situations from a random sample of subjects in field settings through a survey questionnaire or, less frequently, through a structured interview. In cross-sectional field surveys, independent and dependent variables are measured at the same point in time (e.g., using a single questionnaire), while in longitudinal field surveys, dependent variables are measured at a later point in time than the independent variables. The strengths of field surveys are their external validity (since data is collected in field settings), their ability to capture and control for a large number of variables, and their ability to study a problem from multiple perspectives or using multiple theories. However, because of their non-temporal nature, internal validity (cause-effect relationships) is problematic. Surveys may also be subject to respondent biases (e.g., subjects may provide a "socially desirable" response rather than their true response) which further decreases internal validity.

4.6.3 *Secondary Data Analysis*

Secondary data analysis is analysis of data that has previously been collected and tabulated by other sources. Data sources may include government agencies (e.g. employment statistics from the U.S. Bureau of Labor Statistics), other researchers (e.g. dissertations), or publicly available third-party data (financial data from stock markets). This is in contrast to most other research designs where collecting primary data for research is part of the researcher's job. Secondary data analysis may be an effective means of research where primary data collection is too costly or unfeasible and secondary data is available at a level of analysis suitable for answering the research questions. The limitations of this design are that the data may not have been collected

in a systematic or scientific manner and hence unsuitable for scientific research. Also, since the data were collected for a presumably different purpose, they may not adequately address the research questions of interest to the researcher. Finally, interval validity is problematic if the temporal precedence between cause and effect is unclear.

4.6.4 *Case Research*

Case research[4] is an in-depth investigation of a problem in one or more real-life settings (case sites) over an extended period of time. Data may be collected using a combination of interviews, personal observations, and internal or external documents. Case studies can be positivist in nature (for hypotheses testing) or interpretive (for theory building). The strength of this research method is its ability to discover a wide variety of social, cultural, and political factors potentially related to the phenomenon of interest that may not be known in advance. Analysis tends to be qualitative in nature, but heavily contextualized and nuanced. Weaknesses of case research include dependence on the observational and analytical ability of the researcher, lack of control which makes it difficult to establish causality, and inability to generalize findings from a single case site to other case sites. Generalizability can be improved by comparing the analysis from other case sites in a multiple case design.

4.6.5 *Focus Groups*

Focus group research is a type of research that involves bringing in a small group of subjects (typically six to ten people) to one location and having them discuss a phenomenon of interest for a period of about two hours. The discussion is moderated by a trained facilitator who sets the agenda and poses an initial set of questions for participants, then ensures that ideas and experiences of all participants are recorded, and then attempts to build an understanding of the problem based on participants' comments. Internal validity cannot be established due to lack of controls and the findings may not be generalized to other settings because of small sample size. Hence, focus groups are not generally used for explanatory or descriptive research but are suited for exploratory research projects.

4.6.6 *Action Research*

Action research assumes that complex social phenomena are best understood by introducing interventions, or "actions," into those phe-

4 It is important to keep in mind that case research is not the same as a business class discussing a classic Harvard Case Study. Case research is the process of actually going to a site, gathering data, and analyzing that data.

nomena and then observing the effects of those actions. In this method, the researcher is usually a consultant or an organizational member embedded within a social context, such as an organization, who initiates an action, such as new organizational procedures or new technologies, in response to a real problem, such as declining profitability or operational bottlenecks. The researcher's choice of actions must be based on theory, which should explain why and how such actions may cause the desired change. The researcher then observes the results of that action, modifying it as necessary, while simultaneously learning from the action and generating theoretical insights about the target problem and interventions. The initial theory is validated by the extent to which the chosen action successfully solves the target problem. Simultaneous problem solving and insight generation is the central feature that distinguishes action research from all other research methods, and hence, action research is an excellent method for bridging research and practice. This method is also suited for studying unique social problems that cannot be replicated outside that context, but it is also subject to researcher bias and subjectivity, and the generalizability of findings is often restricted to the context where the study was conducted.

4.6.7 *Ethnography*

Ethnography is an interpretive research design inspired by anthropology that emphasizes the concept that a phenomenon must be studied within the context of its culture. The researcher is deeply immersed in a certain culture over an extended period of time (a few months to several years) and during that period engages, observes, and records the daily life of the studied culture. The ultimate goal is a theory about the evolution and behaviors in that culture. Data are collected primarily via observational techniques, formal and informal interaction with participants in that culture, and personal field notes, while data analysis involves "sense-making." The advantages of this approach are its sensitiveness to the context, the rich and nuanced understanding it generates, and minimal respondent bias. However, this is also an extremely time and resource-intensive approach, and findings are specific to a given culture and less generalizable to other cultures.

4.7 SELECTING THE RESEARCH DESIGN

Researchers tend to select designs that they are most comfortable with and feel most competent to handle; but, ideally, the choice should depend on the nature of the research phenomenon being studied. In the preliminary phases of research, when the research problem is unclear and the researcher wants to scope out the nature and extent of

a certain research phenomenon, a focus group (for individual unit of analysis) or a case study (for organizational unit of analysis) is an ideal strategy for exploratory research. As the research project evolves, interpretive designs, such as case research or ethnography may be useful. If a literature review finds competing theories then positivist designs such as experimental, survey, or secondary data analysis are more appropriate.

Regardless of the specific research design chosen, the researcher should attempt to collect both quantitative and qualitative data using a combination of techniques such as questionnaires, interviews, observations, documents, or secondary data. For example, even in a highly structured survey questionnaire intended to collect quantitative data, the researcher may leave room for a few open-ended questions to collect qualitative data that may generate unexpected insights not otherwise available from the structured quantitative data alone. Likewise, while case research employ mostly face-to-face interviews to collect most qualitative data, the potential and value of collecting quantitative data using a concurrent survey should not be ignored. As an example, in a study of organizational decision-making processes, the case interviewer could record numeric quantities such as how many months it took to make certain organizational decisions, how many people were involved in that decision process, and how many alternatives were considered, and those data can provide valuable insights not otherwise available from interviewees' narrative responses. Irrespective of the specific research design employed, the goal of the researcher should be to collect as much and as diverse data as possible that can help generate the best possible insights into the phenomenon of interest.

4.8 SUMMARY

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Aenean commodo ligula eget dolor. Aenean massa. Cum sociis natoque penatibus et

Part II

QUANTITATIVE METHODS

Quantitative methods are based in the measurement of concepts and the statistical analysis of those measures. Quantitative methods include activities like sampling, surveys, and experimental research.

5

SURVEY RESEARCH

How do retailers know what sorts of products their customers are likely to purchase? They ask questions and this chapter is all about asking questions and analyzing the answers. SurveyMonkey, an on-line survey tool, posted these seven most commonly-used survey questions from surveys hosted on their site[1]:

Figure 6

- What changes would most improve <our new service | specify new service>?
- What do you like <most | least> about <our new service | specify new service>?
- What changes would most improve <our new product | specify new product>?
- What do you like <most | least> about <our new product | specify new product>?
- Overall, are you satisfied with your experience using <our new product | specify new product>, neither satisfied or dissatisfied with it, or dissatisfied with it?
- Which category below includes your age?
- Are you male or female?

Most of these questions concern the customer's satisfaction, but the last two are common demographic questions.

5.1 INTRODUCTION

Survey research is a method involving the use of standardized questionnaires or interviews to collect data about people and their preferences, thoughts, and behaviors in a systematic manner. Although census surveys were conducted as early as Ancient Egypt, survey as a formal research method was pioneered in the 1930-40s by sociologist Paul Lazarsfeld to examine the effects of the radio on political opinion formation of the United States. This method has since become a very popular method for quantitative research in business and social sciences. Because most students have completed many surveys, they often underestimate the skill and effort needed to create a valid sur-

Figure 6 photo by Joshua Rawson-Harris on Unsplash

1 Found at https://www.surveymonkey.com/curiosity/the-top-7-most-used-survey-questions/ on August 17, 2018

vey. The process is time-consuming and tedious and requires many revisions.

The survey method is best suited for studies that have individual people as the unit of analysis. Although other units of analysis, such as groups, organizations or dyads (pairs of organizations, such as buyers and sellers), are also studied using surveys, such studies often use a specific person from each unit as a "key informant" or a "proxy" for that unit, and such surveys may be subject to respondent bias if the informant chosen does not have adequate knowledge or has a biased opinion about the phenomenon of interest. For instance, Chief Executive Officers may not adequately know employee's perceptions or teamwork in their own companies, and may therefore be the wrong informant for studies of team dynamics or employee self-esteem.

Survey research has several inherent strengths compared to other research methods.

1. Surveys are an excellent vehicle for measuring a wide variety of unobservable data, such as people's preferences (e.g., political orientation), traits (e.g., self-esteem), attitudes (e.g., toward immigrants), beliefs (e.g., about a new law), behaviors (e.g., smoking or drinking behavior), or factual information (e.g., income).

2. Survey research is also ideally suited for remotely collecting data about a population that is too large to observe directly. A large area, such as an entire country, can be covered using mail-in, electronic mail, or telephone surveys using meticulous sampling to ensure that the population is adequately represented in a small sample.

3. Due to their unobtrusive nature and the ability to respond at one's convenience, questionnaire surveys are preferred by some respondents.

4. Surveys are more easily generalized than other research techniques since data can be collected from very large samples at a relatively low cost.

5. Because surveys are standardized in that the same questions, phrased in exactly the same way, are posed to all participants they are more reliable than other methods of gathering data.

6. Interviews may be the only way of reaching certain population groups such as the homeless or illegal immigrants for which there is no sampling frame available.

7. Large sample surveys may allow detection of small effects even while analyzing multiple variables, and depending on the survey design, may also allow comparative analysis of population subgroups (i.e., within-group and between-group analysis).

8. Survey research is economical in terms of researcher time, effort and cost than most other methods such as experimental research and case research.

At the same time, survey research also has some disadvantages.

1. It is subject to a large number of biases such as non-response bias, sampling bias, social desirability bias, and recall bias.
2. While surveys are flexible in the sense that any number of questions on any number of topics may be asked, the researcher is also stuck with that instrument even if it is later shown to contain confusing items.
3. Survey questions must be written such that a broad range of people will understand each of them. Because of this, survey results may suffer from validity concerns not found in methods that are more flexible.

5.2 TYPES OF SURVEYS

There is much variety when it comes to surveys. This variety comes both in terms of time, that is, when or how frequently a survey is administered, and in terms of administration, that is, how a survey is delivered to respondents. This section develops both types of concepts.

5.2.1 *Time*

In terms of time, there are two main types of surveys: cross-sectional and longitudinal.

5.2.1.1 *Cross-Sectional*

Cross-sectional surveys are those that are administered at just one point in time. These surveys offer researchers a snapshot in time and provides an idea about how things are at the particular point in time. These surveys are call "cross-sectional" since they will take a snapshot across multiple analytical units. For example, a survey may be administered to staff members in the human resources department of five different companies or customers of several different movie theaters on the same evening.

An example of a cross-sectional survey is a study of e-cigarette use among adolescents conducted by Dutra and Glantz. They used a cross-sectional survey of more than 40,000 students from more than 200 middle and high schools across the United States. They deter-

mined that the use of e-cigarettes was "...associated with higher odds of ever or current cigarette smoking..."[2]

Another example of a cross-sectional survey, Jørgensen, et. al., investigated if workplace health promotions depend on the work environment. They surveyed 10,605 Danish workers and determined that lower participation in health promotions is dependent on when they are offered (during or afterwork), the social support at work for the programs, and whether their work has high physical demands. [3]

One problem with cross-sectional surveys is that the events, opinions, behaviors, and other phenomena that such surveys are designed to assess are generally not stagnant. Thus, generalizing from a cross-sectional survey about the way things are can be tricky. Perhaps something can be concluded about the way things *were* in the moment that the survey was administered, but it is difficult to know whether things remained that way afterwards. For example, imagine how Americans might have responded to a survey about terrorism on September 10, 2001, compared to September 12, 2001. The point is not that cross-sectional surveys are useless, but researchers must remember that these surveys are a snapshot in time.

5.2.1.2 *Longitudinal*

Longitudinal surveys are those that include observations made over some extended period of time. There are three types of longitudinal surveys: trend, panel, and cohort.

TREND SURVEY The first type of longitudinal survey is a trend survey, which focuses on trends. Researchers conducting trend surveys are interested in how people's inclinations change over time. The Gallup opinion polls are an excellent example of trend surveys [4]. To learn how public opinion changes over time, Gallup administers the same questions to people at different points in time. For example, for several years Gallup has polled Americans to find out what they think about gas prices. One lesson learned from Gallup's polling is that price increases in gasoline caused financial hardship for 67% of respondents in 2011, up from 40% in the year 2000. Gallup's also discovered that 34% of the people surveyed in early 2000 thought the current rise in gas prices was permanent but 54% of people in 2011 that it is. It should be noted that in a trend survey, the same people are probably not answering the researcher's questions each year. Because the interest here is in trends, not specific people, as long as the

2 Dutra, L. M., & Glantz, S. A. (2014). Electronic cigarettes and conventional cigarette use among US adolescents: a cross-sectional study. JAMA pediatrics, 168(7), 610-617.

3 Jørgensen, M. B., Villadsen, E., Burr, H., Punnett, L., & Holtermann, A. (2016). Does employee participation in workplace health promotion depend on the working environment? A cross-sectional study of Danish workers. BMJ open, 6(6), e010516.

4 http://www.gallup.com/Home.aspx

researcher's sample is representative of whatever population is being investigated, it is not important that the same people participate each time.

PANEL SURVEYS Unlike a trend survey, a panel survey uses the same people each time it is administered. As you might imagine, panel studies can be difficult and costly. Imagine trying to administer a survey to the same 100 people every year for five years in a row. Keeping track of where people live, when they move, and when they die takes resources that researchers often do not have. Panel surveys, however, can be quite powerful. The Youth Development Study (YDS)[5], administered by the University of Minnesota, is an excellent example of a panel study. Since 1988, YDS researchers have administered an annual survey to the same 1,000 people. Study participants were in ninth grade when it began and they are now in their thirties. Several hundred papers, articles, and books have been written using data from the YDS. One of the major lessons learned from this panel study is that work has a largely positive impact on young people[6]. Contrary to popular belief about the impact of work on adolescents' performance in school and transition to adulthood, work increases confidence, enhances academic success, and prepares students for success in their future careers. This panel study provided important information about the affect of work on young people.

COHORT SURVEYS In a cohort survey, a researcher identifies some category of people that are of interest and then regularly surveys the people who fall into that category. The same people do not necessarily participate from year to year, but all participants must meet whatever categorical criteria fulfill the researcher's primary interest. Common cohorts that may be of interest to researchers include people of particular generations or those who were born around the same time period, graduating classes, people who began work in a given industry at the same time, or perhaps people who have some specific life experience in common. An example of this sort of research can be seen in Christine Percheski's work on cohort differences in women's employment[7]. Percheski compared women's employment rates across seven different generational cohorts, from Progressives born between 1906 and 1915 to Generation Xers born between 1966 and 1975. She found, among other patterns, that professional women's labor force participation had increased across all cohorts. She also found that professional women with young children from Generation X had higher

5 http://www.soc.umn.edu/research/yds

6 Mortimer, J. T., Staff, J., & Oesterle, S. (2003). Adolescent work and the early socioeconomic career. In Handbook of the life course (pp. 437-459). Springer, Boston, MA.

7 Percheski, C. (2008). Opting out? Cohort differences in professional women's employment rates from 1960 to 2005. American sociological review, 73(3), 497-517.

labor force participation rates than similar women from previous generations, concluding that mothers do not appear to be opting out of the workforce as some journalists have speculated.

All three types of longitudinal surveys share the strength that they permit a researcher to make observations over time. This means that if whatever behavior or other phenomenon the researcher is interested in changes, either because of some world event or because people age, the researcher will be able to capture those changes. Table 1 summarizes each of the three types of longitudinal survey.

Type	Description
Trend	Researcher examines changes in trends over time; the same people do not necessarily participate in the survey more than once.
Panel	Researcher surveys the exact same sample several times over a period of time.
Cohort	Researcher identifies some category of people that are of interest and then regularly surveys people who fall into that category.

Table 1: Compare the Three Longitudinal Survey Types

RETROSPECTIVE SURVEYS Retrospective surveys are similar to other longitudinal studies in that they concern changes over time, but like a cross-sectional study, they are administered only once. In a retrospective survey, participants are asked to report events from the past. By having respondents report past behaviors, beliefs, or experiences, researchers are able to gather longitudinal-like data without actually incurring the time or expense of a longitudinal survey. Of course, this benefit must be weighed against the possibility that people's recollections of their pasts may be faulty. Imagine, for example, that people are asked in a survey to respond to questions about where, how, and with whom they spent last Valentine's Day. Since Valentine's Day cannot be more than 12 months ago, chances are good that they may be able to respond accurately. But if the question is to compare last Valentine's Day with the six previous Valentine's Days the result would be much different.

5.2.2 *Administration*

Surveys vary not just in terms of when they are administered but also in terms of how they are administered. One common way to administer surveys is in the form of self-administered questionnaires. This means that research participants are given a set of questions, in writing, to which they are asked to respond. Self-administered ques-

tionnaires can be delivered in hard copy format, typically via mail, or increasingly more commonly, on-line. Both modes of delivery are considered here.

Hard copy self-administered questionnaires may be delivered to participants in person or via snail mail. Students are commonly given surveys in person on campus or in large classes. Researchers may also deliver surveys in person by going door-to-door and either asking people to fill them out right away or making arrangements for the researcher to return to pick up completed surveys. Though the advent of on-line survey tools has made door-to-door delivery of surveys nearly extinct, an occasional survey researcher may still use this method, especially around election time.

If a researcher is not able to visit each member of the sample to personally deliver a survey, sending it through the mail may be another consideration. While this mode of delivery may not be ideal (imagine how much less likely someone would be to return a survey where the researcher was not standing on the doorstep waiting), sometimes it is the only available or the most practical option.

Often survey researchers who deliver their surveys via snail mail may provide some advance notice to respondents about the survey to get people thinking about and preparing to complete it. They may also follow up with their sample a few weeks after their survey has been sent out. This can be done not only to remind those who have not yet completed the survey to please do so but also to thank those who have already returned the survey. Most survey researchers agree that this sort of follow-up is essential for improving mailed surveys' return rates[8].

Online delivery of surveys are another approach to the administration challenge. This delivery mechanism is becoming increasingly common, no doubt because it is easy to use, relatively cheap, and may be quicker than knocking on doors or waiting for mailed surveys to be returned. To deliver a survey online, researchers may subscribe to a service that offers online delivery or use some delivery mechanism that is available for free, like *SurveyMonkey*[9]. One advantage to using a service like *SurveyMonkey*, aside from the advantages of online delivery, is that results can be provided in formats that are readable by data analysis programs such as *R* and *Excel*. This saves researchers the step of having to manually enter data into an analysis program, as is necessary for hard copy surveys.

Many of the suggestions provided for improving the response rate on a hard copy questionnaire apply to online questionnaires as well. One difference, of course, is that the sort of incentive that can be provided in an online format differ from those that can be given in person or

8 Babbie, E., & Wagenaar, T. (2010). Unobtrusive research. The practice of social research, 320.

9 http://www.surveymonkey.com

sent through the mail. Many online surveys only come with the incentive of knowing that the respondent is helping other people. It is possible, though, to provide some sort of coupon to a local store or Amazon.com. Commonly, online surveys provide some sort of food, like a "free drink," from the restaurant that is administering the survey. Finally, it is possible to have respondents provide some sort of contact information, like an email address, and then have a drawing for a free *Fire* tablet or some other prize. Using these sorts of rewards raises questions about the validity of the results. If people are only participating in a survey to have a chance at a prize then are they going to simply pattern-respond (choose all "A" answers, for example) or will they take the time to thoughtfully respond?

Sometimes surveys are administered by researchers posing questions directly to respondents rather than them read the questions on their own. These types of surveys are a form of interviews, which is discussed elsewhere in this book. It is enough at this point to mention that interview methodology differs significantly from survey research in that data are collected via a personal interaction.

Whatever mechanism is selected, there are both strengths and weaknesses which must be considered. While online surveys may be faster and cheaper than mailed surveys, it may be that not everyone in the sample has easy access to a computer and the internet. On the other hand, mailed surveys are more likely to reach the entire sample but also more likely to be ignored. The choice of which delivery mechanism is best depends on a number of factors including the researcher's resources, the respondent's resources, and the time available to distribute surveys and wait for responses.

5.3 DESIGNING EFFECTIVE QUESTIONNAIRES

Invented by Sir Francis Galton, a questionnaire is a research instrument consisting of a set of items intended to capture responses from respondents in a standardized format. Items may be either structured or unstructured. Structured items ask respondents to select an answer from a set of choices. The responses are then aggregated into a composite scale or index for statistical analysis. On the other hand, unstructured questions ask respondents to provide a response in their own words using a free-flow type of entry. Questions should be designed such that respondents are able to read, understand, and respond to them in a meaningful way so surveys would not be appropriate for certain demographic groups such as children or the illiterate.

Most questionnaire surveys tend to be self-administered mail surveys, where the same questionnaire is mailed to a large number of people and respondents complete and return the survey at their own convenience. Mail surveys are advantageous in that they are unob-

trusive and inexpensive to administer. However, response rates from mail surveys tend to be quite low since most people ignore survey requests. There may also be long delays, perhaps several months, before receiving the responses. That means that researchers must continuously monitor responses and send reminders to non-respondents. Questionnaire surveys are also not well-suited for issues that require clarification or require detailed responses. Finally, a longitudinal research design can send a survey to the same group of respondents several times over a long period but response rates tend to fall precipitously from one period to the next.

A second type of survey is a group-administered questionnaire. A sample of respondents is brought together at a common place and time and each respondent is asked to complete the survey questionnaire while in that room. Respondents enter their responses independently without interacting with each other. This format is convenient for the researcher and high response rate is assured. Also, if respondents do not understand any specific question, they can ask for clarification. These types of surveys are most useful in an organization where it is relatively easy to assemble a group of employees in a conference room or lunch room, especially if the survey is approved by corporate executives.

A more recent type of questionnaire survey is an online or web survey. These surveys are administered over the Internet using interactive forms. Respondents may receive an electronic mail or text message request for participation in the survey with a link to a site where the survey may be completed. Alternatively, the survey may be embedded in an e-mail and can be completed and returned immediately. These surveys are very inexpensive to administer, results are instantly recorded in an online database, and the survey can be easily modified if needed. However, if the survey website is not password-protected or designed to prevent multiple submissions, the responses can be easily compromised. Furthermore, sampling bias may be a significant issue since the survey cannot reach people that do not have computer or Internet access, such as many of the poor, senior, and minority groups; moreover, the respondent sample will be skewed toward a younger demographic who are online much of the time and have the time and ability to complete such surveys. Computing the response rate may be problematic, if the survey link is posted in Facebook, Twitter, or other social media sites instead of being e-mailed directly to targeted respondents.

5.3.1 *Asking Effective Questions*

The first thing you need to do in order to write effective survey questions is identify what exactly it is that you wish to know. As silly as it sounds to state what seems so completely obvious, I can't stress

enough how easy it is to forget to include important questions when designing a survey. Let's say you want to understand how students at your school made the transition from high school to college. Perhaps you wish to identify which students were comparatively more or less successful in this transition and which factors contributed to students' success or lack thereof. To understand which factors shaped successful students' transitions to college, you'll need to include questions in your survey about all the possible factors that could contribute. Consulting the literature on the topic will certainly help, but you should also take the time to do some brainstorming on your own and to talk with others about what they think may be important in the transition to college. Perhaps time or space limitations won't allow you to include every single item you've come up with, so you'll also need to think about ranking your questions so that you can be sure to include those that you view as most important.

Although I have stressed the importance of including questions on all topics you view as important to your overall research question, you don't want to take an everything-but-the-kitchen-sink approach by uncritically including every possible question that occurs to you. Doing so puts an unnecessary burden on your survey respondents. Remember that you have asked your respondents to give you their time and attention and to take care in responding to your questions; show them your respect by only asking questions that you view as important.

Once you've identified all the topics about which you'd like to ask questions, you'll need to actually write those questions. Questions should be as clear and to the point as possible. This is not the time to show off your creative writing skills; a survey is a technical instrument and should be written in a way that is as direct and succinct as possible. As I've said, your survey respondents have agreed to give their time and attention to your survey. The best way to show your appreciation for their time is to not waste it. Ensuring that your questions are clear and not overly wordy will go a long way toward showing your respondents the gratitude they deserve.

Related to the point about not wasting respondents' time, make sure that every question you pose will be relevant to every person you ask to complete it. This means two things: first, that respondents have knowledge about whatever topic you are asking them about, and second, that respondents have experience with whatever events, behaviors, or feelings you are asking them to report. You probably wouldn't want to ask a sample of 18-year-old respondents, for example, how they would have advised President Reagan to proceed when news of the United States' sale of weapons to Iran broke in the mid-1980s. For one thing, few 18-year-olds are likely to have any clue about how to advise a president (nor does this 30-something-year-old). Furthermore, the 18-year-olds of today were not even alive

during Reagan's presidency, so they have had no experience with the event about which they are being questioned. In our example of the transition to college, heeding the criterion of relevance would mean that respondents must understand what exactly you mean by "transition to college" if you are going to use that phrase in your survey and that respondents must have actually experienced the transition to college themselves.

If you decide that you do wish to pose some questions about matters with which only a portion of respondents will have had experience, it may be appropriate to introduce a filter question into your survey. A filter question is designed to identify some subset of survey respondents who are asked additional questions that are not relevant to the entire sample. Perhaps in your survey on the transition to college you want to know whether substance use plays any role in students' transitions. You may ask students how often they drank during their first semester of college. But this assumes that all students drank. Certainly some may have abstained, and it wouldn't make any sense to ask the nondrinkers how often they drank. Nevertheless, it seems reasonable that drinking frequency may have an impact on someone's transition to college, so it is probably worth asking this question even if doing so violates the rule of relevance for some respondents. This is just the sort of instance when a filter question would be appropriate. You may pose the question as it is presented in Figure 8.8 "Filter Question".

There are some ways of asking questions that are bound to confuse a good many survey respondents. Survey researchers should take great care to avoid these kinds of questions. These include questions that pose double negatives, those that use confusing or culturally specific terms, and those that ask more than one question but are posed as a single question. Any time respondents are forced to decipher questions that utilize two forms of negation, confusion is bound to ensue. Taking the previous question about drinking as our example, what if we had instead asked, "Did you not drink during your first semester of college?" A response of no would mean that the respondent did actually drink—he or she did not not drink. This example is obvious, but hopefully it drives home the point to be careful about question wording so that respondents are not asked to decipher double negatives. In general, avoiding negative terms in your question wording will help to increase respondent understanding. [1]

You should also avoid using terms or phrases that may be regionally or culturally specific (unless you are absolutely certain all your respondents come from the region or culture whose terms you are using). When I first moved to Maine from Minnesota, I was totally confused every time I heard someone use the word wicked. This term has totally different meanings across different regions of the country. I'd come from an area that understood the term wicked to be asso-

ciated with evil. In my new home, however, wicked is used simply to put emphasis on whatever it is that you're talking about. So if this chapter is extremely interesting to you, if you live in Maine you might say that it is "wicked interesting." If you hate this chapter and you live in Minnesota, perhaps you'd describe the chapter simply as wicked. I once overheard one student tell another that his new girlfriend was "wicked athletic." At the time I thought this meant he'd found a woman who used her athleticism for evil purposes. I've come to understand, however, that this woman is probably just exceptionally athletic. While wicked may not be a term you're likely to use in a survey, the point is to be thoughtful and cautious about whatever terminology you do use.

Asking multiple questions as though they are a single question can also be terribly confusing for survey respondents. There's a specific term for this sort of question; it is called a double-barreled question. Using our example of the transition to college,Figure 8.9 "Double-Barreled Question" shows a double-barreled question.

Figure 8.9 Double-Barreled Question

Do you see what makes the question double-barreled? How would someone respond if they felt their college classes were more demanding but also more boring than their high school classes? Or less demanding but more interesting? Because the question combines "demanding" and "interesting," there is no way to respond yes to one criterion but no to the other.

Another thing to avoid when constructing survey questions is the problem of social desirability. We all want to look good, right? And we all probably know the politically correct response to a variety of questions whether we agree with the politically correct response or not. In survey research, social desirability refers to the idea that respondents will try to answer questions in a way that will present them in a favorable light. Perhaps we decide that to understand the transition to college, we need to know whether respondents ever cheated on an exam in high school or college. We all know that cheating on exams is generally frowned upon (at least I hope we all know this). So it may be difficult to get people to admit to cheating on a survey. But if you can guarantee respondents' confidentiality, or even better, their anonymity, chances are much better that they will be honest about having engaged in this socially undesirable behavior. Another way to avoid problems of social desirability is to try to phrase difficult questions in the most benign way possible. Earl Babbie (2010) [2] offers a useful suggestion for helping you do this—simply imagine how you would feel responding to your survey questions. If you would be uncomfortable, chances are others would as well.

Finally, it is important to get feedback on your survey questions from as many people as possible, especially people who are like those in your sample. Now is not the time to be shy. Ask your friends for

help, ask your mentors for feedback, ask your family to take a look at your survey as well. The more feedback you can get on your survey questions, the better the chances that you will come up with a set of questions that are understandable to a wide variety of people and, most importantly, to those in your sample.
In sum, in order to pose effective survey questions, researchers should do the following:

- Identify what it is they wish to know.
- Keep questions clear and succinct.
- Make questions relevant to respondents.
- Use filter questions when necessary.
- Avoid questions that are likely to confuse respondents such as those that use double negatives, use culturally specific terms, or pose more than one question in the form of a single question.
- Imagine how they would feel responding to questions.
- Get feedback, especially from people who resemble those in the researcher's sample.

5.3.2 *Anol: Question Wording*

Question content and wording. Responses obtained in survey research are very sensitive to the types of questions asked. Poorly framed or ambiguous questions will likely result in meaningless responses with very little value. Dillman (1978) recommends several rules for creating good survey questions. Every single question in a survey should be carefully scrutinized for the following issues:

- Is the question clear and understandable: Survey questions should be stated in a very simple language, preferably in active voice, and without complicated words or jargon that may not be understood by a typical respondent. All questions in the questionnaire should be worded in a similar manner to make it easy for respondents to read and understand them. The only exception is if your survey is targeted at a specialized group of respondents, such as doctors, lawyers and researchers, who use such jargon in their everyday environment.
- Is the question worded in a negative manner: Negatively worded questions, such as should your local government not raise taxes, tend to confuse many responses and lead to inaccurate responses. Such questions should be avoided, and in all cases, avoid double-negatives.

- Is the question ambiguous: Survey questions should not words or expressions that may be interpreted differently by different respondents (e.g., words like "any" or "just"). For instance, if you ask a respondent, what is your annual income, it is unclear whether you referring to salary/wages, or also dividend, rental, and other income, whether you referring to personal income, family income (including spouse's wages), or personal and business income? Different interpretation by different respondents will lead to incomparable responses that cannot be interpreted correctly.

- Does the question have biased or value-laden words: Bias refers to any property of a question that encourages subjects to answer in a certain way. Kenneth Rasinky (1989) examined several studies on people's attitude toward government spending, and observed that respondents tend to indicate stronger support for "assistance to the poor" and less for "welfare", even though both terms had the same meaning. In this study, more support was also observed for "halting rising crime rate" (and less for "law enforcement"), "solving problems of big cities" (and less for "assistance to big cities"), and "dealing with drug addiction" (and less for "drug rehabilitation"). A biased language or tone tends to skew observed responses. It is often difficult to anticipate in advance the biasing wording, but to the greatest extent possible, survey questions should be carefully scrutinized to avoid biased language.

- Is the question double-barreled: Double-barreled questions are those that can have multiple answers. For example, are you satisfied with the hardware and software provided for your work? In this example, how should a respondent answer if he/she is satisfied with the hardware but not with the software or vice versa? It is always advisable to separate double-barreled questions into separate questions: (1) are you satisfied with the hardware provided for your work, and (2) are you satisfied with the software provided for your work. Another example: does your family favor public television? Some people may favor public TV for themselves, but favor certain cable TV programs such as Sesame Street for their children.

- Is the question too general: Sometimes, questions that are too general may not accurately convey respondents' perceptions. If you asked someone how they liked a certain book and provide a response scale ranging from "not at all" to "extremely well", if that person selected "extremely well", what does he/she mean? Instead, ask more specific behavioral questions, such as will you recommend this book to others, or do you plan to read other books by the same author? Likewise, instead of asking how big

is your firm (which may be interpreted differently by respondents), ask how many people work for your firm, and/or what is the annual revenues of your firm, which are both measures of firm size.

- Is the question too detailed: Avoid unnecessarily detailed questions that serve no specific research purpose. For instance, do you need the age of each child in a household or is just the number of children in the household acceptable? However, if unsure, it is better to err on the side of details than generality.

- Is the question presumptuous: If you ask, what do you see are the benefits of a tax cut, you are presuming that the respondent sees the tax cut as beneficial. But many people may not view tax cuts as being beneficial, because tax cuts generally lead to lesser funding for public schools, larger class sizes, and fewer public services such as police, ambulance, and fire service. Avoid questions with built-in presumptions.

- Is the question imaginary: A popular question in many television game shows is "if you won a million dollars on this show, how will you plan to spend it?" Most respondents have never been faced with such an amount of money and have never thought about it (most don't even know that after taxes, they will get only about $640,000 or so in the United States, and in many cases, that amount is spread over a 20-year period, so that their net present value is even less), and so their answers tend to be quite random, such as take a tour around the world, buy a restaurant or bar, spend on education, save for retirement, help parents or children, or have a lavish wedding. Imaginary questions have imaginary answers, which cannot be used for making scientific inferences.

- Do respondents have the information needed to correctly answer the question: Often times, we assume that subjects have the necessary information to answer a question, when in reality, they do not. Even if a response is obtained, in such case, the responses tend to be inaccurate, given their lack of knowledge about the question being asked. For instance, we should not ask the CEO of a company about day-to-day operational details that they may not be aware of, or asking teachers about how much their students are learning, or asking high-schoolers "Do you think the US Government acted appropriately in the Bay of Pigs crisis?"

S

5.3.3 *Response Options*

While posing clear and understandable questions in your survey is certainly important, so, too, is providing respondents with unambiguous response options. Response options are the answers that you provide to the people taking your survey. Generally respondents will be asked to choose a single (or best) response to each question you pose, though certainly it makes sense in some cases to instruct respondents to choose multiple response options. One caution to keep in mind when accepting multiple responses to a single question, however, is that doing so may add complexity when it comes to tallying and analyzing your survey results.

Offering response options assumes that your questions will be closed-ended questions. In a quantitative written survey, which is the type of survey we've been discussing here, chances are good that most if not all your questions will be closed ended. This means that you, the researcher, will provide respondents with a limited set of options for their responses. To write an effective closed-ended question, there are a couple of guidelines worth following. First, be sure that your response options are mutually exclusive. Look back at Figure 8.8 "Filter Question", which contains questions about how often and how many drinks respondents consumed. Do you notice that there are no overlapping categories in the response options for these questions? This is another one of those points about question construction that seems fairly obvious but that can be easily overlooked. Response options should also be exhaustive. In other words, every possible response should be covered in the set of response options that you provide. For example, note that in question 10a in Figure 8.8 "Filter Question" we have covered all possibilities—those who drank, say, an average of once per month can choose the first response option ("less than one time per week") while those who drank multiple times a day each day of the week can choose the last response option ("7+"). All the possibilities in between these two extremes are covered by the middle three response options.

Surveys need not be limited to closed-ended questions. Sometimes survey researchers include open-ended questions in their survey instruments as a way to gather additional details from respondents. An open-ended question does not include response options; instead, respondents are asked to reply to the question in their own way, using their own words. These questions are generally used to find out more about a survey participant's experiences or feelings about whatever they are being asked to report in the survey. If, for example, a survey includes closed-ended questions asking respondents to report on their involvement in extracurricular activities during college, an open-ended question could ask respondents why they participated in those activities or what they gained from their participation. While

responses to such questions may also be captured using a closed-ended format, allowing participants to share some of their responses in their own words can make the experience of completing the survey more satisfying to respondents and can also reveal new motivations or explanations that had not occurred to the researcher.

In Section 8.4.1 "Asking Effective Questions" we discussed double-barreled questions, but response options can also be double barreled, and this should be avoided. Figure 8.10 "Double-Barreled Response Options" is an example of a question that uses double-barreled response options.

Other things to avoid when it comes to response options include fence-sitting and floating. Fence-sitters are respondents who choose neutral response options, even if they have an opinion. This can occur if respondents are given, say, five rank-ordered response options, such as strongly agree, agree, no opinion, disagree, and strongly disagree. Some people will be drawn to respond “no opinion” even if they have an opinion, particularly if their true opinion is the nonsocially desirable opinion. Floaters, on the other hand, are those that choose a substantive answer to a question when really they don’t understand the question or don’t have an opinion. If a respondent is only given four rank-ordered response options, such as strongly agree, agree, disagree, and strongly disagree, those who have no opinion have no choice but to select a response that suggests they have an opinion.

As you can see, floating is the flip side of fence-sitting. Thus the solution to one problem is often the cause of the other. How you decide which approach to take depends on the goals of your research. Sometimes researchers actually want to learn something about people who claim to have no opinion. In this case, allowing for fence-sitting would be necessary. Other times researchers feel confident their respondents will all be familiar with every topic in their survey. In this case, perhaps it is OK to force respondents to choose an opinion. There is no always-correct solution to either problem.

Finally, using a matrix is a nice way of streamlining response options. A matrix is a question type that that lists a set of questions for which the answer categories are all the same. If you have a set of questions for which the response options are the same, it may make sense to create a matrix rather than posing each question and its response options individually. Not only will this save you some space in your survey but it will also help respondents progress through your survey more easily. A sample matrix can be seen in Figure 8.11 "Survey Questions Utilizing Matrix Format".

5.3.4 *Anol: Response Formats*

Response formats. Survey questions may be structured or unstructured. Responses to structured questions are captured using one of the following response formats:

- Dichotomous response, where respondents are asked to select one of two possible choices, such as true/false, yes/no, or agree/disagree. An example of such a question is: Do you think that the death penalty is justified under some circumstances (circle one): yes / no.
- Nominal response, where respondents are presented with more than two unordered options, such as: What is your industry of employment: manufacturing / consumer services / retail / education / healthcare / tourism & hospitality / other.
- Ordinal response, where respondents have more than two ordered options, such as: what is your highest level of education: high school / college degree / graduate studies.
- Interval-level response, where respondents are presented with a 5-point or 7-point Likert scale, semantic differential scale, or Guttman scale. Each of these scale types were discussed in a previous chapter.
- Continuous response, where respondents enter a continuous (ratio-scaled) value with a meaningful zero point, such as their age or tenure in a firm. These responses generally tend to be of the fill-in-the blanks type.

5.3.5 *Designing Questionnaires*

In addition to constructing quality questions and posing clear response options, you'll also need to think about how to present your written questions and response options to survey respondents. Questions are presented on a questionnaire, the document (either hard copy or online) that contains all your survey questions that respondents read and mark their responses on. Designing questionnaires takes some thought, and in this section we'll discuss the sorts of things you should think about as you prepare to present your well-constructed survey questions on a questionnaire.

One of the first things to do once you've come up with a set of survey questions you feel confident about is to group those questions thematically. In our example of the transition to college, perhaps we'd have a few questions asking about study habits, others focused on friendships, and still others on exercise and eating habits. Those may be the themes around which we organize our questions. Or perhaps

it would make more sense to present any questions we had about precollege life and habits and then present a series of questions about life after beginning college. The point here is to be deliberate about how you present your questions to respondents.

Once you have grouped similar questions together, you'll need to think about the order in which to present those question groups. Most survey researchers agree that it is best to begin a survey with questions that will want to make respondents continue (Babbie, 2010; Dillman, 2000; Neuman, 2003). [3] In other words, don't bore respondents, but don't scare them away either. There's some disagreement over where on a survey to place demographic questions such as those about a person's age, gender, and race. On the one hand, placing them at the beginning of the questionnaire may lead respondents to think the survey is boring, unimportant, and not something they want to bother completing. On the other hand, if your survey deals with some very sensitive or difficult topic, such as child sexual abuse or other criminal activity, you don't want to scare respondents away or shock them by beginning with your most intrusive questions.

In truth, the order in which you present questions on a survey is best determined by the unique characteristics of your research—only you, the researcher, hopefully in consultation with people who are willing to provide you with feedback, can determine how best to order your questions. To do so, think about the unique characteristics of your topic, your questions, and most importantly, your sample. Keeping in mind the characteristics and needs of the people you will ask to complete your survey should help guide you as you determine the most appropriate order in which to present your questions.

You'll also need to consider the time it will take respondents to complete your questionnaire. Surveys vary in length, from just a page or two to a dozen or more pages, which means they also vary in the time it takes to complete them. How long to make your survey depends on several factors. First, what is it that you wish to know? Wanting to understand how grades vary by gender and year in school certainly requires fewer questions than wanting to know how people's experiences in college are shaped by demographic characteristics, college attended, housing situation, family background, college major, friendship networks, and extracurricular activities. Keep in mind that even if your research question requires a good number of questions be included in your questionnaire, do your best to keep the questionnaire as brief as possible. Any hint that you've thrown in a bunch of useless questions just for the sake of throwing them in will turn off respondents and may make them not want to complete your survey.

Second, and perhaps more important, how long are respondents likely to be willing to spend completing your questionnaire? If you are studying college students, asking them to use their precious fun time away from studying to complete your survey may mean they

won't want to spend more than a few minutes on it. But if you have the endorsement of a professor who is willing to allow you to administer your survey in class, students may be willing to give you a little more time (though perhaps the professor will not). The time that survey researchers ask respondents to spend on questionnaires varies greatly. Some advise that surveys should not take longer than about 15 minutes to complete (cited in Babbie 2010), [4] others suggest that up to 20 minutes is acceptable (Hopper, 2010). [5] As with question order, there is no clear-cut, always-correct answer about questionnaire length. The unique characteristics of your study and your sample should be considered in order to determine how long to make your questionnaire.

A good way to estimate the time it will take respondents to complete your questionnaire is through pretesting. Pretesting allows you to get feedback on your questionnaire so you can improve it before you actually administer it. Pretesting can be quite expensive and time consuming if you wish to test your questionnaire on a large sample of people who very much resemble the sample to whom you will eventually administer the finalized version of your questionnaire. But you can learn a lot and make great improvements to your questionnaire simply by pretesting with a small number of people to whom you have easy access (perhaps you have a few friends who owe you a favor). By pretesting your questionnaire you can find out how understandable your questions are, get feedback on question wording and order, find out whether any of your questions are exceptionally boring or offensive, and learn whether there are places where you should have included filter questions, to name just a few of the benefits of pretesting. You can also time pretesters as they take your survey. Ask them to complete the survey as though they were actually members of your sample. This will give you a good idea about what sort of time estimate to provide respondents when it comes time to actually administer your survey, and about whether you have some wiggle room to add additional items or need to cut a few items.

Perhaps this goes without saying, but your questionnaire should also be attractive. A messy presentation style can confuse respondents or, at the very least, annoy them. Be brief, to the point, and as clear as possible. Avoid cramming too much into a single page, make your font size readable (at least 12 point), leave a reasonable amount of space between items, and make sure all instructions are exceptionally clear. Think about books, documents, articles, or web pages that you have read yourself—which were relatively easy to read and easy on the eyes and why? Try to mimic those features in the presentation of your survey questions.

5.3.6 *Anol: Question Sequencing*

Question sequencing. In general, questions should flow logically from one to the next. To achieve the best response rates, questions should flow from the least sensitive to the most sensitive, from the factual and behavioral to the attitudinal, and from the more general to the more specific. Some general rules for question sequencing:

- Start with easy non-threatening questions that can be easily recalled. Good options are demographics (age, gender, education level) for individual-level surveys and firmographics (employee count, annual revenues, industry) for firm-level surveys.
- Never start with an open ended question.
- If following an historical sequence of events, follow a chronological order from earliest to latest.
- Ask about one topic at a time. When switching topics, use a transition, such as "The next section examines your opinions about . . . "
- Use filter or contingency questions as needed, such as: "If you answered "yes" to question 5, please proceed to Section 2. If you answered "no" go to Section 3."

5.3.7 *Anol: Other Golden Rules*

Other golden rules. Do unto your respondents what you would have them do unto you. Be attentive and appreciative of respondents' time, attention, trust, and confidentiality of personal information. Always practice the following strategies for all survey research:

- People's time is valuable. Be respectful of their time. Keep your survey as short as possible and limit it to what is absolutely necessary. Respondents do not like spending more than 10-15 minutes on any survey, no matter how important it is. Longer surveys tend to dramatically lower response rates.
- Always assure respondents about the confidentiality of their responses, and how you will use their data (e.g., for academic research) and how the results will be reported (usually, in the aggregate).
- For organizational surveys, assure respondents that you will send them a copy of the final results, and make sure that you follow up with your promise.
- Thank your respondents for their participation in your study.

- Finally, always pretest your questionnaire, at least using a convenience sample, before administering it to respondents in a field setting. Such pretesting may uncover ambiguity, lack of clarity, or biases in question wording, which should be eliminated before administering to the intended sample.

KEY TAKEAWAYS

- Brainstorming and consulting the literature are two important early steps to take when preparing to write effective survey questions.
- Make sure that your survey questions will be relevant to all respondents and that you use filter questions when necessary.
- Getting feedback on your survey questions is a crucial step in the process of designing a survey.
- When it comes to creating response options, the solution to the problem of fence-sitting might cause floating, whereas the solution to the problem of floating might cause fence sitting.
- Pretesting is an important step for improving one's survey before actually administering it.

5.4 ANALYSIS OF SURVEY DATA

Objectives

- Define response rate, and discuss some of the current thinking about response rates.
- Describe what a codebook is and what purpose it serves.
- Define univariate, bivariate, and multivariate analysis.
- Describe each of the measures of central tendency.
- Describe what a contingency table displays.

This text is primarily focused on designing research, collecting data, and becoming a knowledgeable and responsible consumer of research. We won't spend as much time on data analysis, or what to do with our data once we've designed a study and collected it, but I will spend some time in each of our data-collection chapters describing some important basics of data analysis that are unique to each method. Entire textbooks could be (and have been) written entirely on data analysis. In fact, if you've ever taken a statistics class, you already know much about how to analyze quantitative survey data.

Here we'll go over a few basics that can get you started as you begin to think about turning all those completed questionnaires into findings that you can share.

5.4.1 *From Completed Questionnaires to Data*

It can be very exciting to receive those first few completed surveys back from respondents. Hopefully you'll even get more than a few back, and once you have a handful of completed questionnaires, your feelings may go from initial euphoria to dread. Data are fun and can also be overwhelming. The goal with data analysis is to be able to condense large amounts of information into usable and understandable chunks. Here we'll describe just how that process works for survey researchers.

As mentioned, the hope is that you will receive a good portion of the questionnaires you distributed back in a completed and readable format. The number of completed questionnaires you receive divided by the number of questionnaires you distributed is your response rate. Let's say your sample included 100 people and you sent questionnaires to each of those people. It would be wonderful if all 100 returned completed questionnaires, but the chances of that happening are about zero. If you're lucky, perhaps 75 or so will return completed questionnaires. In this case, your response rate would be 75% (75 divided by 100). That's pretty darn good. Though response rates vary, and researchers don't always agree about what makes a good response rate, having three-quarters of your surveys returned would be considered good, even excellent, by most survey researchers.

There has been lots of research done on how to improve a survey's response rate. We covered some of these previously, but suggestions include personalizing questionnaires by, for example, addressing them to specific respondents rather than to some generic recipient such as "madam" or "sir"; enhancing the questionnaire's credibility by providing details about the study, contact information for the researcher, and perhaps partnering with agencies likely to be respected by respondents such as universities, hospitals, or other relevant organizations; sending out prequestionnaire notices and postquestionnaire reminders; and including some token of appreciation with mailed questionnaires even if small, such as a $1 bill.

The major concern with response rates is that a low rate of response may introduce nonresponse bias into a study's findings. What if only those who have strong opinions about your study topic return their questionnaires? If that is the case, we may well find that our findings don't at all represent how things really are or, at the very least, we are limited in the claims we can make about patterns found in our data. While high return rates are certainly ideal, a recent body of research shows that concern over response rates may be overblown (Langer,

2003). [1] Several studies have shown that low response rates did not make much difference in findings or in sample representativeness (Curtin, Presser, & Singer, 2000; Keeter, Kennedy, Dimock, Best, & Craighill, 2006; Merkle & Edelman, 2002). [2] For now, the jury may still be out on what makes an ideal response rate and on whether, or to what extent, researchers should be concerned about response rates. Nevertheless, certainly no harm can come from aiming for as high a response rate as possible.

Whatever your survey's response rate, the major concern of survey researchers once they have their nice, big stack of completed questionnaires is condensing their data into manageable, and analyzable, bits. One major advantage of quantitative methods such as survey research, as you may recall from Chapter 1 "Introduction", is that they enable researchers to describe large amounts of data because they can be represented by and condensed into numbers. In order to condense your completed surveys into analyzable numbers, you'll first need to create a codebook. A codebook is a document that outlines how a survey researcher has translated her or his data from words into numbers. An excerpt from the codebook I developed from my survey of older workers can be seen in Table 8.2 "Codebook Excerpt From Survey of Older Workers". The coded responses you see can be seen in their original survey format in Chapter 6 "Defining and Measuring Concepts", Figure 6.12 "Example of an Index Measuring Financial Security". As you'll see in the table, in addition to converting response options into numerical values, a short variable name is given to each question. This shortened name comes in handy when entering data into a computer program for analysis.

If you've administered your questionnaire the old fashioned way, via snail mail, the next task after creating your codebook is data entry. If you've utilized an online tool such as SurveyMonkey to administer your survey, here's some good news—most online survey tools come with the capability of importing survey results directly into a data analysis program. Trust me—this is indeed most excellent news. (If you don't believe me, I highly recommend administering hard copies of your questionnaire next time around. You'll surely then appreciate the wonders of online survey administration.)

For those who will be conducting manual data entry, there probably isn't much I can say about this task that will make you want to perform it other than pointing out the reward of having a database of your very own analyzable data. We won't get into too many of the details of data entry, but I will mention a few programs that survey researchers may use to analyze data once it has been entered. The first is SPSS, or the Statistical Package for the Social Sciences (http://www.spss.com). SPSS is a statistical analysis computer program designed to analyze just the sort of data quantitative survey researchers collect. It can per-

form everything from very basic descriptive statistical analysis to more complex inferential statistical analysis. SPSS is touted by many for being highly accessible and relatively easy to navigate (with practice). Other programs that are known for their accessibility include MicroCase (http://www.microcase.com/index.html), which includes many of the same features as SPSS, and Excel (http://office.microsoft.com/en-us/excel-help/about-statistical-analysis-tools-HP005203873.aspx), which is far less sophisticated in its statistical capabilities but is relatively easy to use and suits some researchers' purposes just fine. Check out the web pages for each, which I've provided links to in the chapter's endnotes, for more information about what each package can do.

5.4.2 *Identifying Patterns*

Data analysis is about identifying, describing, and explaining patterns.Univariate analysis is the most basic form of analysis that quantitative researchers conduct. In this form, researchers describe patterns across just one variable. Univariate analysis includes frequency distributions and measures of central tendency. A frequency distribution is a way of summarizing the distribution of responses on a single survey question. Let's look at the frequency distribution for just one variable from my older worker survey. We'll analyze the item mentioned first in the codebook excerpt given earlier, on respondents' self-reported financial security.

As you can see in the frequency distribution on self-reported financial security, more respondents reported feeling "moderately secure" than any other response category. We also learn from this single frequency distribution that fewer than 10% of respondents reported being in one of the two most secure categories. Another form of univariate analysis that survey researchers can conduct on single variables is measures of central tendency. Measures of central tendency tell us what the most common, or average, response is on a question. Measures of central tendency can be taken for any level variable of those we learned about in Chapter 6 "Defining and Measuring Concepts", from nominal to ratio. There are three kinds of measures of central tendency: modes, medians, and means. Mode refers to the most common response given to a question. Modes are most appropriate for nominal-level variables. A median is the middle point in a distribution of responses. Median is the appropriate measure of central tendency for ordinal-level variables. Finally, the measure of central tendency used for interval- and ratio-level variables is the mean. To obtain a mean, one must add the value of all responses on a given variable and then divide that number of the total number of responses.

In the previous example of older workers' self-reported levels of financial security, the appropriate measure of central tendency would

be the median, as this is an ordinal-level variable. If we were to list all responses to the financial security question in order and then choose the middle point in that list, we'd have our median. In Figure 8.12 "Distribution of Responses and Median Value on Workers' Financial Security", the value of each response to the financial security question is noted, and the middle point within that range of responses is highlighted. To find the middle point, we simply divide the number of valid cases by two. The number of valid cases, 180, divided by 2 is 90, so we're looking for the 90th value on our distribution to discover the median. As you'll see inFigure 8.12 "Distribution of Responses and Median Value on Workers' Financial Security", that value is 3, thus the median on our financial security question is 3, or "moderately secure."

Figure 8.12 Distribution of Responses and Median Value on Workers' Financial Security

As you can see, we can learn a lot about our respondents simply by conducting univariate analysis of measures on our survey. We can learn even more, of course, when we begin to examine relationships among variables. Either we can analyze the relationships between two variables, called bivariate analysis, or we can examine relationships among more than two variables. This latter type of analysis is known as multivariate analysis.

Bivariate analysis allows us to assess covariation among two variables. This means we can find out whether changes in one variable occur together with changes in another. If two variables do not covary, they are said to have independence. This means simply that there is no relationship between the two variables in question. To learn whether a relationship exists between two variables, a researcher may cross-tabulate the two variables and present their relationship in a contingency table. A contingency table shows how variation on one variable may be contingent on variation on the other. Let's take a look at a contingency table. In Table 8.4 "Financial Security Among Men and Women Workers Age 62 and Up", I have cross-tabulated two questions from my older worker survey: respondents' reported gender and their self-rated financial security.

You'll see in Table 8.4 "Financial Security Among Men and Women Workers Age 62 and Up" that I collapsed a couple of the financial security response categories (recall that there were five categories presented in Table 8.3 "Frequency Distribution of Older Workers' Financial Security"; here there are just three). Researchers sometimes collapse response categories on items such as this in order to make it easier to read results in a table. You'll also see that I placed the variable "gender" in the table's columns and "financial security" in its rows. Typically, values that are contingent on other values are placed in rows (a.k.a. dependent variables), while independent variables are placed in columns. This makes comparing across categories of our in-

dependent variable pretty simple. Reading across the top row of our table, we can see that around 44% of men in the sample reported that they are not financially secure while almost 52% of women reported the same. In other words, more women than men reported that they are not financially secure. You'll also see in the table that I reported the total number of respondents for each category of the independent variable in the table's bottom row. This is also standard practice in a bivariate table, as is including a table heading describing what is presented in the table.

Researchers interested in simultaneously analyzing relationships among more than two variables conduct multivariate analysis. If I hypothesized that financial security declines for women as they age but increases for men as they age, I might consider adding age to the preceding analysis. To do so would require multivariate, rather than bivariate, analysis. We won't go into detail here about how to conduct multivariate analysis of quantitative survey items here, but we will return to multivariate analysis in Chapter 14 "Reading and Understanding Social Research", where we'll discuss strategies for reading and understanding tables that present multivariate statistics. If you are interested in learning more about the analysis of quantitative survey data, I recommend checking out your campus's offerings in statistics classes. The quantitative data analysis skills you will gain in a statistics class could serve you quite well should you find yourself seeking employment one day.

5.4.3 *Anol: Biases in Survey Research*

Despite all of its strengths and advantages, survey research is often tainted with systematic biases that may invalidate some of the inferences derived from such surveys. Five such biases are the non-response bias, sampling bias, social desirability bias, recall bias, and common method bias.

Non-response bias. Survey research is generally notorious for its low response rates. A response rate of 15-20% is typical in a mail survey, even after two or three reminders. If the majority of the targeted respondents fail to respond to a survey, then a legitimate concern is whether non-respondents are not responding due to a systematic reason, which may raise questions about the validity of the study's results. For instance, dissatisfied customers tend to be more vocal about their experience than satisfied customers, and are therefore more likely to respond to questionnaire surveys or interview requests than satisfied customers. Hence, any respondent sample is likely to have a higher proportion of dissatisfied customers than the underlying population from which it is drawn. In this instance, not only will the results lack generalizability, but the observed outcomes may

also be an artifact of the biased sample. Several strategies may be employed to improve response rates:

- Advance notification: A short letter sent in advance to the targeted respondents soliciting their participation in an upcoming survey can prepare them in advance and improve their propensity to respond. The letter should state the purpose and importance of the study, mode of data collection (e.g., via a phone call, a survey form in the mail, etc.), and appreciation for their cooperation. A variation of this technique may request the respondent to return a postage-paid postcard indicating whether or not they are willing to participate in the study.
- Relevance of content: If a survey examines issues of relevance or importance to respondents, then they are more likely to respond than to surveys that don't matter to them.
- Respondent-friendly questionnaire: Shorter survey questionnaires tend to elicit higher response rates than longer questionnaires. Furthermore, questions that are clear, nonoffensive, and easy to respond tend to attract higher response rates.
- Endorsement: For organizational surveys, it helps to gain endorsement from a senior executive attesting to the importance of the study to the organization. Such endorsement can be in the form of a cover letter or a letter of introduction, which can improve the researcher's credibility in the eyes of the respondents.
- Follow-up requests: Multiple follow-up requests may coax some non-respondents to respond, even if their responses are late.
- Interviewer training: Response rates for interviews can be improved with skilled interviewers trained on how to request interviews, use computerized dialing techniques to identify potential respondents, and schedule callbacks for respondents who could not be reached.
- Incentives: Response rates, at least with certain populations, may increase with the use of incentives in the form of cash or gift cards, giveaways such as pens or stress balls, entry into a lottery, draw or contest, discount coupons, promise of contribution to charity, and so forth.
- Non-monetary incentives: Businesses, in particular, are more prone to respond to nonmonetary incentives than financial incentives. An example of such a non-monetary incentive is a benchmarking report comparing the business's individual response against the aggregate of all responses to a survey.

- Confidentiality and privacy: Finally, assurances that respondents' private data or responses will not fall into the hands of any third party, may help improve response rates.

Sampling bias. Telephone surveys conducted by calling a random sample of publicly available telephone numbers will systematically exclude people with unlisted telephone numbers, mobile phone numbers, and people who are unable to answer the phone (for instance, they are at work) when the survey is being conducted, and will include a disproportionate number of respondents who have land-line telephone service with listed phone numbers and people who stay home during much of the day, such as the unemployed, the disabled, and the elderly. Likewise, online surveys tend to include a disproportionate number of students and younger people who are constantly on the Internet, and systematically exclude people with limited or no access to computers or the Internet, such as the poor and the elderly. Similarly, questionnaire surveys tend to exclude children and the illiterate, who are unable to read, understand, or meaningfully respond to the questionnaire. A different kind of sampling bias relate to sampling the wrong population, such as asking teachers (or parents) about academic learning of their students (or children), or asking CEOs about operational details in their company. Such biases make the respondent sample unrepresentative of the intended population and hurt generalizability claims about inferences drawn from the biased sample.

Social desirability bias. Many respondents tend to avoid negative opinions or embarrassing comments about themselves, their employers, family, or friends. With negative questions such as do you think that your project team is dysfunctional, is there a lot of office politics in your workplace, or have you ever illegally downloaded music files from the Internet, the researcher may not get truthful responses. This tendency among respondents to "spin the truth" in order to portray themselves in a socially desirable manner is called the "socialdesirability bias", which hurts the validity of response obtained from survey research. There is practically no way of overcoming the social desirability bias in a questionnaire survey, but in an interview setting, an astute interviewer may be able to spot inconsistent answers and ask probing questions or use personal observations to supplement respondents' comments.

Recall bias. Responses to survey questions often depend on subjects' motivation, memory, and ability to respond. Particularly when dealing with events that happened in the distant past, respondents may not adequately remember their own motivations or behaviors or perhaps their memory of such events may have evolved with time and no longer retrievable. For instance, if a respondent to asked to describe his/her utilization of computer technology one year ago or even memorable childhood events like birthdays, their response may

not be accurate due to difficulties with recall. One possible way of overcoming the recall bias is by anchoring respondent's memory in specific events as they happened, rather than asking them to recall their perceptions and motivations from memory.

Common method bias. Common method bias refers to the amount of spurious covariance shared between independent and dependent variables that are measured at the same point in time, such as in a cross-sectional survey, using the same instrument, such as a questionnaire. In such cases, the phenomenon under investigation may not be adequately separated from measurement artifacts. Standard statistical tests are available to test for common method bias, such as Harmon's single-factor test (Podsakoff et al. 2003), Lindell and Whitney's (2001) market variable technique, and so forth. This bias can be potentially avoided if the independent and dependent variables are measured at different points in time, using a longitudinal survey design, of if these variables are measured using different methods, such as computerized recording of dependent variable versus questionnaire-based self-rating of independent variables.

5.5 SUMMARY

- Sometimes researchers may make claims about populations other than those from whom their samples were drawn; other times they may make claims about a population based on a sample that is not representative. As consumers of research, we should be attentive to both possibilities.
- A researcher's findings need not be generalizable to be valuable; samples that allow for comparisons of theoretically important concepts or variables may yield findings that contribute to our social theories and our understandings of social processes.

BIBLIOGRAPHY

[1] Samuel B Bacharach. "Organizational theories: Some criteria for evaluation." In: *Academy of management review* 14.4 (1989), pp. 496–515.

[2] Pratima Bansal and Kendall Roth. "Why companies go green: A model of ecological responsiveness." In: *Academy of management journal* 43.4 (2000), pp. 717–736.

[3] Anol Bhattacherjee. "Social science research: Principles, methods, and practices." In: (2012).

[4] National Commission for the Proptection of Human Subjects of Biomedical and Md Behavioral Research Bethesda. *The Belmont report: Ethical principles and guidelines for the protection of human subjects of research*. Superintendent of Documents, 1978.

[5] Amy Blackstone. *Principles of sociological inquiry–qualitative and quantitative methods*. The Saylor Foundation, 2012.

[6] Kathleen M Blee. "Racial violence in the United States." In: *Ethnic and Racial Studies* 28.4 (2005), pp. 599–619.

[7] Donna Bobbitt-Zeher and Douglas B Downey. "Number of siblings and friendship nominations among adolescents." In: *Journal of Family Issues* 34.9 (2013), pp. 1175–1193.

[8] John Brewer and Albert Hunter. *Multimethod research: a synthesis of styles*. Sage Publications, Inc, 1989.

[9] Gary Bridge and Robyn Dowling. "Microgeographies of retailing and gentrification." In: *Australian Geographer* 32.1 (2001), pp. 93–107.

[10] Alan D Bright. "The role of social marketing in leisure and recreation management." In: *Journal of leisure research* 32.1 (2000), pp. 12–17.

[11] Ann D Cummings. "The Exxon Valdez Oil Spill and the Confidentiality of Natural Resource Damage Assessment Data." In: *Ecology LQ* 19 (1992), p. 363.

[12] John T Delaney and Mark A Huselid. "The impact of human resource management practices on perceptions of organizational performance." In: *Academy of Management journal* 39.4 (1996), pp. 949–969.

[13] Kathleen M Eisenhardt and Melissa E Graebner. "Theory building from cases: Opportunities and challenges." In: *The Academy of Management Journal* 50.1 (2007), pp. 25–32.

[14] David Ellwood, Thomas J Kane, et al. "Who is getting a college education? Family background and the growing gaps in enrollment." In: *Securing the future: Investing in children from birth to college* (2000), pp. 283–324.

[15] Kristin G Esterberg. "Qualitative methods in social research." In: (2002).

[16] Ruth R Faden and Tom L Beauchamp. *A history and theory of informed consent*. Oxford University Press, 1986.

[17] Ronald M Green. "Direct-to-consumer advertising and pharmaceutical ethics: The case of Vioxx." In: *Hofstra L. Rev.* 35 (2006), p. 749.

[18] J Richard Hackman and Greg R Oldham. "Motivation through the design of work: Test of a theory." In: *Organizational behavior and human performance* 16.2 (1976), pp. 250–279.

[19] Diana M Hechavarria and Paul D Reynolds. "Cultural norms & business start-ups: the impact of national values on opportunity and necessity entrepreneurs." In: *International Entrepreneurship and Management Journal* 5.4 (2009), p. 417.

[20] John F Huck and Thaddeus McEwen. "Competencies needed for small business success: perceptions." In: *Journal of Small Business Management* 29.4 (1991), p. 90.

[21] Laud Humphreys. "Tearoom trade." In: *Trans-action* 7.3 (1970), pp. 10–25.

[22] David D Kirkpatrick. "Conservatives pick soft target: A cartoon sponge." In: *The New York Times* 20 (2005).

[23] Philip Kotler and Eduardo L Roberto. "Social marketing. Strategies for changing public behavior." In: (1989).

[24] Sarosh Kuruvilla and Aruna Ranganathan. "Economic development strategies and macro-and micro-level human resource policies: The case of India's "outsourcing" industry." In: *ILR Review* 62.1 (2008), pp. 39–72.

[25] C Jay Lambe, C Michael Wittmann, and Robert E Spekman. "Social exchange theory and research on business-to-business relational exchange." In: *Journal of Business-to-Business Marketing* 8.3 (2001), pp. 1–36.

[26] M Lynne Markus. "Toward a "critical mass" theory of interactive media: Universal access, interdependence and diffusion." In: *Communication research* 14.5 (1987), pp. 491–511.

[27] David Marshall, Stephanie O'Donohoe, and Stephen Kline. "Families, food, and pester power: beyond the blame game?" In: *Journal of Consumer Behaviour: An International Research Review* 6.4 (2007), pp. 164–181.

[28] K Praveen Parboteeah, Yongsun Paik, and John B Cullen. "Religious groups and work values: A focus on Buddhism, Christianity, Hinduism, and Islam." In: *International Journal of Cross Cultural Management* 9.1 (2009), pp. 51–67.

[29] Joseph G Ponterotto. "Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science." In: *Journal of counseling psychology* 52.2 (2005), p. 126.

[30] Paul Christopher Price, I-Chant A Chiang, and Rajiv Jhangiani. *Research methods in psychology*. BCcampus, BC Open Textbook Project, 2015.

[31] Susan M Reverby. *Examining Tuskegee: The infamous syphilis study and its legacy*. Univ of North Carolina Press, 2009.

[32] Stefan Riedel. "Edward Jenner and the history of smallpox and vaccination." In: *Baylor University Medical Center Proceedings*. Vol. 18. 1. Taylor & Francis. 2005, pp. 21–25.

[33] Randall S Schuler and Nikolai Rogovsky. "Understanding compensation practice variations across firms: The impact of national culture." In: *Journal of International Business Studies* 29.1 (1998), pp. 159–177.

[34] Sanjay Sharma. "Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy." In: *Academy of Management journal* 43.4 (2000), pp. 681–697.

[35] Lawrence W Sherman and Richard A Berk. "The specific deterrent effects of arrest for domestic assault." In: *American sociological review* (1984), pp. 261–272.

[36] Surendra Kumar Sia and Gopa Bhardwaj. "Employees' perception of diversity climate: role of psychological contract." In: *Journal of the Indian Academy of Applied Psychology* 35.2 (2009), pp. 305–312.

[37] Charles W Steinfield and Janet Fulk. "The theory imperative." In: *Organizations and communication technology* (1990), pp. 13–25.

[38] Anselm Strauss and Juliet Corbin. "Grounded theory methodology." In: *Handbook of qualitative research* 17 (1994), pp. 273–85.

[39] Daniel Monroe Sullivan. "From food desert to food mirage: Race, social class, and food shopping in a gentrifying neighborhood." In: *Advances in Applied Sociology* (2014).

[40] Charles Teddlie and Abbas Tashakkori. "A general typology of research designs featuring mixed methods." In: *Research in the Schools* 13.1 (2006), pp. 12–28.

[41] Mark Twain. *Following the Equator:(With Original Illustrations)*. Simon and Schuster, 2014.

[42] David A Whetten. "What constitutes a theoretical contribution?" In: *Academy of management review* 14.4 (1989), pp. 490–495.

[43] Attahir Yusuf. "Critical success factors for small business: Perceptions of South Pacific entrepreneurs." In: *Journal of small business management* 33.2 (1995), p. 68.

Part III

QUALITATIVE METHODS

Qualitative methods are based in the evaluation of non-numeric data, like photographs and text documents. These methods include activities like field work, unobtrusive, and interpretive research methods.

Part IV

MIXED METHODS

All quantitative and qualitative research methods have certain strengths and weaknesses. Mixed methods are an attempt to use more than one research method on a given project to utilize the strengths of each method while mitigating their weaknesses.

Part V

REPORTING

After a research project is completed, the investigator must report the results of the project, often in both written and oral forms. This chapter concerns the reporting process.

Part VI

APPENDIX

6

APPENDIX

GLOSSARY

1. **Boundary Conditions** (Chapter 2)
2. **Constructivism** A philosophical stance that reality is a construct of the human mind and is, therefore, subjective. Normally, qualitative research methods are used by researchers who are constructivists. (Chapter 1)
3. **Constructs** (Chapter 2)
4. **Deductive Research** A research methodology that works from a general theory to specific observations. This is sometimes called the "theory-testing" form of research.
5. **Epistomology** A branch of philosophy that is concerned with the sources of knowledge. (Chapter 1)
6. **Falsifiability** To have credence, a hypothesis must be disapprovable; that is, there must be a way to prove it wrong.
7. **Grounded Theory** (Chapter 2)
8. **Idiographic** An explanation for an observed phenomenon that explains only a single case and is not applicable to a wider population. (Chapter 2)
9. **Inductive Research** A research methodolody that works from specific observations to a general theory. This is sometimes called the "theory-building" form of research.
10. **Logic** (Chapter 2)
11. **Macro-Level Research** (Chapter 2)
12. **Meso-Level Research** (Chapter 2)
13. **Micro-Level Research** (Chapter 2)
14. **Nomothetic** An explanation for an observed phenomenon that is applicable across a wide population rather than a single example. (Chapter 2)
15. **Objectivism** A philosophical stance that there exists an objective reality can be studied and understood. (Chapter 1)

16. **Ontology** The branch of philosophy that is concerned with the nature of reality. (Chapter 1)

17. **Paradigm** A pattern or model of how things work in the world. (Chapter 1)

18. **Parsimony** A fundamental aspect of research that states if two or more competing explanations are considered then the simplest must be accepted. Thus, researcher would state that the pyramids were built by humans using known technology rather than aliens in spaceships. (Chapter 1)

19. **Positivism** (Chapter 2)

20. **Postmodernism** (Chapter 2)

21. **Precision** Research projects must precisely focus on one aspect of a problem or they will become so broad that their value will be diminished. (Chapter 1)

22. **Propositions** (Chapter 2)

23. **Replicability** A research project must be able to be replicated by other researchers or at other times in order to be considered sound. (Chapter 1)

BIBLIOGRAPHY

[1] Samuel B Bacharach. "Organizational theories: Some criteria for evaluation." In: *Academy of management review* 14.4 (1989), pp. 496–515.

[2] Pratima Bansal and Kendall Roth. "Why companies go green: A model of ecological responsiveness." In: *Academy of management journal* 43.4 (2000), pp. 717–736.

[3] Anol Bhattacherjee. "Social science research: Principles, methods, and practices." In: (2012).

[4] National Commission for the Proptection of Human Subjects of Biomedical and Md Behavioral Research Bethesda. *The Belmont report: Ethical principles and guidelines for the protection of human subjects of research*. Superintendent of Documents, 1978.

[5] Amy Blackstone. *Principles of sociological inquiry–qualitative and quantitative methods*. The Saylor Foundation, 2012.

[6] Kathleen M Blee. "Racial violence in the United States." In: *Ethnic and Racial Studies* 28.4 (2005), pp. 599–619.

[7] Donna Bobbitt-Zeher and Douglas B Downey. "Number of siblings and friendship nominations among adolescents." In: *Journal of Family Issues* 34.9 (2013), pp. 1175–1193.

[8] John Brewer and Albert Hunter. *Multimethod research: a synthesis of styles*. Sage Publications, Inc, 1989.

[9] Gary Bridge and Robyn Dowling. "Microgeographies of retailing and gentrification." In: *Australian Geographer* 32.1 (2001), pp. 93–107.

[10] Alan D Bright. "The role of social marketing in leisure and recreation management." In: *Journal of leisure research* 32.1 (2000), pp. 12–17.

[11] Ann D Cummings. "The Exxon Valdez Oil Spill and the Confidentiality of Natural Resource Damage Assessment Data." In: *Ecology LQ* 19 (1992), p. 363.

[12] John T Delaney and Mark A Huselid. "The impact of human resource management practices on perceptions of organizational performance." In: *Academy of Management journal* 39.4 (1996), pp. 949–969.

[13] Kathleen M Eisenhardt and Melissa E Graebner. "Theory building from cases: Opportunities and challenges." In: *The Academy of Management Journal* 50.1 (2007), pp. 25–32.

[14] David Ellwood, Thomas J Kane, et al. "Who is getting a college education? Family background and the growing gaps in enrollment." In: *Securing the future: Investing in children from birth to college* (2000), pp. 283–324.

[15] Kristin G Esterberg. "Qualitative methods in social research." In: (2002).

[16] Ruth R Faden and Tom L Beauchamp. *A history and theory of informed consent*. Oxford University Press, 1986.

[17] Ronald M Green. "Direct-to-consumer advertising and pharmaceutical ethics: The case of Vioxx." In: *Hofstra L. Rev.* 35 (2006), p. 749.

[18] J Richard Hackman and Greg R Oldham. "Motivation through the design of work: Test of a theory." In: *Organizational behavior and human performance* 16.2 (1976), pp. 250–279.

[19] Diana M Hechavarria and Paul D Reynolds. "Cultural norms & business start-ups: the impact of national values on opportunity and necessity entrepreneurs." In: *International Entrepreneurship and Management Journal* 5.4 (2009), p. 417.

[20] John F Huck and Thaddeus McEwen. "Competencies needed for small business success: perceptions." In: *Journal of Small Business Management* 29.4 (1991), p. 90.

[21] Laud Humphreys. "Tearoom trade." In: *Trans-action* 7.3 (1970), pp. 10–25.

[22] David D Kirkpatrick. "Conservatives pick soft target: A cartoon sponge." In: *The New York Times* 20 (2005).

[23] Philip Kotler and Eduardo L Roberto. "Social marketing. Strategies for changing public behavior." In: (1989).

[24] Sarosh Kuruvilla and Aruna Ranganathan. "Economic development strategies and macro-and micro-level human resource policies: The case of India's "outsourcing" industry." In: *ILR Review* 62.1 (2008), pp. 39–72.

[25] C Jay Lambe, C Michael Wittmann, and Robert E Spekman. "Social exchange theory and research on business-to-business relational exchange." In: *Journal of Business-to-Business Marketing* 8.3 (2001), pp. 1–36.

[26] M Lynne Markus. "Toward a "critical mass" theory of interactive media: Universal access, interdependence and diffusion." In: *Communication research* 14.5 (1987), pp. 491–511.

[27] David Marshall, Stephanie O'Donohoe, and Stephen Kline. "Families, food, and pester power: beyond the blame game?" In: *Journal of Consumer Behaviour: An International Research Review* 6.4 (2007), pp. 164–181.

[28] K Praveen Parboteeah, Yongsun Paik, and John B Cullen. "Religious groups and work values: A focus on Buddhism, Christianity, Hinduism, and Islam." In: *International Journal of Cross Cultural Management* 9.1 (2009), pp. 51–67.

[29] Joseph G Ponterotto. "Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science." In: *Journal of counseling psychology* 52.2 (2005), p. 126.

[30] Paul Christopher Price, I-Chant A Chiang, and Rajiv Jhangiani. *Research methods in psychology*. BCcampus, BC Open Textbook Project, 2015.

[31] Susan M Reverby. *Examining Tuskegee: The infamous syphilis study and its legacy*. Univ of North Carolina Press, 2009.

[32] Stefan Riedel. "Edward Jenner and the history of smallpox and vaccination." In: *Baylor University Medical Center Proceedings*. Vol. 18. 1. Taylor & Francis. 2005, pp. 21–25.

[33] Randall S Schuler and Nikolai Rogovsky. "Understanding compensation practice variations across firms: The impact of national culture." In: *Journal of International Business Studies* 29.1 (1998), pp. 159–177.

[34] Sanjay Sharma. "Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy." In: *Academy of Management journal* 43.4 (2000), pp. 681–697.

[35] Lawrence W Sherman and Richard A Berk. "The specific deterrent effects of arrest for domestic assault." In: *American sociological review* (1984), pp. 261–272.

[36] Surendra Kumar Sia and Gopa Bhardwaj. "Employees' perception of diversity climate: role of psychological contract." In: *Journal of the Indian Academy of Applied Psychology* 35.2 (2009), pp. 305–312.

[37] Charles W Steinfield and Janet Fulk. "The theory imperative." In: *Organizations and communication technology* (1990), pp. 13–25.

[38] Anselm Strauss and Juliet Corbin. "Grounded theory methodology." In: *Handbook of qualitative research* 17 (1994), pp. 273–85.

[39] Daniel Monroe Sullivan. "From food desert to food mirage: Race, social class, and food shopping in a gentrifying neighborhood." In: *Advances in Applied Sociology* (2014).

[40] Charles Teddlie and Abbas Tashakkori. "A general typology of research designs featuring mixed methods." In: *Research in the Schools* 13.1 (2006), pp. 12–28.

[41] Mark Twain. *Following the Equator:(With Original Illustrations)*. Simon and Schuster, 2014.

[42] David A Whetten. "What constitutes a theoretical contribution?" In: *Academy of management review* 14.4 (1989), pp. 490–495.

[43] Attahir Yusuf. "Critical success factors for small business: Perceptions of South Pacific entrepreneurs." In: *Journal of small business management* 33.2 (1995), p. 68.

COLOPHON

This document was typeset using the typographical look-and-feel `classicthesis` developed by André Miede. The style was inspired by Robert Bringhurst's seminal book on typography "*The Elements of Typographic Style*". `classicthesis` is available for both LaTeX and LyX:

https://bitbucket.org/amiede/classicthesis/

Happy users of `classicthesis` usually send a real postcard to the author, a collection of postcards received so far is featured here:

http://postcards.miede.de/