

STATISTICAL AGENCIES' DUTIES TO THEIR CLIENTS: WHO TEACHES, WHO LEARNS?

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Statistical agencies follow the UN Principles of Official Statistics, which set high standards of practice and ethics. The question is posed as to whether current practices meet these high standards, with some topical examples relating to Indigenous statistics and disability statistics. Some important messages for the teachers of statisticians are then drawn out, covering some practical and ethical issues for those who work, or will work, in statistical agencies.

Statistical agencies are guided by the UN's Principles of Official Statistics, adopted by the UN Statistical Commission (United Nations, 1994). The principles recognise official statistics as indispensable to a democratic society, serving not only the government but also the economy and the public. Official statistics are to be of "practical utility" and made available on an impartial basis. The Principles instruct agencies to adopt methods and procedures "according to strictly professional considerations, including scientific principles and professional ethics". Information is to be presented "according to scientific standards on the sources, methods and procedures of the statistics". Further, "statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics".

This paper considers the responsibilities that these principles place upon statistical agencies. Emphasis is placed on the attention that agencies need to give to their output, to ensure that users are well informed about the limitations of the data and their use. Some topical examples are provided, drawing on the author's field of health and welfare statistics. Finally, some implications for the training of statisticians who are planning to work in statistical agencies are discussed.

STATISTICAL AGENCIES' COMMUNICATION GOALS

Much of the output of statistical agencies is in table form, published regularly, with the minimal analysis included for the benefit of expert users. National Accounts, labour force statistics and vital statistics publications follow this format. Agencies release the information to all users at the same time. The emphasis is on fully informing expert users. There is an expectation that the media, politicians and market commentators will all analyse the released information from their own standpoints.

Behind many of these regular releases, statistical agencies release detailed information on definitions, concepts, sources and methods, which are freely available to anyone interested. The language used is technical, and their existence is normally only known to the expert user. These are important, but not of much direct relevance to the general user.

In Australia, comprehensive data dictionaries describe, using international standards, terms and data items used in health (AIHW, 2001a), community services (AIHW, 2000) and housing statistics (AIHW, 2001b). National classifications used are based on, and consistent with, internationally agreed classifications. The process described is certainly good practice. But is it best practice? Does it go far enough? Can the interested user still fall into traps that are preventable by the statistician? If so, the statistician should do more, not adopt a "buyer beware" attitude.

INDIGENOUS STATISTICS IN AUSTRALIA

Indigenous people in Australia comprise Aboriginal and Torres Strait Islander peoples. They totalled 386,000 people at 30 June 1996, 2.1% of the Australian population. Their health status is much worse than that of the total population, with a standardised mortality ratio of 2.9 for both males and females, and a life expectancy 20 years less for males, 19 for females (ABS & AIHW, 2001). Almost all health statistics reflect this wide gap in health experience. Yet only \$1.22 is spent on Indigenous health for every dollar spent on other Australians (AIHW, 2001c).

The national statistical system has made an effort in recent years to describe Indigenous health and related issues. A standard definition of Aboriginal or Torres Strait Islander is used throughout statistical and administrative data collections (with the notable exception of Medicare, Australia's universal health insurance system). But almost every piece of information must be interpreted with care, and there is genuine scope for alternative views on such basic issues as population size and death rates.

Completeness of identification is the key problem. Indigenous population numbers have been increasing in large part because of increasing identification. Only 42% of the growth between the 1991 and 1996 censuses is attributed to "natural" growth (ABS & AIHW, 2001). Many Indigenous people believe there is still systemic under-counting, reflecting the understandable unwillingness of some Indigenous people to be identified to any government agency. Deaths data have been substantially under reported, with the Indigenous question often not asked or the response assumed. Today, Indigenous deaths data are still unusable in three Australian States (NSW, Victoria and Tasmania), where almost 40% of Indigenous people live, so the reported Australian experience must be based on the remaining jurisdictions.

The situation reflects the social experience of Aboriginal people in Australia: the lack of recognition, the exclusion and the stigma. Statisticians have done a fair job, although a distinct Indigenous statistics program did not emerge until the 1990s. Today, there is a special effort to enumerate Indigenous people in the five yearly population census, there is an Indigenous survey program as part of the national population survey program, and a sustained effort is underway to improve identification in vital statistics and administrative data collections across the health system. But statisticians have recognised that they must do more in this complex field. A biennial report on the health and welfare of Aboriginal and Torres Strait Islander people (ABS & AIHW, 2001) has been published since 1997, with thorough explanation of data issues and methods. Available data have also been used to estimate many issues not yet directly measurable.

The use of summary statistics is important. The few numbers quoted above on death rates, life expectancy and expenditure have become well recognised as social indicators, remembered and used in the policy debate in Australia. Here is the power of the statistician, to summarise succinctly and meaningfully an array of information to focus attention on a key area of social concern, while not seeking to predetermine the government or societal response.

DISABILITY PREVALENCE

Several US commentators are jubilantly reporting a reduction in disability among the elderly. "Manton and Gu present clear overwhelming evidence that the average health of the elderly population is improving" summarises David Cutler in the Proceedings of the National Academy of Sciences USA (Cutler, 2001). "Between 1982 and 1999, the share of the elderly with severe disabilities, measured roughly as the ability to function independently with ease, declined from 26.2% to 19.7%,... or 1.7% per year."

Here is a powerful summary statistic from the US. It has caused substantial debate in Australia because the Australian data show no similar trend. The proportion of people aged 65 and over with a severe restriction due to a disability has risen from 18.4% in 1988 to 19.6% in 1998 (AIHW, 2001d). These proportions are from the Survey of Disability, Ageing and Carers, conducted by the Australian Bureau of Statistics. The ABS has extensively analysed the impact of methodology changes across surveys, and concluded that the reported increase does *not* reflect an increase in disability rates, but neither is there any evidence of a decrease.

Are the US and Australian experiences really so different? In fact, international evidence is mixed, and the US data are not as clear as the quote above might suggest. Cutler observes one "partial outlier" in the Health Interview Survey. This is in fact the official health and disability survey for the US, conducted by the National Center for Health Statistics. Schoeni, Freedman and Wallace (2001) have analysed the results of this survey from 1982 to 1986, and concluded that "any improvements ... were for those who only need help with routine care activities... rather than the more severe indicator of personal care disability, which demonstrated no change over the 1982-1996 period."

So the official statistics in both the US and Australia do not support the conclusion stated so forcefully by some analysts, and potentially having an important impact on policy debates.

Remember the UN Principle quoted at the outset: “statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics”. Here is a living example of the task before us in Australia. We must settle a position amongst ourselves, then publicise that position and engage in active debate.

LESSONS FOR THE TEACHERS OF STATISTICIANS

These two examples could be extended across many fields. But what are the lessons for the teachers of statisticians? *First*, there is the need to respond to complex social issues in a positive way. This response starts with the largest possible effort to apply standard measurement techniques. Resources should be actively sought to enable the maximum effort by official statisticians, although the independence of official statisticians needs to be maintained (the Australian Institute of Health and Welfare contracts more than 50% of its work, on terms that ensure its independence). But there should also be willingness to attempt to fill information gaps with the best possible estimates from available data sources, carefully and clearly stating the limitations of the estimates. The community and policy makers deserve to have these best efforts, and, if statisticians do not make the effort, others less qualified, and perhaps less objective, will fill the gap.

Second, there is the need to provide simplified (as well as expert) output, so that as many in the community as possible can receive and understand the statistician’s message directly, without the need for interpretation by others. Here it is suggested that statisticians are not generally successful, or, worse, perhaps not really interested. So we have some summary statistics such as Gross Domestic Product and the unemployment rate, but few attempts at broader measures of progress, national balance sheets, or summary statistics on under-employment, casualisation of the workforce. Importantly, statisticians of the developed world have no agreed indicators of poverty or exclusion.

This is not easy territory. Policy makers want to set indicators appropriate for their policies, and statisticians need to help them do so. But there is the clear message in the UN Principles that statisticians need to set their own measures, “of practical utility”, to inform the broader community. In defining indicators, statisticians must have regard to the conditions and concerns of their own society. So they need to be in touch with the debates and issues, a challenge to the relative detachment needed to produce objective statistics.

Third, there is the need for official statisticians to provide authoritative national information on important issues. Further, they need to be willing to argue vigorously that these surveys are the best measures related to these issues. There will always be room for improvement in the methods used in national surveys, and therefore criticism of methods should be welcomed. But official statisticians must ensure their results are at centre stage, and lead the national debate.

Funders have a responsibility here too. It is common for funders to seek out competitors to the official agencies to conduct surveys, in the name of contestability or policy relevance. Such commissioning has its place, particularly when program evaluation is the main consideration. But core issues, both social and economic, need consistent, objective and relevant description, and the official statistician must be able to provide it.

Fourth, statisticians must be trained in, and become advocates for, the values of their calling. The UN Principles are an excellent starting point, but there are a range of ethical issues confronting the statistician in their day to day work. Examples include the intrusion on respondents, such as in asking Indigenous status or disability status, and in how to obtain information from participants in the informal economy (who are generally anxious not to have their activities known to tax authorities). There are also the difficult decisions about release of microdata, where the threat to confidentiality has to be weighed against the real needs of analysts for access to the richest possible data set.

To assist it to manage these difficult issues, the Australian Institute of Health and Welfare has an Ethics Committee. The Committee considers all new work to be undertaken by the Institute. The Institute is able to release identifiable microdata to researchers, but only with the Committee’s consent to each specific request. The Committee is independently chaired, and contains members from a range of disciplines, as well as community representatives. It is modelled on the ethics committees common in health research organisations.

It is also important to state what official statisticians *cannot* take responsibility for. While they have the clear responsibility for ensuring their own staff members are fully trained, and skills are maintained, they cannot directly train their clients. This is a truism for the community user, but even for government users, the agencies concerned need to recruit and train their own staff. Official statisticians can, and should, explain their methods, present seminars and meet regularly with key users. But this can only be a supplement to the training users must arrange themselves, using the full range of education resources available.

Having said that, official statisticians should establish a dialogue with the statistical education community so that educators cover the needs of users of official statistics in their programs. This task is separate from the training needed by statisticians themselves. Topics such as national accounting, population survey methods, time series analysis and data analysis come to mind. The material should not be overly technical, being aimed at non-statisticians. It should include the principles underlying official statistics discussed earlier. It would be interesting to know the extent to which such a dialogue is in place in different countries, and the steps that might be considered to improve it.

CONCLUSION

Official statisticians are guided by a commonly held set of principles. They must ensure that they make every possible effort to describe issues of importance to their society, with information that can be widely understood. They need to advocate for the use of their output as the best available information, but be prepared to adapt and update their methods as required.

The education and training of statisticians should prepare them to take on these roles. Official statisticians now provide some of this content through in-house training. But the statistical workforce is mobile, and similar work is undertaken by statisticians in other fields, notably universities and research organisations. This suggests that training in the areas highlighted should be available to, if not required of, all statisticians. Official statisticians need to take active steps to ensure statistical educators appreciate the training needs.

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