

# Quantification and Social Research

## A Trend Analysis

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*The increasing volume of researches in the field of Indian social sciences calls for a close look at, besides other aspects, the methodology followed in them. This paper makes an attempt to examine the extent of application of quantitative methods of data collection and presentation in social science studies in India. A survey of 3907 published studies found that most of them were primarily of descriptive nature and devoid of any quantitative orientation. The relevance of both, the descriptive and the quantitative approaches, is also examined.*

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THE steady increase in social science research in this country has necessitated a close look at the kinds of studies that are being undertaken and the methodology which guides them. Some attempts, however limited, have already been made in this direction (CSSR 1968, SIU 1969). The present effort is directed towards, and limited to, an inquiry into certain methodological aspects of research in social sciences in India. More specifically, this paper examines (a) the extent and degree to which quantification has been an aid to inference, and (b) the use of sampling procedures in the interest of representativeness in social science researches/studies on India, particularly in sociology and social anthropology.

### I Categories

The limitations of such a task would at once be obvious. A complete bibliography of all books, articles in edited volumes, and papers published in journals is almost impossible to get hold of. Even if it were possible to prepare a consolidated bibliography with the help of existing bibliographies, the non-availability of all references would pose another insurmountable problem. Conscious of these evident difficulties a comprehensive bibliography upto 1964 was prepared from already available sources (Farrer-Helmendorf 1958, National Library 1960, Unesco 1958, 1959, 1960). In order to locate the references, six of the best equipped libraries\* of

The libraries chosen were: the Indian Statistical Institute Library; the National Library; the library of the Anthropological Survey of India, Government of India; the Asiatic Society Library; the library of the Department of Anthropology, Calcutta University, and a special library of the Cultural Research Institute, Government of West Bengal.

Calcutta were consulted, with the result that 730 books, 329 papers published in various symposium volumes, and 2812 papers published in different issues of 88 journals, constituting about 85 per cent of references in the list form the basic material for the present analysis.

The total of 3907 references collected and analysed during a period of about eight months (from December 1965 to September 1966) were classified under one of the four categories according to the nature of information they contained relating to the collection and presentation of data. These categories denoted hereafter by a, b, c, and d are as follows:

(a) Collection of data: Without application of any sampling procedure

Presentation of data: Without any quantification

This category includes publications like "Bondo Highlander" by Verrier Elwin (1950), "Marriage and Family in

Mysore" by M N Srinivas (1942), "Land and Society in Malaya" by A C Mayer (1952), etc.

(b) Collection of data: As far (a) Presentation of data: With elementary quantification in the form of frequency distributions, percentages, etc.

For illustration, reference may be made to "Caste and the Economic Frontier: A Village in Highland Orissa" by F G Bailey (1958), "Indian Village" by S C Dube (1955), "Himalayan Polyandry" by D N Muzumdar (1962), etc.

(c) Collection of data: With the application of some form of sampling technique

Presentation of data: As far (b).

Publications like Edwin D Driver's "Differential Fertility in Central India" (1963), I P Desai's "Some Aspects of Family in Mahuva, A Sociological Study of Jointness in a Small Town" (1964), "Social Profile of a Metropolis: Social and Economic Structure of Luck-

TABLE I

Year of Publication	Percentage by Nature of Information				Total
	a (1)	b (2)	c (3)	d (4)	
Before-1930	94	5	1	—	100 (891)
1930-1939	82	11	5	2	100 (311)
1940-1949	79	13	5	3	100 (385)
1950-1954	73	16	9	2	100 (391)
1955-1959	62	19	15	4	100 (900)
1960-1964	51	21	19	9	100 (1083)
Not available	87	11	2	—	100 (40)
Total	71	15	10	4	100 (3907)

Note: Figures in parentheses, in this and subsequent Tables indicate number of books and papers.

now, Capital of Uttar Pradesh" by R K Mukherjee and Baljit Singh (1961), etc, fall in this category.

(d) Collection of data: As for (c) Presentation of data: As for (b) plus application of some statistical tests to draw valid inferences.

For illustration of this category, mention may be made of publications like "A Study of Opinion Regarding Marriage and Divorce" by B Kuppattswamy (1957), "Caste Ranking and Community Structure in Five Regions of India and Pakistan" by McKim Marriott (1960), "Caste and Economic Structure in West Bengal in Present Times" by R Mukherjee (1961) in "Sociology: Social Research and Social Problems in India" (ed) R N Sikseena

It is within this frame of reference that the problem has been approached and related to a number of variables considered relevant for our purpose.

## II

### Little Qualitative Research

Not unexpectedly, the bulk of these studies in the social sciences seem to be devoid of any quantitative orientation (71 per cent), and an even larger number have given scant attention to sampling procedure as an objective means of approaching the problem of representativeness (88 per cent). While studies combining sampling procedure with elementary quantitative analysis have been few (10 per cent) and studies employing statistical tests of inference even fewer (4 per cent), they are by no means a recent phenomenon and can be traced as far back as the Second World War.

Though quantitative research is not very new to social science research in this country, there is no denying the fact that the proportion of such research has been insignificant and in spite of greater use of quantitative methods, continues to be so (Table 1).

Though the recognition and use of statistics as key technology in the analysis of social research is being increasingly realised, the identification of the period when this breakthrough occurred is beset with certain difficulties. In Table 1 the decade starting 1950 seems to record a clear departure towards a greater use of quantification in terms of research publications.

But one has to bear in mind that the year of publication of a study is not necessarily indicative of the period of research, mainly due to the fact that the entire process ranging from data collection to publication generally involves a time lag. Hence identification of the

TABLE 2

Year of Data Collection (field work)	Percentage by Nature of Information				Total (0)
	a (2)	b (3)	c (4)	d (5)	
1944 or before	00	19	8	4	100 (480)
1945-1949	59	28	12	1	100 (102)
1950-1954	40	27	25	8	100 (350)
1955-1959	34	21	32	13	100 (410)
1960-1964	23	32	32	13	100 (213)
Not available	87	9	3	1	100 (3500)
Total	71	15	10	4	100 (3907)

TABLE 3

Area Studied	Percentage by Nature of Information				Total (0)
	a (2)	b (3)	c (4)	d (5)	
West India	39	21	20	11	100 (354)
North India	56	19	18	7	100 (246)
East India	78	11	8	3	100 (1363)
South India	76	15	7	2	100 (432)
Central India	75	16	7	2	100 (229)
India in general	78	14	5	3	100 (948)
Above areas in various combinations with each other	88	8	16	8	100 (37)
Total	71	15	10	4	100 (3907)

period of breakthrough could also be made by treating the year of field work as an independent variable. Such an examination leads to an almost incredible revelation — as many as 60 per cent of the publications do not mention the year of field work (Table 2).

However, an analysis based on 40 per cent of the studies tends to corroborate the earlier finding based on the year of publication, namely, that the decade of the 50s saw a wider use of quantification in social research.

As it would normally be expected, the volume of research after 1950 has considerably increased and constitutes 58 per cent of the total research output under consideration.

An analysis of the regional variations in the acceptance and use of quantitative methods in social research would be very much in order (Table 3).

It is apparent that eastern India (comprising Andaman Islands, Assam, Bengal, Bihar, Orissa and NEFA) has engaged the attention of the social scientists much more than any other area, accounting for about one-third of the total studies. Studies on India in general come close to this figure with a lit-

tle less than one-fourth of all studies. In western India (comprising Maharashtra and Gujarat), however, where the number of studies recorded have been the least (9 per cent), the use of quantitative methods has been the most extensive, accounting for 40 per cent of the studies. Next to it, north India comprising Uttar Pradesh and Delhi accounts for as many as one-fourth of its studies based on a quantitative framework. In contrast, eastern India with a maximum of research concentration shows a preponderance of descriptive studies (89 per cent).

While it was felt that the variable "scholar's nationality" was important in observing a possible variation in their orientations, it was found that both Indian and foreign scholars have displayed a more or less similar pattern in their orientation towards quantification in social research.

But if we examine the above findings in the light of three variables jointly, namely, the year of publication, area studied and authorship, and thus exclude other variables (nature of document, i.e., whether published in the form of book or paper, and year of field

TABLE 4

Books/Papers (1)	Percentage by Nature of Information				Total (6)
	a (2)	b (3)	c (4)	d (5)	
1 Pre-1950 publication by Indian or non-Indian authors on any area excluding north and/or west India	90	7	2	1	100 (1382)
2 Pre-1950 publications by Indian or non-Indian authors on north and/or west India	78	15	6	1	100 (321)
3 1950 and later publications by Indian or non-Indian authors on any area excluding north and/or west India	67	18	11	4	100 (1953)
4 1950 and later publications by non-Indian authors on north and/or west India	55	17	18	12	100 (135)
5 1950 and later publications by Indian authors on north and/or west India	34	23	32	11	100 (516)
Total	71	15	10	4	100 (3007)

work, for obvious reasons we get the following features:

(i) The pre-1950 studies made by both the Indian and non-Indian authors are largely qualitative in character. The relative incidence of this type of work, however, appears to be less in the western and/or northern Indian studies; and

(ii) In the 1950 or later publications, proportionately a higher incidence of quantitative studies can be marked, especially in the said regions. But it is the Indian social scientists who have utilised quantitative approaches in their studies more than the non-Indian researchers (Table 4)

### III

#### Both Approaches Useful

It is not within the purview of this paper to enter into any detailed examination of the relative superiority of either of the two approaches over the other in social research. Both have their own logic and their utility. It is also true that the choice of method is guided by the nature of social reality that we desire to investigate (Oommen, 1969), the extent of knowledge we have of it, and also to what level of abstraction we would like to enter in our investigations. Thus, each of the two approaches — descriptive or quantitative will find their relevance with respect to the above considerations.

For the present, it is best to be content with appraising why social research after 1950 has been steadily using quantitative methods to a large degree. Since the mode of collection and presentation of data of any study depends largely on its objective(s) it is desirable that we look for an explanation

here. A cursory examination of the objectives of the studies would make one notice that the pre-1950 studies (especially sociological and social anthropological) on India are mostly confined to ethnographic-monographic accounts of tribal and rural communities, or at best devoted to some selected topics on the structure and function of rural society. Presumably, these social scientists held the view that, Indian society being primarily rural in character, Indian social life could be best studied in its rural setting. Paucity of basic data on human behaviour and group-interaction was a positive hindrance towards undertaking meaningful quantitative studies. Therefore, the enrichment of knowledge by collecting basic information at the behavioural level was probably a first step, and consequently, detailed descriptive studies were a historical necessity in the development of social research.

In fact, in a vast country like India it is not possible to correctly interpret the diverse social/cultural/economic/regional peculiarities simply by statistical logic, without knowledge of basic information on the nature of social problems. To achieve this objective, social scientists might have studied these problems qualitatively.

Since social need varies with time, a significant change appears in the post-independent Indian social situation. Innumerable problems of community development, consumer behaviour, family planning, etc., have emerged and the complexity of social problems enhanced by the growing consciousness of the need to bring far-reaching transformations in Indian society in as short a period as possible. For studying these

problems a need for the quantitative approach became manifest mainly for two reasons:

(a) Collection of precise, reliable and representative information of the universe within a specified time and with limited resources, and,

(b) Examination and interpretation of social data collected from social groups scattered over a wider territory.

Both of them are equally important for the welfare programmes of the country. Consequently, the proliferation of social science research institutions in India has become marked. For example, Saha has shown that out of 141 recognised social science research centres in India, "28.4 per cent originated before Independence and 71.8 per cent after that. This clearly shows an increased awareness of research activities in social sciences in last two decades".

Statistics as a tool in social sciences has developed recently in India. Its previous linkage which was chiefly confined to biological, agricultural, and natural sciences may also explain the small number of quantitative studies on India in the earlier period. The preponderance of descriptive studies in social research has no doubt indicated fruitful directions of research and will continue to do so. However, detailed quantitative analysis of specified types of information may be useful for arriving at more definite conclusions.

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