



Question 5. A researcher is studying relationship between speed of cycling and the presence of people. Formulate a relevant hypothesis and identify the independent and dependent variables.  
Answer:

- Variable: It is any stimulus or event which varies or can take on different values can be measured e.g. weight, height.
- Hypothesis: It is a tentative and testable statement which expresses relation between two or more than two variables, e.g.: those who are rewarded shall require lesser number of trials to learn than those who are not rewarded.
- Independent variable: It is the variable which is systematically manipulated or altered in an experiment. It is the cause.
- Dependent variable: It is the variable that is measured in an experiment. It is the effect.
- As per the question: Hypothesis. Presence of others will enhance the speed of cycling.  
Independent variable. Presence of others  
Dependent variable. Speed of cycling

Question 6. Discuss the strengths and weaknesses of experimental method as a method of enquiry.

Answer: Experimental method is aimed at discovering causal relationship between various factors by manipulating the situation under totally controlled conditions.

Characteristics:

- Experimentation involves manipulation of variables to study their effect on other aspects.
- Experiments are carried out in totally controlled condition.
- Subjects or individuals are assigned to experimental and control group, randomly.
- All factors other than manipulated variable that might affect the dependent variable are kept constant.

Advantages:

- Experimental method aims at establishing cause-effect relationship between the variables.
- Replication and verification of obtained result is possible.
- The investigator can manipulate the independent variable according to the demands of the situation.
- It can be performed at any time.
- It is very objective—No personal bias exists.

Limitations:

- Experiments are conducted in a very artificial and unrealistic situations—the setting is not natural.
- They lack external validity i.e. generalizability. Since they are not done in natural settings, the results can't be generalized with confidence.
- It is difficult to control and know all extraneous variables like - motivation, emotion, state etc.
- It is not always possible to study a problem experimentally.

For example, personality can't be studied experimentally.

Question 7. Dr. Krishnan is going to observe and record children's play behaviour at a nursery school without attempting to influence or control the behaviour. Which method of research is involved?

Explain the process and discuss its merits and demerits.

Answer: Dr. Krishnan would use the method of non-participant observation to observe and record children's behaviour at play without attempting to influence or control the behaviour. He would sit in a corner and observe the children's behaviour without them being aware of it. He would note the behaviour of children while playing, how ' they interact with each other and their reaction towards winning or losing. He would collect all the data in a file and then match the conclusion with the hypothesis.

Merits of non-participant observation:

- The researcher observes the people and their behaviour in naturalistic settings.
- The observer can get first hand information regarding the subject.

Demerits:

- This method is time consuming, labour intensive and subject to personal biases.
- The researcher may interpret the behaviour based on personal values.

Question 8. Give two examples of the situations where survey method can be used. What are the limitations of this method?

Answer: Survey Method is a research method utilizing written questionnaires or personal interviews to obtain data of a given population.

For example: Surveys are used in variety of situations such as

1. They can be used in political regime to know whether people approve or disapprove any particular policy of government, say for example, policy of reservation in higher education or Nuclear deal with America in recent times.
2. They are used during elections also to know who will people vote to.
3. Surveys can also be used to test hypothesis about the relationship among variables. One may try to find out the effect of some event on people's behaviour.  
For example - Surveys have been conducted after the earthquake at Bhuj in Gujarat to find out the impact of earthquake on people's lives.
4. In marketing area, before launching a product surveys are often conducted. They are used to assess people's attitude on various social issues such as family planning and gender equality.

Limitation:

1. The major difficulty is the issue of accuracy and honesty of the responses as the respondents attempt to create favourable impression - faking is possible.
2. Surveyor's bias also affects the results. He/she may ask the question in such a way as to elicit desired response.
3. Surveys remain at the surface and it does not penetrate into the depth of the problem. They are time-consuming and expensive.
4. These techniques make the respondent conscious. So he/she may mould his/her responses.
5. Survey demand expertise, research knowledge and competence on the part of the researcher. Most of the survey researchers don't possess these qualities in the required

- amount. This invalidates the quality of survey.
6. Sample selected might not be the true representative of the population.

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