

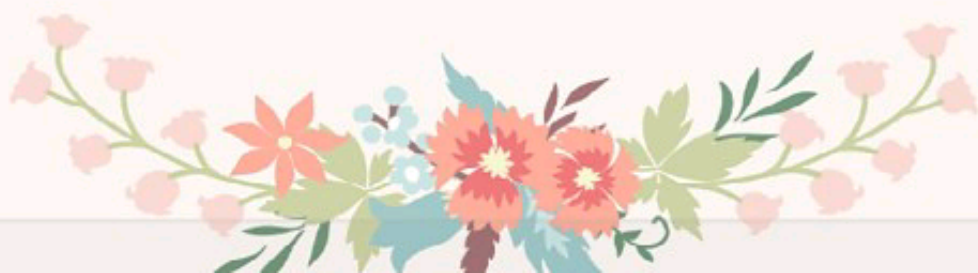
Course-M.A.Education

Semester-4th

Paper -401

Topic- EX-POST FACTO

RESEARCH



Introduction

- **Ex post facto** is a Latin phrase that essentially means "retroactive," or affecting something that's already happened.
- **Ex post facto** design is a quasi-experimental study examining how an independent variable, present prior to the study in the participants, affects a dependent variable. A quasi-experimental study simply means participants are not randomly assigned.

PROCEDURES IN AN EX POST FACTO INVESTIGATION

- **Stage One:** Define the problem and survey the literature.
- **Stage Two:** State the hypotheses and the assumptions or premises on which the hypotheses and research procedures are based.
- **Stage Three:** Select the subjects (sampling) and identify the methods for collecting the data.
- **Stage Four:** Identify the criteria and categories for classifying the data to fit the purposes of the study.

PROCEDURES IN AN EX POST FACTO INVESTIGATION

- **Stage Five:** Gather data on those factors which are always present in which the given outcome occurs, and discard the data in which those factors are not always present.
- **Stage Six:** Gather data on those factors which are always present in which the given outcome does not occur.
- **Stage Seven:** Compare the two sets of data (i.e. subtract the former (Stage Five) from the latter (Stage Six), in order to infer the causes that are responsible for the occurrence or non-occurrence of the outcome.
- **Stage Eight:** Analyze, interpret and report findings.

APPROACHES TO EX POST FACTO RESEARCH

1. One commences with subjects who differ on an *independent* variable, for example their years of study in mathematics, and then study how they differ on the dependent variable, e.g. a mathematics test.
2. One commences with subjects who differ on the *dependent* variable (for example their performance in a mathematics test) and discover how they differ on a range of independent variables, e.g. their years of study, their liking for the subject, the amount of homework they do in mathematics).

CHARACTERISTICS OF EX POST FACTO RESEARCH

- In *ex post facto* research the researcher takes the effect (or dependent variable) and examines the data retrospectively to establish causes, relationships or associations, and their meanings.

DIFFICULTIES IN *EX POST FACTO* RESEARCH

- ✓ Direction of causality difficult to establish: what caused what.
- ✓ Lack of control of the independent variable or variables.
- ✓ Impossible to isolate and control every possible variable, or to know with absolute certainty which are the most crucial variables.
- ✓ Randomization impossible.
- ✓ Can provide support for any number of different, even contradictory, hypotheses.
- ✓ Lack of control: the researcher cannot manipulate the independent variable or randomize her subjects.

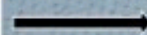
EX POST FACTO RESEARCH AND INDEPENDENT VARIABLES

*Differing on the **independent** variable:*

Presence of independent variable
Absence of independent variable
Degrees of independent variable



Investigate



Effect on the **dependent** variable

*Same on the **independent** variable(s)*



Investigate



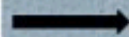
Effect on the **dependent** variable

EX POST FACTO RESEARCH AND DEPENDENT VARIABLES

*Differing on the **dependent** variable*

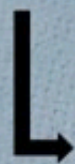


Investigate

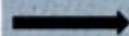


*Differing on **independent** variables:*
Presence of independent variables
Absence of independent variables
Degrees of independent variables

*Same on the **dependent** variable*



Investigate



*Differing on **independent** variables:*
Presence of independent variables
Absence of independent variables
Degrees of independent variables

EX POST FACTO RESEARCH IS USEFUL WHEN . . .

- ❖ It is impossible, impractical, costly or unethical to conduct an experiment.
- ❖ It is not possible to select, control and manipulate the factors necessary to study cause-and-effect relationships directly.
- ❖ When the control of all variables except a single independent variable may be unrealistic and artificial.
- ❖ Where the independent variable lies outside the researcher's control.

ADVANTAGES OF EX POST FACTO RESEARCH

- Useful where the more rigorous experimental approach is not possible.
- Useful to study what goes with what and under what conditions.
- Useful where the setting up of the latter would introduce a note of artificiality into research proceedings.
- Useful where simple cause-and-effect relationships are being explored.
- It can give a sense of direction and provide a source of hypotheses that can subsequently be tested by the more rigorous experimental method.

DISADVANTAGES OF EX POST FACTO RESEARCH

- One cannot know for certain whether the causative factor has been included or even identified.
- It may be that no single factor is the cause.
- A particular outcome may result from different causes on different occasions.
- It is not possible to disconfirm a hypothesis.
- Classifying into dichotomous groups can be problematic.
- As the researcher attempts to match groups on key variables, this leads to shrinkage of sample.
- Conclusions may be based on too limited a sample or number of occurrences.
- It may fail to single out the really significant factors.