

## Research Methodology -An Introduction-

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"When you are willing to make sacrifices for a great cause, you will never be alone."

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## What is Research

- Just close your eyes for a minute and utter the word *research* to yourself.
- What kinds of images does this word conjure up for you?



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## What is research *contd.*

- Before you start your research you need to have at least some idea of what you want to do.
- Without being clear about what you are going to research it is difficult to plan how you are going to research it.
- This reminds us a favorite quote in [Alice's Adventures in Wonderland](#).



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## The nature of research

- The results of a research are all [around us](#).
- [Politicians](#) often justify their policy decisions on the basis of a research.
- Many of these everyday uses of the term 'research' are not research in the true meaning of the word, (Walliman, 2005).
- Research has number of characteristics
  - Data are collected [systematically](#)
  - Data are interpreted [systematically](#)
  - There is a clear purpose: [to find things out](#).

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## The nature of business and management research

- Modern [technology](#) has made research an exciting and a relatively smooth process.
- Business research can be described as a systematic and organized effort to investigate a [specific problem](#) encountered in the work setting, that needs a solution.
- 1<sup>st</sup> step is to know where the problem areas exist in the organization.
- Once the problem is identified, take steps to gather information, analyze data, and determine the factors associated with the problem and solve it by taking necessary corrective action.
- You can [outsource](#).

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## Definition of a research


- It is an [organized, systematic, data-based, critical, objective, scientific inquiry or investigation into a specific problem](#), undertaken with the purpose of finding answers or solutions to it.
- Information provided could be the result of a careful analysis of data gathered [firsthand](#) or data that are [already available](#).
- Data can be [Quantitative](#) and [Qualitative](#) in nature.

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### Types of business research – Applied and Basic

- **Applied research:** where an attempt to solve an existing problem in an organization.
  - Example: *a particular product may not be selling well and the manager might want to find the reasons for this in order to take corrective action.*
- **Basic research:** where an attempt to generate a body of knowledge by trying to comprehend how certain problems that occur in organizations.
  - Example: *A university professor may be interested in investigating the factors contribute to absenteeism as a matter of mere academic interest. After analyzing data, the professor may identify factors such as inflexible work hours, inadequate training of employees, and low morale as primary influencing absenteeism. Later on, a manager who encounters absenteeism of employees in his organization may use this information to determine is these factors are relevant to that particular work setting.*

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### Refining research ideas

- **The Delphi Technique:** This involves using a group of people who are either involved or interested in the research idea to generate and choose a more specific research idea, (Robson, 2002) 

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### Business Research in the 21<sup>st</sup> century

- Today business research has been strongly influenced by two major trends in business
  - Increased globalization
    - **Upjohn** conducts business research in 160 different countries.
    - A.C. Nielson International
  - Growth of the internet
    - The internet has become a dominant source for academics in conducting research activities.
    - Online databases allow researchers to access research worldwide.







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### Inductive and Deductive methods of reasoning

- What is an **argument**?
  - A group of statements, in which some of them (the premises) are intended to support another statement (the conclusion).
  - An argument is **NOT**, a **quarrel**, bickering, or verbal fighting of any kind.
- Inductive method: is the process of creating a generalization based on a pattern of individual observations. (*particular to the general*)
  - Example: *My pet dog is very friendly to me from the past. Thus my pet dog will not bite anyone in the future.*
  - Example: *My laptop has never broken-down before. So it will not break in the future.*
  - Example: *I drop my pen, it falls to the ground. Again I dropped it. It falls to the ground. Thus, I'm going to say the general principle behind that, **that is The Law of Gravity.***

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### Inductive and Deductive methods of reasoning Contd..

- **Deductive method:** is when we arrive at a conclusion using facts, definitions, rules or properties. (*general to the particular*)
  - Example:
    - Premise 1: All politicians are liars  Existing Knowledge
    - Premise 2: Saman is a politician  Existing Knowledge
    - Conclusion: Saman is a Liar  New Knowledge
  - Example:
    - Premise 1: All men are mortal 
    - Premise 2: Socrates is a man 
    - Conclusion: Socrates is mortal 
    - In each of these arguments, if the premises are true, the conclusions **must** also be true. It is **impossible** for the premises to be true and the conclusions to be false.

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### The scientific method

- You need to have a clear idea as to what is HYPOTHESIS and a THEORY
  - HYPOTHESIS: an educated guess based on observations. Can be tested by experiments.
  - THEORY: Coherent group of thoroughly tested hypothesis commonly regarded as correct.
- Scientific method is based on the **HYPOTHESIS**
- Hypothesis is a statement describing relationships among variables that is tentatively assumed to be true
- example: lets assume that you have a flash light and it breaks. What are the alternatives you have, replace batteries, or replace the bulb.
- Scientific method is like a **cycle**.

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### Time in research

- Time is an important element in research design
  - Cross sectional** : A cross sectional study is one that takes place at a single point in time. You take a cross section of what you are observing or measuring.
    - It is a snapshot of a population at a certain point of time. 😊
    - An example of a cross sectional survey would be a questionnaire that collects data on how parents feel about Internet filtering, as of March of 2013.
  - Longitudinal** : A longitudinal study is one that takes place over time. 😊
    - Time is the main variable.
    - Example: The researcher may then analyze changes in the population and attempt to describe and/or explain them.


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## The Broad Problem area -The Research Problem-

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### Research Problem



**Context**

Yesterday they were there

Today they are there

Everyday They are there

**Knowledge/Theory**

Different people/theories say different things. So we do not no exactly WHY?

- Three old men come to same coffee shop everyday exactly 3 pm. They sit at same place and drink same type of coffee for three hours
- WHY are they behaving like this is not clear/ not exact

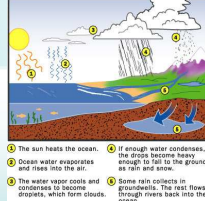

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### Regularities and phenomenon

- By research you are going to explain the **regularities** of the world
- Research is start with such **regularities**.
  - one day in the morning you walk on the road and you saw three old men sitting at the coffee shop
  - Everyday in the morning you saw these three old men sitting at the coffee shop

### Research problem

- Rain .....is regular event in universe.. There is no contradiction about water cycle...No Problem
- Colored Rain...Red, Blue, Green, Orange and yellow...can not be explained by existing knowledge about water cycle
- Some says it happened because of ,
  - Alien invasion
  - Colored algae blow up by the strong winds ...
  - End of the world
  - Sign of the rise of RAVAN
  - Knowledge of why color rain is uncertain and contradicting, hence a Problem. A research problem

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### Research Problem to Research Questions

- Research problem/aim:** Find out the reasons for Red rain
- Research Questions:**
  - What are the locations that experienced the red rain?  
*Earth based Belief*
  - What are the geospatial similarities of those areas?
  - Were there any UFO/Allen citing in recent times?  
*Space based belief*
  - Were there significant outer space activities occurred?
- Is there relationship between geospatial patterns, UFO citing, outer space activities and red rain ?
- Without answering these research questions you can not Find out the reasons for Red rain

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### Research Questions to Research Objectives

Research Questions- what you want find	Research Objectives to- What you are going to do to find it
What are the locations that experience red rain?	Map the locations that got red rain
What are the geospatial similarities of those areas?	Explore the geospatial similarities of the areas effected by red rain
Were there any UFO/Alien citing in recent times?	Investigate the UFO/Alein citing in the areas effected by red rain
Were there significant outer space activities occurred?	Explore the outer space activities during last two weeks
Do geospatial patterns, UFO citing, outer space activities have a connection with red rain ?	Determine the relationship between geospatial patterns, UFO citing, Outer space activities and red rain

**Research problem/aim: Find out the reasons for Red rain**

- ### Research Problem to Hypothesis
- **RP:** Find out the reasons for Red rain
  - **RQ:** Do geospatial patterns, UFO citing, outer space activities have a connection with red rain ?
  - **RO:** Determine the relationship between geospatial patterns, UFO citing, Outer space activities and red rain
  - **Hypotheses:**
    - **H1 :** There is a relationship between geospatial pattern and red rain
    - **H2 :** There is a relationship between UFO citing and red rain
    - **H3 :** There is a relationship between outer space activities and red rain

If you fall behind, run faster. Never give up, never surrender, and rise up against the odds.  
Jesse Jackson



## Types of business research

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- ### Types of business research
- Business research produces information to reduce **uncertainty**.
  - *For example: a soft drink company introducing a new iced coffee might want to know whether a gold or a silver label would make the packaging more effective.*
  - Companies engage with different uncertain circumstances. Thus the proper identification of the **TYPE** of research is required.
    - Exploratory studies
    - Descriptive research
    - Casual research
    - Experimental research
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- ### Types of business research *contd..*
- **Exploratory studies** are conducted in order to clarify ambiguous problems.
    - Exploratory research requires a **preliminary data gathering** that will help to define problem and to suggest hypothesis.
    - *For example: Unilever which make street ice cream, might want to find out if a new adult flavor will add to its ice cream sales and profits.*
    - *Example: in an organization considering a program to help employees with child care needs, for example, exploratory research with a small number of employees who have children might determine that many of them have spouses who also work and that these employees have positive reactions to the possibility of an on-site child-care program.* 😊
    - This requires an informal discussions with consumers, employees, management or competitors.
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- ### Types of business research *contd..*
- **Descriptive research:** as the term implies to you, is to describe characteristics of a population or phenomenon.
  - *For example: The Department of Census and Statistics (DCS) conducts descriptive research in the form of the Current Population Survey. Official statistics on employment and other characteristics of the labor force are derived from this survey.*
  - 😊 **Causal Research:** The main goal is to identify cause-and-effect relationships among variables.
    - In causal research attempts to find our when we do one thing, another thing will follow.
    - *Example: a typical causal study has management change one variable (training) and then observe the effect on another variable (productivity)*
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### Types of business research *contd.*

- Experimental research:
  - *Example: the research problem concern the effect of mineral supplements (independent variable) on the educational attainment of final year undergraduates (dependent variable)*
  - The dependent variable can be defined as a specific IQ test.
  - Here the researcher divides the total experimental group into two groups. One is Experimental group and the other one is the Control group.
  - Experimental group → mineral supplements in all meals.
  - Control group → not given mineral supplements but is given a placebo.

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### References..

- Kumar, R 2011, *Research Methodology: A Step by Step Guide for Beginners*, 3rd edn, Sage Publications.
- Sekaran, U & Bougie, R 2009, *Research Methods for Business: A Skill Building Approach*, 5th edn, John Wiley & Sons.

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