

**Module 3**  
**Research Methods in Population Studies**  
**Lecture 7: Methodology and Methods**

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**POSITIVISM AND PHENOMENOLOGY**

Methodology refers to philosophy and logic of methods, methods to specific tools and techniques of research. Broadly speaking there are two methodologies in sociology: positivist and phenomenological. Positivists assume that the social phenomena can be studied using tools and techniques of science. For them objectivity and value neutrality are the hallmarks of science. Phenomenologists reject positivism and claim that human behaviour is not amenable to scientific treatment. In order to understand human behaviour sociologists must study subjective meanings and qualitative methodology is more suited for this.

In the past social scientists working in the field of population studies in general and morbidity and mortality in particular placed greater importance on quantitative methods such as survey and analytical methods. The shift in attention to AIDS epidemic, sexuality and empowerment has led to major changes in methodology. The reason is that researchers working on HIV/AIDS have to deal not only with estimation of incidence and prevalence rates but they also must explore the social representations of the virus, phenomenological issues in counselling, testing and care, effective intervention strategies and related policy issues.

**THE DEBATE BETWEEN QUANTITATIVE AND QUALITATIVE METHODS**

Literature shows that in demography statistical modelling and advanced statistical methods are used more extensively. Demographers use latest versions of regression analysis, factor analysis and multidimensional scaling. In the recent times, however, there is a greater appreciation of qualitative methods.

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Today in sociology in general and in population studies in particular, qualitative methods such as participatory rapid (or relaxed) appraisal, discourse analysis, narratives, case history methods, biographical methods are more in demand than the advance statistical techniques.

Importance of qualitative methods is derived from greater appreciation of multiparadigmatic and shifting paradigmatic stances in various fields of social sciences, metatheoretical commitments, and growing popularity of postmodernism. All this also implies popular distrust of experts, importance of subjective and social representations, historical research, and empowerment. Social constructionism has diverted attention of researchers from exploring the causal connections to understanding of the “taken for granted knowledge”. .

For a long time sociologists favoured one of the two approaches – statistical and qualitative - and took a rigid stand on the matter. A polarity between the quantitative and qualitative methods has emerged very clearly in the disciplines of sociology and psychology. While a large number of researchers, for example, believe that meaningful research cannot be carried out without employing statistical tools, an equally strong number of researchers seem to be absolutely dissatisfied with this approach. Historically sociologists and psychologists have always endeavoured to bring sociology and psychology at par with pure sciences. In part, this is also due to the deep impact of methodological behaviourism in contemporary psychology. However, for several years now social scientists have been critical of such an approach and view it as a major source of narrowness in research. A considered view would be that no particular method is essential to social science research in all circumstances. Which method should be used and whether several methods should be used in combination depends on the purpose and approach of the study. It may be noted that the differences between statistical methods and phenomenological methods are not on a continuum between extreme poles. They may be combined at various levels.

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#### STRENGTH OF STATISTICAL METHODS

Statistical methods are useful for a variety of purposes. They are used for constructing scales, designing studies, describing data, exploring patterns, revealing dimensionality, and predicting social phenomena. They may also be combined with qualitative methodology. Statistical methods such as multidimensional scaling (MDS) have been used successfully in studies of social representations for which anthropology and social psychology have significantly contributed.

Traditionally social sciences have always tried to be in line with the principles of natural sciences and have favoured exact and standardized scientific methodology. Social sciences have always considered quantitative methods as the only statistically valid and reliable methods of research. Using a deductive approach quantitative research yields statistically reliable results. The process of quantitative research is best suited for testing hypotheses. The obtained results are utilized for establishing causal relationships and making predictions. Quantitative research methods can be broadly classified under the four major categories:

- Descriptive or survey research,
- Correlational and causal research,
- Experimental research.

Positivists consider qualitative data as unreliable, ambiguous and doubtful. Yet, despite criticism and attack, the quantitative approach dominates social sciences. Scientific observation is the keystone of social scientific research. In absence of objective observation and definition, verifiability of research findings is jeopardized. Social scientific theories and concepts can be studied meaningfully only through standardized measurement procedures. Therefore, it appears that social sciences cannot exist without objective measurement of variables. Such measurement provides the advantage of quantification of constructs and concepts which in turn provides a basis for using statistical and mathematical tools of analysis.

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Standardized measures are important for scientific communication. Objectivity and quantification enhance communication within the scientific community. Subjective evaluations of findings are far difficult to communicate as compared to results obtained through statistical analysis of standardized measures.

Economy of time, money and scientific resources, such as use of biomarkers in modern health research to measure factors like HIV status and anaemia, is another reason that justifies the use of standardized statistical procedures. This is especially true when one has to study a large sample. Large samples cannot be studied through qualitative methods. Qualitative methods of data-collection such as in-depth interviews and participant observation might prove to be unwieldy and cumbersome in dealing with a large number of participants. Even if data is somehow collected from a large group at the expense of economy, it is rather difficult to handle the data without employing statistical procedures for a meaningful analysis.

#### SCOPE OF STATISTICAL METHODS

The above arguments bring this debate to a point where it is important to take note of the scope of quantitative statistical procedures. In population research quantitative methods are particularly useful in:

- Estimation of size of national and sub-national populations
- Estimation of demographic rates, and incidence and prevalence rates of various diseases
- Causal analysis of concurrent and sequential variations in vulnerability to various risks
- Operations research in which one wants to know whether a programme has been effective in achieving the desired goal (such as promoting safe sex practices, reducing stigma against HIV and rehabilitation of people living with AIDS)
- Descriptive studies of knowledge, attitudes and practices
- Rapid situation analysis and benchmarking

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Quantitative survey research seems to be best suited for obtaining hard facts and factual descriptive information that is the keystone for most social scientific research. Qualitative research is not amenable to study many important research issues such as measurement of attitudes in various domains and for different purposes, analysis of voting behaviour, study of demographic patterns, behaviour patterns pertaining to health and illness, evaluation of community intervention programmes, religious beliefs and their causal influence on social behaviour, economic surveys etc. to mention only a few. An important point to note is that it is possible to study such a wide variety of problems and issues because of the diverse statistical techniques available to handle and analyze complex data.

Most research problems involve intricate relationships among variables. Such relationships involve various complex formats and structures. Tacq (1997) has provided a comprehensive discussion of such structures and corresponding multivariate statistical techniques of analysis. The format of multivariate analysis techniques may involve convergent causal structure, interactive structure, spurious or indirect causality, discriminant structure, canonical structure and latent structure among others. The complex reality of social scientific problems is thus dealt with to a great extent by multivariate techniques.

However, critics of positivism believe that social scientists deal with complex phenomena and study contexts that are characterized by multiplicity of meanings. Complex social reality is not amenable to quantitative approach. One major criticism of the traditional statistical approach in social sciences is that it emphasizes objectivity at the cost of tampering with reality. This lends support to qualitative methodology and qualitative methods.

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### QUALITATIVE METHODS

Social scientists have produced a variety of qualitative methods. They include biographic theory, phenomenology, grounded theory, ethnography and case studies. Qualitative methods are particularly useful when the purpose is to explore new problems, when it is important to understand the people's perspectives, when one is dealing with unstructured issues or when standard measurements will be misleading. In population research one often confronts the additional problem of collecting reliable data which is of intimate and confidential nature. Qualitative methods can help a lot in the initial phases and often produce useful results to design quantitative studies. In general, qualitative methods have been used in the following types of studies:

- Subjective meaning in reproductive decisions – religious and traditional rationality
- Why some couples who do not want additional child do not use contraceptive methods either?
- Community norms including gender norms regarding sexual behaviour and drug use
- Lived experiences of those suffering from HIV/AIDS
- Social and cultural dimensions of diseases
- Community responses to various risks including risk of HIV
- Sexual and drug use networks
- Subjective understanding of needle exchange among drug users, sexuality, and its impact
- Phenomenological understanding of unsafe practices