### **TYPE OF HYPOTHESIS**

### **Alternative Hypothesis:**

In the academic domain, it is very often denoted as H1. The significance of this kind is to identify the expected outcome of your research procedure. Additionally, it is further classified into two subcategories:

**a. Directional:** A statement that defines the ways through which the expected results will be gathered. It is generally used in the cases where you need to establish a relationship between various variables rather than making any comparison between multiple groups. For example, Attending physiotherapy sessions will improve the on-field performance of athletes.

**b.** No directional: As the name suggests, a non-directional alternative hypothesis doesn't suggest any direction for the expected outcomes. For example, Attending physiotherapy sessions influence the on-field performance of athletes.

Now in the above two examples, carefully observe the two statements. The directional statement specifies that physiotherapy sessions will improve or boost performance. On the other hand, the non-directional statement helps establish a correlation between the two variables (physiotherapy sessions and performance). However, it does not emphasize whether the performance will be good or bad due to physiotherapy sessions.

### **Null Hypothesis:**

A null hypothesis is denoted as H0. A null hypothesis exists as opposed to an alternative hypothesis. It is a statement that defines the opposite of the expected results or outcomes throughout your research. In simpler terms, a null hypothesis is used to establish a claim that no relationship exists between the variables defined in the hypothesis.

To give you an idea about how to write a null hypothesis, the last example can be stated as:

The physiotherapy sessions do not affect athletes' on-field performance. Both the null and alternative hypotheses are written to provide specific clarifications and examination of the research problem. So, to clarify confusion, the difference between a research problem statement and a hypothesis is that the former is just a question that can't be validated or tested. In contrast, the latter can be tested, validated, or denied.

### **Simple Hypothesis:**

It is a statement that is made to reflect the relation between the dependent and independent variables. Follow through the example, and you will understand,

- a. Smoking is a prominent cause of lung cancer
- b. Intake of sugar-rich foods can lead to obesity

#### **Complex Hypothesis:**

A complex hypothesis implies the relationship between multiple dependent or independent variables stated in the research problem. Follow through the below examples for better clarity on this:

a. Individuals who eat more fruits tend to have higher immunity, lesser cholesterol, and high metabolism.

b. Including short breaks during work hours can lead to higher concentration and boost productivity.

# **Empirical Hypothesis:**

It is also referred to as the "Working Hypothesis." This type of claim is made when a theory is being validated through an experiment and observation. This way, the statement appears justifiable enough and different from a wild guess.

Here are a few examples through which you can learn to create an empirical hypothesis:

a. Women who take iron tablets face a lesser risk of anemia than those women who take vitamin B12.

b. Canines learn faster if they are provided with food immediately after they obey a command.

## **Statistical Hypothesis:**

A statement claiming an explanation after studying a sample of the population is called a statistical hypothesis. It is a type of logic-based analysis where you research a specific population and gather evidence through a particular sample size.

# 1. Formation of Hypotheses:

- Theories are relatively elaborate tools used to explain and predict events.
- The social scientist develops a theory to account for some social phenomena, and then he devises a means whereby the theory can be tested or subjected to verification or refutation.
- Seldom does the researcher test theory directly.
- Most of the time he/she conducts tests of hypotheses that been generated and derived from that theory. If the hypotheses 'test out' as the researcher has specified, or if his empirical observations are in accordance with what has been stated in the hypotheses, we say that his/her theory is supported in part.
- It usually takes many tests of different hypotheses from the same theory to demonstrate its predictive value and its adequacy as a tool of explanation for some event or sequence of events.

- A major function of hypotheses is to make it possible to test theories. In this regard, an alternative definition of a hypothesis is that it is a statement of theory in testable forms.
- All statements of theory in testable form are called hypotheses. Some hypotheses are not associated with any particular theory. It could be that as a result of some hypothesis, a theory will be eventually constructed.
- Consequently, another function of hypotheses is to suggest theories that may account far some event.
- Although it is more often the case that research proceeds from theories to hypotheses, occasionally the reverse is true.
- The social investigator may have some idea about why a given phenomenon occurs and he/she hypothesises a number of things that relate to it.
- He/she judges that some hypotheses have greater potential than others for explaining the event, and as a result, he/she may construct a logical system of propositions, assumptions and definitions linking his explanation to the events. In other words, the researcher devises a theory. All hypotheses have to do with our knowledge of things, and as this knowledge changes, we change also.