

EXPERIMENTAL DESIGN

Experimental research is any research conducted with a scientific approach, where a set of variables are kept constant while the other set of variables are being measured as the subject of experiment. There are times when you don't have enough data to support your decisions. In such situations, you need to carry out experiments to discover the facts. Experimental research can gather a lot of data that can help you make better decisions.

Hypothesis-testing research studies (generally known as experimental studies) are those where the researcher tests the hypothesis of casual relationships between variables. When we talk of research design in such studies, we often mean the experimental design.

Experimental research design deals with determining cause and effect relationship. It is typically in form of experiment. In causal research design, attempt is made to measure impact of manipulation on independent variables (like price, products, advertising and selling efforts or marketing strategies in general) on dependent variables (like sales volume, profits, and brand image and brand loyalty). It has more practical value in resolving marketing problems. We can set and test hypotheses by conducting experiments.

The simplest example of an experimental research is conducting a laboratory test. As long as research is being conducted under scientifically acceptable conditions – it qualifies as an experimental research. A true experimental research is considered to be successful only when the researcher confirms that a change in the dependent variable is solely due to the manipulation of the independent variable.

In the words of **Jahoda and Cook**, 'an experiment maybe considered as a way of organizing the collection of evidence so as to permit one to make inference about the tenability of a hypothesis.

According to **Chapin**, "experiment is simply observation under controlled conditions. When observation alone fails to disclose the factors that operate in a given problem, it is necessary for the scientist to resort to experiment."

Experimental design enables the researcher to draw causal inferences. It also smoothen, the observation of independent variable causing assumed effect.

The three components of experimental design are: comparison, manipulation, and control.

Through comparison, the correlation between variables is known. It also enables us to demonstrate the association between two or variables.

Through manipulation the researcher establishes the time order of events. The major evidence which become essential to determine the sequence of events is that a change occurs only after the

activation of the independent variable. In other words the independent variable precedes the dependent variable.

Experimental research is conducted in the following situations:

- Time is a vital factor for establishing a relationship between cause and effect.
- Invariable behavior between cause and effect.
- The importance of cause-effect relationship is as per desirability.

Advantages of Experimental Research

- Researchers have a stronger hold over variables to obtain desired results.
- Subject or industry is not a criterion for experimental research due to which any industry can implement it for research purposes.
- Results are extremely specific.
- Once the results are analyzed, they can be applied to various other similar aspects.
- Cause and effect of a hypothesis can be derived so that researchers can analyze greater details.
- Experimental research can be used in association with other research methods.