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# Conceptualization in Research

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## Abstract

Research is always based on reliable data and the methods used to capture this data. Scientific methods facilitate this process to obtain quality output in research. Formulation of research problem is the first step to begin with research. It is at this stage, the researcher should have a clear understanding of the words and terms used in the research such that there are no conflicts arising later regarding their interpretation and measurements. This necessitates the understanding of the conceptualization process.

## Introduction

Good evidence comes from well-made research. But best evidence comes from good research. Good research can appear in form of study published in journal or from analysis of real data at job, secondary sources, etc. Internet and modern communication are real boon to mankind in accessing and analyzing data. Conceptualization is breaking and converting research ideas into common meanings to develop an agreement among the users. This process eventually leads to framing meaningful concepts which ultimately lead to creation of a theory.

## What is research?

Research is systematic and organized way of collecting data using scientific methods and interpreting the data through analysis. Research is conducted either for any one or more of these following reasons:

- New knowledge creation,
- Addition to existing knowledge and

- Validating existing knowledge.

Research focus could be either to:

- Fill knowledge gaps, usually termed as Academic research, and or
- Problem solving.

What is Good Research?

Good research is just like good car or good pair of shoes, must be well designed and well made. We cannot simply depend on brand names in research. Although knowing research comes from respected scientific journals or reputable research institutions, still their impact factors, author's affiliation, etc. matter. Good research is always based on good, valid and reliable data and empirical evidence.

Why study Research Methodology

Each research study is unique and each study has unique strengths and weaknesses. So we need to study how research is made. *Methodology is a 'science of finding'*. It involves: sampling strategies, measurements and measuring tools, statistical techniques and other procedures to produce research evidence. By understanding methodology, we judge quality of research. Methodology is a subset of epistemology is the '*science of knowing*', how researchers make their knowledge claims.

Preplanned Research

It consists of two steps:

- Step1: Usually begin with a topic. Sources could be: reading, personal experiences, state of knowledge in the field, solving problem, curiosity based on something in the media, personal values, social premiums and everyday life, etc.
- Step2: Topic is narrowed down into focused research question/s. This is done by deciding if study is primarily qualitative or quantitative or mixed.

Formulating Research Questions

Research answers questions but what kind of questions and where do the questions come from? Understanding the reality: e.g. what is the relationship between two variables x and y? This is termed as *Positive questions?*

Understanding how you want world to look like is called as *normative questions?*

Research is well suited for answering positive questions. Research does not help much in answering normative questions. The research question defines the "area of interest" but it is not a declarative statement like a hypothesis. The central research

question (general focus) may be complemented by a few secondary questions (specific) to narrow the focus. Research question must be capable of being confirmed or refuted.

### Research Questions in Qualitative study

Both qualitative and quantitative studies suit for some topics.

Some topics are well suited for qualitative study, here topics are loosely defined and research question become clear only during the research process. Data is used to narrow the focus in qualitative study and literature review helps.

### Research Questions in Quantitative study

Topic is narrowed into a focused research question. Focusing the question helps in developing a testable hypothesis in quantitative study. Research questions refer to relationship among a small number of variables. Listing the variables is needed to focus the topic on research questions.

### Research objectives

Research objectives are statements of intentions defining the actions and activities that are envisaged for answering the research questions and investigative questions. These always start with a verb signifying the intended action to be initiated to address the research questions.

### Conceptualization

Imagine you speak of abstract words “satisfaction”, “happiness”, “healthy”, etc.

We cannot research these words until we know exactly what they are.

Everyday language is often vague and unspecified meanings. Most fundamental process of science is abstract conceptualization. Conceptualization is to specify exactly what we mean and don't mean by the terms we use in our research.

Term ‘concept’ (also referred as ‘construct’) refers to end product of ‘conceptualization’. Concept could be a word or complex set of events or ideas referred by the word. Concept can be word or symbol used to represent a meaningful whole. Words we use to form the description of a concept are also concepts. To fully understand the description of a given concept, each concept in that definition must also be understood. In addition to organizing observations into meaning wholes, concepts also needed to be organized into *separate* phenomena.

Limitations in conceptualization.

Data-gathering process is a complex interplay between the conceptual process and the actual observation or measurement process. There are: Physical, Psychological, Cultural and Technological limitations to conceptualization and measurement.

Concept versus reality

Facts do not speak for themselves or stand out. They are limited by the creation of conceptual and perceptual frameworks and by measurement techniques. Concepts are not completely arbitrary; they must match with reality. Disagreements arise about whether reality always exists or we create reality by using concepts?

Conceptualization of framework for design

The common terminology used in conceptualization framework is:

- Ontology –it is claims about what is knowledge, either theoretical vs. reality. Many times it is philosophical in nature and lies in methodology behind questions (positivism, post-positivism, constructivism, interpretivism, pragmatism, etc.).
- Epistemology- is science of knowing (objectivism, subjectivism, etc.).
- Methodology –it is science of finding (experimental, survey, observation, ethnography, etc.)
- Methods –is ways to capture data (questionnaire, interview, focus group, etc.)
- Structure (flow in writing- introduction, literature review, methodology, analysis of data, findings and conclusions)

Triangulation

This idea involves looking at something from multiple points of view for same phenomenon and improves accuracy. E.g. To assess a person's health, the doctor uses multiple ways and measures such as: observation, questionnaire, interview, physical examination, laboratory/medical reports.

Four types of triangulation are common:

- Measures-Quantitative units are used
- Observes- Independently being watched
- Theory- involves comparing theories
- Method- Mix of different methods

## Research Paradigms

The most popular paradigms used in research conceptualization include:

- In Filling Knowledge Gaps - Positivism, Objectivism, Hypothesisist and common in Quantitative Research
- Problem Solving -Interpretivism, Constructivism, Pragmatism and Common in Qualitative Research

## Explication

It is the process of moving from definition to measurement and back to the definition. One does not always start with a clear, observable, complete and useful conceptual definition and then attempt to observe (measure) that variable.

Process of explication indicates that final conceptualization and measurement results from interplay of these two activities.

## Indicator

Indicator is a class, set, or group of potentially observable phenomenon which stand for or represents a conceptual definition. Indicators indicate the presence or absence of the concept we are studying.

## Operational definition

Operational definition is complete set of instructions for what to observe and how to measure a variable (concept). Indicators previously selected serve as the bases for development of operational definitions .Putting operational definition into practice is called *measurement*.

## Conclusion

There is no one best way of conducting research. The attitude of a researcher should be to “Stand on the shoulders of the giants” according to Isaac Newton. Each study is unique, has its own strengths and weaknesses. Three common approaches used in research include: qualitative, quantitative and mixed (triangulation). They contain philosophical assumptions about knowledge claims, strategies for inquiry and specific research methods. When philosophy, strategies and methods are combined, they provide different frameworks for conducting research. Choice of research approach to use is based on the research problem,

personal experiences and the audience for whom you want to write.

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