



# CHAPTER 2

## Research Methods in Industrial/Organizational Psychology



***Introduction to  
Industrial/Organizational  
Psychology by Ronald Riggio***



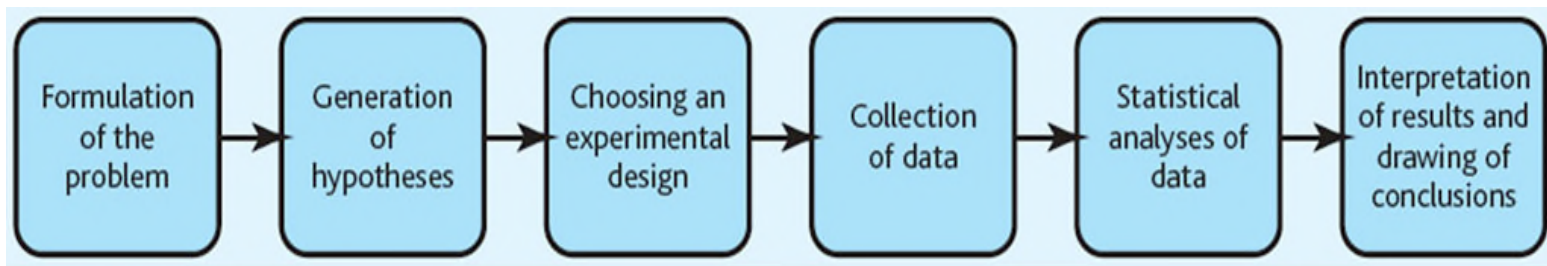
# Social Scientific Research Methods

- Social scientific research methods enable an I/O psychologist to study a specific issue objectively.
- **Objectivity** is the unbiased approach to observation and interpretations of behavior



# Social Scientific Research Methods

- The goals of I/O psychology include the ability to describe, explain, and predict phenomena
- As applied science, I/O psychology also has the goal of attempting to control or alter behavior to obtain desired outcomes



**FIGURE 2.1**

Steps in the Research Process



# Social Scientific Research Methods

- The first step in the conducting research is to specify the problem or issue to be studied.
- The second step is to take those elements the researcher intends to measure and develop hypotheses

**TABLE 2.1**

*Examples of Hypotheses in I/O Psychology Research*

- Greater employee participation in organizational decision making is related to higher levels of job satisfaction (Locke & Schweiger, 1979).
- Use of tests of mechanical ability increases the effectiveness of selecting employees for mechanical and engineering positions (Muchinsky, 1993).
- Applicants who are characterized by a higher degree of conscientiousness will exhibit higher levels of job performance (Barrick & Mount, 1991).
- Commitment to a work organization will decrease as the perceived chances of finding a job with another company increase (Bateman & Strasser, 1984).
- As employee age increases, voluntary absenteeism decreases (Hackett, 1990).
- Increasing employees' sense of control over the work environment is related to reductions in work stress (Jackson, 1983).



# Social Scientific Research Methods

- **Variables** are the elements measured in research investigations
- **Hypotheses** are statements about the supposed relationships between or among variables
- By testing hypotheses, a researcher may be able to develop a theory or model
- A **theory** or **model** is an organization of beliefs into a representation of the factors that affect behavior



# Social Scientific Research Methods

- The third step in the research process involves selecting the research design
  - The type of design will depend upon several factors, such as the research setting and the degree of control the researcher has





# Social Scientific Research Methods

- The fourth step in the research process is data collection
- **Sampling** is the selection of a representative group from a larger population for study
  - **Random sampling** refers to the selection of research participants from a population so that each individual has an equal probability of being chosen



# Social Scientific Research Methods

- **Stratified sampling** is the selection of research participants based on categories representing important distinguishing characteristics of a population



# Social Scientific Research Methods

- Once the data are collected, they can then be analyzed
- In most cases, data are analyzed using statistical analysis.



# Social Scientific Research Methods

- The final step of the research process is the interpretation of the results
- The researcher draws conclusions about the meanings of the findings and their relevance to actual work behavior as well as limitations



## Major Research Designs

- The **experimental method** is a research design characterized by a high degree of control over the research setting to allow for the determination of cause-and-effect relationships among variables



## Major Research Designs

- **Independent variable** is the variable that is manipulated by the researcher using the experimental method, while **dependent variable** is the variable that is acted upon by the independent variable; the outcome variable
- The primary advantage of the experimental method is that it allows us to determine cause-and-effect relationships among variables



## Major Research Designs

- The **treatment group** is the group in an experimental investigation that is subjected to the change in the independent variable, while the control group is the group that receives no treatment
- **Extraneous variables** are variables other than the independent variable that may influence the dependent variable



## Major Research Designs

- The key to the success of the experimental method is to hold all extraneous variables constant
- **Random assignment** is a method of assigning subjects to groups to control for the effects of extraneous variables





## Major Research Designs

- Laboratory experiment
  - Johnson, Driskell, & Salas, 1997
- Field experiment
  - Ludwig & Geller, 1997



# Major Research Designs

## ○ Quasi-experiment

- In many cases, a researcher does not have the control over the situation needed to run a true experiment.
- Design might lack random assignment
- Unit of analysis might be group or organization, rather than individual



## Major Research Designs

- The **correlational method** is a research method that examines the relationship among or between variables as they occur naturally
- Advantage is that a correlational study might be easier to implement in a particular setting



## Major Research Designs

- **Meta-analysis** is a technique that allows results from several different research studies to be combined and summarized
- Meta-analyses typically rely on indicators of **effect size**, or estimates of the magnitude of the relationship or effect found in a research investigation



## Major Research Designs

- The **case study** is a descriptive investigation that involves a one-time assessment of behavior
- May provide rich, descriptive information about work behaviors and settings



## Measurement of Variables

- Research variables that are operationalized are clearly defined so that they may be concretely measured



## Measurement of Variables

- Observation is one procedure for measuring research variables
- **Obtrusive observation** is research observation in which the presence of the observer is known to the participants.
- In contrast, **unobtrusive observation** is observation in which the presence of the observer is not known to the participants



## Measurement of Variables

- **Self-report techniques** are measurement methods that rely on research participants' reports of their own behaviors or attitudes
- **Surveys** are a common self-report measure in which participants are asked to report on their attitudes, beliefs, and/or behaviors





## Interpreting and Using Research Results

- **Internal validity** is the extent to which extraneous or confounding variables are removed
- **External validity** refers to whether research results obtained in one setting will apply to another setting



# Ethical Issues in Research and Practice in I/O Psychology

- The American Psychological Association lists several core principles that should guide the ethical conduct of research in psychology, including I/O psychology



# Ethical Issues in Research and Practice in I/O Psychology

- One key element in working with human participants is obtaining **informed consent**
- With informed consent, a research participant is fully informed of the nature of the experiment and has the right to not participate