**Variables :**

In the course of writing your thesis , one of the first terms that you encounter is the word ‘variable ’. Failure to understand the meaning and the uselfulness of variables in your study will prevent you from doing good research.

**Definition of variables :**

Variables are those simplified portions of the complex phenomena that you intend to study. The word variable is derived from the root word ‘ vary’, meaning, changing in amount, volume, number, form, nature of type. These variables should be measurable,i.e, they can be counted or subjected to a scale.

The following examples of phenomena from a global to a local perspective. The corresponding list of variables is given to provide a clear ilustration of how complex phenomena can be broken down into manageable pieces for better understanding.

**Phenomenon 1: climate change**

**Examples of variables related to climate change :**

Sea level

Temperature

The amount of carbon

The amount of rainfall

**Phenomenon 2 : crime and violence in streets**

**Examples of variables related to crime and violence in streets**

Number of robberies

Number of attempted murders

Number of prisoners

Number of crime victims

Number of law enforcers

Number of convictions

Number of car napping incidents

In research terminology, change variables are called **independent variables**, outcome/ effect variables are called **dependent variables.**

**independent variables**: are variables which are **manipulated or controlled** or changed. In the example «  a study of the effect of teacher praise on the reading achievement of second graders » , the researcher is trying to determine whether there is a cause and effect relationship, so the kind of praise is varied to see whether it produces different scores on the reading achievement test. We call this a manipulated independent variable. **The amount and** **kind of praise** is controlled by the researcher.

**Dependent variables :** the **outcome** or changes brought about by introduction of an independent variable. Dependent variables are the outcome variables and are the variables for which we calculate statistics. The variable which changes on account of an independent variable is called dependent variable.

The following example further illustrates the use of variables. In a study conducted to determine the effect of three different teaching methods on achievement in elementary algebra. The idependent variable in the study is : teacing methods. Achievement in algebra, as measured at the end of the instructional period, is the dependent variable, independent variables are those that are manipulated whereas dependent variables are **only measured** or registered.