ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY
PALKULAM
BUSINESS RESEARCH METHODS

UNIT – I Research Design/ Hypothesis

HYPOTHESIS

It is a tentative generalization, the validity of which remains to be tested. At the elementary level it may be mere hunch, guess, and imaginative data, which becomes the basis for action or investigation. – LundbergHypothesis is a proposition, which can be put to test to determine validity. – Goode & Hatt.
A tentative solution posed on a cursory observation of known and available data and adopted provisionally to explain certain events and to guide in the investigation of others. It is in fact, a possible solution to a problem.

Characteristic Of Hypothesis

Clarity:

The hypothesis must be conceptually clear. When the researcher attempts to establish relationship among various facts and translates these relationships into concepts he succeeds in formulating the hypothesis. Hence when a hypothesis is conceptually clear it provides a clear direction to the researcher.

Scope For Verification:

Hypothesis should be amenable for verification and empirical analysis. Though hypothesis can be verified in terms of moral judgments yet such verifications process will be questionable.

Specific:

The hypothesis should be very specific and not a general statement. It should not be ambiguous and it should be clearly stated. It is wiser to construct a hypothesis in simple language than resorting to flowery and confusing terminology.

Testable:

It should be testable with the available technique of analysis. Even while formulating a researcher should ascertain the relevant techniques with which it could be tested.

Linked To Theory

Hypothesis should facilitate establishing relationship with a body of theory. Therefore when the hypothesis is formulated the researcher should confirm whether it is related to any existing theory or not.

Consistent

It should be consistent with a most known facts ie it must be consistent with a substantial body of established facts. It should be one which judges accept as being the most likely.

TYPES OF HYPOTHESIS:

Crude Hypothesis:

A crude hypothesis is formed to initiate the process of research. When the researcher is commencing his research work he needs some guidelines or focus. For this purpose he might develop a hypothesis based on the available evidence or data.

Refined hypothesis:

Hypothesis that state the existence of empirical uniformities, hypothesis that are concerned with complex ideal types and hypothesis that are concerned with complex ideal types and hypothesis that are concerned with the relation of analytical variables.

Working hypothesis

It is formed in the process of verifying the relationship among various variables included in research. It provides useful guideline to the researcher in determining the nature of data to be collected, volume of data required, the sample technique to be used analytical tools to be selected etc.

Statistical hypothesis

Statistical hypothesis are those, which are formulated based on the sample data or facts. They serve the usual purpose of testing any expected relationship among variables. Once these hypotheses are tested or verified the conclusion about the population is drawn.

Null hypothesis

It is formulated only to test whether there is any relationship between variables related to the problem being studied. Usually the null hypothesis is formed as a negative statement.

Alternative hypothesis

It is a statement, which is accepted after the null hypothesis is rejected based on the test results.

Procedure For Hypothesis Testing:

It refers to all those steps that we undertake for making a choice between the two actions ie. Rejection and acceptance of a null hypothesis. The various steps involved in hypothesis testing are stated below;

Making a formal statement :

The step consists in making a formal statement of the null hypothesis and also of the alternative hypothesis.

Selecting a significance level :

The hypothesis is tested on a pre- determined level of significance and as such the same should be specified. Generally 5% or 1% is adopted for the purpose. The factors that affect the level of significance are; a) the magnitude of the difference between sample means. b) Whether the hypothesis is directional or non directional. c) The variability of measurements within samples d) whether the hypothesis is directional or non directional.

Deciding the distribution to use:

After deciding the level of significance the next step in hypothesis testing is to determine the appropriate sampling distribution. The choice generally remains between normal distribution and the t-distribution.

Selecting a random sample and computing an appropriate value:

The next step is to select a random sample and compute an appropriate value from the sample data concerning the test statistic utilizing the relevant distribution.

Calculation of the probability:

Then calculate the probability that the sample result would diverge as widely as it has from expectations, if the null hypothesis were in fact true.

Comparing the probability:

In this step compare the probability thus calculated with the specified value for $\propto$ the significance level. If the calculated probability is equal to or smaller than the $\propto$ value in case of one tailed test , then reject the null hypothesis but if the calculated probability is greater then accept the null hypothesis.

Sources Of hypothesis

Theory :

This is one of the main sources. It gives direction to research by stating what is known. Logical deduction from theory leads to new hypothesis.

Eg . the rate of return on capital employed is an index of business success.

Observation :

Hypothesis can be derived from observation . from observing price behavior in a market a hypothesis can be formulated on the relationship between price & demand for an article.

Analogies:

Julian Huxley pointed out that casual observation in nature or in the framework of another science may be fertile source of hypothesis. The hypothesis that similar human types or activities may be found in similar geophysical regions came from studying plant ecology.

Intuition & personal experience :

Personal life and experience of persons determine their perception. These may in turn direct a person to certain hypothesis more quickly. Eg Newton & falling of apple.

Findings Of studies:

Hypothesis may be developed from the findings of other studies in order to replicate and test.

State Of Knowledge:

An important source of hypothesis is the state of knowledge in any particular science. Where formal theories exist , hypothesis can be deduced from them. If the hypothesis were rejected theories would be modified. Where formal theories are scarce, hypothesis are generated from conceptual frameworks.

Culture:

another source of hypothesis is the culture in which the researcher has been nurtured. In India in socio – economic and leadership studies, hypothesis based on caste- ridden, hierarchical and segmental and the Indian economic system riddled with inequalities and privileges.

Continuity Of research:

The continuity of research in a field itself constitute an important source of hypothesis leads to the formulation of new ones capable of explaining dependent variables in a subsequent researchers on the same subject.

CHARACTERISTIC OF A GOOD HYPOTHESIS:

Conceptual Clarity:

It should be conceptually clear. It should consist of clearly defined and understandable concepts. Clarity is obtained by defining operationally the concepts in the hypothesis.

Specificity:

A hypothesis should be specific and explain the expected relations between variables and the conditions under which these relations will hold.

Testability :

A hypothesis should be testable and should not be a moral judgement. It should be possible to collect empirical evidence to test the hypothesis. Eg Bad partners produce bad children.

Availability Of technique:

Hypothesis should be related to available techniques. Otherwise they will not be researchable. Therefore the research must make sure that methods for testing his proposed hypothesis are available.

Theoretical relevance:

It should be related to a body of theory. A science can be cumulative only building on an existing body by building on an existing body of facts and theory. When research is systematically based upon a body of existing theory , a genuine contribution to knowledge is more likely to result. Therefore a hypothesis should posses theoretical relevance.

Consistency:

Hypothesis should be logically consistent. Two or more propositions logically derived from the same theory must not be mutually contradictory.

Objectivity:

Scientific hypothesis should be free from value judgements. However as social phenomenon are affected by the milieu in which they take place, the researcher must be aware of his values and state them explicitly.

Simplicity :

A hypothesis should be a simple one requiring fewer conditions or assumptions. It demands insight. The more the insight the researcher has into a problem, the simple will be his hypothesis about it.

Rules in Hypothesis Development:

1. Search for variable measurements with the most quantitative characteristic.
2. Make the variable like properties explicit by stating all of the variable's mutually exclusive and totally inclusive categories by degree.

3. Describe the means used to sort observation into your variable categories insufficient detail so that methods may be evaluated and replicated by others .
4. Always consider alternative operations that might be more appropriate for a given variable.
5. Analyze variable through their relationship.
6. Link two or more formal propositions through a shared independent or dependent variable where possible.