

Lib sc. 9;1972; Paper M.

Survey Analysis: Development and Structure.
(Classification problems. 60). (Social science series. 5).

**S Seetharama, Documentation Research and Training Centre,
Indian Statistical Institute, Bangalore 3.**

[The origin, developmental history and the significant contributions to the development of the discipline of Survey Analysis are briefly described. The content of the subject Survey Analysis — the general framework, the methods and techniques of study — are mentioned. Evidences — such as, establishment of survey research centres, holding of conferences on Survey Analysis, and literary warrant — are given in support of the formation of a theory of Survey Analysis with its own specialists. The relation of the subject Survey Analysis and its components to other subjects, and its position in the Schedule of Main Subjects in CC and UDC, are briefly discussed.]

ABBREVIATIONS USED

(BS) = Basic Subject (MS) = Main Subject
CC = Colon Classification UDC = Universal Decimal
(CN) = Class Number Classification

1 Scope of the Paper

This paper gives a brief description of the subject Survey Analysis, with particular reference to

- 1 The main stages in the development of the subject;
- 2 The significant contributions to the subject;
- 3 The major ideas making up the subject, including the different techniques of Survey Analysis;
- 4 Its treatment in the Colon Classification (= CC); and
- 5 Its treatment in the Universal Decimal Classification (= UDC).

2 Survey Analysis

21 DEFINITION

Survey Analysis (or Survey Research) is an investigation essentially based on " asking questions of a systematically selected

group of respondents with a relatively standardized research instrument, and involving analysis of the data by quantitative techniques" (16). This definition by Sidney Verba has been made deliberately broad so as to include both sample surveys as well as the surveys covering almost all of the relevant population.

22 DIFFERENCE BETWEEN SURVEY ANALYSIS AND SOCIAL SURVEY

The emphasis on causal factors in Survey Analysis differentiates it from other descriptive procedures such as "Social Survey". The latter is defined as a "fact-finding study of social institutions and activities of a group of persons living in a particular locality" (17, 18); or, as used in Great Britain, "a statistical account of urban life, especially among the poor" (15). Unlike Social Survey, Survey Analysis seeks to link its data to a body of theory, though it shares with the former a reliance on tabular presentation.

3 Developmental History

31 EARLY IDEAS

The concept of "Survey Analysis", as it is understood and practised today, had its origin in the seventeenth century when the idea that the data on the attributes of society could be subjected to quantitative analysis, acquired prominence. Some of the factors leading to the emergence of this idea, generally known as "Quantification in Social Sciences", are deemed to be:

- 1 The rational spirit of rising capitalism;
- 2 The intellectual climate of the Baconian era;
- 3 The rise of insurance systems which necessitated a numerical foundation; and
- 4 The prevailing belief of the mercantilists that the size of population was a crucial factor in the power and wealth of the State (9).

32 THREE MAJOR PERIODS

In the developmental history of "Survey Analysis" which is itself the history of the application of techniques of measurement to Social Sciences, three major distinct but overlapping phases can be recognised. They are:

- 1 The Preparatory Period extending approximately from the middle of the seventeenth century to the beginning of the nineteenth century;
- 2 The period of "Statistique Morale" and after; and
- 3 The Modern Period starting from the end of the nineteenth century.

321 *The Preparatory Period*

The Preparatory Period was dominated by demographic enumeration (Census in the modern sense) and collection of numerical information, or quantitative data on the attributes of society. This was a period of 'problems and obstacles', from the viewpoint of collection of information. This difficulty is attributable to

- 1 The unwillingness of people to give reliable information, for, they feared that taxes may be increased; and

- 2 The attitude of governments in treating statistical information as highly confidential due to its military significance.

As a consequence, reliable data was not easily forthcoming. However, with the passage of time, conditions improved and with the development of analytical techniques, data from several studies were published for public use. Table 1 (p 269) mentions some of the significant contributions and studies of the Preparatory Period.

323 *Annotation*

- 1 The studies are largely concerned with demographical information, except for the work of W Petty which was on sociological data of Ireland.

- 2 Most of the contributors were not social scientists, but were specialists in the physical and biological sciences.

- 3 Measurement in social sciences had its origin in Europe especially in Germany.

324 *Period of "Statistique Morale" and After*

The Preparatory Period was followed by a period marking the beginning of modern efforts at Sociological Measurement. Outstanding among the contributors were Adolphe Quetelet, Le Play, Galton, Booth and De Tourville (See Table 2).

"Moral Statistics" as expounded by Quetelet expanded rapidly as a topic of empirical research during the nineteenth century, and gave rise to disciplines such as Educational statistics, Political statistics, Social statistics and so on. But, it was Le Play's budgetary analysis which was abandoned by his followers who were highly critical of his methods, which ushered in a new trend in the history of measurement. Thus, we find that the budget items proposed by Le Play as a social measure being replaced by "Time budgets" and "Sociometric Records" which in their turn, have given way to "Attitude and Opinion surveys" of the present century.

Table 2 (p 271) gives a list of significant contributions/studies of this period.

322 Table 1. Significant Contributions of the Preparatory Period

Year of contribution	Contributor	Contribution	Data recorded	Remarks: Publications, etc
1662	Graunt (J) (Haberdasher by trade)	Natural and political observations made upon the Bills of Mortality	Rural and urban death rates	A major figure in the history of Survey Analysis, and of Statistics and Demography (9,15).
1672	Petty (W) (1623-87. British Statistician, Physician, Political Economist)	<i>Political anatomy of Ireland.</i> 1672	Sociological data	Coined the term 'Political arithmetic'. Conducted the first Scientific Survey on a large scale.
1673	Conring (H) (1606-82. German Professor of Philosophy, Medicine, and Politics)	<i>Political anatomy of Spain.</i> 1673	Population statistics	Responsible for the development of the German root of University Statistics.
1693	Halle, (E) (1656-1742. British Astronomer)	Paper on 'Mortality'	Registration data on births and funerals in the City of Breslau	..
1741	Suessmitch (J P) (1707-67. German Specialist in Medicine, Theology)	<i>Divine order as proven by birth, death and fertility of the human species.</i> 1741	Birth, death and fertility rates	First to focus attention on 'Fertility' studies. His studies brimmed with social analysis.

Year of contribution	Contributor	Contribution	Data recorded	Remarks : Publications etc.
1749	Achenwall (G) (1719-72. German Statistician)	<i>The science of to-day's main European realms and republics.</i> 1749	Statistical data	Considered by some as "Father of Statistical Science" and as the founder of the Ger- man non-quantitative root
1791	Lavoisier (1743-94. French Chemist)	<i>Treatise dealing with the population and economic conditi on of France.</i> 1791	Population data	..
1807	Göttingen School	Idea of two-dimensional schemata: On the horizontal dimension, the countries to be compared and on the vertical dimension the categories of com- parison.	..	Perhaps, this was the beginning of Compa- rative Survey Analysis.

325 Table 2. Significant Contributions of the Period of "Statistique Morale" and After

Year of contribution	Contributor	Contribution	Data recorded	Remarks: Publications, etc
1831-65	Quetelet (A) (1796-1874, Belgian Astronomer)	Quantitative Study of the Physical Characteristics—"Physique sociale"	Anthropological measurements	Quetelet's important contributions to Survey Analysis were:
		(a) <i>Growth of man</i> (1831)		(a) Use of multivariable tables to explore the relations between the rates of crime or marriage and such demographic factors as age and sex;
		(b) <i>Developmental data on weight</i> (1832)		(b) Application of calculus of Probability in explaining the constancy of social rates over time; and
		(c) <i>On man and the development of his faculties with the subtitle "Physique sociale"</i> (1835)		(c) Help in the establishment of organized bodies of Statisticians, as also in organising the International Statistical Congress (1851)
		Quantitative Study of the Non-Physical characteristics—"Statistique Morale"	Data on non-physical characteristic	
		(a) <i>Criminal tendencies at different ages.</i> (1831)		
		(b) <i>Probability as applied to moral and political sciences</i> (1840)		

Year of contribution	Contributor	Contribution	Data recorded	Remarks : Publications, etc.
1865	Quetelet (A) and Heusinger	(c) <i>Social system and the laws which govern it</i> (1840) Demographic studies <i>Statistique internationale de l'population.</i> 1856 (7)	Population statistics	..
1877	Le Play (1806-92. French Minerologist)	" Methode d'observation " mentioned in the <i>European workers</i> 1877. 6V.	Budgetary data	(a) Introduction of the family budget as a tool in empirical studies in social sciences. (b) Diagnostic procedure of analysis of budgetary data using specific items as indicators of broad sentiments or social configurations.
1884-85	Galton (Francis) (1822-1911. British Scientist, Explorer and Anthropometrist)	Developed new statistical methods culminating in correlational calculus for the interpretation of the "family records" of 9,000 individuals. Made quantitative assess-	Family records of physical and mental attributes	

ment of heredity by correlating the physical and mental attributes of kinsmen, and also recognised that two characteristics measured on an organism are not independent (6)

Booth (Charles) (1840-1916.
British, Ship Owner)

1886-
1902

Shows the numerical relation which poverty, misery, and depravity bear to regular earnings and comparative comfort, and describes the general conditions under which each class lives (2).

Labour and life of the peoples of London.
1886-1902. 17V.
Study of budgetary data using the "Synthetic Procedure".

1896-98

Henri de Tourville (1843-
1903. Frenchman)

Nomenclature: Provided a system of 25 categories which could be broadly grouped under two headings:

(a) Family in its "Own Context," (9 categories);

(b) Family in ever-broadening circles of its "Social context" (16 categories)

326 *Annotation*

- 1 Emphasis on studies shifted from physical characteristics to non-physical characteristics.
- 2 Statistical methods employed for analytical purposes.
- 3 Most of the contributors were not social scientists.
- 4 Most of the studies were made in Europe.

327 *Modern Period*

Towards the end of the nineteenth century, measurement takes on its modern function of translating ideas into empirical operations and to look for regular relations between the variations so observed. This led to a new era of application of Survey Analysis in the 1920's in the form of communication research, election research, public opinion polls, and market research, in addition to some miscellaneous surveys on nutrition, health, education, travel, industrial relations, crime, population, social mobility, juvenile delinquency, old age, family expenditure, rural life, urban life, anthropology, and professions and occupational groups (10). Some of the factors contributing to these new developments were:

- 1 The change in the concept of Social Psychology and Sociology in USA from speculation to empirical research;
 - 2 The wide application of punched card machines; and
 - 3 A new interest in the use of formal statistical procedures.
- Further, the Second World War saw the beginning of hundreds of attitude surveys, especially among American soldiers (8).

Three major developments have influenced the development of Survey Analysis as a method of studying society since the 1940's. They are:

- 1 The emphasis on closer relation between theory and research has led to greater concern with conceptualisation as well as with causal interpretation of statistical relations;
- 2 The rise of university research bureaux resulting in an increase both in the number and quality of Survey Analysis; and
- 3 The advent of the large computer which brought about the possibility of replacing the crude assessment of percentaged tables with the more powerful methods of multiple regression and other multivariate procedures (15).

Table 3 mention some of the significant advances in social sciences which influenced the application of Survey Analysis. A large number of cross-national and cross-cultural comparisons have been made making use of them. The information given in Table 3 is based on Table 1 of "Conditions favouring major advances in Social Sciences" by K W Deutsch, J Platt, and D Sehghaas (5).

328 Table 3. Significant Advances in Social Sciences in the Modern Period

Year of contribution	Contributor	Contribution	Remarks: Publications,* etc.
1897	Durkheim (E) (1858-1917. French Sociologist)	<i>Suicide: Variation in suicide rates by difference in social structure.</i> 1897	One of the classics in Survey Analysis. Durkheim was the Founder of the French School of Sociology.
1900-08	Pareto (V) (1848-1923. Italian Economist and Sociologist) Gini (C) (1884-1965. Italian Statistician, Economist and Sociologist)	Theory and measurement of social inequalities (EC)	Pareto developed a cyclic theory of social change. Theory of cyclic population (1927).
1900-28	Pearson (K) (1879-1916. British Mathematician)	Correlation analysis and social theory (Math)	Founder of modern statistics
1900-30	Edgeworth (F)		
1920-48	Fisher (R A) (1890-1962. British Mathematician, Statistician and Geneticist)		<i>The Design of experiments.</i> Ed 4. 1947.
1900-23	Mosca (G) (1858-1941. Italian Jurist)	Elite studies (Soc)	Nineteen elite studies listed in the bibliography of Rokkan and others (14)
1900-16	Pareto (V)		

* Publications mentioned are only examples representing the work of the respective authors.

Years of contribution	Contributor	Contribution	Remarks : Publications, etc.
1936-52	Lasswell (H) (1902- . American Political Scientist)	} Learning theory (Psy)	} Most influential theoretical psychologist of 1930-50. In his classic works, he developed an explicit quantitative theory of simple and complex forms of learning and behaviour.
1905-40	Thorndike (E L) (1874-1949. American Psychologist)		
1929-40	Hull (C) (1884-1952. American Psychologist)		
1916-11	Binet (A) (1875-1911. French Psychologist)	} Intelligence tests (Psy)	} Contributions include measurement of intelligence and educational attainment of school children; projection tests and tests of "thematic apperception".
1916-37	Terman (L) (1877-1956). American Psychologist)		
1904-27	Spearman (L) (1863-1945. British Psychologist).		

Published the first important and widely used individual intelligence test in the USA, — Stanford-Binet test. introduced the term I.Q.

Abilities of man : Their nature and measurement. 1927.

1908-14	Schumpeter (J A) (1883-1950.) Czech Economist	Founder of the Econometric Society
1912	Bowley (A L) (1886-1957. British Sociologist)	<i>Livelihood and poverty.</i> 1912.
1915	Moreno (J L) (Psychologist)	Sociometry and Sociogram (Soc)
1921-55	Richardson (L F) (1881-1963.) British Mathematician and Meteorologist	Applied mathematics for weather forecasting and also to elucidate causes of war.
1936-66	Wright (Q) (1890- . American Political Scientist)	<i>Study of international relations.</i> 1955.
1923	Rorschach (L F) (1884-1922. Swiss Psychiatrist)	His Inkblot test helped in exploring the personality of individuals at depth.
1926-38	Murray (H) (Psychologist)	<i>Explorations in personality.</i> 1938.
	Park (R) (1864-1944. American Sociologist)	Made a clear distinction between "ecological community" as an aggregate of individuals characterised by symbiosis, division of labour and competitive cooperation and "Society" as an organization of persons through communication, socialization and collective behaviour.
	Burgess (E W) (1886- . American Sociologist)	<i>Ageing in western societies.</i> 1960.

Year of contribution	Contributor	Contribution	Remarks: Publications etc.
1926-48	Thorstone (L) (1887-1955. American Psychologist)	Factor analysis (Math)	Pioneered in the application of mathematical and statistical methods to psychological problems. His improved methods of multiple factor analysis are widely used in research on the nature of human ability and for constructing tests to measure different types of human ability.
1928-44	Keynes (J M) (1883-1946. British Economist)	Economic propensities, employment, and fiscal policy (Ec)	<i>Treatise on money</i> , 1930.
1928-44	Neuman (J V) (1903-1957. Hungarian-born American Mathematician) Morgenstern (O) (1902-. German Economist)	Game theory (Math)	<i>The theory of games and economic behaviour</i> , 1944.
1929-62	Lynd (R) (1892-. American Sociologist) and others	Community studies (Soc)	Work on culture provided a stimulating approach to anthropological theory.
1930-60	Benedict (R) (1887-1948. American Anthropologist) and others	Culture and personality and comparative child rearing (Anthrop)	Fifteen survey studies on the authoritarian personality syndrome (14).
1930-2	Horkheimer (M) and others	Authoritarian personality and family structure (Psy)	

- 1930-53 Hanssen (M) Large-scale sampling in social research (Math)
- 1932-36 Likert (R) (1903- . American Psychologist) and others Laboratory study of small groups (Psy)
- 1936 Gallup (G) (1901- . American Psychologist) Attitude surveying and opinion polling
- 1937-52 Cantril (H) (1906- . American Psychologist)
- 1940 Lazarsfeld (P F) (1901- . Austrian-born American Sociologist) and Campbell (A) (1910- . American Psychologist)
- 1938-56 Laswell (H) (1902- . American, Political Scientist) and others Content analysis (Pol)
- 1941-50 Blackett (P M S) (1897- . British Physicist) Operations research and Systems analysis (Math)
- 1941-58 Morse (P) (1903- . American Physicist) and Bellman (R) (1920- . American Mathematician) Methods of operations research. 1951.
- P C Mahalanobis's large scale sample surveys in India in the jute industry is an example.
- Public opinion and the individual.* 1938. Studies in India in the area of supervisory leadership are examples.
- Pulse of democracy.* 1969.
- Public Book to public opinion polls.* 1948.
- Gauging public opinion.* 1944.
- Politics of despair.* 1958.
- People's choice.* 1948.
- Director, Survey Research Centre. (University of Michigan) *American voter.* 1960.
- Analysis of political behaviour.* 1948.

Year of Contribution	Contributor	Contribution	Remarks: Publications etc.
1941-54	Gurtman (L) (1916- . American Social Psychologist) Coombs (C) (1912- . American Psychologist)	Scaling theory (Psy)	<i>Theory of date</i> , 1964.
1942-67	Deutsch (K W) 1912- . Czech Political Scientist	Quantitative models of nationalism and integration (Pol)	<i>France, Germany and the Western Alliance: A study of elite attitudes on European integration and world politics</i> , 1967. <i>Testing political community: Britain and America since 1890</i> , 1967.
1943-58	Russell (B) (1935- . American Political Scientist) Merritt (R L) Bush (V) (1890- . American Electrical Engineer) Caldwell (S) (1904- . American Electrical Engineer)	Computer (Math)	
1944-54	Stouffer (S) (1900-60. . American Sociologist) Anderson (T W) Lazarfeld (P F)	Multivariate analysis linked to social theory (Soc)	<i>American soldier</i> , 1949.
1944-58	Shannon (C) (1916- . American Mathematician) Wiener (N) (1894-1964. American Mathematician)	Information theory, Cybernetics and feed back systems (Math)	Coined the term 'Cybernetics'.
1935-40	Tinbergen (J) (1903- . Dutch Economist)	Econometrics (EC)	<i>Statistical testing of business cycles theories</i> , 1938-39, 2V.

- 1947 Samuelson (P A) (1915- . American Economist). *Foundations of economic analysis.* 1947.
- 1964 Malinvaud (E) (French economist)}
 1960 Rapoport (A) (American Mathematical Psychologist) Conflict theory and variable sum games (Psy)
- 1953 Anderson (H H) (American Psychologist) }
 Anderson (G L) (1899- American Psychologist) } Incomplete story test (Psy)
- 1961 McClelland (D) (1917- . American Psychologist) ' n-achievement test ' (Psy) Ten need-achievement studies (14)
- 1964 Osgood (C) (1916- . American Psychologist) Semantic-differential technique (Psy)
- 1965 Cantil (H) Self-anchoring striving scale (Psy)
- 1966 Inkeles (A) (1920- . American Sociologist and Social Psychologist) 119-item test of "attitudinal odemtnity". (Psy) *Public opinion in Soviet Russia: A study in mass persuasion* Ed 2. 1958.

3291 *Annotation*

1 Thirty-three basic advances in Social sciences have been made in the Modern Period (1900-60).

2 Twenty-one of the advances have been due to contributions in different disciplines, such as, Mathematics, Statistics, and Psychology.

3 Twelve of the advances have been due to contributions within the Social sciences disciplines, such as, Political Science, Economics, and Sociology.

4 The contributions of Gallup, Roper, Cantril, Thurstone, Likert, Campbell, and Lasswell are considered significant and outstanding. On the other hand, the contributions of Neumann, Morgenstern, Rapoport, Lazarsfeld, Lipset, Inkeles, Wiener and Shannon are considered as middle-range theories (4).

5 Thirty-three out of the Fifty contributors belonged to USA, while the remaining seventeen belonged to Europe. This is an indication that during the Modern Period, most of the studies have been undertaken in USA in contrast to the earlier periods.

6 Twenty-one of the contributors were social scientists. The remaining twenty-nine were specialists in the Physical Sciences, Biological Sciences, and Humanities. Among the twenty-nine non-social scientists, seventeen were psychologists.

4 Applications of Survey Analysis

Survey Analysis has been applied in studies in different subject fields such as, Communication, Education, Geography, History, Economics, Industrial Relations, and Sociology. However, a majority of the applications is in the field of Sociology. In Sociology, the facets studied can broadly be divided into two categories namely:

1 The attributes of society; and

2 Populations.

The attributes of society include public opinion polling, crime, demography, social mobility, juvenile delinquency, rural life, urban life, and anthropology. The population studied can be grouped By Age, By Sex, By Family, By Residence, By Occupation, By Birth, By Status and By Abnormality. Such an application of a common methodology to many different fields and problems confirms the concept of "Interdisciplinary movement". A discipline exhibiting this phenomenon has been named "inter-departmental institute" (3).

5 Survey Analysis and Interdisciplinary Movement

Survey Analysis as a method has come a long way from the simple enumeration of demographical characteristics with little relation to the social context, in the seventeenth century,

to its highly sophisticated form today. This has largely been possible due to the refinement in the technique in the present century from a single-question plebiscite model to the multi-item test batteries model. Further, the responses collected through the interviews which were subjected to the typical correlation and factor analytical treatment of the type known from the earlier phase of differential and educational psychology offered opportunities for the development of powerful new techniques, better adapted to the qualitative character of the data, such as Guttman Scaling, Lazarsfeld's latent structure analysis, and various forms of attribute-space analysis (13). Data in Table 3 indicate that a large majority of basic innovations in Social Sciences are contributions dominantly belonging to the disciplines of Mathematics, Statistics, and Psychology. In other words, the phenomenon of "interdisciplinary movement" can be noticed in the development of Survey Analysis.

6 Pure Theory of Survey Analysis

61 DEVELOPMENT OF A THEORY

Until recently, Survey Analysis was considered merely as an investigation or practice-in-action useful in studying, among other things, the attributes of society. However, in recent years establishment of Survey Research Centres, holding of conferences on Survey Research, and literary warrant indicate the formulation of a pure theory of Survey Analysis with its own specialists. Some of these evidences are briefly discussed in the following sections.

62 CONFERENCE ON SURVEY RESEARCH

Since 1951, three conferences exclusively on Survey Research and two other conferences wherein Survey Research Methodology has been discussed have been held in different parts of the world. This supports the recognition of Survey Analysis as an independent discipline having its own principles and methods, as has been done in this case of Management Science, or Techniques such as Conference Techniques, Evaluation Techniques, etc. In other words, Survey Analysis has its own specialists to explore and develop newer methodologies in Survey Analysis and new principles for guidance.

63 SURVEY RESEARCH CENTRE

In addition to conferences and seminars, agencies and institutions for research in Survey Analysis are being established, under the sponsorship of national governments and international bodies. For example, the American Institute of Public Opinion (Gallup Poll), the Survey Research Centre of the University of

Michigan, the National Opinion Research Centre of University of Chicago, the Bureau of Applied Social Research of Columbia University, the Surveys Division of the Office of War Information (13), the Social Survey Research Centre of the Chinese University, Hongkong and the Survey Research Unit of the Indian Statistical Institute, Calcutta, are such agencies. It has been estimated by Deutsch and others that since 1930, 60 per cent of the total capital expenditure on research in Social Sciences has been on Survey Analysis (5).

64 LITERARY WARRANT

As a consequence of the specialisation in Survey Analysis as a pure discipline, and the establishment of organisations to promote research and development in this field, a large variety and number of documents have appeared on the subject. The data given in Tables 4 and 5 indicate the number of documents produced during the period 1926-69 on the various aspects of Survey Analysis. The data presented in Table 4 is based on an analysis of the documents listed in the annotated bibliography *Comparative survey analysis* by S Rokkan and others, 1969.

641 Table 4. *Number of Documents*

Aspect of Survey Analysis	Book	Report	Article	Total
General context..	40	..	81	121
Methodology ..	25	..	71	96
Application ..	161	32	485	678
TOTAL ..	226	32	637	895

642 Annotation

1 The fact that most of the documents cited in the bibliography deal with the Application of Survey Analysis, confirms that the pure theory of a particular methodology may get evolved out of the results of the application of the methodology in different fields—that is, a methodology is “distilled out” of the experiences in its appearance-in-action in diverse compound subjects going with different host (BS) or occasionally even with host compound subjects.

2 The fact that 25 books and 71 articles have been published on the Methodology of Survey Analysis itself during this period

643 Table 3. Documents on Survey Analysis

Type of document and aspect of Survey Analysis	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-60	1961-65	1966-69	Total
<i>Books</i>										
General context	1	3	4	12	12	8	40
Methodology	1	8	4	9	3	25
Application	..	1	..	2	5	34	57	53	8	161
Total N of Books	..	1	..	2	9	46	73	74	19	226
<i>Articles*</i>										
General context	3	7	10	16	46	3	85
Methodology	1	..	11	22	10	23	6	73
Application	..	2	2	4	3	54	172	181	19	489
Total N of Articles	..	2	2	5	6	86	198	250	28	647
<i>Reports</i>										
Application	7	12	11	2	32
Total N of Reports	7	12	11	2	32
Total N of all Documents	..	3	2	7	8	139	283	337	49	905

* The number of articles mentioned in this table do not tally with that of table 4 as one and the same article published in different periodicals have been taken as separate articles.

(1926-69) confirms that the pure theory of Survey Analysis has itself become a subject of study.

644 *Annotation*

1 There is a similarity in the pattern of incidence of books and articles in all the three aspects of Survey Research—General context, Methodology, and Application.

2 The peak period of Survey Research on all the three aspects taken together is the decade 1956-65.

3 The peak period of Survey Research in relation to the aspect General Context is also the decade 1956-65.

4 There are two peak periods for Survey Research Methodology, namely 1951-55 and 1961-65. The pattern is similar both for books and articles.

5 The peak period of Survey Research Application is the decade 1956-65. Here, the earlier part of the decade shows a slightly larger number of books and a smaller number of articles compared to the latter half of the decade.

6 All the reports are on Application, the peak period being the decade 1956-65.

7 *Classification of Survey Analysis*

71 IN CC

711 *Main Subject*

The classificationist usually finds it convenient to group the subjects in the universe of subjects, in the first instance, into a few "Fields of Specialisation". This grouping conforms, more or less, to the general pattern of division of the universe of subjects by scholars into homogeneous groups of subjects fit for specialisation. Each chunk of the universe of subjects into which such a homogeneous group of subjects may be deemed to fall, is called a Main Basic Subject (or Main Subject) (11).

712 *Further Division*

A further division of the field of work among a group of specialists may be found helpful when the number and variety of the subjects going with a (MS) taken as a whole may be found to be too large to form a convenient field of specialisation. The classificationist then finds it convenient to group the subjects going with the (MS) concerned, into a few smaller groups of homogeneous subjects. Each such smaller chunk of the universe of subjects (within the larger chunk constituting a (MS)) into which the smaller group of homogeneous subjects may be deemed to fall, is called a Non-Main Basic Subject.

713 *Grouping of Main Subjects*

In the Schedule of (MS) of CC, there are two broad groups:
 1 The traditional (MS) taken along with their respective adjunct (MS) (B Mathematics.... Z Law); and

2 A group of (MS) each of which has no particular affinity to the traditional (MS) (12).

The second group of (MS), placed earlier to the traditional (MS) include such (MS) as "1 Universe of subjects: Structure and Development", "2 Library Science," "3 Book Science" ... "6 Museology" and Distilled (MS), such as "8 Management science", "9d Standardisation methodology", "9e Specification methodology", and "9f Research methodology".

A distilled (MS) occurring as a practice-in-action in subjects going with the (BS) in the Natural Sciences as well as Social Sciences is placed in the group of distilled (MS) mentioned above. In Sec 642 it has been pointed out that the pure theory of Survey Analysis may be deemed to be a distilled (MS) which as a practice-in-action can occur in subjects going with the (BS) in the Natural Sciences as well as Social Sciences. Hence among the distilled (MS) enumerated in CC, Ed 7, the pure theory of Survey Analysis is a canonical division of the (MS) "9f Research methodology". Thus:

9f Research methodology.

9f1 Survey methodology.

714 *As An Isolate Facet*

The concept Survey Analysis can occur as an Energy isolate representing a practice-in-action in compound subjects going with any of the (BS) in the Universe of Subjects.

72 IN UDC

According to the "Guide to UDC" (1963) Survey Analysis can be represented as a "distilled discipline" by the (CN) 001.891 [308] using the intercalation device (1).

8 Comparative Survey Research

From the 1950s, there has been a steady increase in the designing and planning of surveys for cross-national and cross-cultural data-gathering and data-analysis. Important among these studies are the UNESCO-nine-country survey (1948), OCSR seven-country teacher survey (1953), and the Almond-Verba five-country study (1958). A list of such studies is given by S Rokkan and others (14). The advantages of Comparative Research have also been discussed by S Rokkan (13). Comparative Survey Research may be taken as an (1P1) isolate of Survey Analysis.

9 Bibliographical Reference

- 1 Sec 72 BS 1000c-1963. Guide to the Universal Decimal Classification (UDC).
- 2 Sec 325 BOOTH (C), *Ed.* Labour and life of the people of London, 1889-1902. 17V.
- 3 Sec 5 BOULDING (K E). General systems theory—the skeleton of science. (*In* Vardaman (G T) and Halterman (C C), *Managerial control through communication* 1968. P 395-407).
- 4 Sec 3291 DEUTSCH (K W). Impact of complex data bases on the social sciences. (*In* Bisco (RL), *Ed.* *Data bases, computers, and the social sciences.* 1970. P 19-41).
- 5 Sec 63 —, PLATT (J) and SENGHAAS (D). Conditions favouring major advances in social sciences, (Science j. 171; 1971; 450-9).
- 6 Sec 325 ENCYCLOPAEDIA BRITANNICA. 1965. V 9. P 1107.
- 7 Sec 325 — — — — — V 21. P 342.
- 8 Sec 327 HYMAN (H). Survey design and analysis. 1966.
- 9 Sec 31, 322 LAZARSFELD (P F). Notes on the history of quantification in sociology—etc., (ISIS. 52, Part 2; 1961, June; 277-333).
- 10 Sec 327 MOSER (C A). Survey methods in social investigation. 1961. P 18-38.
- 11 Sec 711 NEELAMEGHAN (A) and GOPINATH (M A). Fused main subjects. (Annual seminar, (DRTC), 9; 1971; Paper CD, Sec 21-23).
- 12 Sec 713 RANGANATHAN (S R). Prolegomena to library classification. Ed 2. 1957. Chap 7176.
- 13 Sec 4, 63, 65, 8 ROKKAN (S). Cross-national survey research: Historical, analytical and substantive contexts (*In* 14. P 5-55).
- 14 Sec 328, 65 — and others. Comparative survey analysis. 1969.
- 15 Sec 22, 322, 325, 327 SILLS (D I), *Ed.* International encyclopaedia of social sciences. 1968. V 15. P 411-36.
- 16 Sec 21 VERBA (S). Uses of survey research in the study of comparative politics; issues and strategies. (*In* 14. P 56-106).
- 17 Sec 22 WELLS (A F). Local survey in Great Britain. 1935.
- 18 Sec 22 —. Social Surveys. (*In* Bartlett (F) and others-*Study of society.* 1961. P 424).