

Statistical Organization

Criteria for Inter-Country Comparisons and Their Application to Canada

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Abstract: Literature on the subject of international comparisons of statistical agencies tends to emphasize their structural characteristics in terms of centralization and decentralization. This paper sets up a list of criteria and examines how the Canadian statistical system has performed using the criteria as standards. In particular it examines performance in terms of political interference with the system; the relationship between the Chief Statistician and the system's political masters; the agency's per-

formance in terms of securing resources and specialized staff. The conclusions are that comparisons through performance criteria may be more fruitful than the traditional approach and that events in Eastern Europe and Europe 1992 may require a greater emphasis on comparative studies of statistical agencies.

Key words: Statistical systems; performance criteria; centralization; decentralization.

1. Introduction

Periodically, in the context of general reviews of statistical agencies (Moser 1973; Ripert 1973) or as part of the advice provided to countries attempting to create or overhaul their statistical services (Fellegi 1978; Mathew 1973), the advantages and disadvantages of different organizations are compared. The promulgation of the Single Act for Europe may give rise to a new round of discussion, both because the relationship between European Community country offices and Eurostat (the statistical office of the European Community) might be re-examined and because it will be an opportunity to compare the organizational strengths

and weaknesses of various statistical systems. If this is the case, the organization or statistical systems in federal countries will be looked at with increased attention.

A further impetus may be given to the process of comparison and re-examination as the very recent developments in Eastern European countries call into question the adequacy of their statistical organizations, their relationships to government and to the public as well as their relationships to an emerging market economy. A nagging question is if there is going to be review and comparison of existing institutions, do we have an appropriate conceptual framework to make such comparisons productive and are we likely to come up with sound advice on how others should go about restructuring their statistical systems.

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There is another and perhaps more obvious reason why comparisons have been made in the past and why it is very likely that they will continue in the future. The purpose of statistical agencies is to provide government and the public with high quality and relevant statistics. Institutional and organizational arrangements can either encourage or inhibit reaching the ultimate objectives of statistical agencies. To the extent that some arrangements may be found to work better than others, comparisons could be useful and productive.

This paper starts out with the assumption that in spite of the existing literature on the subject (Norwood 1975; Duncan 1978; Goudswaard 1977), there is no criteria against which individual offices could examine their performance and recommend change if evidence suggested it was needed. And since performance criteria might be helpful in assisting national statistical offices as well as supra- and international agencies to engage in the process of review, the paper proposes such criteria and tests them by examining the performance of the Canadian statistical system in the last two decades. In doing so, there is a clear recognition that the criteria are not unique any more than the values they embody, although one would expect broad agreement about most of them. But more important than agreement on a list of criteria is the notion that this is a fruitful approach.

There are many difficulties in attempting to evaluate performance and particularly in comparing it with that of other countries. There is no general agreement about the role that statistical agencies fulfil vis-a-vis the public and the government; there is no agreement about the values that statistical agencies ought to promote and protect; nor is there general agreement about the ranking of values and objectives that cannot be achieved simultaneously. But there is some

likelihood that if international comparisons on the basis of performance criteria are to take place, many of these differences will become explicit and will help our understanding and ability to improve the organizational design.

2. Criteria of Performance

The criteria suggested are a mixture of objectives and features which avoid getting trapped by differences in the institutional setting of statistical agencies. The criteria are as institution-free as possible but inevitably some institutional residue remains. But since their application is relatively unambiguous and not too demanding in terms of research, they may be found useful for a first approximation to comparing the behaviour of different statistical agencies in different countries.

Consider the following *dramatis personae*:

- *The Chief Statistician*: A person, or the collective management of the statistical system, or a central coordinating body at the top of a statistical system.
- *The Minister*: The political head or heads of the statistical organization or organizations that make up the statistical system. The presumption is that the Minister is a Cabinet officer.
- *The Statistical System*: A collection of government agencies and offices, whose output is primarily statistical and whose legal basis designates them as producers of statistics bound by the usual rules governing the collection, compilation, and publication of statistics.

A number of relationships among these entities are described as answers to the following questions:

- Who is the Chief Statistician and how is the Chief Statistician appointed to or removed from office?

- How does the Chief Statistician interact with the rest of the government?
- How does the Chief Statistician interact with concerned members of the private sector (business, academic, and research institutions)?
- How does the Chief Statistician lead, manage, and coordinate the statistical system?
- What safeguards are there to ensure that there is no legislative or administrative threat to the confidentiality with which statistical agencies treat their records?
- How do respondents and users recognize the legitimacy of the complex of institutions that make up the statistical system?
- How does the statistical system convey to users the notion that its trade-mark ensures the quality of its output?
- How robust is the statistical system should its leadership fall into hands that are either politically contaminated or else are less administratively or professionally apt?
- How well has the statistical system fared in acquiring, developing, and keeping trained human resources?
- How do respondents react to the continuing burden imposed on them by the collection operations of the statistical system?

The following are not normative criteria. They are presented as statements of fact. Their purpose is to provide a yardstick against which to measure actual performance. The terms used are drawn from the setting of a statistical agency in a parliamentary democracy but could be modified to have wider applicability. Some, but by no means all, also apply to supra-national entities.

2.1. The Chief Statistician

- Supported by law and custom, the Chief Statistician is committed to the preservation of the integrity of the system s/he is called upon to lead, accountable to an elected official or body of officials, and perceived to have reached office by virtue of professional distinction.
- The appointment of the Chief Statistician is the result of an objective process of selection, as objective as the appointment of the government's chief scientific advisor or the head of any other public professional agency.
- The removal of the Chief Statistician from office is not tied to the fortunes of a particular party nor to the constitution of a new administration (which does not preclude elected representatives in government from formulating and carrying out policies regarding the organization of the statistical system and its relationship to the private sector).

2.2. The Chief Statistician and government

- The Chief Statistician has access to policy decision takers in order to gauge the direction of change in government priorities, to get first impressions of emerging policies, and to assess likely changes in information needs.
- The Chief Statistician is given access to decision takers in government in order to brief them on the interpretation of current figures so that statistical matters do not get in the way of policy analysis.
- The Chief Statistician is able, either directly or through the Minister, to discuss with Treasury the adequacy of resources in the light of expected programme deliveries.

- The Minister is sufficiently senior for his views, assurances, and requests to be given due weight by Cabinet, by the Opposition, and by media and yet not so senior as to be obliged to ignore statistical requirements because of more pressing commitments. Moreover, the Minister's other commitments are not incompatible in substance and appearance with the Government's statistical agenda (as, for example, if the Minister's portfolio includes regulation, law enforcement or tax collection).
- The relationship between the Minister and the Chief Statistician does not give rise in appearance or substance, to political interference with the compilation or release of statistics to the public.

2.3. The Chief Statistician and the Statistical System

- The Chief Statistician is sufficiently well informed to set priorities for alternative statistical activities and has the necessary authority and recognition of legitimacy to have those priorities accepted by all members of the statistical system. The authority to set priorities is backed up by the necessary facilities to coordinate the activities of the members of the statistical system.
- The Chief Statistician is in a position to modify, where necessary, the allocation of resources within the statistical system. This is almost a corollary of the previous consideration. The proper mechanisms to ensure effective coordination after the setting of priorities include the power to reallocate resources.
- The Chief Statistician is in a position to assure compliance of statistical outputs with accepted standards of measurement and norms of quality.

2.4. The Statistical System over time

- The Statistical System has the necessary means to gauge future requirements and the necessary checks and balances to prevent it from sacrificing unduly the continuity of its outputs for the sake of short-lived priorities.
- Since the usefulness of a statistical programme increases with the steady accumulation of data under stable conditions of collection and compilation, and since the development and institution of a statistical programme requires time, the Statistical System must be proactive in its response to requirements. At the same time, it must be capable of making judgements at the margin about the trade-off between relevance and the requirements of stability and continuity.
- Budgetary cycles operate in terms of one year; and political cycles – from election to re-election – in terms of four or five, on average. Statistical activities, however, do not adapt well to either one or the other calendar and in order to flourish require longer term guarantees than what can be provided as part of either cycle.
- There is a tacit agreement between the Treasury authorities and those of the statistical system which allows the latter a degree of operational certainty to launch multi-year activities.

2.5. The Statistical System: legitimacy and recognition

- There is a legal basis for the activities of the Statistical System vis-a-vis respondents. The legal basis fulfils two requirements: identification of the collector of statistics (including a clear statement that the collector is mandated to collect statistics, obliged to treat them in a con-

fidential manner and why this is the case) and a definition of the obligation placed on individuals, businesses, and institutions to assist the collector by providing information promptly and without bias. Whether the obligation is accompanied by a definition of sanction if there is no compliance is a delicate matter that will vary with the times and the institutional setting of the statistical system.

- Notwithstanding what the law has to say about obligation and sanction, the Statistical System cannot operate without universal recognition of its legitimacy and the consequent cooperation afforded by respondents. If there is a general recognition – no matter how diffuse at the level of the individual respondent – that government is entitled to collect relevant information about important social and economic issues through organs of the Statistical System, cooperation will be given. But the legal basis by itself can be no more than a necessary condition for orderly collection to take place. Of course, recognition of government's entitlement by itself is not enough. It is also necessary that the respondent believe that information is collected and handled in a thoroughly professional manner and that its confidentiality is protected by both law and security measures.
- Recognition and legitimacy operate at the level of users just as they do with respondents. If users question the credibility of the statistics put out by organs of the Statistical System and attempt to make their own judgements about what they consider the “true” state of affairs, the Statistical System will have failed in one of its most important duties. If, on the other hand, users behave as if the mere fact of having the Statistical Sys-

tem stamp its outputs with its trade mark of professionalism and objectivity, is sufficient to remove questions about data from public concern, an important objective will have been attained. This in no way exempts the Statistical System from informing users clearly and openly about the reliability of statistical outputs.

2.6. *The Statistical System in the eyes of the respondent: confidentiality*

- By and large a Statistical System cannot function effectively if it does not make confidentiality the hallmark of its dealings with respondents. (There are of course exceptions but these are not sufficiently numerous or widespread to remove the concern over confidentiality from the centre of statistical agency policies.) The following components of confidentiality are present: it is squarely defined in law as the way in which official statistical agencies operate; the staff of a statistical agency treats the preservation of confidentiality as one of the pillars upon which their mission rests; and the responding public believes that the institutions concerned act as the law requires them to.
- The Chief Statistician has the necessary status and enjoys the necessary reputation not to be pressured by colleagues or political masters into stepping outside what is strictly permissible by law.

2.7. *The Statistical System and respondents: response burden*

- The Statistical System impresses respondents with the seriousness of its attempts not to impose undue burden, and with the thoughtfulness of its management of response burden. The management of response burden requires not only control of overall burden but also the

management of how burden imposed by statistical inquiries is distributed. The imaginative use of administrative registers as alternative sources of relevant information is made visible to respondents.

2.8. *The Statistical System: vulnerability to the wrong Chief Statistician*

- The Chief Statistician is the visible embodiment of the Statistical System, and must not violate or appear to violate principle. The Chief Statistician must not seek political favour without due regard for objectivity and impartiality.
- The influence of a Chief Statistician is disproportionate, particularly in times of crisis. Designing the institutions that comprise the Statistical System and the relations that bind them into one system so that they are only moderately vulnerable to personal quirk is of the same order of complexity as the design of any other part of public administration. Nonetheless, it is essential that for the correct functioning of the Statistical System, there be ways to neutralize personnel mismanagement at the very top.

2.9. *The Statistical System and its human resources*

- The Statistical System is flexible whenever there are changes or priorities involving the redeployment of resources. A dedicated, professionally trained body of statisticians makes this possible. The Statistical System has the necessary facilities to provide professional training to its staff in order to ensure that skills are maintained, and that these skills make the staff sufficiently versatile to adjust to significant redeployment needs.

3. **The Canadian Statistical System**

In the case of Canada there are statistical activities at two levels of government – federal and provincial. These activities coalesce in statistical offices, one federally financed, and several financed by provincial governments. But Canada opted many years ago for a particular division of roles. It assigned to the federal office a national role, that of leader, principal collector, compiler and coordinator of all statistical activities, federal and provincial. And correspondingly, it assigned to provincial offices a subordinate role. The allocation of roles and the mechanisms of coordination are models, if not to follow, at least to be aware of.

Statistics Canada has the responsibility to produce for all aggregates that matter, a set of consistent statistics – one for the country as a whole and one for each province. But Canadian provinces vary greatly in size, population, and environmental conditions. They range from one small province comparable in size and population to Luxembourg to two large ones, comparable in size to several times France and in combined population, to the Netherlands.

In the course of the First World War, Canada hit upon the idea of centralizing its statistical activities. Probably if it had not done so, today its statistical organization would be similar to that in the United States. Was it because mobilization for the war effort was relatively more taxing, started earlier than in the United States, and as a result the Canadian Cabinet became more conscious of the need for consistent figures, preferably from one single source? Or rather, was it because R.H. Coats, Canada's first Dominion Statistician foresaw as early as two years before hostilities broke out that the sensible pursuit of Canadian domestic affairs required the establishment of a centralized statistical agency?

For whichever reason, today in Canada

there is a highly centralized statistical agency responsible for the overwhelming majority of Government's statistical output. It conducts the Census of Population, compiles the National Accounts, and collects all business as well as social and institutional statistics. It even compiles the capital account of the Balance of Payments, and several other financial statistics, for many years a protected reserve of the Central Bank.

The Agency has as its head a Chief Statistician, a permanent official whose rank is equivalent to that of the Permanent Heads of other Government Departments. There is a Minister responsible for the Agency. Currently, the Minister in question has the portfolio of Industry, Science, and Technology. The Chief Statistician communicates to Parliament via the Minister responsible but is answerable to the Secretary to Cabinet who is the titular head of the Permanent Civil Service.

Statistics Canada is by any measure a large agency. It consumes the equivalent of some five thousand man-years and its budget is about 1 to 2 per cent of the Federal (central) Government's operating budget (i.e., net of programme expenses). The Agency's legal basis is the Statistics Act, first promulgated at the end of World War I and updated in 1971. The Act recognizes the Agency's role as leader and coordinator of all official statistical activities in Canada which implies that even though the Agency is federally financed and mandated, its role is national.

4. Performance of the Canadian Statistical System

The ensuing paragraphs attempt to describe in a selective fashion how institutions in Canada have performed over time. The purpose of the summary is to constitute a basis of comparison with other statistical

systems. The sections are organized as follows:

- those dealing with the appointment of the Chief Statistician, access to Government circles and relations to the Minister Responsible correspond to the criteria dealing with the Chief Statistician and the Chief Statistician and Government;
- the sections on priority setting, allocation of resources, and advisory bodies deal with the issues raised in connection with the Chief Statistician and the Statistical System and the Statistical System over Time;
- response burden and avoiding duplication and a section on the professional competence of staff correspond respectively to response burden and human resources; and
- the issues raised by the criteria on legitimacy and recognition, confidentiality, and vulnerability to an inept Chief Statistician are dealt with summarily in a final section.

Of course, the purpose of reviewing the performance of the Canadian statistical system is not so much to be exhaustive as to contribute towards a possible inter-country series of comparisons.

4.1. Appointment of Chief Statistician

Over a period of seventy years, Canada has had nine Chief Statisticians including the incumbent. One was an interim appointment for less than one year and is probably the only one who was appointed for administrative reasons rather than professional standing or reputation. Of the remaining eight, four spent most of their careers within the Statistical Agency; two were not part of it but were career civil servants when appointed; and two were outsiders (or

almost) to the Public Service at the time of appointment.

Four Chief Statisticians left office when they chose to retire from the career; one died while in office; and three left to take up other positions with or in one case outside the Public Service. No departure was related to a change in Government or in Minister responsible.

There is no evidence that the Government would question the need to have as Chief Statistician a reputable professional. There is also no evidence that the Government has ever attempted to remove a Chief Statistician on political grounds.

4.2. The Chief Statistician's access to government circles

The Chief Statistician does not have access to Cabinet nor is it a custom to request a briefing at Cabinet or Cabinet committee meetings. Although written briefings are provided regularly there is no current tradition of briefing orally the Minister on the significance of the latest key figures although such a tradition existed some thirty years ago.

Access to other government departments is through officials, formally or informally. Informally, Permanent Heads get together for a weekly breakfast in the course of which they are informed of government developments by the Secretary to Cabinet. There are a number of additional occasions, although less frequent, in which the Chief Statistician joins the group of Permanent Heads for briefings or strategic discussions.

Currently, the Chief Statistician is an accepted member of the informal club of Permanent Secretaries. In addition to the weekly meetings and to the less frequent retreats, the Chief Statistician maintains a flow of correspondence with his colleagues designed partly to bring to their attention important findings through the release

of current statistics. Not only do these communications act as a reminder of the value and scope of the Statistical System but they reinforce the ties with Permanent Heads and help consider the Statistical System explicitly as a partner in any policy initiative in which the provision of information is either an essential ingredient or a natural outcome.

Formally, the statistical agency maintains a complex network of inter-departmental committees designed to respond, collaborate, explain and generally maintain the flow of information to users within Government.

Statistics Canada is probably not as close to government departments as would be the case with a decentralized system. Contacts, although numerous, tend to be mostly formal; there are many instances where other departments overlook the need to make explicit allowances for statistical requirements. But there are very few instances where other departments undertake a significant statistical initiative on their own.

Were Statistics Canada to be fragmented, and its various components attached to different departments, it is very likely that at least in the short term some or even many of those departments would be better served in terms of the relevance and timeliness of the information provided to them. It is less likely that in the long term, such departments could sustain the infra-structure and necessary degree of professionalism to keep their statistical satellites in working order. But it is equally likely that given its stance and network of contacts, Statistics Canada as it is currently organized is in a better position to meet the requirements of its many constituencies. It is at least difficult to imagine how an alternative organization (which is not the same as a more sensitive organization) could have performed in as cost effective a manner.

4.3. *The Chief Statistician and the Minister responsible*

Since the early sixties, the Chief Statistician has reported directly to the Minister responsible. Previously, reporting was through the Permanent Head of the Ministry of Industry and Trade. As an Agency Head, the Chief Statistician appears annually before a Parliamentary Committee in connection with his budgetary estimates. Although formally entitled, the Minister responsible usually does not accompany the Chief Statistician.

For a while, the Chief Statistician reported to the Minister in charge of Federal Government procurement. The grounds for this somewhat unusual arrangement were that as a central statistical agency, Statistics Canada should not be seen to favour an economic rather than a social portfolio. Procurement as a service portfolio, was chosen as the guarantor of neutrality.

Actually, there was no clear evidence that reporting through one of the economic ministries (other than the Ministry of Finance) was sufficient to bias Statistics Canada's internal allocation of resources. For this reason, recently, it was judged preferable to have as Minister responsible one of the stakeholders in the Agency's output.

Over time, there has been no evidence of any serious attempt to interfere politically with the Agency's role as impartial and objective recorder of facts. The arm's length relationship between Minister and Chief Statistician is well understood although it is inevitable that each new Minister should test it at the boundary.

The link to the Minister is not the only one between Chief Statistician and Government. The indirect link through the Secretary to Cabinet has probably contributed as much as any to preserve the Chief Statistician's and the statistical system's special status vis-a-vis government's current concerns. Over time, Canada's Secretaries to

Cabinet have brought with them a sober appraisal of the role of statistical information in the management of governmental affairs and the need to keep the producers of such information free of political interference. It is fair to speculate that these officials would have lent their enormous influence in any conflict that threatened the statistical agency's objectivity.

One test of this influence was provided when the Canadian statistical system was exempted from free access to its confidential records by a newly established government intelligence agency which otherwise gained unrestricted access to all government files.

4.4. *Priority setting*

Few tasks are as difficult for the Chief Statistician as the setting of priorities. The difficulty can be dimly appreciated by imagining a world in which the consumers are only partly known, many of them do not reveal their preferences by purchase, and not all can react to marginal changes in the goods and services delivered with equal force or persuasiveness. Moreover, whereas all consumers must be treated as equal, there not being a scheme to order them, there is a tacit understanding that some among them must be given more attention and a greater say in ultimate choices than others.

In spite of these difficulties, the record of Statistics Canada is good. There is no evidence that more attention is paid to economic statistics at the expense of data on more purely social matters and there is no evidence that within economic statistics there are sectors that are out of line in terms of the intrinsic importance of the sector. For the high technology driven services, there are comparatively few resources allocated, but this has more to do with the general state of knowledge about the industry than with a deliberate wish to withhold resources.

There may have been a time when the

emphasis was unduly on economic statistics although from an early stage labour market statistics and household surveys occupied a central place in the Agency's concerns. Moreover, through the obligation to carry out population censuses, quinquennially for the last twenty years, the importance of demographic and social statistics was asserted.

4.5. Allocation of resources: background

The allocation of resources is conducted in three ways: through reassigning resources internal to the Agency; through direct applications to Treasury for supplementary resources; and through direct funding by users of special programmes.

The question of securing resources and the allocation thereof is obviously a most important test of the efficacy of a particular organizational arrangement. Judged by performance over its entire existence Statistics Canada did well, probably better than the average for the Public Service. Judged by its performance over the last fifteen or so years, the Agency did less well and probably has had to contract more than the average government department.

This is important because there was neither a reduction in mandate nor a perceptible loss of interest in the kind of information produced by the Government's Statistical Agency. This last point might be questioned insofar as a previous government hesitated before approving the eighties' mid-decade Census of Population and only did so on condition that the Agency's budget absorb the cost of conducting the Census over a period of five years.

But this incident was more in the nature of a historical freak. Statistics Canada had its "time of troubles" marked by indifferent leadership, indecision as to the right course of action, and a poor image in the minds of

media and the opposition political party alike. When the latter was called upon to form a government and wished to institute severe controls on public expenditure, Statistics Canada was a natural and tempting target.

4.6. Allocation of resources: current situation

Every year as part of its annual planning, Statistics Canada, in addition to facing up to its commitments to reduce its budget and work force, moves some three to four per cent of its total resources from one set of priorities to another. In addition, it reckons on some eight per cent of its total budget to come from the sale of goods and services directly to users. The income from these sales must be handled in a way such that the programme of the Agency is not permanently distorted. To do so, Statistics Canada's size and capacity to coordinate all statistical activities are important contributing factors.

The ability to move resources from less important to more important objectives is comparatively new. During Statistics Canada's period of fast growth, internal allocation of newly secured resources was roughly proportional to the size of the receiving programme. But the Agency has had to take a much more prudent stance as its numbers shrink and rather than engage in proportional reduction, it has developed a sophisticated planning process that cushions priority programmes from the massive reductions applied to the Agency as a whole. To institute a comparable planning and reassignment capacity in a decentralized system would have been more difficult.

Statistics Canada's achievement in reducing resources fast without any significant effect on its programme is due to at least two other factors both inextricably bound up

with its size. The first had to do with economies of scale. The larger the scale of operations, the greater the range over which variable resources can be made to increase or decrease without visible effects on output. The second factor had to do with the opportunities to use more intensively and more effectively the agency's enormous infrastructure again an option only open to large scale statistical institutions.

4.7. Advisory bodies

In addition to its network of inter-departmental committees, Statistics Canada has set up an equally large network of advisory committees, each on a special aspect of the Agency's programme. The membership of these Advisory bodies is drawn from different sources: public sector, universities, research institutions, industry, media, etc. They have a multiple role: to advise the Chief Statistician on desirable programme changes; to warn him about the effects of possible programme cuts; and to act as sounding boards for innovative surveys or survey practices.

The network of advisory committees is capped by a National Statistics Council whose members are appointed by the Minister. It has the same functions as the committees but its scope is agency-wide. It also has the necessary standing to communicate to government, through the Minister responsible, its views on the hard choices faced by the Agency.

In the course of periods of fiscal restraint, statistical agencies must grapple with the assignment of priorities to different programmes and at times, with the prospect of having to cut programme elements. In the recent past, Statistics Canada has come to depend – for budget protection – on charging users for the provision of special products and services.

All statistical agencies are called upon

to make very difficult choices among their economic, social and institutional programmes on top of choices within each of those programmes. Obviously, the political risks of these choices increase as they affect programmes that serve very different constituencies. In such situations, the value of advisory bodies is that they bring a balanced opinion to bear; and they are perceived as objective by a public to whom these choices must be communicated. They can also provide important assistance in balancing the requirements of continuity against the need to be relevant.

It is not clear whether in such situations having several statistical agencies, each with its well-defined major client Department, is a better way of handling priorities and potential budget cuts in a balanced way. However, in a medium-size country such as Canada, securing a representative advisory body with members of high standing is obviously easier if there is only the one than if the government's Statistical System is fragmented.

4.8. Avoiding duplication and response burden

The Chief Statistician is urged by sections of the Statistics Act to coordinate, lead, and avoid duplication. There are a number of special provisions designed to allow the Statistical Agency to share individual information with those provincial statistical agencies which have comparable protection of confidential records to that enjoyed by Statistics Canada. The purpose is to maximize the cost effectiveness of the Statistical Agency's collection vehicles and so deter other agencies from embarking upon unnecessary collection.

The cost advantages of centralization are very considerable. So much so, that there is a real barrier to entry by private business into any of the markets served by a central

statistical agency simply because they cannot be as cost effective in activities other than secondary dissemination. Statistics Canada realized its own cost effectiveness when it unsuccessfully attempted to contract out to the private sector a number of its intermediate activities.

Statistics Canada has been entrusted with the responsibility of keeping a register of all Federal data holdings and of using this register as a means to avoid unnecessary duplication of collection and mismanagement of response burden. Moreover, the fact that the Agency disposes of a central business register, has made it possible to record the form in which burden is distributed. Finally, the Agency's access to administrative records, and in particular to tax records, has allowed it to engage in wholesale replacement of survey questionnaires by the corresponding tax returns. It is doubtful whether a less centralized organization would have allowed Statistics Canada to play such a central role. Nor is it likely that the business list could have played such a key role in managing burden.

Statistics Canada succeeded in reducing overall response burden on business by over one-half in less than ten years. Small businesses were the prime beneficiaries of the reductions as theirs was somewhat higher than 60 per cent. The Agency managed to reach these levels of reduction by using a wide range of approaches but, of course, chief among them was the systematic substitution of administrative records for survey derived records.

If a relationship could be established between the investment required to attain a given level of response to surveys and the Agency's efforts to manage its respondent relations, such a relationship would probably come out as strong and positive. In this sense, a more decentralized set of statistical

institutions might have required more resources to attain the same levels of response.

4.9. Professional competence of staff

As far as the professional standing of the staff in the post-war period, Statistics Canada has probably performed as well as the average Department in the Federal Public Service. In fact, because of the greater dedication of its administrators and professionals, it is likely that today the Agency can rely on a more effective and more competent staff than the average government agency. Notwithstanding, with the exception of mathematical statisticians, a minority among its professional staff, the Agency has not yet succeeded in setting up formal professional standards for the bulk of its professionals although it has been trying to do so in the very recent past.

4.10 Other aspects of performance

Statistics Canada is firmly established as part of a complex of Canadian Federal government agencies. It owes its recognition to its uninterrupted history over the best part of the century; to a very broad range of concerns that translate into a continuous flow of information on every single issue of social or economic concern; to the pervasiveness of its censuses and surveys; and to the enormous support it gets from Canadian media in giving wide dissemination to the Agency's outputs.

Neither recognition nor legitimacy are serious issues in the minds of respondents or users. While there have been occasional challenges to the Agency's right to inquire, these have been driven by either a political point peculiar to a pressure group or else by concerns about privacy rather than the notion that the Agency is incompetent to survey or inept at compiling results. And

furthermore, none of the challenges have given rise to a movement that could impair Statistics Canada's effectiveness. For example, there is no record of a Statistics Canada survey or census that was not carried out because of concerted respondents' opposition.

Part of Statistics Canada's claim to legitimacy and most of the enviable relations the agency enjoys with respondents has to do with the Agency's unbroken record of dealing with respondents' records in a manner that protects their absolute confidentiality. The agency has been active in elevating this matter to the forefront of its concerns; it has sponsored scientific research into the mathematics and computing of disclosure safe methods of publishing statistics; and has firmly and successfully resisted attempts by other agencies in government to inquire into the contents of individual records.

5. Conclusions

Tinkering with organizational arrangements is a continuing activity, necessary because circumstances, demands, and capabilities change. It is not possible to accommodate these changes in the most effective manner with a frozen organization. So long as this is the case, the administrators of statistical agencies will likely attempt to borrow from their own past and from similar agencies those arrangements which have stood the test of time and appear to work effectively. They will also attempt to consult what literature there is on statistical organization and use it as an additional source of guidance.

As for emerging statistical agencies in Third World countries, the task of their Chief Statisticians is not so much to tinker at the margin as to put together viable systems that can produce reliable information. They can count less on their past experience but have to consider to a large extent the experience of other countries. In many

instances, the transfer of experience takes place through technical assistance which in turn may reflect the national experience of advisors rather than the result of a comparative study of what works and what does not in similar countries.

Whatever the case, there are reasons for comparisons and for creating a literature on the results of organizational experiments. But the value of comparisons and the evaluation of experiments requires criteria of performance. These have not been explicitly proposed in the literature on statistical organization in spite of their potential importance in practical applications. While there is no reason for there to be a unique list of criteria it would be helpful if there were a list from which relevant criteria could be selected.

The criteria that were developed above are a contribution to two activities: to draw up a list of generally acceptable criteria of performance and to suggest a way in which these can be tested in the light of a statistical agency's historical experience. The fruitfulness of the proposal can only be assessed if in the course of applying this list or a more refined version, statistical agencies will find that the range of options for organizational change increases and that there is better evidence to guide them in making organizational choices.

Obviously, criteria to be applied in international comparisons cannot be restricted to a single country. And for more countries to discuss, refine, and apply such criteria it is necessary to have a forum. Traditionally, discussions on statistical organization were sponsored by such bodies as the Statistical Commission of the United Nations or the Conference of European Statisticians of the Economic Commission for Europe. But the last of these discussions took place several years ago (United Nations 1973) and they have tended to be infrequent. With the

emergence of Eurostat as a major normative agency, in view of the changing role of national statistical offices vis-a-vis Eurostat, the setting up of statistical offices in Third World countries, and the economic and political changes in Eastern Europe, the time may be ripe for a review of practices and this paper suggests a more effective means of conducting such a review.

The practical ways in which different statistical systems can be compared require the gathering of basic data. Part of these data should be relatively simple to gather: budgetary data for statistical agencies and for central government; data on personnel turnover; highly qualified manpower in statistical agencies and in the rest of the civil service; and enumerations and descriptions of the advisory bodies which interact with the statistical agency. Other data are more difficult to put together particularly if there is no reliable history of the agency with a careful examination of its relationships to the rest of the administration and to political circles. To the extent that ex-Chief Statisticians can be interviewed their testimony should prove invaluable to ascertain the extent of political interference with the statistical system.

Of course, the requirement to produce these data in systematic fashion is not trivial and presupposes an initiative taken by a reputable professional body with international links or else by an international organization. Countries' interest in these comparisons will dictate the nature of future steps in this direction.

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