



Methodology Driven Dilemma of Social Science Research: Choosing Between R and Q Methodology

KEYWORDS

R-Methodology, Q-Methodology, Subjectivity, Ipsative and Normative choices, Triangulation

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ABSTRACT *The paper is an introduction and application of R and Q methodologies to deal with social science research problems. Both R & Q methodologies have merits and limitations in their operation, but author proposes a triangulation method to blend the advantages of both the methodologies. Q-Methodology could be seen as replacement of qualitative analysis in original triangulation research methods. But at the same time it is much more scientific, reliable and objective in nature. Q-Methodology is most suitable technique for dealing with subjective issues which has situational and contextual importance. This can be used for theory building in dealing with subjective issues like feelings, sentiments, values, behaviours and the like. Thus paper is an attempt to find possibility of blending rather than differentiating both R & Q methodologies.*

Physical sciences research commonly called 'scientific research' has always been pushing for objectivity in every aspect of research to deliver the best possible results and to create a valid and reliable body of knowledge. It could do so due to nature of the physical science and its substance of study which is static until the frame of reference itself changes. It was only the influence of the science rather than nature of the subject to name a subject of art or humanities as science including Social Science, Behavioural Science, Political Science and the like. Ironically, when a branch of science reaches to its most refined form physical scientists call it a 'state of art' rather than 'state of science'. Social science has always been confused for identity tag among arts, humanities and Science. Actually this uncertainty is due to nature of the subject, which is non-material and is dynamic.

Now the problem comes what should be methodology for studying such a subject which can't be traced in black & white. How can we find a method of generalization of human behaviour? And what about those concepts which do not conform to already established theories, and have varied responses to the same concept, I mean, the concepts which depend on individual's opinions. How we should handle the subjective issues like meaning of religion, values, effective leader/leadership, desirable behaviours of teacher/students and the like.

Methodologies of studying Social Science:

There are basically two forms of methodologies for dealing with social science problems namely R and Q methodology. Let us understand basics of these methodologies and how we can take advantage of both these methodologies for studying problems of social science.

R- Methodology:

Stephenson (1953) stated "R-technique is concerned with correlational analysis of tests". Every human action was grasped by Karl Pearson as a vast matrix, cemented together by correlation and correlation of tests called 'R' had its roots in this postulate. In mental tests and individual differences, correlation seemed to be an important statistical tool and for traditional theorists using significance of correlation and factor analysis, was a nuisance in almost all the problems. The correlation of tests (R) was considered to be the basis of the belief of man in different abilities, capacities, potentialities and other traits associated with human personality.

In R-methodology tests and scales are administered on samples of persons which are then scored objectively using nor-

native methods of scaling based on individual differences for a trait. The basic idea is to generate some generalized outcomes of human behaviour. It is assumed that items can behave like material as in case of physical sciences, so is taken as objective in nature and named as Quantitative or Positivistic approach of research. This mode of research is opposed by many as they feel that behaviour is a dynamic entity whereas numbers are objective in nature, thus the basic assumption contradicts the subject of study. This is where Qualitative approach emerges as an alternative methodology which claims for capturing the holistic picture of human behaviour. In this undertaking again we went too much and lost the focus for the second time. Subjectivity all around and no objectivity, hence low reliability and poor generalization is the issue at hand. This situation forced social scientists to think for an approach which could handle subjective issues with reasonable objectivity; hence evolution of Q-methodology happened to be.

Q-Methodology

Q Methodology was originally developed by William Stephenson (1902-1989), an Englishman trained in physics (Ph.D., 1926), psychology (Ph.D., 1929) and psychometrics under the tutelage of Charles Spearman (1863-1945) and Sir Cyril Burt (1883-1971).

Stephenson (1953) "Q-methodology is devised to characterize a set of philosophical, psychological, statistical and psychometric ideas oriented to research on the individual. Brown (1993) submits "Q-methodology provides a foundation for the systematic study of subjectivity, a person's viewpoint, opinion, beliefs, attitude, and the like". Brouwer (1999) observed, "typically, in a Q methodological study people are presented with a sample of statements about some topic, called the Q-set. Respondents, called the P-set, are asked to rank-order the statements from their individual point of view, according to some preference, judgement or feeling about them, mostly using a quasi-normal distribution".

Brown (1993; 2002) pointed out that factors resulting from Q analysis thus represent clusters of subjectivity that are operant, i.e., that represent functional rather than merely logical distinctions. Stephenson (1953) observed, "A crucial premise of Q is that subjectivity is communicable, because only when subjectivity is communicated, when it is expressed operantly, it can be systematically analyzed just as any other behaviour".

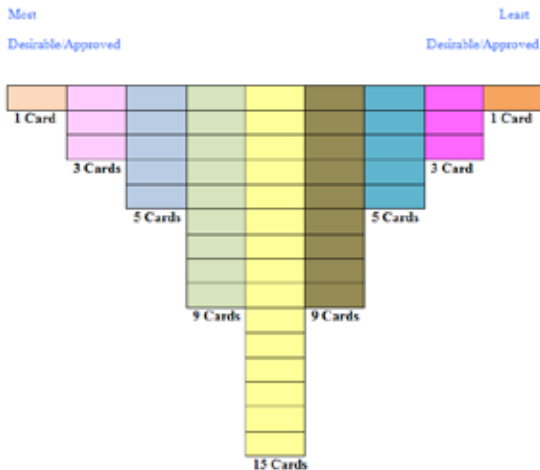
In this way, we summarize that Q-methodology is a method of Q-sorting which calls for a person to rank order a set of

stimuli according to a well-defined rule. The operation of rank ordering though a subjective matter yet it uses the ipsative or forced choice sorting of cards/objects into a set of well-defined categories. An individual is asked to sort them into a number of piles in accordance with some criterion. The sorter is instructed to place varying number of cards in several piles using approval/ disapproval (or some other) criterion, the whole making up a distribution. The distribution is known as a Q- distribution which can be quasi-normal, normal or some other. This Q-sort distribution is a rank order continuum from most desirable/approved to least desirable/ approved or most likely my view to least likely my view.

Ipsative versus Normative Measures

Normative measures are generally used with tests and scales as in R-methodology. An individual is free to choose any of the alternatives out of five/seven alternatives if administration is done on a five/seven point scale. On the other hand ipsative measure involves forced choice procedure of placing items into a number of categories using a specific criterion. The Q-methodology uses ipsative measures in which specified number of items are placed into different categories formed according to some symmetrical distribution of items (to be placed into categories). This has been illustrated in the schematic distribution of 51 items (for example) given below

Schematic representation of Q-Distribution of 51 Items



Q-Methodology versus R-Methodology

Q-methodology is different from R in the sense that it does not involve the correlation and factor analysis of same matrix (columns = items and rows = persons), rather it is inverse matrix (columns = persons and rows = items). In dimensional analysis Q and R methodologies differ in respect of the following aspects

R Methodology:

- Aims to measure a trait and generalization of results
- Based on inter-item correlations and R-type factor analysis
- Positivist hypothetical-deductive
- Uses standardized instruments with pre-established psychometrics
- Assumes independent responses by participants to normative scales
- Measures traits in persons
- Attempts prediction
- Seeks to generalize to a larger population
- Empowers the ideas (hypotheses) of the researcher

Q Methodology:

- Aims to discover
- Based on inter-person correlations and Q-type factor analysis
- Constructivist operant-subjectivity
- Uses concourse items generated in the research context

- Assumes interdependent responses to items by participants to ipsative scales
- Assesses personal points of view
- Attempts in-depth explanations
- Seeks to understand human complexity
- Empowers the points of view of the participants

Steps of R-methodology are

- Concept development
- Determining operations
- Development/selection of tests
- Sample and administration of tests.
- Finding the inter-item correlations
- Factor analysis to work out the underlying structure of items

Steps of Q-methodology are

- working out a "concourse" to develop statements (developing a Q-Set)
- Sampling of P-Set (participants/ persons)
- Q-Sorting uses ipsative measures
- Finding the inter-person correlations
- Factor analysis to find groups of persons
- Working out underlying structure of items

Solving the Dilemma of Methodology

Both R and Q methodologies have their merits and limitations, may be suitable for one problem and unfit for another. The figure 1 shows relative strengths of two methodologies on comparative bases and attempts to combine the strengths of the two. We call this type of union as Triangulation or mixed methods approach. We have been doing this previously by combining quantitative and qualitative methods in traditional research entrepreneur. It is more or less replacing a qualitative method with Q-methodology. As shown in figure 1 we could generate a big U-area for scope of triangulation. But big area again offers chances of big uncertainty.

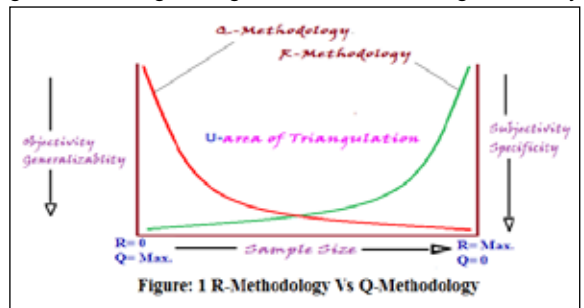


Figure: 1 R-Methodology Vs Q-Methodology

On further pushing the two methodologies towards center by merging the two methodologies as depicted in figure 2. This resulted in merging of two methodologies to convert the U-area of triangulation into a I-line of triangulation a complete blend of the two.

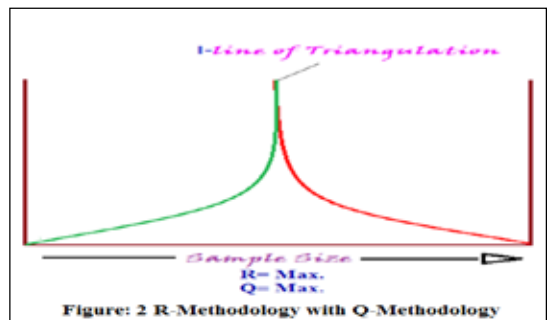


Figure: 2 R-Methodology with Q-Methodology

It is actually compromising both the methodologies to have a reasonable sample size, which is surely possible due to availability of complex computer operated softwares as in case we use 'PQ Method' and 'PC Method' softwares for Q-methodology.

Let us take a case where this proposed triangulation can be applied. Let the proposed investigation is "A study of desirable behaviours of a political leader as perceived by graduate students". We start with Q-methodology, create a 'con-course' Collect the data through Q-sorting, decode it and put to Q-type factor analysis to obtain group of persons and then group of items, we call these Factors. Convert these factor items in to some normative scale to obtain normative data and decode in terms of score which can be studied in terms of inter factor comparison, correlation with other variables or for comparison of groups in respect of attribute an demographic variables.

In this way we could use the perceptions of people (subjective approach) to build a theory as well as use a theory to obtain objective results. This is what we wanted, studying subjectivity in an objective manner.

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