Chapter-17

Research Methodology: The Approach and Application in Social Sciences

Methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge. Typically, it encompasses concepts such as paradigm, theoretical model, phases and quantitative or qualitative techniques.
A methodology does not set out to provide solutions - it is, therefore, not the same as a method. Instead, a methodology offers the theoretical underpinning for understanding which method, set of methods, or best practices can be applied to specific case, for example, to calculate a specific result.

It has been defined also as follows:

1. "the analysis of the principles of methods, rules, and postulates employed by a discipline
2. "the systematic study of methods that are, can be, or have been applied within a discipline";
3. "The study or description of methods".

The *methodology* is the general research strategy that outlines the way in which research is to be undertaken and, among other things, identifies the methods to be used in it. These *methods*, described in the methodology, define the means or modes of data collection or, sometimes, how a specific result is to be calculated. *Methodology* does

not define specific methods, even though much attention is given to the nature and kinds of processes to be followed in a particular procedure or to attain an objective.

When proper to a study of methodology, such processes constitute a *constructive generic framework*, and may therefore be broken down into sub-processes, combined, or their sequence changed.

A *paradigm* is similar to a methodology in that it is also a *constructive framework*. In theoretical work, the development of paradigms satisfies most or all of the criteria for methodology. An *algorithm*, like a paradigm, is also a type of *constructive framework*, meaning that the construction is a logical, rather than a physical, array of connected elements.

Any description of a means of calculation of a specific result is always a description of a method and never a description of a methodology. It is thus important to avoid using *methodology* as a synonym for *method* or *body of methods*. Doing this shifts it away from its true epistemological meaning and reduces it to being the procedure itself, or the set of tools, or the instruments that should have been its outcome. A methodology is the design process for carrying out research or the development of a procedure and is not in itself an instrument, or method, or procedure for doing things.

Methodology and *method* are not interchangeable. In recent years however, there has been a tendency to use *methodology* as a "pretentious substitute for the word *method*". Using *methodology* as a synonym for *method* or *set of methods* leads to confusion and misinterpretation and undermines the proper analysis that should go into designing research.

Methodology, Theory, Paradigm, Algorithm and Method:

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Social research is research conducted by social scientists following a systematic plan. Social research methodologies can be classified along a quantitative/qualitative dimension.

- Quantitative designs approach social phenomena through quantifiable evidence, and often rely on statistical analysis of many cases (or across intentionally designed treatments in an experiment) to create valid and reliable general claims. Related to quantity.
- Qualitative designs emphasize understanding of social phenomena through direct observation, communication with participants, or analysis of texts, and may stress contextual subjective accuracy over generality. Related to quality.

While methods may be classified as quantitative or qualitative, most methods contain elements of both. For example, qualitative data analysis often involves a fairly structured approach to coding the raw data into systematic information, and quantifying inters coder reliability. Thus, there is often a more complex relationship between "qualitative" and "quantitative" approaches than would be suggested by drawing a simple distinction between them.

Social scientists employ a range of methods in order to analyses a vast breadth of social phenomena: from census survey data derived from millions of individuals, to the in-depth analysis of a single agent's social experiences; from monitoring what is happening on contemporary streets, to the investigation of ancient historical documents. Methods rooted in classical sociology and statistics have formed the basis for research in other disciplines, such as political science, studies, program and market research.

Sampling:

Typically a population is very large, making a census or a complete enumeration of all the values in that population infeasible. A 'sample' thus forms a manageable subset of a population. In positivist research, statistics

derived from a sample are analyzed in order to draw inferences regarding the population as a whole. The process of collecting information from a sample is referred to as 'sampling'. Sampling methods may be either 'random' (random sampling, systematic sampling, stratified sampling, cluster sampling) or non-random/non probability (convenience sampling, purposive sampling, snowball sampling). The most common reason for sampling is to obtain information about a population. Sampling is quicker and cheaper than a complete census of a population.

Methodological assumptions[edit]

Social research is based on logic and empirical observations. Charles C. Ragin writes in his *Constructing Social Research* book that "Social research involved the interaction between ideas and evidence. Ideas help social researchers make sense of evidence, and researchers use evidence to extend, revise and test ideas." Social research thus attempts to create or validate theories through data collection and data analysis, and its goal is exploration, description, explanation, andprediction. It should never lead or be mistaken with philosophy or belief. Social research aims to find social patterns of regularity in social life and usually deals with social groups (aggregates of individuals), not individuals themselves (although science of psychology is an exception here). Research can also be divided into pure research and applied research. Pure research has no application on real life, whereas applied research attempts to influence the real world.

There are no laws in social science that parallel the laws in natural science. A law in social science is a universal generalization about a class of facts. A fact is an observed phenomenon, and observation means it has been seen, heard or otherwise experienced by researcher. A theory is a systematic explanation for the observations that relate to a particular aspect of social life. Concepts are the basic building blocks of theory and are abstract elements representing classes of phenomena. Axioms or postulates are basic assertions assumed to be true. Propositions are conclusions drawn about the relationships among concepts, based on

analysis of axioms. Hypotheses are specified expectations about empirical realityderived from propositions. Social research involves testing these hypotheses to see if they are true.

Social research involves creating a theory, operationalization (measurement of variables) and observation (actual collection of data to test hypothesized relationship). Social theories are written in the language of variables, in other words, theories describe logical relationships between variables. Variables are logical sets of attributes, with people being the "carriers" of those variables (for example, gender can be a variable with two attributes: male and female). Variables are also divided intoindependent variables (data) that influences the dependent variables (which scientists are trying to explain). For example, in a study of how different dosages of a drug are related to the severity of symptoms of a disease, a measure of the severity of the symptoms of the disease is a dependent variable and the administration of the drug in specified doses is the independent variable. Researchers will compare the different values of the dependent variable (severity of the symptoms) and attempt to draw conclusions.

Guidelines for "good research"

When social scientists speak of "good research" the guidelines refer to how the science is mentioned and understood. It does not refer to how what the results are but how they are figured. Glenn Firebaugh summarizes the principles for good research in his book *Seven Rules for Social Research.* The first rule is that "There should be the possibility of surprise in social research." As Firebaugh (p. 1) elaborates: "Rule 1 is intended to warn that you don't want to be blinded by preconceived ideas so that you fail to look for contrary evidence, or you fail to recognize contrary evidence when you do encounter it, or you recognize contrary evidence but suppress it and refuse to accept your findings for what they appear to say."

 ISBN: 978-93-85822-46-9

In addition, good research will "look for differences that make a difference" (Rule 2) and "build in reality checks" (Rule 3). Rule 4 advises researchers to replicate, that is, "to see if identical analyses yield similar results for different samples of people" (p. 90). The next two rules urge researchers to "compare like with like" (Rule 5) and to "study change" (Rule 6); these two rules are especially important when researchers want to estimate the effect of one variable on another (e.g. how much does college education actually matter for wages?). The final rule, "Let method be the servant, not the master," reminds researchers that methods are the means, not the end, of social research; it is critical from the outset to fit the research design to the research issue, rather than the other way around.

Explanations in social theories can be idiographic or nomothetic. An idiographic approach to an explanation is one where the scientists seek to exhaust the idiosyncratic causes of a particular condition or event, i.e. by trying to provide all possible explanations of a particular case. Nomothetic explanations tend to be more general with scientists trying to identify a few causal factors that impact a wide class of conditions or events. For example, when dealing with the problem of how people choose a job, idiographic explanation would be to list all possible reasons why a given person (or group) chooses a given job, while nomothetic explanation would try to find factors that determine why job applicants in general choose a given job.

Research in science and in social science is a long, slow and difficult process that sometimes produces false results because of methodological weaknesses and in rare cases because of fraud, so that reliance on any one study is inadvisable.

Sociological positivism:

Émile Durkheim

The origin of the survey can be traced back at least early as the Domesday Book in 1086, while some scholars pinpoint the origin of demography to 1663 with the publication of John Graunt's *Natural and Political Observations upon the Bills of Mortality*.[1] Social research began most intentionally, however, with the positivist philosophy of science in the early 19th century.

Statistical sociological research, and indeed the formal academic discipline of sociology, began with the work of Émile Durkheim (1858–1917). While Durkheim rejected much of the detail of Comte's philosophy, he retained and refined its method, maintaining that the social sciences are a logical continuation of the natural ones into the realm of human activity, and insisting that they may retain the same objectivity, rationalism, and approach to causality. Durkheim set up the first European department of sociology at the University of Bordeaux in 1895, publishing his Rules of the Sociological Method (1895). In this text he argued: "Our main goal is to extend scientific rationalism to human conduct.... What has been called our positivism is but a consequence of this rationalism.

Durkheim's seminal monograph, *Suicide* (1897),a case study of suicide rates among Catholicand Protestant populations, distinguished sociological analysis from psychology or philosophy. By carefully examining suicide statistics in different police districts, he attempted to demonstrate that Catholic communities have a lower suicide rate than that of Protestants, something he attributed to social (as opposed to individual or psychological) causes. He developed the notion of objective *suis generis* "social facts" to delineate

a unique empirical object for the science of sociology to study. Through such studies he posited that sociology would be able to determine whether any given society is 'healthy' or 'pathological', and seek social reform to negate organic breakdown or "social anomie". For Durkheim, sociology could be described as the "science of institutions, their genesis and their functioning".[12]

Modern methodologies:

In the mid-20th century there was a general—but not universal—trend for U.S.American sociology to be more scientific in nature, due to the prominence at that time of action theory and other system-theoretical approaches. Robert K. Merton released his *Social Theory and Social Structure* (1949). By the turn of the 1960s, sociological research was increasingly employed as a tool by governments and businesses worldwide. Sociologists developed new types of quantitative and qualitative research methods. Paul Lazarsfeld founded Columbia University's Bureau of Applied Social Research, where he exerted a tremendous influence over the techniques and the organization of social research. His many contributions to sociological method have earned him the title of the "founder of modern empirical sociology .Lazarsfeld made great strides in statistical survey analysis,[14] panel methods, latent structure analysis, and contextual analysis. Many of his ideas have been so influential as to now be considered self-evident.

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