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| **Topic 3: Research Methodology/Research Approach** |

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| **Introduction** |

This chapter examine two approaches related to research methodology:

1. The Research Process ‘Onion’ (Saunders et al)

2. The Honeycomb of Research Methodology (Jonathan Wilson)

* 1. **The Research Process ‘Onion’**

Research

philosophy

Deductive

Experiment Research

Survey Positivism approach

Cross sectional Case study

Research

Sampling strategies

Secondary data

Observation Grounded theory Interpretivism

Interviews

Questionnaires

Time

Longitudinal Ethnography horizon

Action research

Inductive Realism

Data

collection methods

The above **onion research process** shows the different aspects as layers of an onion. The first represents the philosophy of research, then the research approach, research strategies, and time horizon before coming to data collection methods. All these **five** aspects constitute the **research design**.

* 1. **The Honeycomb of Research Methodology**

Epistemology/Positivism/Interpretivism/

1 Pragmatism/Ontology/Objectivism/

Research Subjectivism/Axiology/Value-free/Biased

Descriptive statistics philosophy

Inferential statistics 6 2

Narrative analysis Data analysis Research Inductive

Discourse analysis techniques approach Deductive

Content analysis Research

Methodology

5 3 Quantitative,

Data Research Qualitative or

Questionnaire collection 4 strategy Mixed Methods

Observation Research such as action research,

Interview design grounded theory, ethnography,

Records comparative, expository,

Documents descriptive approach.

Pictures This is the collection of all the above four

steps (1–4) necessary for the collection

of data (step 5) and the analysis of the data

(step 6).

The honeycomb approach indicates **six** aspects of the research methodology with the inclusion of the research design compared to the ‘onion process’ approach. The research design is not included in the research process ‘Onion’. In the research process ‘Onion’ the research design is constituted to be from the five aspects starting from the research philosophy to the data collection methods (see diagram).

A research design is a framework that is developed as a guide to the collection, analysis and interpretation of data using quantitative or qualitative strategy. There are many research designs and each of them has its unique characteristics to guide you in your research process.

As with regard to the research strategy in aspect 3 and as a part of a research design, it refers to the quantitative approach, qualitative approach or mixed approach that is applied to conduct a research study. The research strategy is referred to as the method that is developed by researchers for the collection of data and analysis of data such as a case study, grounded theory, experiment, action research, ethnography, and comparative study, expository study and descriptive study.

There is a relationship between research philosophy and research approach and research strategy. This implies that the choice of the research philosophy will likely to determine the research approach and research strategy. E.g. if you choose positivism as your research philosophy, then your research approach has to be deductive and your research strategy has to be quantitative. On the other hand, if you choose interpretivism, your research approach has to be inductive and your research strategy has to be qualitative as well.

Similarly, your choice of research philosophy also involves your choice of the research design. It leads you to the type of evidence required and how it is to be collected and interpreted. Furthermore, it helps you to identify and adapt the research design option according to the constraints of your research topic.

Review the 5 aspects in the Research Process Onion:

**1. The Research Philosophy (principle or concept)**

**(***Philosophy originates from the Greek word “philosophia”. “Philo” means ‘loving/lover of’ and “sophia” means ‘wisdom’. Therefore philosophy means “love of wisdom”. It is concerned with the search for meaning.*

*Research philosophy is related to the systematic inquiry into the nature and meaning of reality, existence, truth, knowledge, reasoning and value.)*

There are three philosophical views about the research process that dominate the literature:

1. Positivism (deductive/quantitative approach)

2. Interpretivism (inductive/qualitative approach)

3. Realism (mixed approach)

These are three different views about how knowledge is developed and judged as being acceptable. They are different but not mutually exclusive. All of them have an important part to play in business and management research. In other words there are three ways by which data or information is gathered to provide answers to the research study.

***Positivism (Quantitative approach)***

This approach reflects what a scientist does. He sets an objective and conducts an experiment and from the data collected, he determines the outcome. This method is highly structured and can be repeated as the environment is controlled. The data can be statistically analysed to determine whether the objective is achieved. This is a scientific quantitative approach.

***Interpretivism (Quality approach)***

This is a qualitative approach to study the activities of a selected group of people or a selected few persons in a natural environment and then attempt to draw meanings of the events and activities of these people. The role of the observer is to make sense of and understand their motives, actions and intentions in a way that is meaningful for these research participants.

***Realism (Mixed approach)***

This is based on the belief that a reality exists that is independent of human thoughts and beliefs. That there are unforeseeable forces existing in the external environment to affect the interpretations and behaviours of the people but somehow the people do not notice them.

Realism recognises the importance of understanding people’s socially constructed interpretations and meanings within the context of seeking to understand broader social forces, structures or processes that influence the nature of people’s view and behaviours.

Business and management research is not done just using one approach but a combination of positivism and interpretivism reflecting the stance of realism.

**2. Choosing a research approach**

This is related to whether the research should use the deductive approach or the inductive approach. In the deductive approach a theory/ hypothesis is developed and then design a *research strategy* to test the hypothesis. This is related to positivism.

On the other hand, the inductive approach involves collecting the data and then develops a theory from the data analysis. This is related to the philosophy of interpretivism (qualitative approach).

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| Deductive approach process | Inductive approach process |
| 1. Come out with a hypothesis about the  relationship between two or more vents from  the theory.  2. Express the hypothesis in operational terms  i.e. how the variables are to be measured.  3. Test the hypothesis i.e. do an experiment.  4. Examine the outcome to confirm the theory.  5. If necessary modify the theory. | 1. Collect the data e.g. by observation or  interview.  2. Analyse the data collected.  3. The result of the analysis leads to the  formation of a theory.  4. It involves understanding the social aspects  of human behaviour. |

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| Major differences between deductive and inductive approaches to research | |
| Deduction emphasises (quantitative) | Inductive emphasises (qualitative) |
| 1. Scientific principles 2. Moving from theory to data 3. The need to explain causal relationships between variables 4. The collection of quantitative data 5. The application of controls to ensure validity of data 6. The operationalization of concepts to ensure clarity of definition 7. A highly structured approach 8. Researcher independence of what is being researched 9. The necessity to select samples of sufficient size in order to generalise conclusions. | 1. Gaining an understanding of the meanings  humans attach to events.  2. A close understanding of the research  context  3. The collection of qualitative data  4. A more flexible structure to permit  changes of research emphasis as the  research progresses  5. A realisation that the researcher is part  of the research process  6. Less concern with the need to generalise |

**3. Research Strategy**

It is *a general plan of how you will go about answering the research question*. It contains clear objectives, derived from the research question, specify the sources from which you intend to collect the data and indicate the constraints you will face such as time, financial resources, location, and access to data and ethical issues. It refers to quantitative approach or qualitative approach or even a mixed approach.

Research topic Quantitative/Qualitative/Mixed

Research questions Objectives Research strategy Sources of data

Schematic Presentation of the Research Strategy

Differences between strategy and tactics: Strategy is concerned with the overall approach you adopt; tactics is about the finer detail of how the data is collected and the analysis methods used.

The research strategy options available are:

* Experiment - a systematic approach to gather data and interpretation of the data.
* Survey - a deductive approach. It allows the collection of a large amount of data from a sizable population. Often obtained by using a questionnaire, the data are standardised and compared. The importance of this strategy is the designing of the questionnaire. Other methods to collect data are observation and interview.
* Case study - an in-depth investigation of one unit (e.g. individual, group, institution, organisation, programme or document). It involves the understanding and translating the dynamics of the selected unit. It is a problem-solving technique of a culture-sharing group. It is basically to understand what is going on or the things a particular group of people do in a particular environment. Multiple methods of primary data collection such as observation, interviews and questionnaires are used to improve the qualitative research and concurrently to enable the research findings to be as authentic as possible.
* Grounded theory - data collection starts without the formation of an initial theoretical framework. Theory is developed from data generated by a series of observations. These data lead to the generation of predictions that are then tested in further observations which may confirm, or otherwise, the predictions. Constant reference to the data to develop and test theory leads Hussey and Hussey (197) to call grounded theory an inductive/deductive approach, theory being grounded in such continual reference to the data.
* Ethnography - an inductive approach; came from the field of anthropology. The purpose is to study the cultural patterns and perspectives of participants in their natural setting, a form of qualitative research.
* Action research - any systematic inquiry conducted by teachers, principals, school counsellors, or other stakeholders in the teaching-learning environment, to gather information about the ways in which their particular schools operate, the teachers teach, and the students learn.
* Cross-sectional and longitudinal studies

Cross-sectional studies - involve the study of a particular phenomenon at a particular time. E.g. the study of the IT skills of managers on one organisation at a given time e.g. over a period of days or weeks or months.

Longitudinal studies - where the researcher studies people or phenomena at more than one point in time in order to answer the research question. E.g. the research might want to study employees’ behaviour before and after a change in the top management, to study the effect of the change. Here, because data are gathered at two different points in time, the study is not cross-sectional or one- shot kind, but is carried longitudinally across a period of time.

* Exploratory, descriptive and explanatory studies.

*Exploratory studies* - this is usually done when there is not much information available about the situation at hand. Data are gathered through interviews, questionnaire or even observation or a search of the literature.

*Descriptive studies* - this is to ascertain and to describe the characteristics of the variables of interest in a situation. E.g. a study of a class in terms of the percentage of members who are in their senior and junior years, sex composition, age groupings, number of semesters until graduation and number of business courses taken. The goal of a descriptive study is to offer a profile or to describe relevant aspects of the phenomena of interest to the researcher from an individual, organisational, industry-oriented or other perspective. Such information may be vital before even considering certain corrective steps such as to bring about a change in the management. Presenting data in a meaningful form help to:

(1) understand the characteristics of a group in a given situation;

(2) think systematically about aspects in a given situation;

(3) offer ideas for further problem and research; and

(4) help make certain simple decisions.

*Explanatory studies* - it is a study of a situation or a problem to establish the relationship

between variables e.g. is there a correlation between the two variables.

**4. Research design**

The research design is a detailed plan or a blueprint of the steps to be followed to achieve the objectives conceived by the researcher in terms of answering the research questions formulated by him in any area or discipline.

*The research design is actually a collection of steps involved before starting to carry out the collection of data. It involves the followings:*

* *Identifying the research topic*
* *Develop research question(s) and objectives.*
* *Selecting an appropriate research strategy most suitable to the research questions and objectives.*
* *Looking at constraints under which the research is being conducted e.g. is the pursuit of longitudinal research precluded.*
* *Does it involve combining different research methods (different techniques used for collecting data – Questionnaire, interview, observation & documents.*
* *The threats to credibility such as reliability and validity contained in your research design.*
* *Moral ethics in collecting data.*

*The research design option that is chosen will provide the above steps for the collection of data.*

*It has the following properties:*

* *Is time-based, procedural plan for every research activity.*
* *Is always focused on the research question.*
* *Guides selection of sources of information (cases).*
* *Provides the framework for specifying the relationships among the study’s variables.*

**Mixed Methods**

This is a combination of quantitative and qualitative methods and primary and secondary data are used.

**Credibility of research findings**

This refers to how good are the data collected i.e. the trustworthiness of the research. This depends on how accurately the instrument developed to measure a particular concept. It is necessary to ensure that the instrument that is use in the research measures the variables accurately. To ensure that the measures developed are reasonably good, we use the reliability and validity tests.

Reliability - it indicates the extent to which the measure is without bias (error free) and hence offers consistent measurement across time and across the various items in the instrument. It therefore indicates the stability and consistency with which the instrument measures the concept and helps to assess the ‘goodness’ of a measure. This is more towards consistency.

Validity - It is the degree to which a test measures what it is intended to measure; a test is valid for a particular purpose for a particular group. In qualitative research, it is the degree to which qualitative data accurately gauge what the researcher is trying to measure. There are many threats to validity according to Robson (2002) such as history, testing, instrumentation, mortality, maturation and ambiguity about causal direction.

Generalizability (external validity) - to what extent the findings of the research can be applied to the population. In a case study it is not possible to apply to other situations because circumstances and conditions such as the settings and participants are different.

**The ethics of *research design***

Moral ethics should exist when gaining access to the place for research to be carried out, to the participants, and the collection of the data. In fact moral ethics applies in all the stages of the research process starting from designing to the research strategy through the implementation stage and the evaluation and control stage. All these stages if are not done ethically have serious implications on the validity of the research.