Statistics and Society

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Editor's Note

About one month before the ICOTS Conference began, the South Commission advised Devaki Jain that she would be needed for their final Press Conference in Jakarta on the Tuesday of the ICOTS week. Try as we could, we could devise no means of transporting Devaki from Dunedin on Monday to Jakarta on Tuesday morning. With great disappointment, since she was not only a Plenary Speaker, but a special visitor under the New Zealand 1990 programme, her visit was cancelled. Fortunately, her paper had been prepared beforehand and was read for her by Helen Wily in Session C10. For the *Proceedings*, I felt it was more appropriately reinstated to its original role as a Plenary paper.

1. Introduction

It is customary for non-statisticians to mock statistical descriptions of social and economic phenomena on the grounds that the statistics can be manipulated to indicate or support one's preconceived views. In other words, they highlight one particular chapter in the textbooks that all of us have read, namely "Uses and Abuses of Statistics".

Perhaps we statisticians have invited this ridicule because quantification and hard data are so often used to support "facts", that facts have now become synonymous with statistics. Yet we know, at least in the social sciences, that numbers and measures are vulnerable. Cost of living indices, pure indices, and many other individual and composite numbers, are so value-loaded that we should simply admit the fact: then we would perhaps be less ridiculed. Oxford philosophers have even challenged the existence of anything called a "pure fact", suggesting that no observations are value-free.

But however mocking those who do not deal with statistics, there is a deep and genuine unease about statistical descriptions of society and the economy among those who are struggling to remove poverty and inequality. This unease appears at many layers and levels.

2. Economic development at the global level

At the *macro* and *global* levels, it is suggested that the indicators which measure economic development, and which implicitly give values to certain indices or certain types of change, are misleading from the point of view of resource conservation: they tend to destroy and damage the environment. They seem inappropriate from the point of view of improving society and providing opportunities for sustenance to the less endowed and privileged. Further, they ignore the vast creative potential within the many ostensibly troubled and devastated economies of our world. The value-base of such indicators is morally destructive and damaging. In other words, the motives which are encouraged in the society by such transformations are unattractive or "bad".

Thus, there is a widespread movement towards defining alternative indices to measure development; these would be based on a value system oriented towards social harmony, environmental conservation, and equity. Amongst the better-known publications in this area are Perez (1989), the South Commission Report (South Commission, 1990), the DAWN book (Sen and Grown, 1987), the INSTRAW Report (Instraw, 1986), Ghai (1988), and the TOES Report (Ekins, 1986).

To summarise it simply, what this literature states is that if economic progress is measured in terms of a regular and increasing rate of growth of exports, industrial output, per capita consumption of food and other consumer goods, as is customary, then

(i) pressure is put on those who are not providing similar indices to do so, creating strains on human endurance, as well as resource availability;

(ii) the fact is concealed that economies which have these characteristics are in fact polluted to a greater extent than less developed economies;

(iii) these economic norms are used in judging progress and also in negotiations between those who have arrived and those left behind; for example, between developed nations in the "North" and developing countries in the "South";

(iv) sections of society such as the poor (especially poor women), groups which are living in more traditional forms of peasant agriculture at the subsistence level, and powerless or oppressed groups, are often left out of this movement. Their exclusion may in a sense be an advantage, as they may not yet be corrupted in their lifestyles. But unless the system recognises that being excluded is a virtue, this under-class may be harassed and exploited.

Therefore, at the macro level there is a desire to reform the values on which successful development indicators are based, using values such as conservation, ecological balance, equity, low resource use (including low energy use), self-reliance, and social cohesion as indices to judge an economy's "success". Once such an alternative social welfare yardstick is postulated, then the kind of data that will be collected and the way they are used would be quite different.

In the field of economic development, the World Bank's Development Report is a powerful document. It is full of statistics, mainly tables which then are used for grouping and ranking countries in terms of poverty, capability to develop, debt, and so on. This scale in turn influences the aid packages which are determined by the consortium of rich countries, including their international financial institutions. This places considerable pressure on countries to fit in: consume less, export more, tighten

your belts, generate surpluses; these are some of the messages.

Translating these messages into national policy has meant increasing commercialisation. In agriculture, this has meant moving countries from simple subsistence levels to the generation of surpluses and market orientation, shifting land use from coarse grains with some forest cover for fuel and fodder to the hi-tech growing of cash crops. This cash has then to be recycled to provide food and energy. The reintroduced food and energy are also high-cost, not only in money terms, but also in terms of energy values. This kind of dependence becomes enlarged into national enslavement while the society's sources of sustenance get distorted. In its struggle for survival, such a society begins to destroy the resources around it, which leads to the cruel, almost obscene, allegations made by the Brundtland Commission Report (World Commission on Environment and Development, 1987) that the poor are the biggest degraders of land.

3. The household level

At the *household* level, we see similar distortions creeping in, not through value-scaled data presentations, but through the methods by which data are collected. A team from the Institute of Social Studies Trust (ISST) undertook to study the allocation of time over the whole day across all activities of all the individuals above the age of five in a set of households (Jain and Chand, 1982). Our quest was to challenge, or at least understand, the figures given by the census and the national household survey of female work participation in the economy. The average figure for this ranges from 28% to 30%, where the corresponding figure for males is about 50%-60%.

My personal encounters with rural and urban India made me suspect this figure; I always appeared to see as many women (sometimes more) in the fields and streets of India amongst the labouring classes as I did men.

We designed our data collection fairly scientifically, stratifying our sample across classes and taking a 15% sample for estimation purposes. But we also followed the national level household survey both in terms of selection of villages as well as households, and in the questionnaire used. In the selected households we canvassed both the traditional questionnaire and also computed the work participation rate from our own data on activities. We found that even using the conventional definition of gainful activity (there is strong pressure by feminists to count domestic work, namely cooking, cleaning, and child care, the three C's, as gainful activity; but we used the old conventional, patriarchal definition), the female participation rate was almost twice that revealed in the macro-data collection. There were other important results also, such as work participation of children (aged 5 to 14) and the improvement of the class-based differentiation in female participation rates. We found that among those who were absolutely landless (those who had no land, not even homestead land), the female participation was greater than the male. The average figure was concealing the differences based on class, but more than this, the data was not even being collected (Jain, 1980).

There was some debate as to whether the accuracy would improve if women collected the data on women, especially in traditional societies. However, ISST's experience of canvassing the national sample survey's questionnaire with female investigators revealed that this was not the main problem. The problem lay in the method of soliciting information as well as in the coding. In the activity codes from an

international list which is attached to the question "What is your main activity?", code 93 refers to domestic activity. The majority of women, especially in the traditional sectors of the developing countries, would consider themselves mainly engaged in domestic activity, even if for several hours a day they were producing goods and services at home, or engaged in other income substituting and income producing activities. In our study, we found that the most regular activity which engaged several girls and women for 365 days of the year for at least four hours, if not more, was household chores, namely the three C's. Naturally, a woman who is a peasant or slum dweller and who collects water and fuel as well as weeding her plot and milking her goats, answers the question "What is your main regular activity in the last year?" with "domestic activity".

In the next section on the questionnaire, the investigators are told that those who identify themselves as belonging to code 93 should be left out. All others are asked what they did in half days for the previous week (see Jain, 1982, 1985, 1986).

The reason this case is presented in such detail is to show that international protest is necessary to modify basic methodology. Unless domestic activity as a code is dropped internationally, no national statisticians will question it, as it challenges the standard classificatory systems.

Simultaneously, the problem posed by women's self-perception is caused partly by the dominant economic values, namely that wage-earning labour is work, whereas non-wage-earning labour is not work. Such signals are generated by a variety of sources: the political development paradigm, the questionnaire and the investigator, and the mass media. It is linked to the scale of values in economic theory, which characterises the subsistence household, namely production for consumption as something feudal or backward. Yet, today's thrust for the conservation of resources and the reduction of wasteful consumption is pointing to the importance of subsistence households, which will manage within the limits of resource availability. If subsistence households were given a positive value, then the women in the household would get recognition, and the stigma of the statistical classification would be changed or blunted. I hope this illustration will have moved you from the global discourse and demonstrated the need to look critically at the international classifications and at economic theory.

There are many more examples which challenge the international classificatory systems, namely the occupational code list, the identification of home-based work as legitimate work, and so forth. There are innumerable illustrations showing that the basic norms implicit in current economic theory, whether capitalist or socialist, are inaccurate if not inappropriate (Jain, 1990).

Thus statistics, and how statistical tables are arranged, as well as the theories which point to the kind of data that should be collected, have a significant influence on social engineering. We have all learnt this in our classrooms. I remember, when teaching statistics in Delhi University, illustrating the normative aspects of statistical descriptions by asking questions like "How many of you are shorter than 5 ft?". This showed that I was emphasising shortness. Collecting alternative statistics is not a new game; many of you may have used it in your trade union negotiations, or even in your families. There is nothing new in what I have written, but what I set out to emphasise is the role that statisticians can play in social and economic engineering.

4. Statistics and trade unionism in India

I will end with a few illustrations from Indian grassroot activism, on the use of household surveys. This may not strictly be what we think of as the teaching of statistics, but it is a potential tool in development activism for those of us who wish to enliven our classes while teaching the more technological skills of statistics.

SEWA, a trade union of self-employed women in Ahmedabad (see Jain, 1979) has a simple technique for initiating unionisation. The self-employed women are usually street vendors of vegetables and other assorted goods, head loaders, cart pullers, and home-based seamstresses. They are dispersed workers who often start the day by taking a loan to buy raw materials and end the day by recovering sales revenue from the day's earnings. By and large, they live in neighbourhoods according to certain castes, religions, or occupations (which in India usually merge into each other). For example, one neighbourhood may consist only of women who are embroiderers and stitchers. Another may contain women petty vendors, and so on. SEWA would send out its organisers with a one-page questionnaire addressed to women in their own homes, asking them to list what they did, how much they earned, their source of supply, market, etc. They would then aggregate the information from these questionnaires and produce a profile according to occupation for, say, 5, 50, or 100 women in a neighbourhood. They would then carry this aggregate macro "picture" to the women during their cultural get-togethers (singing bhajans, an Indian form of religious socialisation) or similar occasions, and present them with their own image. A discussion would follow, where the women could see that their problem was not one of their individual making, but emerged from some external "enemy", either the money lender who was overcharging all of them, or the police who were browbeating them. Often they were expending energy invididually which could be pooled. This group analysis helped them to identify some reasons for solidarity and unionisation, or at least collectivisation.

Thus, in one case they bargained as a group for a cheaper rate of interest for raw materials; in another case, for a higher piece rate; in a third, for bank credit, and so forth. Today, SEWA numbers 20,000 members and is one of the largest women's trade unions in India. This method is universal. In the USA, for example, in the early years of feminism, rap sessions for consciousness-raising would be held; a group would recognise that its problem was common to the whole group and begin to see the case for a gender-based formation. But what impressed me in SEWA was the enormous use of the questionnaire by the organisers. Even today, they are constantly publishing sheets of information with informal statistics. One can imagine school and college students creating consciousness in their neighbourhoods and cities, through revealing statistics. In a sense, today's environmentalists are shocking us with such statistics.

5. Concluding remarks

My own journey as a development activist began as a student of mathematics in the University of Mysore; from there I went to Oxford and took special papers in national income accounting and statistics. I taught at Delhi University, mainly statistics and national income accounting, before coming to women's studies. While today I may not be considered to belong to the tribe of statisticians, I feel that this entry

point into women's studies has been valuable not only to me, but to the entire area of women's studies in India. Not enough theoretical economists and statisticians are taking part in the women's movement. Yet today, more than ever before, from its origins in social and economic theory, to the identification and collection of specific data, through its presentation and use in analysis and policy, statistics has become a powerful weapon. Those who mock it on their platforms still have to go home and design their next step on the basis of these hard data. Thus, we statisticians are far more powerful than we realise. I suggest that there is a case for us to be more responsible for the image we are generating of society. There is a case for collectively reappraising our knowledge, and recasting it, if necessary, to provide a more civilised touch to human development.

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