

# Hypothesis Formulation

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## Salvo of research – Curiosity & Passion

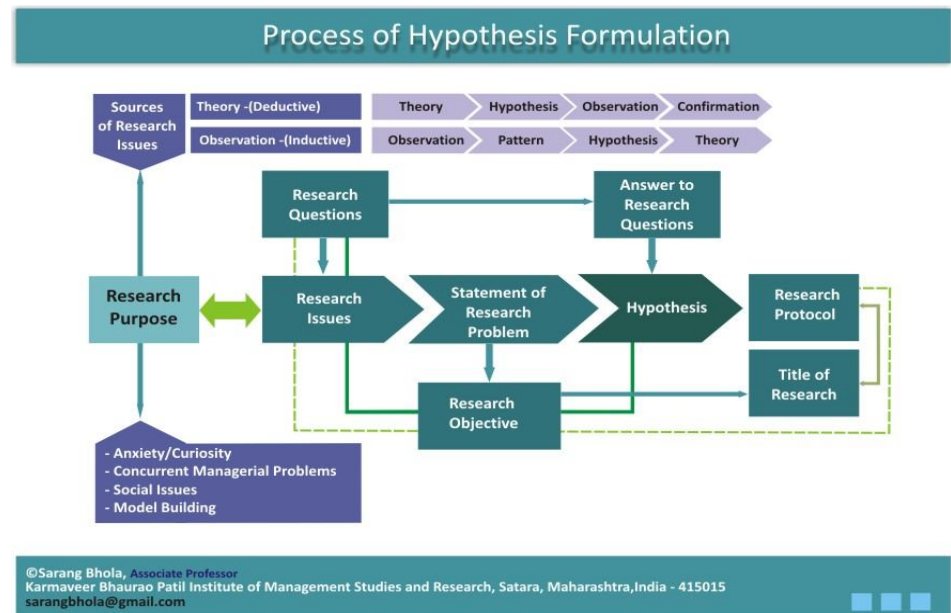
- A genuine researcher is with well cultivated curiosity.
- Researcher keeps on asking questions self on theory and observations. Unbiased searching for an answer with utmost patience, perseverance and persistence till satisfaction.
- Research is an unending voyage and degree, publications are just milestones not a destination.
- Turn to research, only after finding thirst area for research in academics.

# Takeaways

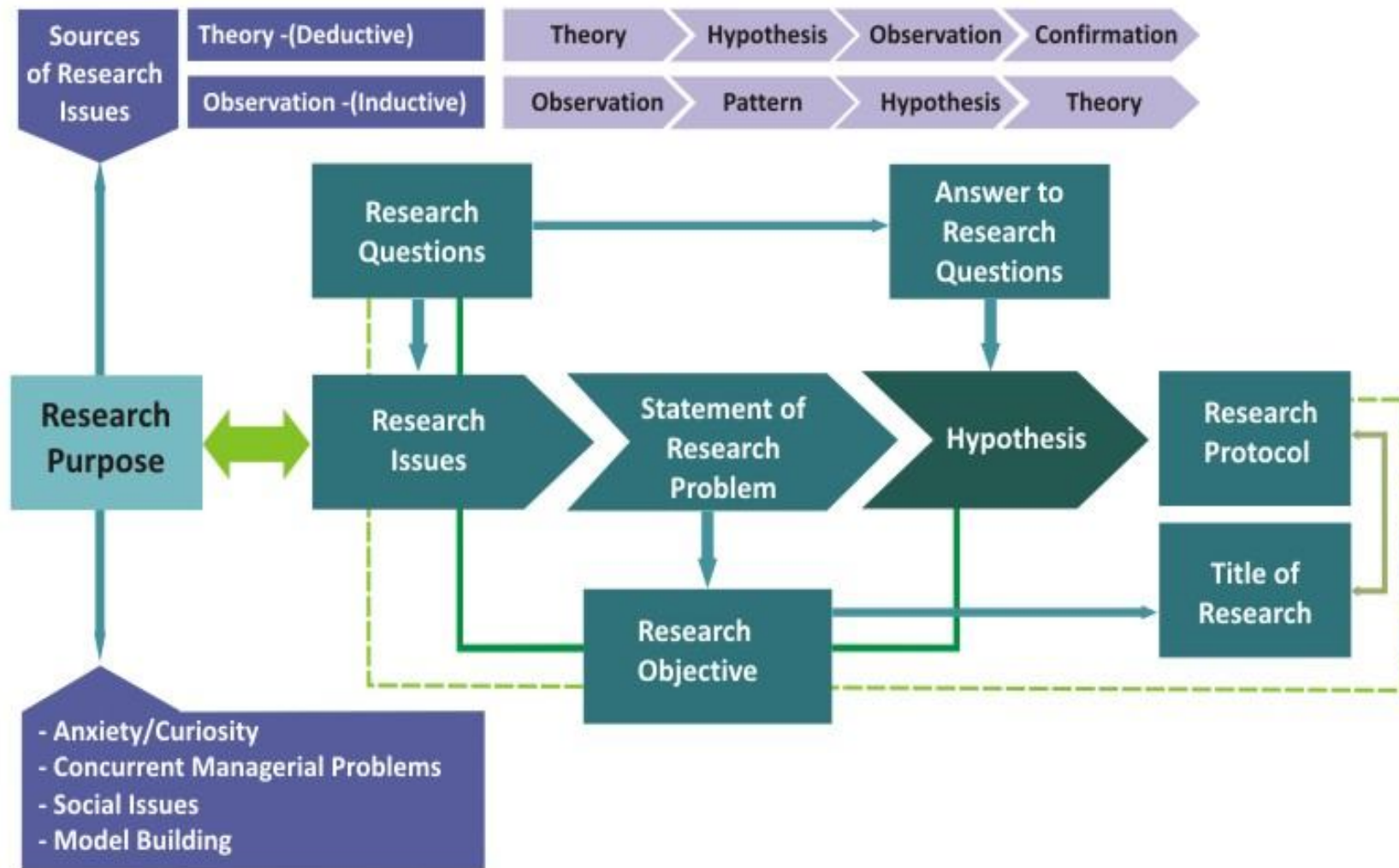
## Understand

- Research Problem
- Statement of Problem
- Hypothesis
- Research Question
- Research Protocol

Research



# Process of Hypothesis Formulation



## Research Issue

Statement of Research Problem

Hypothesis

Research Protocol

Like a Hour Glass

Narrowing from Research Issue to Hypothesis  
and

Expanding from Hypothesis to Research Protocol.

- Research problem is unearthing situation/event/happening needs a solution and for which possible solutions are exist.
- Statement of research problem is issue which needs to be addressed which also provides the context for research.
- Hypothesis is skeptical assumption about desired results.
- Research protocol is detailed and complete description about research planning.



# Steps towards formulating hypothesis

## Research Issue:

1. Ask as many W/H questions as possible towards research problem/issues.
2. Make a list of all possible research questions
3. Categorize questions on the basis of similarities in issues.
4. Prioritize questions; judging need of attention

## Statement of Research Problem:

Select appropriate set of category of research questions or a prioritized research question.

While selecting question for statement of problem:

- a. Evidences against questions can be located.
- b. Interesting and relevant
- c. Question is manageable
- d. Learn something new from answer of question.

## Hypothesis:

Answer the research question(s) to get a statement of hypothesis.

## Characteristics of Research Questions:

- Question should not have Yes/No answer.
- Research question should be clear and focused.
- Very narrow and very broad type of question is tough to research.
- Question is not oversimplified.
- Research question is always open ended and indirect question.

## Steps towards Hypothesis Formulation – Case Study

Step	Description
Research Issue	Education was a taboo decades back for female in India. Indians have witnessed many revolutions for female education. Growing percentage of female education reveals that female are entering in every economic sector whether it is business, service or profession. Female are securing highest ranks and merits in academics in specific. This general observation leads to many questions in mind of researcher.
Questions	<ol style="list-style-type: none"> <li>1. Female are more intelligent than men since in majority of merit list top ranks are features by female.</li> <li>2. The IQ of female and few god gifted characteristics, traits must be the reason behind success of female virtually in all fields.</li> <li>3. Female more ambitious then men and ready to take up any job usually men were doing previously.</li> <li>4. Female imbibe qualities and competencies that make them so successful.</li> <li>5. Men and female equally housed with similar kind of employability skills and traits which make them competitive.</li> </ol>
Statement of research problem	Female are more intelligent than men since in majority of merit list top ranks are features by female.

Now this questions is relatively broad in nature since it does not talk about female and men of which age, which class etc. besides this; the statement does not reveal how intelligence is going to be measured.

## Steps towards Hypothesis Formulation – Case Study conti.....

Revised research question	Female student's score higher than male students in final examination of MBA course in Shivaji University.
	The stated revised statement is specific enough and does not leave any ambiguity. Research question talks about testing intelligence with the help of scores of final examination. Examination is also specified i.e. MBA examination conducted by Shivaji University. Scores of male and female would be compared to arrive at result.
Hypothesis	H0: 'Significant difference does not exist in the marks scored by male and female students in MBA examination'.
	The ideal research question is one which defines problem in the form of a question. Unbiased answer to the same research question reveals null hypothesis.
Title	Gender based Assessment of intelligence of MBA students in Shivaji University.



## Statement of Research Problem.....

Selecting the most recent and appropriate problem for research (Questions to answer) out of research issues.

A statement of research problem should have

- Geographical context
- Historical context
- Biological context
- Conceptual context
- Analytical context

Appropriate context reflect in title of study

eg. Analytical Study on Efficacy of Management Education towards Entrepreneurship Among the Management Students in Shivaji University, Kolhapur



Quest is narrowing statement of research problem  
 different context helps narrowing statement of research problem

Stages of Narrowing	Example Description	Context
Stage One	Leadership	Very Vague
Stage Two	Entrepreneurial Leadership	Conceptual Context
Stage Three	Entrepreneurial Leadership in India	Geographic Context
Stage Four	Women entrepreneurial leadership in India in Post Liberalization	Historical Context
Stage Five	Analytical Study of Women Entrepreneurial Leadership In India post liberalization	Analytical Context

# Research Issues and Research Problem

## Research Issues

- Directly taken from the problem area for solution.
- It is a problem in itself.
- It can be a direct observation for managerial analysis for problem solving and decision making.
- A management problem analyst need not employ a hypothesis, not always use scientific method.
- Management problem is definite. It is observation of problem in actual practice.
- Management problem motivates a managerial analyst.

## Research Problem

- Adopted and re-stated for translating it into a research problem.
- It is a subject matter for in-depth investigation.
- A research problem generally identifies hypothesis for testing and uses scientific method.
- Research problem and hypothesis is skeptical.
- Research interest is more active in a research problem.

Source: Michael V.P., Research Methodology in Management, Himalaya Publishing House, 3<sup>rd</sup> revised , 1996, p.33.

# Concept of Hypothesis

## Hypothesis – Meaning

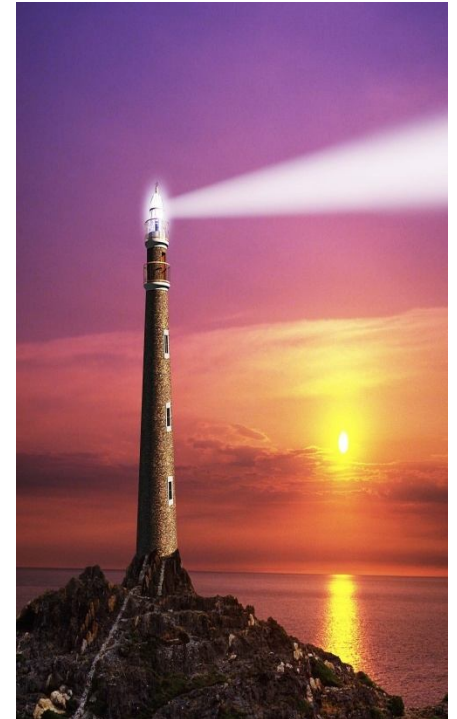
Tentative assumptions, Unproved theory, Educated guess  
Basis for discussion.

## Hypothesis – Definition

Hypothesis as a possible explanation of the phenomenon under observation... Prof. C.T.Curien.....

## Hypothesis – Nature

Alternative answers to the research question,  
Research determines which of these alternative answers is correct.  
Hypothesis is a preposition that the researcher wants to verify.  
The causes of certain phenomenon or  
Relationship between two or more variables under investigation..



# Hypothesis

## Functions

- Gives definite point to investigation and guides the direction.
- Specifies the sources of data,
- Provide context to be studied.
- It determines data need & prevents blind search.
- Suggests type of research
- Determines the technique of analysis.
- It links theory and investigation..

## Characteristics

- Conceptual clarity
- Specificity
- Testability
- Availability of techniques
- Theoretical relevance
- Consistency

eg. There is no significant difference in the skills possessed before perusing MBA and skills possessed after MBA course.

# Types of Hypothesis

- Working hypothesis
- Descriptive Hypothesis
- Relational Hypothesis
  - Correlation Hypotheses
  - Explanatory Hypotheses
- Null Hypothesis
- Statistical Hypothesis

# Case Study

Number of advertisements featuring celebrity is rising, advertisers are also forced to increase their advertising budget for the celebrity association. Multiple endorsements.

Questions:

- 1. Whether celebrity endorsement is actually a safe bet for the brands?
- 2. Whether it is really worth spending such huge amount?
- 3. Whether celebrity endorsement ensures better brand recall?
- 4. Whether it is effective for all product categories?
- 5. Whether it has any impact on durable and high-involvement products?
- 6. Whether it really leads to the purchase action?

Hypotheses:

Match between the product and celebrity personality has a positive impact on prospective customers.

Celebrity endorsing many brands creates confusion in customers' mind.

Celebrity advertisements create desire to purchase but do not always lead to purchase action among the customers.

# Case Study – Employability Skills

Observation – (Inductive) Observation – Pattern – Hypothesis – Theory

Research Issue	Despite the fact that today there are millions of job opportunities across various sectors; industry is witnessing a serious talent crunch. Though hiring has been taking place on a regular basis, low employability of the hired resources is a serious issue. While there are instances where the workforce may be competent in their chosen areas of expertise and falling short only where the soft-skills are concerned, there are also cases where the recruits don't even have the basic skills.
Questions	The question that is being raised is whether this is due to an out dated education system, which is not being refurbished to suit the changing needs of the economy. Is there exist a gap between skills imparted by management institutes in post graduate management students and skills required for different positions in industry at entry level?
Statement of research problem	One would not argue that syllabus and pedagogy seem to teach important skills to be transferred to the workplace. But we are teaching the right skills to students and management students possess adequate employability skills as expected by the various industry sectors. Students able to transfer those skills learned in their management course to their workplace. If not, something needs to be done differently in academic programs to better prepare students. Essentially, these questions must be answered so that appropriate changes are made to syllabus and pedagogy in management education so that students learn and transfer their learning beyond their collegiate experience to the workplace and other contexts.



## Case Study – Employability Skills conti.....

Hypothesis	Different industrial sectors require distinct employability skills and skills imparted by management institutes and skills required by the industry are complimentary.
Objectives of the Study	<p>To explore the perception and expectations of employers on existing employability skills of Management post graduate students at entry level.</p> <p>To assess the nature of work and extent of skills required for employability in the identified industrial sectors.</p> <p>To study and analyze opinions of Management post graduate students, institutes and employers about, employability and suitability of course contents with current market needs.</p> <p>To identify the factors affecting employability skills of management post graduates students at entry level.</p>
Title of Study	An Assessment of Employability Skills of Management Students in (name the place)

# Research Protocol



# Title of Study

- It is derived from research problem.
- It has context – Geographical, Historical, Biological, Conceptual, Analytical etc.
- It is short and self explanatory

eg. Analytical study of impact of celebrity endorsements on purchase of consumer durables in Pune city.

An assessment of employability skills of management students in Pune.

A psychographic study of selected market segments for lifestyle goods in urban Maharashtra.

## In research .....

- We never talk of topic but of research question
- We test hypothesis do not prove it
- Every research is directed towards a defined end
- Conduct research to find answers to questions and not reinforce opinions or ideas you already have
- Model building should be the integral part
- Redefine your own theories, models ..... it is continuous process.

# Discussion

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