

# TYPES OF RESEARCH

---

T  
Y  
P  
E  
S  
O  
F  
R  
E  
S  
E  
A  
R  
C  
H

The different characteristics of research:

## Research May be Applied or Basic

The purpose of applied research is to solve an immediate, practical problem.

Basic Research (Pure) adds to the existing body of knowledge; doesn't necessarily provide results of immediate, practical use.

## Research May be Obtrusive or Non-Obtrusive

Obtrusive research - where the researcher introduces conditions that influence participants. Where the researcher manipulates the environment.

Non-obtrusive research - where researcher avoids influencing subjects in any way and tries to be as inconspicuous as possible.

## Four Main Types of Research

T  
y  
p  
e  
s  
o  
f  
R  
e  
s  
e  
a  
r  
c  
h

Historical research - describes what was-mostly non-obtrusive

Descriptive research - describes what is-mostly non-obtrusive

Correlation research - makes comparisons, looking for trends or tendencies

Experimental research - describes what will be - mostly obtrusive

## Historical Research

A systematic process of searching for information and fact to describe analyze or interpret the past

Value-can provide prospective for decision making about current problems

-issues are often better understood if we understand the historical perspective

Sources-must have good backed sources to protect from criticism

-most common sources are past records

## Descriptive Research

Describes, interprets, and clarifies what in the present

-often done with surveys

-may be done by observation or an observational instrument

Developmental Research is one common type of descriptive research which involves the study of changes in behavior over a period of time

## Correlation Research

The purpose is to find relationships between two or more variable so to:

- Better understand the conditions and events that we encounter (what goes with what)
- To predict future conditions and events.
- Correlations do not show cause and effect

## Coefficients of Correlation

- range from  $-1$  to  $1$
- the farther the number is away from  $0$  the higher the correlation
- a negative correlation suggest an inverse effect
- a  $1$  or  $-1$  shows a perfect correlation
- a correlation of  $0$  indicates no relationship

## Experimental Research

An experiment is a research situation where at least one independent variable, called the experimental variable, is deliberately manipulated or varied by the researcher.

Variable—element or characteristic being studied

Parameter-element that remains unchanged (age, number of subjects)

## Evaluation of Sources

Primary sources-original or first hand account of event or experience, persons involved, documents, records or relics

Secondary sources-an account that is at least once removed

- persons not involved directly with an event but has close knowledge (parents, relatives)
- newspaper

External Criticism -evaluates the validity of the document

- who, when, where it was produced
- is the document genuine, authentic
- status of author (primary or secondary?)

Internal Criticism-evaluates the meaning, accuracy and trustworthiness of the content (comes after external criticism)

- Both external and internal criticism are important to establish validity.

## Sampling Terms and Procedures

Population-inclusive group defined by researcher

Sample-representative subset of population  
-should contain essential elements of population

Random Sampling-process of sampling which assures that any subject in the population has an equal probability of being in the sample

Systematic counting-uses list to choose every  $n^{\text{th}}$  person from the population

Stratified Random-used when researcher believes the population has distinct subgroups  
Ex: population has 45% men, then we make sure sample is 45% men

## Variables and Limitations

**Independent Variable**-experimental or treatment variable  
(it is the cause)

- what we are studying
- it is what we are manipulating in our study

**Dependent Variable**-is what is measured to assess the effects of the independent variable

- it is thought to be dependant on the independent variable

**Delimitations**-choices the experimenter makes to affect a workable research problem

Ex: You delimit the number of subjects or the time frame

**Limitations**-the conditions or influences that either cannot be controlled or are the results of the delimitations imposed

- limitations are beyond the control of the researcher and may place restrictions on the study

## Experimental Research Designs

### Pretest-Posttest Design

Pretest → treatment → posttest

Posttest Only Control Group Design-weak due to lack of control sampling through a pretest

- (1) Treatment → posttest
- (2) → posttest (control group)

### Pretest-Posttest-Control Group Design

- (1) Pretest → treatment → posttest
- (2) Pretest → → posttest (control group)

### Quasi-Experimental Design

- (1) Pretest → group → treatment → posttest
  - (2) Pretest → group → → posttest (control group)
- \*Grouping is performed based on pretest\*

Solomon 4-Group Design-used to check effects of posttest

- (1) Pretest → treatment → posttest
- (2) Pretest → → posttest (control group)
- (3) treatment → posttest
- (4) → posttest (control group)



## Validity

- Does it measure what it is suppose to measure
- Wasted time if not valid
- Involves:
  1. The extent to which the results can be accurately interpreted
  2. The extent to which the results can be generalized to population

### Internal Validity

- basic minimum control, measurement, analysis, and procedures necessary to make the results interpretable
- is the study itself setup and run correctly

- External Validity-extent to which the study relates to the population
- concerned with comparability and translatability

## Seven Threats to Validity

1. **History**- events that take place between the pretest and post test that may be a partial or total explanation for the differences-control group will help
2. **Maturation**-refers to physiological and biological development that takes place over time.
3. **Regression**-occurs due to the imperfect relationship between the pretest and the posttest scores. Ex: lack of sleep, illness
4. **Instrumentation**-changes occurring in the instruments and observation procedures
5. **Pre-testing**-effect pretest has on subsequent tests- may serve as learning instrument
6. **Mortality**-loss of subjects during an experiment
7. **Selection**-the procedure used to choose subject who participate

## Subjects and Subjects Rights

- Right to privacy or non-participation
- Do not ask unnecessary information
- Should get adults consent or parents of minors consent
- Right to remain anonymous-researchers should explain study focus on group data
- Right to expect experimental responsibility
  - Researcher will be ethical and sensitive to dignity
  - Subjects must be notified of research or debriefed immediately after
- Informed consent-a fair explanation of procedures to follow