

# SOCIAL INDICATORS—SYSTEMS, METHODS AND PROBLEMS

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Professor Moser regards the purpose of social indicators as being to aid the policy maker by summarizing the state and changing conditions of society, pinpointing the outstanding existing and emerging social problems and monitoring the effects of social policies and programmes. Thus social indicators will frequently, though not necessarily, be normative and they will often, though again not necessarily, be concerned with outputs rather than inputs. Although many writers regard social indicators as being combinations of series, the problems of construction are substantial. Central to the idea of a social indicator, however, is that it should represent or summarize a broader concept than itself and that it should belong to a structure or system of series. Although there are no social theories about society in general on which a structure of indicators can at present be based there are a number of middle range theories relating to specific fields or sectors, such as occupational mobility, education, migration, mental health, etc., around which quantitative relationships and models can gradually be built to give insight into social changes and perhaps eventually into the manipulation of policy instruments for the improvement of social conditions.

## I. INTRODUCTION

Interest in social indicators has become so widespread that some recent writers have (understandably enough) referred to a "social indicators movement". The stimulus has come from many directions. In the policy world, increasing interest has become evident in quantitative assessments of social conditions, changes and problems—to assess what is happening, to pave the way for policy decisions and to monitor the effects of policies. At programme or project level, activities connected with programme planning and budgeting systems and with programme evaluation have provided further stimulus. As a result, there is a search for indicators of many kinds, with functions which are descriptive, predictive or prescriptive. Some think of social indicators as being very numerous, others as a small set of aggregative measures.

To this policy interest in the subject has been added that of statisticians themselves. With the elaboration of the economic accounts largely achieved, and with considerable advances in many aspects of macro and micro-economic statistics behind them, statisticians in government would anyhow have turned more attention to social statistics; as it happens, substantive and policy pressures have led in the same direction. As a result, in addition to trying to improve individual social statistical series, they have begun to tackle two more far-reaching objectives: the construction of integrated frameworks of social and demographic statistics (social accounts), and the establishment of social indicators.

Academic social scientists have also become increasingly interested in this subject, often with the aim of going beyond mere indicator-construction and towards the analysis of social change and the elaboration of explanatory or predictive models.

Most of the activity in fact comes from the United States, both in academic and official circles. Latterly, other countries have also begun to make progress, and one can now discern activity in most European countries. Links between official work, usually aimed at improving information systems for decision-making, and academic research of a more fundamental kind, however, remain poor. Work is also being sponsored at international level, notably within the United Nations family of organizations and OECD. There are some risks of duplication here, and in an area where there is so much to be done care must be taken to make the most rational use of resources.

Our work within the U.K. Government Statistical Service is new and we cannot as yet report empirical findings or produce specific indicators. The aim of this paper is to summarize progress on our attempts to sort out the various concepts of social indicators, to relate these to other aspects of social statistics information systems, and to set out the next steps of our work. The paper is written from the standpoint of one particular government statistical office, and from the starting position that, though social indicators can be valuable and enlightening, they are not in themselves a panacea for decision-making.

## II. THE USES OF INDICATORS

For the policy-maker, whether in government, local government or elsewhere, social indicators at their best would give a pointed summary of the *state* of society in given fields, of *social changes* relevant to them, of outstanding *social problems* of the day and emerging social problems of the future, and of the *effects of social policies and programmes* (thus linking with PPBS and programme evaluation activities). The information conveyed by the indicators, if well structured, can help in the formulation of policies and, in so far as they relate to manipulable variables, directly aid a policy-maker's actions. But it is best to think of indicators as contributing to his background enlightenment, and influencing his choice of goals and strategies, rather than aiding decisions directly. Indicators are particularly helpful for medium and long-term planning. At a subsidiary level, social indicators can measure the extent to which goals and strategies are achieved and can be of significant use for management.

On the question of coverage, it is clear that all the fields of social policy—housing, health, crime, education, population, social security, employment etc.—are obvious candidates for inclusion, and the choice made for research or for a Government's information programme can up to a point be pragmatic and indeed opportunistic. The same perhaps holds of the "sub-fields" (e.g., mental health, higher education) chosen for attention. What is important, however, is that, whatever the choice of fields and sub-fields, the structure of indicators should not be confined to these boundaries; indeed the forming of relationships and models spanning several fields (e.g., linking housing and health, education and juvenile delinquency, etc.) is one of the main challenges in the social indicators field. The question becomes even more complex when one turns to problem areas rather than fields of social policy. Examples are poverty, social mobility, equality and social participation.

The range of indicators can be coterminous with all that relates to the quality of life, and might also well cover subjective aspects like satisfaction, motivation, and so forth; this lends importance to attempts to look at indicators also from the point of view of the “consumer”, i.e., in terms of the aspects of education, housing, social services, etc., that matter most to the people at the receiving end. This is not only important in itself, but also conceivably as a basis for “weights” in composite indices.

### III. WHAT IS A SOCIAL INDICATOR ?

There is no agreed definition of social indicators. In fact, the literature shows considerable difference of opinion and some confusion. To some writers, they are virtually equivalent to “good social statistics”, as long as they are time series and permit suitable disaggregation. This usage is not necessarily wrong, but it is not helpful. Nor is it useful simply to equate social indicators with important or “key” series. A restricted usage must be based on a more precise concept.

In this context, a number of delineations of social indicators are worth discussing.

- (i) It is often argued that a major distinguishing feature of social indicators is that they should be *normative*, in the sense that a move in a particular direction could be said to be “good” or “bad”. Here it is necessary to distinguish between the indicator as a statistic and the context of its use. It is the latter which confers upon the indicator any normative character it may have and to be normative may thus be a frequent but not a necessary characteristic. It is easy to conceive of indicators on which there is no general consensus as to which direction of movement is “good”—but which are generally agreed to form an important element of the information required for “enlightenment”. Other indicators may have opposite normative characteristics in different circumstances, e.g., the birth rate is likely to have very different implications for, say, Australia and India. Moreover policy changes can reverse interpretations.
- (ii) A different kind of criterion is that social indicators should relate to *outputs* rather than inputs of social programmes, e.g., to improvements in health rather than to expenditure on health services, to the raising of educational levels rather than to attendance at school. In short, indicators should relate to ends rather than means. There are two conceptual difficulties with this. One is that there are often aims which are “intermediate” ends: thus school attendance is in one sense an end, in another a means to the end of better education. In the same way statistics demonstrating the redistribution of income in one sense measure the outcome of taxation and social security policies, but in another sense redistribution of income is a means towards achieving more equity in the standard of living, which it may or may not achieve. The other problem is the difficulty of measuring outputs. Often, for better or worse, input measures have to be used as proxies for output measures.

- (iii) In some writings, it is held that social indicators should necessarily be *combinations* of series, i.e., index numbers in the conventional sense. This is an undesirable restriction of the term. Apart from anything else, the technical objections to such indices—most basically the problem of weighting—are substantial. All the inadequacies of concepts, measurement, interpretation are compounded, and in our approach, work on index number combinations is envisaged for later stages.
- (iv) It is commonly assumed that social indicators should be *comprehensive* or aggregative measures, that they should relate to broad concepts like educational level or juvenile delinquency rather than specific aspects of them like numbers of young people achieving particular qualifications or committing particular crimes. This is sometimes associated with the argument for composite indices, but the two do not necessarily go together. Rather is it a concept of the indicator being representative of, or summarizing, a broader concept than itself, and in this sense it is indeed central to the whole idea.
- (v) This brings one to the criterion that—for preference—a series (or combination of series) should be termed a social indicator only if it belongs to a *structure* or *system* of series: or, to put the point differently, if it can be explicitly and quantifiably related to things/concepts/series other than itself. In short, if it is genuinely “indicative” of something. This implies that indicators should be part of some kind of model whether explanatory or predictive, in the sense that economic indicators relate to economic theories and fit into models. Comprehensiveness, discussed in (iv), is an aspect of this, in that the indicator is chosen to represent, or be a summary of, a wider concept, and thus in principle requires quantifiable relationships between the two. In short, this requirement is that the series, to rank as an indicator, should have a place within some sociological or social policy model. In our approach to work on social indicators, this last criterion carries special weight, with special concentration on output measures, and on individuals and families rather than institutions.

#### IV. THE ROLE OF THEORY

Social indicators and social accounts are often compared to economic indicators and the economic accounts. The analogy should not be pressed too far, if only because (a) the unifying thread of a monetary measure is not helpful with the former as it is with the latter (which it dominates) and (b) the economic measurements are backed substantially by theory concerning the structure of the economy (which helps the economic accounts) and the relationships within the economic cycle (which helps the economic indicators). In short, economic indicators readily fit into models.

However, this should not discourage us. In the development of the economic accounts and indicators, pragmatic empiricism and theoretical developments in fact went side by side, re-inforcing each other. It would be untrue to say

that their construction was completely based on economic theory. Theories were developed, but simultaneously, and in parallel, series were selected for improved measurement, relationships between them and others were investigated and formalized, models were gradually built up, theories were improved in turn, and so forth.

So it should be with the social accounts and social indicators. There are no sociological theories about society in general on which a structure of indicators can at present be based, nor is this a major drawback. There are, however, a number of "middle-range" theories relating to specific fields or sectors—e.g., to occupational mobility, education, migration, mental health etc., and more of these are needed so that quantitative relationships and models can gradually be built up. These theories should give us insight into social change and perhaps eventually into the manipulation of policy instruments for the improvement of social conditions. They should also enable us to make predictions by relating inputs of money, manpower, etc., to outputs in terms of, for example, improved education or improved health. What we currently lack is understanding of how the inputs are converted within a complex society and system of institutions into outputs. Although social accounting of the type developed by Stone can pinpoint changes in output in the cases where these can be measured, it does not in itself demonstrate the mechanism of change; it is a systematization of the data, not a model or theory of inter-relationships. But social statisticians need not wait for theories before improving their measurements. The inductive approach, from measurement to theory-building, can and should go on alongside.

## V. FUTURE TASKS

In looking at future work, it is clear that social indicators cannot be considered in isolation from the whole complex of social statistics, and that it is important to distinguish between the different parts and functions of an information system.

Without going into details of the nature of information systems, certain points are clear. One is that a government's information system is meant, and should be designed, as much for enlightenment as for decision-making. Social indicators should not be thought of as solely, or even primarily, geared to decision-making; their message especially before theory develops will often be too ambiguous for that. Another relevant point is that an information system has to operate at many levels, not only in that it has to serve people responsible for different degrees of detail, but also in that it has to relate to broad goals, strategies for achieving them, and specific projects within those strategies. It also has to relate to differing time-spans from urgent short-term issues to long-term planning. And it has to serve both in the preparation of policies and in the monitoring of their effects. Indicators can in principle be required for all these purposes.

In this context, the tasks ahead can be summarized under a number of heads.

(a) *Improvement of the Infrastructure*

It goes without saying that a prerequisite of all the other developments is a good “infrastructure” of basic social statistics. By and large, social statistics are less developed than economic statistics. Pressure to improve economic statistics came from a number of directions, above all from the needs of modern governments to steer and tune their economies and forecast future changes. This led to the development of comprehensive models and integrated systems of statistics which are now well advanced. Having achieved this level of understanding and measurement of the economic situation thoughts have turned to the need to measure the quality of life produced by the state of economic health or ill-health which has been discerned. So recently there have been increasing pressures to improve the statistical basis for social policy, to forecast social changes and to monitor the results of policies. With this impetus, there have been considerable improvements in individual series across the whole social policy field, and continuing efforts are being made to improve the scope, frequency, speed and comprehensiveness of social statistics. Yet much remains to be done, especially in improving regular statistics on social resources (in money and manpower terms), on the utilisation of resources (e.g., take-up of social services) and, above all, on unmet social needs. Quantitative studies of social change, and of the impact of social policies, are still often hampered by poor data.

As regards sources, this calls for improvements in administrative data, and in the range, regularity and frequency of censuses and surveys. Continuous surveys, and replicated studies, are of particular value. But there are some signs of “survey-saturation”, so that care needs to be taken in launching into surveys. Also, the considerable fears concerning interference with privacy need to be borne in mind in developing social statistics.

The improvement in comprehensiveness, detail, frequency and general quality of all social statistics is clearly of great importance. But in practice, one cannot do everything at once, so that priorities have to be established, and the identification of priorities can well be governed by the fields where social indicators are most in demand.

(b) *Development of Output Measures*

The most essential element in the work on social indicators is the development of genuine output measures or greatly improved proxies for output. This means the identification of primary, secondary and subsequent objectives for broad policy areas, for more specific strategies and for specific programmes. The relevance of this for programme planning, budgeting, and for programme evaluation, is obvious, and the new elements in the machinery of government in Britain which select and review specific policies are closely concerned with these developments. But output measures must also be evolved for broader bases than are involved in the programme context.

The difficulties of developing output measures are well-known, and it is all too easy (as is conventionally done in the national accounts) to use input (i.e., cost) measures instead. To get over this is a major challenge regarding social indicators. It is essential to move gradually, and continuously, towards assessing

the benefits of, e.g., educational policies, housing programmes, health service changes, and so forth. Some of these effects will be measured in the national accounts, in so far as, for example, higher education or better health increases production. But these contributions cannot at present be disentangled, and this is an obvious area for research. In addition, there are “consumption” effects of education, health and other social programmes which would not in principle be reflected in the national accounts, but which should be tackled in the work on social indicators.

(c) *Social accounts*

Recently attempts have been made to develop a system of social and demographic statistics by linking them into a single set of accounts. It is the natural aim of statisticians to seek linkages and attempt to impose standard classifications and definitions on related data. Most progress has been made so far in the work by Richard Stone, which began with matrix tabulations of the flows of people through the educational system. This work has been extended to other “life sequences” (e.g., health), elaborated to permit various sub-classifications and conceptually evolved to facilitate the estimation of probabilities of a person in one given “state” or circumstance moving to another. Whatever the policy uses of this system of accounts, there is no questioning its value for illuminating what is happening in, say, an educational system; and there is no doubt that it is a good framework for the improvement of statistics.

Other kinds of system are under discussion. One possibility is to set up “social service accounts”, linking tables on the expenditure on given social services, the manpower involved in them, their utilization, and—hardest of all—on their ultimate effects. All such efforts can be illuminating and, at the best, helpful for the systematization and improvement of statistics. This is, of course, a long-term task of even greater complexity than the structuring of the national accounts both conceptually and in terms of measurement. It is a task in which government statisticians and academic researchers have to share. As with social statistics generally, social indicators can be useful as a “way into” the construction of the social accounts, identifying which sub-accounts should have priority.

(d) *Selection and Presentation*

The multitude of series involved in the “infrastructure” of social statistics, or in social accounts, is enormous. For public consumption, and indeed for policy makers, selected packages have to be prepared. Such a one is the CSO’s new publication *Social Trends* in which a number of significant statistical series relating to social policies and conditions are brought together annually. There is no pretence that these form an integrated system of tables along social accounting lines, but the confrontation of tables on different aspects of social life helps to produce a more rounded picture of the social scene than emerges from conventional statistical compilations. No sophisticated criteria are used to make the selection. Value judgments are made based on assessment of the importance of particular issues and problems at a given time, and of the relevance of particular series to enlightenment of them. As a way to producing better understanding of social changes, this kind of venture deserves high priority. It also stimulates

discussion of data gaps and is a necessary background to the development of social indicators.

(e) *Development of Relationships and Models*

It follows from what has been said in our approach to social indicators, the greatest challenge lies in the development of theories and models linking together different series in the statistical system. At the most ambitious level, this would call for general theories of social change; but much progress can be made—indeed must be made—via “middle range” theories and models relating to specific fields and problems. Relationships can be of different kinds. Most obviously they can be between inputs, resources, utilization and outputs of particular programmes; but they can also link together outputs of different but overlapping policies.

The essence of the former type of relationships can be illustrated as follows, taking juvenile delinquency as an example. The first issue is to decide on suitable *output* measures. Various indices of juvenile crime might be considered, derived from recorded crime figures, court appearances, convictions, sentences, etc. The problems are well-known, and at best such recorded crime indices are a proxy for total juvenile crime; apart from anything else their usefulness as output measures is affected by variations in recording efforts and efficiency, changes in sentencing policy, and by the problems of the “dark” figures of unrecorded crimes. All this is to say that in developing output measures for programmes and policies concerned with juvenile crime, it is desirable to go beyond obvious measures derived from official crime statistics; and criminologists are of course much concerned with this.

Whatever the choice of output measures, the system of related indicators should cover four types of series. First, there are *inputs*, such as police, probation schemes, approved schools and so forth, measured in money and manpower. Second, there are *other influences*, such as housing, social amenities, education and health, which may bear on juvenile delinquency.

Third, there are *basic factors* relating to the juveniles themselves, such as their age, sex and background, which may affect their disposition towards crime. These three sets of factors combine with a fourth, the *institutional framework* (i.e., utilization of prisons, approved schools, etc.), which helps to translate given inputs into ultimate consequences or outputs. All these kinds of variables would need to be involved in a model relating to juvenile delinquency. And what is important is that they include factors on the input side which the responsible authorities can “manipulate” explicitly with these specific outputs in mind (e.g., the responsible Ministry can decide the resources that go into crime prevention and detection) as well as factors which, though still manipulable by the authorities, would have other aims as their *primary* objectives (e.g., housing or educational policies); as well as variables which are in no sense manipulable. The same is true analogously of economic models.

To develop the various relationships involved in such models needs hypotheses, their empirical elaboration and testing, the formulation of better and more sophisticated hypotheses. It is not the kind of thing a government’s statistical office can, or should, do by itself; it requires a collaborative operation between government and academic researchers.

## VI. CONCLUDING REMARKS

As we have seen, the term "social indicators" is used in many different senses. This is perhaps unfortunate and can often be confusing. In our work, we shall increasingly try to restrict the term to time series which relate to individuals or households, that are measures of output, and fit into an explicit structure of series, i.e., into a set of relationships. As such they will find their place alongside the general context of the improvement of social statistics and the development of social accounts. All these activities will complement one another. The improvement of social statistics, including their better presentation, is clearly a matter for the Government Statistical Service. So is a fair part of the work on social accounts. But when it comes to the development of social indicators in the sense of models and sets of relationships, a joint effort with academic researchers is necessary. We hope to encourage this, starting with two or three quite specific policy-problem areas. We also hope that, from the very outset, this work can have an international flavour, with two or three countries contributing to the work on given policy areas.