BRM: Unit 1

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Syllabus

• 1. Foundations of Research:
  • 1.2 Research & the Scientific Method: Characteristics of scientific method.
  • 1.3 Steps in Research Process
  • 1.4 Concept of Scientific Enquiry: - Formulation of Research Problem – Management Question – Research Question – Investigation Question
  • 1.5 Research Proposal: – Elements of a Research Proposal, Drafting a Research Proposal, Evaluating a research proposal (Students are expected to draft and evaluate a real life research proposal)
Introduction

• Research is the main pillar contributing to the development of human civilization. Scientific research has not only contributed abundant knowledge but also paved the path for sophisticated human life.

• All the countries invest a huge amount on the research in the arena of economic, social, political and technological development.

• Developed countries are having wider research base. Nowadays Business organizations indulge in research activities to tackle the stringent global competition. The term research seems to be complex, but if it adopts suitable methodology it achieves the goals of the research easily.
Definitions of Research

• According to Oxford dictionary, “Research is the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions”

• According to V. Redman and A.V.H. Mory “Research is a systematized effort to gain new knowledge”
Definitions of Business Research

• According to Cooper and Schindler “Business research is a systematic enquiry that provides information to guide business decisions to find solution to problems”.

• According to W.G. Zikmund, “Business research is defined as “the systematic and objective process of gathering, recording and analyzing data for aid in making business decision.”
Objectives of Business Research

• Increasing Profitability
• Enhance Market Share
• Quality Improvement
• To understand the market
• For better decision making
Objectives of Business Research

• Explore new opportunities
• Advanced Technology
• To minimize risk
• To attain Sustainable growth
• To achieve Competitive advantage
Characteristics of Good research

- Clear definition of Purpose
- Detailed research process
- Thoroughly planned research design
- Adopt High ethical standards
- Specify Limitations
Characteristics of Good research

- Adequate analysis
- Explicit presentation of Findings
- Justifications of conclusion
- Reflect researcher experience and expertise
• Scientific methods are simple to understand, and they are basically a way of thinking about problems and their solutions. Scientific method is systematic, logical and sequential process to prove existing theories or establish new theories.

• Scientific method is the way researchers go about using knowledge and evidence to reach objective conclusions in the real world. Scientific method prescribes procedures to determine and connect theoretical statements relating to events.
# Steps in Scientific Method

<table>
<thead>
<tr>
<th>Identify the Problem</th>
<th>Develop a question or problem that can be solved through experimentation</th>
<th>Eg. Plant is not growing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation / Research</td>
<td>Refer theories and observe keenly to estimate the reason for the problem</td>
<td>Soil quality, water supply, sunlight are adequate.</td>
</tr>
<tr>
<td>Formulate Hypothesis</td>
<td>Predict a possible answer to the problem or question.</td>
<td>Example: If soil temperature rises, then plant growth will increase</td>
</tr>
<tr>
<td>Design and Perform experiments</td>
<td>Develop and follow a procedure.</td>
<td>Include a detailed materials list.</td>
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<tr>
<td></td>
<td></td>
<td>The outcome must be measurable</td>
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</table>
## Steps in Scientific Method

<table>
<thead>
<tr>
<th>Collect and Analyze data</th>
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<tbody>
<tr>
<td>Modify the procedure if needed.</td>
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</table>

**Conclusion**

| Include a statement that accepts or rejects the hypothesis. | Make recommendations for further study | Suggest possible improvements to the procedure. |

**Communicate the results**

| Be prepared to present the project to an audience. | Expect questions from the audience. |
Characteristics of Scientific Method

- Objective
- Empirical
- Systematic
- Replicable
- Logical
- Sequential
- Validity
- Reliability
- Accuracy
Characteristics of Scientific Method

- **Objective**: Scientists attempt to remove their bias, belief, preferences, wishes and values from their scientific research. It means the ability to see and accept facts as they are, not as one might wish them to be.

- **Empirical**: Information or facts about the world based on sensory experiences. That is direct observation of the world, to see whether scientific theories or speculations agree with the facts.

- **Systematic**: All aspects of the research process are carefully planned in advance and nothing is done in a casual or haphazard fashion.

- **Replicable**: Repeating studies numerous times to determine if the same results will be obtained.
Characteristics of Scientific Method

• **Predictive**: Science is relating the present to the future.

• **Logical**: It is purely based on sound ideas or theories

• **Sequential**: It should be performed in particular order

• **Validity**: Validity refers to the credibility or believability of the research. It is a checkpoint that ensures whether researcher measures what he claims to measure?

• **Reliability**: Reliability means if any other research repeats the experiment under the same conditions will produce the same significant result.

• **Accuracy**: Accuracy describes how closely the construct measures the concept.
Steps in Research Process

1. Define research problem
2. Review concept and theories
3. Review previous research finding
4. Formulate hypotheses
5. Formulation of design
6. Collection of primary & secondary data
7. Analysis of data with suitable statistical technique
8. Interpret & report
Steps in Research Process

• Step 1: Problem or Opportunity Identification
• Step 2: Decision maker and Business researcher meeting to discuss the Problem or Opportunity dimensions.
• Step 3: Defining the Management problem and subs
• Step 4: Formulate Research proposal and Introducing dimension to the problem
Steps in Research Process

- Step 5: Approaches to research
- Step 6: Fieldwork and data collection
- Step 7: Data preparation and data entry
- Step 8: Performing data analysis
- Step 9: Interpretation of result and findings
- Step 10: Management decision and its implementation
Step 1: Problem or opportunity identification

Step 2: Decision maker and business researcher meeting to discuss the problem and opportunity dimensions

Pilot study
Exploratory research
Secondary data exploration
Background of the problem or opportunity

Step 3: Defining the management problem and subsequently the research problem

Introducing the dimensions to the problem or opportunity
Theoretical model construction
Framing research questions
Developing hypotheses

Step 4: Formal research proposal and introducing the dimensions to the problem

Step 5: Approaches to research

- Types of research
- Measurement and scaling
- Development of questionnaire
- Sample size determination
- Sampling techniques

Data analysis plan

Step 6: Fieldwork and data collection

- Secondary data sources
- Survey and observation
- Experiments

Step 7: Data preparation and data entry

Step 8: Performing data analysis

- Univariate statistical analysis
- Bivariate statistical analysis
- Multivariate statistical analysis

Step 9: Interpretation of result and presentation of findings

Step 10: Management decision and its implementation
Research Question

Management Dilemma

Management Questions

Investigative questions

Research questions

Measurement Questions

Management Decision
The production manager of a shoe factory

<table>
<thead>
<tr>
<th>Management Dilemma</th>
<th>The firm is experiencing an increasing number of complaints regarding health care service quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Question</td>
<td>What can be done to improve service quality?</td>
</tr>
<tr>
<td>Research Questions</td>
<td>(1) Is there a real problem in the quality of service or is the ‘perceived’ quality of the service poor?</td>
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<tr>
<td></td>
<td>(2) Which categories of health care services are generating the major portion of complaints?</td>
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<td></td>
<td>(3) What specific improvements can improve these services?</td>
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<td></td>
<td>(4) What may be expected as an outcome of the improvements?</td>
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</table>
The vice president of labor relations for an auto manufacturer

<table>
<thead>
<tr>
<th>Management Dilemma</th>
<th>Low productivity and high absenteeism at the manufacturing plant.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Question</td>
<td>What are the causes for low productivity and high absenteeism?</td>
</tr>
</tbody>
</table>
| Research Questions | (1) What are the causes of low productivity that relate to personnel issues?  
                            (2) What are the causes of low productivity that relate to technology, or the manufacturing plant?  
                            (3) What are the causes of absenteeism?  
                            (4) Is there an employee morale problem in the plant, and if so, what are its major dimensions? |
The retail advertising manager of a major metropolitan newspaper

<table>
<thead>
<tr>
<th>Management Dilemma</th>
<th>Should advertising rates be revised?</th>
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</thead>
<tbody>
<tr>
<td>Management Question</td>
<td>Should the advertising rates be revised, by how much, and what gains are expected from the revision</td>
</tr>
</tbody>
</table>
| Research Questions | (1) What are the rates of competing publications?  
(2) What should the differentials between rates for different ‘positions’ be?  
(3) What impact will a rate increase have on the demand for advertising?  
(4) What should the revised advertising tariff structure be? |
Research Proposal

• Research proposal is work plan/outline of research or methodology of research. It describes the procedure to carry out the research.

• It is road map which directs or guides the researcher. Alternatively it is also termed as statement of intent draft plan, work plan or prospectus.

• It is intended to convince others about the value of the research. Generally, a research proposal should contain all the key elements involved in the research process and include sufficient information for the readers to evaluate the proposed study.
Keep in mind...

• All research proposals irrespective of area and methodology must address the following questions
  – What you plan to accomplish?
  – Why you want to do it and?
  – How you are going to do it?
Structure of the Research Proposal

Executive summary
Problem statement
Research Objectives
Literature Review

Results: Deliverables
Data Analysis
Research Design
Importance / Benefits of the study

Expertise of the researcher
Budget
Timeline
Bibliography
• **Title:**
It should be concise and descriptive. It should be simple and clear. However, if possible, think of an informative but catchy title. An effective title not only pricks the reader's interest, but also predisposes him/her favorably towards the proposal.

• **Executive summary:**
It is a brief summary of approximately 300 words. It should include the research question, the rationale for the study, the hypothesis, the method and the main findings. Descriptions of the method may include the design, procedures, the sample and any instruments that will be used.
• **Introduction:**

It unveils the reader about the necessary background or context of the research problem.

• **Problem statement:**

❖ State the research problem, which is often referred to as the purpose of the study, with a focus on a specific research problem, to be followed by the rational or justification for the proposed study.

❖ Provide the context and set the stage for your research question in such a way as to show its necessity and importance.

❖ Present the rationale of your proposed study and clearly indicate why it is worth doing.

❖ Briefly describe the major issues and sub-problems to be addressed by your research.
• **Research Objectives**

  - The main purpose is to solve management question. In casual research it is hypothesis whereas in descriptive research it is research question.

  - Identify the key independent and dependent variables of your experiment. Alternatively, specify the phenomenon you want to study.

  - State your hypothesis or theory, if any.

  - Set the delimitation or boundaries of your proposed research in order to provide a clear focus.

  - Provide definitions of key concepts.
Literature Review:

- A literature review is a search and evaluation of the available literature in your given subject or chosen topic area. It serves several important functions:
  - Gives credits to those who have laid the groundwork for your research.
  - Demonstrates your understanding of the theoretical and research issues related to your research question.
  - Shows your ability to critically evaluate relevant literature information.
  - Provides new theoretical insights or develops a new model as the conceptual framework for your research.

Importance and Benefits of the study

- This covers the significance, need and benefits of the study.
• **Research Design**

• It is the framework for conducting the research. Type of design, research methods, sample design, sources and type of data to be collected, data processing and analysis, measurement. You need to demonstrate your knowledge of alternative methods and make the case that your approach is the most appropriate and most valid way to address your research question.
# Research Design

<table>
<thead>
<tr>
<th>SN</th>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type of research</td>
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<tr>
<td>2</td>
<td>Nature of Research</td>
<td></td>
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<tr>
<td>3</td>
<td>Research Instrument</td>
<td></td>
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<tr>
<td>4</td>
<td>Survey period</td>
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<tr>
<td>5</td>
<td>Type of product</td>
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<tr>
<td>6</td>
<td>Method of data collection</td>
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<td>7</td>
<td>Universes</td>
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<tr>
<td>8</td>
<td>Sample Elements</td>
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<tr>
<td>9</td>
<td>Sampling Method</td>
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<tr>
<td>10</td>
<td>Sources of data collection</td>
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<tr>
<td>11</td>
<td>Primary sources</td>
<td></td>
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<tr>
<td>12</td>
<td>Secondary sources</td>
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<tr>
<td>13</td>
<td>Measurable scale used</td>
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<tr>
<td>14</td>
<td>Question Type</td>
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<tr>
<td>15</td>
<td>Rating Scale</td>
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<td>16</td>
<td>Statistical Tool</td>
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</table>
• **Data Analysis**
  Collected data is analyzed using appropriate statistical tools using statistical software like SPSS, SAS, STATA, R, AMOS etc.

• **Results: Deliverables**
  Obviously the researcher does not have results at the proposal stage. However, the researcher may have some idea about the deliverables of the research.

• **Expertise of the researcher**
  The researcher shared his experience and summary of the profile to highlight the expertise of him.

• **Budget**
  The researcher mentions the budget of the research.

• **Timeline**
  The researcher specifies the timeline of the research.

• **Bibliography**
  References for the study such as books, articles, journals’ details referred fare specified in the particular format.
Thank You