



# CONCEPT OF HYPOTHESIS - ITS SOURCES AND SIGNIFICANCE IN RESEARCH DEVELOPMENT: AN OVERVIEW

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**Abstract--**Hypothesis is basically an indispensable tool in research. It is a specific statement of prediction. The concept of hypothesis is developed to describe in concrete terms that what you expect and what will happen in your study. The purpose of conducting hypothesis lies in the fact that it provides an opportunity to different different universities, industries, public laboratories, more often government agencies as well to have debate, discussions, presentations and the recent advances made on various researches. This article aims to provide an overview on hypothesis being an essential tool of research methodology. Also describes the driven sources of hypothesis and its significance in research development including its characteristics and classification.

**Key Words:** Hypothesis, Statistical, Variables, Descriptive, Preposition, Tentative, Supposition, Significance.

## INTRODUCTION

If we have to proceed towards some destination for which we do not know the way, we try to form an idea about the direction to proceed and by trial and error, we reach that goal. This primary idea is called as hypothesis. Ordinarily, when we talk about hypothesis, we simply mean a mere assumption or some supposition to be proved or disproved, but for a researcher hypothesis is a formal question that he intends to resolve.

In other words it's a tentative answer to his research problem. When we have to conduct a research the first step we have to take is the identification and formulation of research problem. After the selection of problem the next step is to formulate a hypothesis.

A good hypothesis depends upon the elements and testing of the research with complete tools. It is very important part of scientific method and is significant component in every discipline. Basically, the hypothesis is done on known data and information.

Therefore, a hypothesis is nothing but suggested testable answer to a problem. Enlarging on this meaning of a hypothesis we may say a hypothesis is a testable relationship between two or more variables.

## DEFINITIONS

There are many definitions of hypothesis given by various authors.

*According to Good and Hart*, hypothesis is preposition which can be put to test its validity.

*Theodorson and Theodorson* defines hypothesis as a tentative statement asserting a relationship between certain facts.

*According to Kerlinger*, a hypothesis is a conjectural statement of the relationship between two or more variables.

From the above definitions it is apparent that a hypothesis has a certain characteristics;

1. It is a tentative preposition;
2. Its validity is unknown;
3. In most cases it specifies a relationship between two or more variables.

## SOURCES OF DERIVING HYPOTHESIS

There are following sources which are identifies for deriving hypothesis:

*Cultural value of society-* The cultural prevalent in a society helps to formulate hypothesis. American culture, for example, emphasis individualism, mobility, competition and equality, while Indian culture emphasis



tradition, collectivism, karma and attachment. Therefore, Indian culture values enable us to develop and test the following hypothesis:

- Residential jointness in Indian family has decreased but functional jointness continues to exist.
- Divorce is used as last resort by women to break her marriage.
- Caste is related to voting behavior among Indians.

*Past Research-* Hypothesis is often inspired by past research. For example, a researcher studies the example of student unrest way use the finding of another study that student having there to four years in college or university had taken more interest in student's problem in campus than freshers.

Such hypothesis could be used either to replicate past studies or revise the hypothesis that the alleged correlation does not exist.

*Folk Wisdom-* Sometimes researcher get the idea of a hypothesis from commonly held by beliefs.

*Discussions and Conversations-* Random observations during conversations and discussions and reflections on the life as a person throw lights on events and issues.

*Personal Experiences-* Hypothesis can also be formulated to the in which an individual reacts to culture, science and analogy. Many often researchers see evidence of some behavior pattern in their daily life.

*Intuition-* Sometimes the investigators get the feeling from inside that certain phenomena are correlated. The suspected correlation leads the investigator to hypothesis a relationship and conduct a study to see if his suspicious are confirmed.

### **CHARACTERISTICS OF HYPOTHESIS**

There are number of considerations to keep in mind while constructing hypothesis, as they are important for verification.

- ✓ The most important condition for a valid hypothesis is that it should be empirically verified. A hypothesis ultimately has to confirm or refute, otherwise, it will remain mere supposition i.e. it must be capable empirically tested under the condition of available technique.
- ✓ Hypothesis should be simple, specific, and conceptually clear.
- ✓ It is desirable that hypothesis is selected must be in continuation with the theory already involved i.e. the hypothesis selected should be related to the body of a theory.
- ✓ Hypothesis should be capable of verification.
- ✓ It should be related to the body of knowledge.
- ✓ Hypothesis should be operation able.
- ✓ It should be testable within reasonable time and allowed to be refutable.
- ✓ It should be non contradictory one.
- ✓ Hypothesis should be logically simple in a way.

*P.V Young says*, the more insight the researcher has into the problem the simple will be his hypothesis about it i.e. to the point.

### **FUNCTIONS OF HYPOTHESIS**

While some researchers believe that to conduct a study requires a hypothesis, having a hypothesis is not essential. However, a hypothesis is important in terms of bringing clarity to the research problem.

Specially, the functions of hypothesis are following:

- a. The formulation of a hypothesis provides a study with focus. It tells what specific aspects of a research problem to investigate.
- b. A hypothesis tells what data to collect and what not to collect, thereby providing focus to the study.
- c. As it provides a focus, the construction of a hypothesis enhances objectivity in a study.
- d. A hypothesis may enable to add to the formulation of theory. It enables to specifically conclude what is true or what is false.



### **PROBLEM IN FORMULATING HYPOTHESIS**

According to Good and Hart the main difficulties in formulating hypothesis are:

- Absence of clear theoretical framework.
- Lack of ability to utilize that theoretical work logically and
- Failure to acquaint with available research techniques so as to able to phrase the hypothesis properly.

Despite these difficulties the investigator attempts in his research to formulate a hypothesis. It is a creative task and evolves a lot of thinking and imagination.

### **CLASSIFICATION AND TYPES OF HYPOTHESIS**

*Hypothesis can be classified into below given categories:*

*Working Hypothesis:* Working hypothesis is preliminary assumption of the researcher about the research topic, particularly when sufficient information is not available to establish a hypothesis, and as a step toward formulating the final research hypothesis.

*Research Hypothesis:* It is a researchers preposition about some social attributes and facts without reference to its particular attributes. Research hypothesis may be derived from theories or may result in developing of theories.

*Descriptive Hypothesis:* These describe, delineate or give an account of various characteristics of objects by closely observing what is what.

Such hypothesis enables us to grasp the phenomenon under study. For example: Trade union in India is weak bargaining agencies more interested in national politics.

*Relational Hypothesis:* this explains how and why things are going on, by suggesting meaning inter connection between two or more variables. They account for variables in terms of other variables.

*Null Hypothesis:* This means that there is zero or no relationship. It is often written H and is called (H sub One). It is known as null hypothesis because it is an empty hypothesis of no specific interest to you.

Suppose a new brand of sleeping tablet claims its effect as 7 hours sleeps. This claim is a null hypothesis and stated as  $H_0: \mu=7$  where  $\mu$  is the mean effect of the tablet.

- It is set up so that we can demolish it.
- It is believed to be false.
- Its rejection help us to accept the alternative hypothesis  $H_1$  (H Sub one) which is that we want to prove true.
- Actually null hypothesis is a 'straw man' hypothesis.

*H.M. Garrett* states that it is akin to the legal principle that a man is innocent until he is proved guilty.

*Statistical Hypothesis:* It is a statement about statistical population that one seeks to support or refute. In this hypothesis, the variables are reduced to measurable quantities and then results are derived.

### **TESTING OF HYPOTHESIS**

The process of testing of hypothesis is as:

#### **Phase 1**

Formulating assumption i.e. stating the research question.

It is the first step in research problem in which the researcher recognizes the population interest, related variables and defining the parameters.

Specify null and alternative hypothesis- The second step is specifying the type of hypothesis. The null hypothesis is used for the population and alternative hypothesis is use in terms of direction in case of greater or less.



### **Phase 2**

Collect the required data i.e. calculating test statistics

Another step is to calculate the statistic view in analogous pattern by using the parameters of null hypothesis. In the fourth step, the probability value is calculated which is examined as if the significant value is more than the null hypothesis is not rejected and vice versa.

### **Phase 3**

Analysis data to draw conclusions about the assumption i.e. true or false.

The final step is the conclusion in which descriptions are made. This step consists of two statements; first statement is about the null and alternative hypothesis and second statement is about the proposed research questions while determining the first statement.

In system of logic, *J.S Mill* advocated two means of arriving at logical conclusions in the testing of hypothesis:

- A. The method of agreement.
- B. The negative canon of agreement.

Mill mentioned that where lack or certain phenomena are always or nearly always found with lack of other phenomena. It may be concluded that there is a casual relationship between them.

## **SIGNIFICANCE OF HYPOTHESIS**

Hypothesis has a very important and significant place in research although it occupies a very small place in the body of a thesis. The aimless collection of a data is not likely to lead a researcher anywhere. Significance of hypothesis can more specifically state as below:

- Hypothesis provides directions to the research. It defines what is relevant and what is irrelevant.
- It sensitizes the investigator to certain aspects. It spells the difference between fruitful and fruitless reasons.
- It is guide to the thinking process.
- It place clear and specific goals before.
- It serves the functions linking together related facts and information and organizing them into one comprehensible whole.
- Hypothesis further enables the researcher to clarify the procedures and methods to be used.
- It serves as a framework for drawing conclusion. It makes possible the interpretation of data or provisional guess.

Thus, Hypothesis provides the objectives for setting conclusion in a meaningful way.

## **CONCLUSION**

It may be concluded that hypothesis is an indispensable tool to any research. They tell a researcher that what specific information to collect and thereby provide greater focus. The importance of hypothesis lies in their ability to bring direction and focus to a research. Hypothesis is important in terms of bringing clarity to the research problem. As the hypothesis is the prediction of some scientific research and to know about some further descriptions. Hypothesis doesn't mean that it must be right because hypothesis result may be right or wrong depending upon the research and wrong results are completely acceptable in hypothesis. Good hypothesis depends upon the elements and testing of the research with complete tools. Therefore, it is a very important part of scientific method and is important component in every discipline. It is evident to say that the hypothesis is done on known data and information.

However, it is immaterial that hypothesis is positive or negative towards the research problem. Rather its significance lies in the fact that it provides guidance to the probe, limits the researcher's point of view, outlines area of significance for collection and ultimate interpretation of data and makes research more accurate and productive.



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