

UN HANDBOOK

FOUNDATION OF A STATISTICAL AGENCY

1.1. Introduction

1. National statistical offices exist to provide information to the general public, government and the business community in the economic, demographic, social and environmental fields. This information is essential for development in these areas and for mutual knowledge and trade among the States and peoples of the world.
2. The quality of official statistics depends largely on the cooperation of citizens, enterprises, and other respondents in providing appropriate and reliable data to the statistics agencies.
3. In order that the public trust official statistics, a statistical agency must have a set of fundamental values and principles that earn the respect of the public. These include, independence, relevance, credibility and treating respondents as means rather than as ends.
4. These principles have been codified in the "Fundamental Principles of Official Statistics"[5]

1.2. Independence[6]

5. A widely acknowledged position of independence is necessary for a statistical agency to have credibility and to carry out its function to provide an unhindered flow of useful, high-quality information for the public and policy makers. Without the credibility that comes from a strong degree of independence, users may lose trust in the accuracy and objectivity of the agency's data, and data providers may become less willing to cooperate with agency requests.
6. In essence, a statistical agency should be distinct from those parts of the department government that carry out enforcement and policy-making activities. It should be impartial and avoid even the appearance that its collection, analysis, and reporting process might be manipulated for political purposes or that individually identifiable data might be turned over for administrative, regulatory, or enforcement purposes.
7. Characteristics related to independence are:
 - Authority for professional decisions over the scope, content, and frequency of data compiled, analysed, or published.
 - Authority for selection and promotion of professional, technical, and operational staff.
 - Recognition by policy officials outside the statistical agency of its authority to release statistical information without prior clearance.
 - Authority for the chief statistician and qualified staff to speak about the agency's statistics before the Government and the public bodies.
 - Adherence to predetermined schedules in public release of important economic or other indicator data to prevent even the appearance of manipulation of release dates for political purposes.

- Maintenance of a clear distinction between the release of statistical information and policy interpretations of such information by the senior members of the Government.
 - Dissemination policies that foster regular, frequent release of major findings from and agency's statistical programmes to the public via the media, the Internet, and other means.
8. In 2000 the United States National Research Council in writing the Principles and Practices for a Federal Statistical Agency[7], recognized as fundamental goals of a statistical system the following:
- to protect confidentiality of responses
 - to minimize the burden of the people who provide the responses
 - to assure accuracy which requires proper concern for consistency across geographic areas and across the time, as well as statistical measures of errors in the data;
 - to assure timeliness which requires concern for issuing data as frequently as is needed to reflect important changes in what is being studied, as well as disseminating data as soon as practicable after they are collected;
 - to assure relevance which requires concern for improving data that help users meet their current needs for decision making and analysis, as well as anticipating future data needs;
 - to establish credibility which requires concern for both the reality and appearance of impartiality, and of independence from political control.
9. If a statistical agency operates from a strong position of independence, then how are its objectives and priorities fixed? The answer is that its objectives are fixed by law,[8] and its priorities must be decided by the chief statistician. The objectives are often seemingly very simple. For example, the law governing the Canadian statistical agency states: "...there shall be a bureau...the duties of which shall be to collect, abstract, compile, and publish statistical information relative to the commercial, industrial, social, economic and general activities and condition of the people...". [9] However, in its Strategic Overview,[10] the Canadian chief statistician states that the agency's medium-term priorities are provincial statistics, the service sector, science and technology, etc. The former describes the agency's accountability; the latter is the chief statistician's best interpretation of what the agency should do in the medium-term in light of perceived demand and the conditions necessary to meet it.
10. A statistical agency is a service agency, so its independence is related to methods and results, not to ultimate objectives. For this reason, we begin the discussion of organizational matters with the topic of relevance[11]. There is no question that the products of a statistical agency must be national in scope - that is to say, they must apply to all sectors of a nation's society and economy. But what does relevance mean? And what are the constraints, both physical and psychological, that limit any attempt to be "relevant"?

1.3. Relevance

11. Statistical agencies should continually look to improve their data systems to provide information that is accurate, timely, and relevant for changing public policy needs. A problem is, however, that policy interests may change at a faster pace than a statistical system can adapt. It takes little time for a

concern to emerge; first as curiosity, next as a subject of discussion, and lastly as a matter of substantial importance to policy makers. The question of whether there was a "new economy," not accounted for by conventional statisticians, first surfaced in the early nineties in the press and in popular literature. Within two or three years, this issue became a political priority in a number of advanced countries, and eventually called into question whether statisticians had correctly measured the GDP of their respective countries. If this concern had justified the creation of a new research programme, leading to the possible replacement of the current system of economic accounts and supporting basic data, it would have taken years if not decades for such a programme to yield useful measurements.

12. Another example concerns the service sector. It took two to three years for the issue of the service sector - its configuration, productivity, and quality of jobs it offered to become a serious political concern. But it took over a decade to formulate, accept, and institute the basic international classifications required to collect service sector data. Indeed, as late as the end of the nineties, most statistical agencies were still experimenting with operational frameworks that would enable them to deal in a meaningful way with the service sector.
13. From these two examples it follows that recognizing a problem takes far less time than deploying the necessary means to measure its extent, and making the measurement internationally comparable. Given this disparity, in a world of rapidly shifting priorities, a statistical agency striving to be instantly relevant could become systematically irrelevant in the sense of dealing with matters that once were at the top of the policy agenda but are no longer of such great importance.
14. There is little point in attempting to deal with concerns perceived as transient. By the time a programme devised to deal with them is implemented, the policy agenda will have changed several times over. In fact, when examining priority options, the statistical agency will have to sort out transient from more permanent concerns.
15. Once a priority is determined, it is difficult for a statistical agency to modify it as fast as policy agenda concerns appear to change. This is why it is crucial to exercise good judgment in setting priorities and to accurately foresee changes in policy direction. The chief statistician's planning involves four important elements:
 - devising programmes that are sufficiently general to adapt easily (after a fashion) to small changes in policy direction
 - building up a reserve and creating a state of preparedness such that unforeseen contingencies can be addressed without disturbing the regular functioning of the statistical agency[12]
 - developing human resource policies designed to make the staff of statistical agencies adaptable and redeployable so as to track effectively
 - changes in the agency's programmes sharing technical information and ideas with other statistical agencies. Such sharing can stimulate the development of innovative data collection, analysis, and dissemination methods
16. Ensuring these capabilities gives the statistical agency a great amount of leverage in its attempt to adapt to problems arising from shifts in priority.

17. In an environment of social turbulence, answering to a government using statistical information for planning and allocating resources, the chief statistician is advised to keep some flexible and adoptive capability. Also, he/she should avoid overly detailed, very specific surveys, keeping in mind that policies may change unexpectedly, rendering such surveys of doubtful applicability. In addition, there is no substitute for gaining advance information on issues troubling policy makers themselves, so that the statistician is aware of impending changes in the priorities of the policy agenda. No matter how small an office, the chief statistician must spend a significant proportion of his/her time in the company of senior government officials in order to gain the necessary awareness of impending changes.
18. But it is not sufficient to engage only the head of the agency. Awareness has to extend to the entire agency and this is why a considerable amount of space is devoted to this topic particularly in Chapter 3.

1.4. Credibility

19. A special circumstance affects statistics: the results of the activities of statistical agencies must be replicable to be believable, but realistically the user cannot replicate them. This is why a statistical agency must work hard to bolster credibility, and why there is such extreme sensitivity to any attack on credibility or to notions of a loss of public faith in the reliability of a statistical agency's output.
20. Statistical agencies must be extremely rigorous with respect to the standards that inputs must meet, methods of processing, and derivation of results, and must instill in their staff an ethos of quality on a par with such rigorous high standards. In this way, the sense that what is produced is the result of quality inputs, as well as quality methods of production and control, is constantly reinforced.[13]
21. The need to inspire an ethos of quality, and to convince all users of the quality of adopted production processes, has a number of organizational consequences. For example, it is reassuring to users if periodically the methods adopted by a statistical agency are subject to an outside process of evaluation and the findings are made public and open to discussion. It is difficult to convey the notion of limited openness without giving the impression of patronizing the public. And yet, uncritical openness might end up having contrary effects to those expected. For example, no matter how high a quality involved in the compilation of the national accounts, there is an inevitable residue of estimation based on assumptions that may be plausible but are not necessarily backed by evidence. Conveying this bald fact to the public may give an impression of arbitrariness that in turn could bring the rest of the structure into disrepute. Any sophisticated analyst would know the limits to the effects of these assumptions in the light of the system of identities imposed by the accounting framework. How to convey this to the public in a manner that is not harmful is a matter for careful thought above all in an environment where open inspection of methods is actively encouraged.
22. The underlying issue in the discussion of credibility is how one part of the statistical system can obtain information from one preceding it in the production chain with complete faith that quality has not been compromised in

the process. For this to be assured, there must be a subtle combination of subjective elements in place. The spirit of quality shared by the staff of the agency must never falter, and methods of inspection and control, of checks and balances, powerful enough to detect, correct, and prevent future avoidable errors must always be exercised.

23. In discussing credibility, there is the matter of statisticians interacting with respondents and ensuring that they provide the best possible answers to the questions that statistical agencies put to them. "Best possible" means that the required information should be made available to the official statistical agency without distortion caused by fear of subsequent use or by failure to comprehend survey questions, and without reluctance due to the agency's perceived disrespect for the respondents' time and privacy.

1.5. Respondent policy

24. The objectives implied in the previous paragraph are easier to list than to achieve, and there is no single method to achieve them. All methods tried so far rely on a combination of four basic elements: legal instruments to force compliance or to dissuade disobedience; appeals to respondents' sense of morality to encourage cooperation; assurances that the information will not be misused; and increasingly incentives are being used in some countries.
25. An international survey of practices and opinions would likely reveal that the confidentiality of individual information is the greatest concern among respondents. Agencies that have not yet managed to persuade respondents that the information provided to a statistical agency is absolutely confidential cannot rely on the quality of the information they collect.
26. In all likelihood, most statistical agencies would agree that the power given them by law to solicit information is of little use unless all sectors of society are willing to cooperate. Those offices that have made a strenuous effort to convince respondents that the information they provide is valuable, and that the time taken to provide statistical information is respected and appreciated, tend to be the ones with the highest response rates. It should be clear that low response rates are as much of a flaw in statistical work as is carelessness in the editing and dissemination of numbers. P
27. Persuading respondents to part with information is a difficult task. (There is a detailed discussion of this matter in chapter 12). However, it may have a high rate of return in improving overall quality. In this connection, the national statistical office should be aware of the relationship between the marginal additional expense of improving cooperation and its impact on the overall quality of the resulting statistics. However, other factors must also be taken into consideration. For example, the rate of return on the marginal expense on improving editing might be higher than that on improving response rates.[14]
28. All offices must have a unit dedicated to interacting with respondents. That unit may be part of the office's field organization, or the matter may be of sufficient importance to justify a higher profile unit dealing exclusively with the matter of respondents policies. The objective of a respondents policy unit is to help raise response rates, and to ensure that respondents part with information willingly. The unit's staff must be equipped to answer questions about the use of the information, the care with which it is handled, and the

general attitude of their agency. They must avoid the appearance of harassment and of heavy-handedness in quoting from the law but must be fair and consistent in the way they treat businesses and households. If there is a perceived crisis in respondents' relations, the chief statistician is advised to raise the matter to his level by placing in charge someone who has his confidence and who reports to as high a level in the organization as possible. Reporting directly to the chief statistician may be a good way of showing reluctant respondents the seriousness with which the agency views the matter.

Conclusions

Statistical agencies are service organizations. Their reason for existing, growing, and making a visible contribution to the affairs of their government and society is rooted in their capacity to provide information for the solution of important issues. However, priorities can change more rapidly than the agency's capacity to modify its productive effort. For this reason, it is important that its senior officers have the intuition and contacts that allow them to detect serious problems and distinguish them from what may turn out to be no more than fads.

A strong position of independence is essential for a statistical organization to establish credibility among its users and to create a relationship of mutual respect and trust. Collecting, analysing, and disseminating statistical information should always be distinct from policy-making activities. The chief statistician should commit to impartiality when dealing with collection and release of information.

A statistical organization must assure the soundness of the statistical collection and compilation process, and its inner workings. For this soundness to be credible to the public, and inspiring to the staff of a statistical agency, a number of conditions are required:

- the process must be logically sound
- the machinery that produces it must be robust
- the descriptions of machinery and process must be open for inspection and the result of inspection amenable to public debate
- both process and machinery must have the capacity to grow and to adapt to new circumstances and a new environment

Unless a statistical agency is able to ensure that the information provided to it by respondents is absolutely confidential it will not be able to rely on the quality of information it collects and the credibility of the agency will be in danger.

- [5] United Nations Statistical Commission, Report on the Special Session (11-15 April 1994), Economic and Social Council, Official Records, 1994, Supplement 9. For more information see Appendix I or <http://www.un.org/Depts/unsd/statcom/1994docs/e1994.htm>.
- [6] This paragraph draws heavily from the "Principles and Practices for a Federal Statistical Agency, Second Edition", United States National Research Council, Committee on National Statistics, November 2000.
- [7] "Principles and Practices for a Federal Statistical Agency, Second Edition", United States National Research Council, Committee on National Statistics, November 2000.
- [8] See section 2.6 for a fuller discussion on the statistical law.
- [9] Statistics Act 1918 version. Today's formula does not differ. In the Framework

document of the UK's Office for National Statistics (ONS), the functions of the office are defined as "to collect economic and social statistics". Several countries - Australia, Israel, New Zealand, Pakistan, and South Africa have similar broad formulations of the scope of the office.

- [10] Statistics Canada, Strategic Overview, Ottawa 1989
- [11] Some authors believe the term "relevance" is misplaced because it is obvious. They would prefer if the matter of relevance were discussed under the heading "priorities".
- [12] The latest experience in a number of statistical agencies was to help find out the preparedness of the business sector to deal with the millennium bug in computer systems. Statistics Canada has kept in a state of preparedness a group of survey takers who can deal with a moderately difficult subject in a period of ninety days from start to finish, provided that the number of sampled businesses does not exceed some two thousand.
- [13] Some statistical agencies (for example, the Australian Bureau of Statistics, Statistics Canada and Statistics New Zealand) go so far as to place their Quality Guidelines on their web site or on their Intranet.
- [14] See Fellegi, I. P. and Sunter, A. B., (1973). "Balance Between Different Sources of Survey Errors" Bulletin of the International Statistical Institute, 39th Session of the ISI, Vienna.