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The Potential for National Statistics to Transform Social Policy

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The Potential for National Statistics to Transform Social Policy

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The Potential for National Statistics to Transform Social Policy

Abstract

Statistics Canada is considering radical improvements to its system of national social statistics in order to strengthen the evidence base for traditional social research and analysis and, in addition, to enable a major shift towards evidence-driven social policies and programs. These new uses have the potential to allow social programs to be designed, administered, revised, and evaluated based on evidence of what has worked best for program recipients in similar circumstances in the past. These include applications that will assist in referring individuals to those social program interventions that are most likely to meet their own needs and aspirations, regardless of the department or order of government that offers those programs. They will allow policies to focus on higher order objectives such as improving quality of life at the level of individuals.

Existing social statistics are structured according to data sources, such as surveys, censuses or administrative records. The system being envisaged would be based on an integrated model of society that shows how individuals interact with social institutions, including social programs, over the course of their lives. The data will be drawn from multiple sources including from individuals and from many administrative files that can be linked for particular applications using techniques that protect privacy and confidentiality. Development will be gradual and uneven across the different domains of social policy. Success will rely heavily on new forms of partnership among the national statistical office, program departments and the research community.

The Potential for National Statistics to Transform Social Policy

Executive Summary

Statistics Canada is planning major changes for the system of national social statistics. Existing social statistics are still mainly organized in separate compartments based on the source of data, such as surveys, censuses and administrative records. The changes being considered involve a radical shift towards an integrated system based on data on how individuals interact with each other, and with social institutions and social programs, over the course of their lives. The data would be drawn from multiple sources including many administrative records as well as directly from individuals using existing and new surveys, censuses and, perhaps, newer technologies. These rich data sources could be linked for particular applications using technologies that protect privacy and confidentiality.

The new approach would greatly strengthen the base of evidence for existing social research and analysis. The new statistical evidence would be granular and timely. It would allow deeper analysis of issues related to equality and sustainability, including analysis at the level of small at-risk groups. The longitudinal nature of the data would allow new kinds of causal analysis. It could, for example, allow comparisons of the previous and subsequent characteristics and experiences of the participants in particular programs with those of non-participants with similar characteristics and in similar situations. This information would allow analysis of which programs are working best, for whom, and in what circumstances.

The paper provides examples of how the new ‘what is likely to work best’ evidence could, over time, result in major improvement in the effectiveness of social policies and the efficient administration of social programs. It shows how the eventual result would be a shift to evidence-driven, transparent, individual-driven policies and programs.

For example, the design of new programs could be greatly improved by the ability to use ‘what if’ modelling that would show the likely effects of using different program design characteristics or of possible future changes in the characteristics of the individuals being served. Existing programming could be continuously adapted based on current information about which program features working best for which clients. Some program evaluations already use ‘what is likely to work best’ analysis, but their power would be greatly improved by new statistics on a much wider range of factors that could affect program outcomes.

A particular powerful and visible program application will be ability to use ‘what is likely to work best’ evidence in referring individuals to the available social interventions that are most likely to meet their needs and aspirations. In many cases this kind of information could be provided directly to individual citizens over the internet. As well, a new kind of case management or referral function could emerge that would guide people, particularly those at risk, to mixes of interventions, including those provided different departments and jurisdictions.

More generally, the objective of social policies has always been to improve the quality of life for society as a whole and for specific individuals. However, it has not been possible to develop practical, empirically-based planning and accountability systems that could measure how programs affected quality of life for individual participants. For example, an individual’s quality of life will be affected by the combined effects of their participation in a range of social

programs from all orders of government as well as an even wider range of social factors unrelated to government programs. The evidence was not there to sort out the effect of any particular social program. Policies, in consequence, have often tended to reflect the needs and accountability requirements of those who administer the program, rather than those who use the program. The new statistics hold much potential to, over time, sort out the role of different programs in affecting the lives of participants and, hence, to enable the development of accountable, evidence-driven, people-centric policies and programs.

The paper describes why progress in the new directions will be gradual and uneven. An obvious factor is that a national statistical agency, acting by itself, has neither the mandate nor the knowledge to engage in direct program applications. Progress will depend heavily on the development of new partnership relationships among the statistical office, program departments and the research community. The paper provides examples.

The Potential for National Statistics to Transform Social Policy¹

Introduction

This report contains five major sections. The first section discusses measuring how social statistics programs affect quality of life. Then, this report provides examples of future uses of social statistics in programs and policy applications. The third section examines how traditional system-wide analysis will also be strengthened by social statistics. Lastly, this report discusses how partnerships will be essential and finally moves into the conclusion.

Statistics Canada is considering changes to its social statistics that could, over time, provide the evidence to radically improve the effectiveness of social policies and programs.

The purpose of this article is to explain to policy-makers, and to social policy analysts and researchers, how the social statistics of the future have the potential to shed new light on the causes of social well-being, how that information could in turn help transform social programs and policies, and why partnerships will be essential to realize the full potential of the new statistical products.

In addition to their use in policy-making and program administration, the multi-sourced, integrated system of social statistics that is being envisioned has the potential for payoffs in many other areas. These are summarized in Box 1 on page 3, along with background information about the new directions being considered by Statistics Canada.

Measuring how Programs Affect the Quality of Life

Existing social statistics are based on particular data sources such as surveys, censuses, and administrative records. The new developments being considered by Statistics Canada will draw on data from multiple sources to better reflect societal interactions in a wide range of social domains. These include health, education, labour markets, income, security, and other domains that contribute to a high quality of life. The new data sources include a more flexible suite of surveys, more detailed information drawn from administrative records, and potential new sources based

The data needed to understand how programs affect quality of life

The new capacity for measuring the determinants of a better quality of life for individuals results from the collection of linkable longitudinal microdata.

- *Microdata* are simply the various pieces of information about a particular individual or a particular program that are collected from the individual or from an administrative data file.
- *Longitudinal* microdata describe the characteristics of the same individual at different points in time.
- The adjective 'linkable', rather than 'linked', refers to the use of privacy-protecting statistical techniques that eliminate the need to create a master file that contains linked data about particular individuals. It also refers to the need for consistent standard definitions of all the data in the system, a prerequisite for quality when combining data from various sources.

¹ Peter Hicks is a social policy advisor who, in 2020 and 2021, helped Statistics Canada develop its strategic plans for future directions in social statistics. This article, however, represents his own views, which may not necessarily reflect the views of Statistics Canada. The authors thanks Michael Wolfson and an anonymous referee for useful comments. Email: peterhicks@sympatico.ca

on social media and related technologies. The sidebar provides a technical description of the data that will be collected.

The microdata referred to in the sidebar include:

- Characteristics that contribute to an individual's quality of life including income, wealth, skills, health, safety, social contacts, and perceived well-being.
- The characteristics of tax provisions and social programs, including the nature of the benefits that are delivered and the cost of providing them.

The longitudinal nature of the data holds the potential to enable the kind of causal analysis that was formerly limited to independently-designed experiments, trials and evaluations that used control or comparison group techniques. That is, the future statistical system could allow comparisons of the previous and subsequent characteristics and experiences of the participants in particular programs with those of non-participants with similar characteristics and in similar situations. This information would allow analysis of which programs are working best, for whom, and in what circumstances.

Causal analysis based on longitudinal microdata is already in use in related applications. For example, Employment and Social Development Canada has developed techniques that use data from multiple sources to infer the impact of adult training and other employability interventions on the subsequent employment and income of those who participated in those programs, as well as their subsequent use of income security programs. This information has been used in referring clients to available interventions and in sophisticated evaluations of the provincial and territorial programs that deliver these services.

Through tools such as its Social Policy Simulation Database and Model (SPSD/M), Statistics Canada already provides users with the statistical capacity to examine the effects of a variety of income support programs. These include refundable tax credits and pensions whose outcomes can be measured in terms of changes in income such as reducing poverty, maintaining living standards or reducing income inequality. The new capacity would, over time, allow a comparable examination of the effects of programs that provide services and of mixes of income support and services. It would allow an examination of the effects of programs on a broad range of quality-of-life outcomes, not only income.

The use of the conditional tense throughout this article reflects three important caveats about future directions.

- First, and obviously, are the inevitable risks in attempting to predict what will happen in an uncertain future. The pace of change in social statistics is particularly striking as is illustrated by recent developments such as the use of waste water as a source of health statistics, the use of web-scraping techniques for statistical purposes, the widespread use of personal monitoring devices which have much potential as a source of future statistics, and the increasingly sophisticated techniques being used in big data analysis.
- Second, Statistics Canada is, justifiably, cautious in moving in directions that, if not managed carefully, could be seen to be intrusive and that might erode trust in the statistical system. Statistics Canada is using world-leading techniques to assess the social acceptability of statistical initiatives. It is referred to as the *Necessity and Proportionality Framework* and is designed to protect privacy and confidentiality, provide transparency and to balance issues related to response burden and the importance of the statistics that

are produced. The use of this framework means that progress on some fronts may be slower than that suggested by analysis based only on technological considerations and that some initiatives may not advance at all if there are concerns about their social acceptability.

Box 1. Future Statistical Directions

The Statistics Canada initiative is described in two technical reports which are found on their website:

- The [System of National Quality-Of-Life Statistics: Future Directions](#) which outlines the rationale for the approach and describes the features of the proposed system as they might look some five to ten years in the future. It describes the changes that need to take place in the inputs to the system (the many new sources of data that will be used), the processes used to analyse the vast amount of new data in ways that protect privacy, the new statistical products that need to be available, and the new uses of those data products, including direct uses by citizens.
- The [System of National Quality-Of-Life Statistics: Conceptual Framework](#) which provides historical background to the proposed approach and describes standard ways of describing inputs to the new system (individual data items from multiple sources) and how they are consistently used to produce outputs (indicators, dashboards, supporting tables and microdata files).

The potential power of a multi-source system

The current article describes the payoffs of the shift to a multiple-source, more integrated, statistical system in providing new kinds of causal evidence to support policy-making. The two reports above describe additional payoffs from such a shift:

- Information about a much wider range of social topics can be produced, with the results becoming available quickly and at a fine level of detail.
- Consistently-defined and partially-overlapping microdata gathered from many sources enable the statistical system to create reassuringly strong quality control mechanisms, along the lines of double-entry bookkeeping systems.
- Powerful new statistical products, including tables and dashboards of indicators, can be tailor-made to meet a wide range of policy and program agendas.
- Linkable microdata from multiple sources allow for the

addition of new kinds of data that explore even more dimensions of the quality of life in a way that can be integrated with existing data. An example would be data obtained from a sample of individuals who volunteered to provide information collected using personal monitoring devices, on the proviso that this information would never be made public. These could gather detailed information about health status, mobility, stress, and social contacts.

Current stage of development

Some of the features of the new system are already in place:

- Statistics Canada has many linkable databases drawn from different administrative and survey sources that describe the characteristics of individuals.
- Several techniques are used, and more are being developed, to protect privacy when information is gathered from various sources, including stripping out individual identifiers, data masking and the creation of synthetic individuals.
- Data from tax files is used to supplement information collected from individuals on surveys and censuses. Crowd-sourcing and web-scraping have been used as data sources.
- A strong capacity has been developed for modelling (SPSD/M) the impacts of major tax provisions and spending programs that determine disposable incomes of individuals, without providing personal information about any particular individual.
- A more flexible household survey capacity has been developed that provides new information quickly.
- Data describing small, and often vulnerable, population groups is becoming increasingly available through what is called the Disaggregated Data Action Plan.
- A Quality of Life Hub can now be accessed on the Statistics Canada website that, in its current version, contains key indicators of social well-being and that will, in the future, provide additional data and ways of visualizing the data.

- Third, in many areas, progress will depend on the support of other organizations that may have competing goals. This is particularly the case for social programs which are, in many cases, delivered by the provinces and territories. Arrangements for the sharing and

use of statistical evidence in these areas have typically been shaped by broader jurisdictional as well as by data considerations. The need for new partnership arrangements is discussed later in this article.

Examples of Future uses in Program and Policy Applications

This section of the article describes the program-related uses of the social statistics that could become available in the future, including uses by governments, by non-governmental agencies that deliver social services, and by the individuals who benefit from these programs. Statistical information about likely impacts can be used as programs are designed and as they develop and are adjusted over time. That information can also allow policy objectives to be reframed in a way that is more closely aligned to their ultimate objective of enhancing quality of life.

Uses in Retrospective Evaluations

The comparison group techniques referred to above are already used in some evaluations of program effectiveness. However, there will be major additional benefits if national statistics also support the use of these techniques.

For example, evaluations can benefit from the availability of information about a wider range of factors that can affect outcomes. In the case of employability interventions, this could include information about changes in the local job markets where individuals live. As well, evaluators would have access not only to information about the particular program intervention in question, but also to information about the individual's participation in other interventions that could shape outcomes, both previous and subsequent to the program being evaluated.

Other benefits relate to timeliness, ease of use and support of multiple applications. Traditional evaluations involving comparison groups are often complex to design and conduct. They often require the use of multiple administrative files to examine how the future unfolds for both program participants and non-participants. They are typically undertaken infrequently, require a high level of expertise to conduct, and have results that are often only available some years after the interventions took place. Incorporating this capacity within the system of national statistics would allow the data to be produced quickly and inexpensively, including in a wide variety of related applications.

Matching People with Available Services

Access to many social programs is straightforward or automatic, as is the case with those that provide refundable tax credits, Old Age Security, or services such as elementary and secondary education. However, there is still a vast array of community, health, and other social services where enrolment is not automatic and that are accessed on a one-by-one basis by individuals who hear about them from various sources, often based on recommendations from people they know. Often eligibility criteria are complex with no simple way of determining which of the options that are theoretically open would best meet the needs of that individual.

In some cases, the organization offering the service provides a referral function to help people choose among the options they offer. Other agencies may have a gate-keeping, triage function

when the number of applicants exceeds the availability of the service being provided. In still another model, individuals are referred to a service by a third party such as a case manager, counsellor, or family doctor. And, of course, in many cases people do not access services because they do not know they exist.

Over time, all of the ways of accessing services could be supported by a new system of national social statistics. Using techniques similar to those used in the retrospective evaluations discussed above, the system could provide information to service delivery agencies and their clients on which of the available services are likely to obtain the best results for particular individuals based on what has worked best in similar circumstances in the past. The results would be made available over the internet to the referral agent and/or the individual applicant at the time when the actual choices were being made.

The new information is likely to reshape the way in which people are matched with programs:

- It would support the growth of an independent case management function where individuals with the greatest needs are referred to the service most likely to be effective (or, often, a combination of services and income supports) by counsellors who have access to evidence on what is likely to work best, regardless of who offers the service.
- The same information would allow individuals, acting on their own, to learn what services exist and which are likely to work best for them given their needs and interests.

In other words, most people would have direct access to better evidence when choosing services, thereby reducing the need for a separate referral function. On the other hand, those who need the most assistance would be supported by a more knowledgeable counsellors who can access a wider range of services, including practical limitations in accessing some services such as long waiting lists. As shown in the sidebar, these are changes that could, over time, result in deep improvements in the way in which governments support citizens in improving the quality of life in Canada.

It will be important to manage expectations about the use of this kind of technique for matching specific people with programs using predictive analytics. It will be useful in many applications

New referral tools could build public support and trust

If developed carefully, consistent with Statistics Canada's social acceptability criteria, the referral tools described in the text could build public support and trust for both the programs that use them and for the statistical system.

- They would result in programming that is both efficient and more responsive to the diverse needs of individual Canadians, including those who now feel alienated by standard, often-fragmented programs that do not reflect their individual circumstances.
- Individuals would, over time, have access to a quite new 'what is likely to work best' statistical information product that would help them in making life choices. People would be able to see the benefits of the statistical system in a much more direct way than is currently possible. This could, in turn, help improve response rates to surveys and encourage participation in newer forms of data collection such as the privacy-protected use of personal monitoring devices.
- People would have a greater voice in the design of the programs that affect them. The referral tools being discussed here should be developed through the use of pilot studies that would involve consultation with the individuals who participate in those pilots and with community and other groups who advocate on behalf of people who are not well served by existing siloed programming. Similarly, ongoing programming would evolve, as described later in the text, based on feedback loops that include input from people who participated in those programs.

but not all. Some potential applications may never even be tested if they fail to meet the criteria of social acceptability discussed earlier.

As well, the complexities and uncertainties that exist in the real world will often be too great to allow good quality ‘what is likely to work best’ calculations for particular individuals at particular points in time. However, even here, agencies that offer, for example, labour market information will be able to provide useful aggregated information obtained from the statistical system. In the case of the employability interventions referred to earlier, it would be possible for individuals to receive labour market information over the internet about job vacancies, future skill needs and available training options, as well as information about which kinds of job-seeking or training have, on average, worked best in the past. These averages will often be available for local areas and small population groupings that are of most direct interest to the individual in question.

Feedback Loops to Support Continuous Improvements in Program Design and Delivery

The statistical techniques used to help match specific people with specific services could also be used to provide program agencies with the information needed to improve the efficiency and effectiveness of program designs and to improve service quality. Feedback loops would provide program managers and designers with current information on what aspects of programs are working best for whom and at what cost. Program participants could also be asked to provide feedback.

Such feedback would support continuous evidence-driven incremental changes in program designs and delivery mechanisms. This would be in contrast to traditional arrangements where programs which often remain unchanged for lengthy periods of time. Today, when reform is clearly needed, entirely new programs are often introduced, often with benefits that are not fully integrated with programming provided by other agencies.

Future Program Designs and ‘What if’ Analysis

The statistical techniques used in the retrospective and current applications above could also be used to plan and design future programs given assumptions about future needs and circumstances. That is, there would be a capacity to undertake powerful ‘what if’ analysis to examine the effects of different program designs and different assumptions about future conditions. This would be similar to the existing microsimulation capacity that allows ‘what if’ analysis of income support programs. It would, of course, be more powerful in that it could be applied to service programming. It would also allow analysis of the effects on a range of higher-level outcomes, in addition to changes in income.

Particularly important, such applications have the potential to allow planning and design work to take account of the effects of potential changes on other related programming – helping break through the rigidities of existing program and jurisdictional silos.

As is the case with all the program applications discussed in this article, progress in developing statistical information about the combined effects of different programs options will be gradual. This is unfamiliar territory both for those who fund and manage existing programs and for analysts and researchers in different disciplines. Crossing entrenched program and jurisdictional

boundaries will require new partnership arrangements. As will be discussed later, the national statistical agency could play a strong role in developing these partnerships.

Policies Aimed at Higher Level Objectives

It is not only the design and delivery of programs that will be improved by a new approach to social statistics. The ability to measure the effects of programming on quality of life would also allow the underlying policies to be framed in terms of higher-level objectives, closer to the true purpose of those policies.

At least at the level of rhetoric, the social policy literature is clear on needed future directions. For example:

- Social interventions should support people in the diverse ways in which they develop their capacities and seek well-being over the course of life. For example, the literature often calls for a shift from disease-centred healthcare to people-centred health and wellness – or from curriculum-centred classroom education to student-centred learning.
- The interventions provided by different agencies and jurisdictions should be integrated and readily accessed in a way that respects human diversity and dignity. This is in contrast to much existing programming which has often been designed to provide accountability and efficiency within the various program silos – resulting in a system where it is often left to individuals to navigate a labyrinth of uncoordinated and overlapping income support and service programs.
- Planning, budgeting, and accountability arrangements should be transparent, incorporate the views of those who will be affected by the policy, and designed to show how programs contribute to the various dimensions of the quality of life.
 - This is in contrast to existing arrangements which are often limited to tracking costs and monitoring outputs (such as the number of participants served).
 - Existing performance measures are mainly limited to the economic, dollar-based, dimensions of quality of life and often ignore those dimensions related to health, skills, security, social contacts, and perceived well-being.
 - Current decision-making about policy directions and program designs is often felt to be opaque, without input from the individuals who are the intended beneficiaries.

There has been much reform effort over the decades to promote these newer directions. However, progress has been slow and many of the expectations surrounding past reforms have not been met. A basic problem has been that the underlying data have not been available to support planning, budgeting and accountability systems that reflect the higher-order goals that are real purpose of the policies in question.

The system of social statistics that is being proposed would provide detailed measures not only about the immediate costs and effects of programs but also about their longer-term effects on the quality of life of individual program recipients. It would enable comparisons of different programs based on their costs and longer-term outcomes. That is, it would enable the development of the planning, budgeting, and accountability regimes that are needed to support people-centred, integrated, evidence-driven social policies.

It will, of course, take time to develop the needed data. Progress is likely to be uneven across different social policy areas. It will require political will to develop ways of designing and delivering programs that transcend traditional boundaries.

Traditional System-Wide Analysis will also be Strengthened

In addition to the new program and policy applications discussed above, the future directions in social statistics that are being considered have the potential to strengthen the traditional work of national statistical offices in supporting the social analysis and research carried out by governments, interest groups, think tanks, and researchers. Researchers inside Statistics Canada can play a leading role in undertaking such analysis. For example, a 2022 Statistics Canada research report, [The impact of firm closures and job loss on participation in gig work: A causal analysis](#), uses the potential of longitudinal data drawn from multiple sources (in this case including census records) to carry out causal analysis.

In particular, the new statistics will support deeper and more integrated analysis of both equality and sustainability:

- A social statistics system based on linkable, longitudinal microdata is well suited to support analysis of the many forms of inequality that exist among individuals and the role of social programs in lessening (or reenforcing) those inequalities.
- Data showing the effects of social programs and institutions on the subsequent lives of individuals can also be used in analysis of different dimensions of sustainability such as the causes of change in levels of human, financial and social capital.
- Microdata will enable analysis at the level of small population groups and small geographic areas, better reflecting the diversity of the population.
- Linkable, longitudinal microdata will allow analysis that crosses traditional boundaries, for example showing how the health, educational, labour market and family dimensions of life are inter-related.

Partnership will be Essential

The proposed use of the statistical system to produce evidence about how social interventions affect quality of life is likely to result in a blurring of the mandates of the statistical office and of both program deliverers and the traditional analytic/research community.

For example, the traditional role of the national statistical office is to offer potential users a set of products, such as tables or ways of accessing microdata files, along with needed explanatory material. Users could apply those products as they saw fit, typically with minimal further input from the statistical agency. The future is likely to see more partnership arrangements where both the statistical office and the program organization, and researchers, work together in designing, testing and, in some cases, in the ongoing operation of applications that make use of the new statistical products that are being proposed.

Partnerships with Program Departments in all Jurisdictions

The potential for using statistical information in the program and policy applications discussed above requires consistently-defined information about the characteristics of programs and program participants and consistent ways of measuring outcomes.

The existing statistical system does a good job in supporting such consistent analysis of the income support programs and tax measures of all jurisdictions. The products, or benefits, of income support programs are easy to describe and measure. However, the benefits of service programs, such as those that provide education or social services, will need to be described in a consistent fashion and at a much finer level of detail than now exists.

Developing and collecting such consistent, detailed information about service programs can only be done in partnership with the agencies, mainly in provincial/territorial jurisdiction, which administer these programs. The value of pan-Canadian approaches to sharing administrative data about services has long been recognized. In many social areas, sharing arrangements already exist between Statistics Canada and the provinces and territories. There will, however, be large payoffs, as well as operational challenges, in developing new arrangements where administrative and other data can be directly used in improving the programs that supplied that data.

The nature of the partnership arrangements will depend on the application in question. For example, Box 2 describes the consideration that should be taken into account in developing partnerships to support ‘what is likely to work best’ referral applications.

Box 2. Partnership with Program Agencies in Referral Applications

Likely the most complex partnership arrangements will be with the program agencies (mainly in areas of provincial and territorial jurisdiction) that will use ‘what is likely to work best’ data in referring people to their services.

- The program department in question would, of course, continue to be responsible for the entire operation of that program. It has the mandate and budget for delivering the service or income support in question, for identifying what services are potentially available, for making actual referrals, for providing advice to clients, and for maintaining administrative data.
- However, the statistical office should also play an independent supporting role in the development of the practical referral tools. It has the mandate and capacity to maintain, process and protect much of the data used in making the ‘what is likely to work best’ calculations. These data will often be obtained from sensitive sources such as surveys, tax files and the administrative records of other departments or jurisdictions.
 - The statistical office will often be best placed to develop and explain the quality of these calculations and how they should be interpreted by users.
- In some cases, it might also be best placed to manage follow-up surveys with program participants, where it could be seen a neutral, trusted player.
- In all cases, it will want to highlight its independent role in ensuring the social acceptability of the statistical dimensions of the application, including protecting privacy and confidentiality.
- There will be a large overlap in the ‘what is likely to work best’ data and referral calculations used in social programs administered by different agencies. The direct involvement of the statistical agency can ensure the needed consistency and can assist in the efficient sharing of data and experience across a variety of applications in different agencies.
- Both the program and statistical agencies will also use the same micro databases and techniques in other applications within their mandates. These include, for example, evaluation and program design applications in program departments, and producing a range of aggregated social statistics in the case of the statistical agency.

A main message from Box 2 is that a single program or jurisdiction, acting in isolation, could not realize the full payoffs of the newly-available ‘what is likely to work best’ evidence described in

this article. The national statistical office, or its equivalent, must be directly involved. Only it has the expertise and authority to develop the needed socially-accepted statistical tools and to ensure that statistical evidence developed in one area can also be used in a wide range of other applications.

Partnerships with Researchers

In addition to partnerships with program organizations, it will be important to develop strong partnership arrangements with analysts and researchers in academia, think tanks, program departments, and international organizations to develop the statistical tools and processes that will be needed to fully realize the potential of the proposed new directions.

Box 3 describes two complex, longer-term examples. However, partnership is also needed on a range of more immediate tasks. For example, the background papers referred to in Box 1 show why shifting to a multisource system requires the development of standard, or ideal, definitions of all variables in the social statistic system – definitions that are based on a model of society, without any reference to the source of that data. In the case of existing data, this will largely be a mechanical exercise since it will be important to ensure the continuity of existing time series. However, the external research community, including those in different academic disciplines, should be involved in this process since the standard definitions chosen will influence the content of data that will be collected in the future.

Partnership arrangements with external research community can also be used to help address a key resource problem. This is the lack of staff with the skills needed to carry out the complex technical work associated with development and application of the new statistical tools. We are at a stage of development where users of the new analytic tools will need a set of skills that is similar to the skills needed to develop those tools. There would be high payoffs from partnerships that would result in sharing of existing expertise and increasing the supply of skilled analysts for the future.

Flexible approaches are possible

Establishing the partnership arrangements discussed here – and developing complex statistical tools such as those described in Box 3 – will be difficult and will take time. Fortunately, this work can be conducted gradually and flexibly. The speed of reform can be quite different in different areas of social statistics. In some areas, such as statistics related to income, or the assessment of employability programs referred to earlier, much of the development work has already taken place. In other applications, development will continue for many years, reflecting the priorities associated with the uses of the new data and the resources available to conduct the needed development work.

A system based on microdata is inherently flexible. It makes efficient use of whatever data are there, from all sources, including data that is limited to certain groups or geographic areas or reference periods. The same items of data can be classified in different ways depending on the intended use, both existing uses and new uses. A microdata system allows for trial-and-error learning where this is appropriate, including the use of pilot studies. It is consistent with different partnership arrangements.

And, as also described in Box 3, lessons can be learned from similarly difficult challenges that have been addressed in the past.

Box 3. Partnership in Developing Statistical Tools

The box describes two of the most complex statistical projects that will be needed over the coming years and shows why partnerships with the research, pan-Canadian and international communities will be needed for successful implementation.

Linking data about activities to measures of quality of life

There will be a new need to classify the detailed activities in people's lives in a way that allows analysis of the effects of those activities on different dimensions of the quality of life. For example, they would show how the various activities that take place during the course of a day or year add to, or subtract from, people's human capital (particularly their health and skills) and social capital.

The resulting system for classifying activities would provide a parallel to existing economic classifications that show how dollar transactions are linked to changes in an individual's financial capital and economic well-being.

Developing standard ways of linking activities to various forms of human and social capital would be most useful in social research generally, not only in policy applications. Accordingly, there could be high payoffs from strong partnerships with the broader research and academic communities and with international bodies in their development.

There is also a need for more frequent collection of high-quality information about these detailed individual activities. Part of the solution may be more frequent time use surveys. However, new approaches will likely also be needed, including exploring the use of personal monitoring devices to produce information related to physical activity, the location of activities, interactions with others, stress, and other health measures. Partnership with organizations who have had more experience in these applications could be useful.

Linking point-in-time and lifecourse data

A barrier to integrated social policy analysis is that:

- Most data sources provide information about the characteristics and activities of individuals or families/households at particular points in time.
- The jurisdictional boundaries of social policies are,

however, mainly organized around life-trajectories. Education policy deals with the time that individuals spend over life in learning settings. Labour market policy relates to life in employment. Health policy mainly deals with time spent in sickness or disability. In principle, those policies should be supported by data that takes lifecourse trajectories into account.

Classification systems need to be developed to show how point-in-time data can be consistently linked to the various lifecourse trajectories.

Consistent ways of coding microdata about people's activities and transactions to different trajectories in their lives could, over time, open up potentially important new forms of analysis. For example, it could help in examining how programs in different areas of social policy (e.g., health, education, security) and different programming instruments (such as income transfers, service provision and regulatory approaches) interact in their effects on quality of life of individuals over the course of their lives.

Again, these are complex topics that cross existing academic disciplines and policy silos and that have implications for international statistical standards and classifications.

However, there are precedents

The statistical challenges described above, and throughout the text, are unquestionably complex. However, it is also important to note that national social statistics systems have dealt with similarly complex problems in the past. Lessons can be learned from this past experience.

An example is the development and collection of highly-detailed, internationally-consistent measures literacy, numeracy, and other basic skills. This work was based on partnerships that included national statistical agencies, international bodies, program departments, independent researchers and, in Canada, the pan-Canadian organization, the Council of Ministers of Education, Canada.

Similarly complex systems have been developed in the health area for classifying diseases and health interventions, again involving partnerships that included national statistical agencies, international statistical bodies and, in Canada, the pan-Canadian organization, the Canadian Institute for Health Information.

Conclusion

The tradition function of national social statistics is to describe Canada's society and to support excellent social analysis and research. The message of this article is that the future directions being proposed can not only strengthen that traditional function but also can play an important, direct role in transforming social programs and policies. As consequence, changes in the

statistical system hold the potential to, over time, lead to significant, measurable improvements in the quality of life in Canada.

However, Statistics Canada has neither the mandate nor the resources, by itself, to realize this potential. Success will depend critically on the active support of partners in program agencies in all jurisdictions and in the research community. It will also depend on the support of the central agencies of government in fostering these partnerships and providing appropriate resources.

References

- Hicks, P. (2022, January 31). *The System of National Quality-of-Life Statistics: Future Directions*. Analytical Studies: Methods and References. Retrieved December 12, 2022, from <https://www150.statcan.gc.ca/n1/pub/11-633-x/11-633-x2021006-eng.htm>
- Hicks, P. (2022, June 1). *The System of National Quality-of-Life Statistics: Conceptual Framework*. Analytical Studies: Methods and References. Retrieved December 12, 2022, from <https://www150.statcan.gc.ca/n1/pub/11-633-x/11-633-x2022002-eng.htm>
- Jeon, S. H., & Ostrovsky, Y. (2022, September 27). *The impact of firm closures and job loss on participation in gig work: A causal analysis*. Analytical Studies Branch Research Paper Series. Retrieved December 12, 2022, from <https://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2022001-eng.htm>