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Seminar on “Evolution of National Statistical Systems”

Discussant of keynote address of Dennis Trewin

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Seminar on the evolution of National statistics

Abstract

I would suggest that the decade of the 90s brought about significant changes in the world of statistics. In particular it was the influence of the political landscape and rapid technological advancement that thrust demands onto the statistical systems in ways that have not been witnessed before, and these changes are likely to persevere in the future. However, what will sustain official statistics will be the ability of statisticians to transform them from systems of national statistics to national statistical systems. This will be the hallmark of our ability to adapt in this new order. If we do we may guarantee the prolongation of the human species of statisticians as useful and probably important beings in the new world of ideas and measurement. It requires leadership and statistical leadership to achieve this goal.

1. Introduction

On its sixtieth anniversary the United Nations Statistics Commission, has created an opportunity to reflect on the evolution of National Statistical Systems and to this effect the former head of the Australia Bureau of Statistics Dennis Trewin delivers the keynote presentation. This is a good choice. As South Africa, a late comer and participant in the statistics system of the world, I have been requested to be a discussant of his paper, I doubt if this is a good choice but I will try anyway.

I have found the paper by Trewin well researched. Although he has been modest in his opening remarks and drops frequent disclaimers on the adequacy of the paper and about how he would treat the topic at hand, I have come to a different conclusion. He attributes the limitations in the paper to the fact that it is drawn from idiosyncrasies and personal observations over forty years. I have come to a conclusion that the paper has been well thought through and reflects well what the issues have been in the past sixty years and are going to be in the future. Perhaps it is the richness of analysis including his closeness to the subject, and the appropriate use of idiosyncrasy and perhaps it is the clarity of documentation of his observations that makes his paper exceedingly rewarding. He has provided a sixty-year perspective on critical areas of the evolution of national statistical systems that is without parallel. He has not only given a historical account but he has also looked at forces at play and provided an analytical piece that enables us through think tools to possess a unique crystal-ball on what the future of national statistical systems might, or are beginning to, look like from now into the next sixty years. Finally he raises the critical issue of statistical leadership in an ever and rapidly changing world. He has been a deserving keynote speaker and has provided a classic on this occasion of the 60th anniversary of the United Nations Statistics Commission.

2. Organisation of the paper

My approach as a discussant will focus on five key issues that have or will influence the statistics system in the future. Firstly I would postulate what at the face of it what may sound polemical could well be profound. And this is the last sixty years have been marked by an **evolution** of the Systems of National Statistics rather than an evolution of National Statistical Systems. The second area of focus will be what might have been the driving force for the evolution of systems of national statistics. This account is

luminously narrated in Trewin's paper. What I will only do is to ask the question what and why in the future, specific forces are more likely to drive the **revolution** of national statistical systems. The third area of focus will be an attempt to analyse the ingredients that drive this revolution such as drawn from lessons in biological sciences, the advent of technology and democracy. The fourth area will be on statistics and convergence and therefore I will postulate that there is now an explicit need for national statistical systems, and this is in contradistinction to what were systems of national statistics. Finally I will allude to implications of this explicit requirement on strategy, practice, structure and more importantly statistical leadership and their further implications on both the statistics system of the globe and the global statistics system.

3. Does it matter? An evolution or a revolution

Does it matter if we refer to this seminar as the evolution of national statistical systems or evolution of systems of national statistics? Over the last forty five of the sixty years of statistical practice and experience, I would argue that the systems of statistics have evolved. It was only in the last decade and a half, that these systems have been confronted by major changes in how countries and the world conduct business that there has been a revolution thrust upon national offices of statistics. The impact of this new environment has led to a revolution imposing a transformation from a rather slow and additive evolving system of national statistics to a radically different conception, namely of national statistical systems. A revolution in statistics has begun and is intensifying.

From Trewin's paper, the analysis provides for an evolution that has been largely *laissez faire*. In the last sixty years participants in the system of statistics have been largely numbed by the insurmountable question of coordination. It was the crisis created by the immensity of the issue but also the by the technological possibilities of resolving it and the simultaneous demands of the new world of democracy and knowledge that notions of national statistical systems became common vocabulary, and recent legislative mandates put the national statistics systems as an important centrifugal force of the Statistics Act. This conception is more recent for the major part of the world except possibly for some of the Scandinavian and Nordic countries and possibly only at the conceptual level and not so in practice, for some Latin American countries and one African country.

3.1 Nordic and Scandinavian, South American and African experiences

To concretize this that I refer to as a revolution or evolution, let us explore fairly quickly experiences of the Nordic and Scandinavian countries as far as record keeping is concerned. I would also look at Brazil and Mexico in South America and Egypt in Africa in as far as naming convention is concerned and what it might imply for vision, strategy and leadership in statistics.

3.1.1 Has history transformed their systems?

The Nordic and Scandinavian countries have a long history of keeping administrative records and it might go without saying that in a world or country where all and every

transactional data are captured, analysed and disseminated for statistical purposes, a natural national statistical system exists. And this is what asymptotically the Nordic and Scandinavian countries signify and continue to achieve. Whether in their conscious being, the authorities and participants in the statistics system of these countries conceived this, particularly at the beginning of time, as a national statistical system would be interesting to research. This is so because the changes in their case might well have been very evolutionary given where they started from and may not suffer the shocks that the interface of politics and technological advancement might bring to statistical systems currently. Would we then suggest that a national statistics system might be defined as that which in the main has led, managed and maintained the practice of keeping all administrative records. In Sweden, the TV advert encouraging citizens to keep the record of divorced parties insists on finding out where next the parties are going to stay, emphasising the importance of a physical address. Is this feasible in countries that have as yet not adopted the culture and practice? Do surveys and other partial registration systems adequately equipped to resemble a national statistics system?

3.1.2 What is in a name?

The office of statistics in Brazil is referred to as the Institute of Geography and Statistics. This name or notion carries significant architectural design for a national statistics system. In the history of the development of Brazilian statistics, one finds that geography was at the heart of it and the then ruler needed to inform himself on the specificities of the geography of the nation for purposes of administration. Whilst geography was so obvious although not explicitly incorporated in the naming convention or practice of many statistical offices, what is even more futuristic in the Mexican case is the inclusion of informatics in the naming convention. This naming convention captured the convergence of geography, statistics and informatics as the key and critical subsystems for any national statistical system worth its salt.

In Egypt the name Central Agency for Public Mobilisation and Statistics may and should have general appeal amongst official statisticians. In particular the notion of public mobilization should resonate easily, for are statistical agencies not the biggest and representative institutions that mobilize the public at regular intervals. Whilst the history of this name is that the mobilization was for raising resources for war, the name should indeed still retain this general appeal in Egypt and in the community of statistical practitioners.

4. What drives measurement?

The need for measurement is driven by a variety of forces at historical epochs. In biblical times it was the need to know the number of men that could subscribe to war and knowing the tax base. The classical one we know was of Jesus of Nazareth who had to go to the place of his mother to be included in the count. In modern times it is differing interests but in the main is to know the beneficiaries and where would they benefit from. The 1885 scramble for Africa and the Treaty of Versailles of 1919 was about Colonial governments identifying beneficiaries as themselves Europe and their citizens and

sources of benefits the African continent. So measurement of the population on the continent was thus determined.

4.1 What was the driving force?

Trewin reinvented into a statistical historian in section 2.1 of his paper, captures succinctly the motive force behind the development of statistical frameworks that better demonstrated connection between different economic statistics. He further goes into the different survey instruments that would enable measurement and understanding of this new area of demand. Amongst these, the role played by Keynesian economics is of note. It spurred forward the new approach and consequently economic statistics occupied centre stage.

The approach in statistical analysis hitherto had been influenced by the writings of Adam Smith, Ricardo, and Karl Marx and later by Lenin. This was epitomized in a polarized world that defined and measured the world in terms of the relationship between labour and capital and who owns capital. Both the market economies and command economies required a macro economic framework within which to operate after the crisis of the 1940's. The Leontief input-output tables provided amenable economic deployment strategies important to the command and market economies equally, however for different reasons. Later Friedman entered the fray and monetary policy and inflation have become important, and those who can remember the Phillips curve on the relationship between employment and inflation will be amazed at how centre stage economics statistics has been and still is. In the 90s a sizeable number of countries have had their statistics offices measuring the consumer price index for purposes of inflation targeting. Since then to date these macro-economic models shape the agenda for statistics offices.

4.2 What will be the driving force in the future?

Trewin draws our attention to environmental statistics. In this area I would like to reflect on the thesis by Karl Marx and the contemporary debates then. The main thrust of discussions that led to the world polarized in two camps centred on our understanding and practice of the relationship between labour and capital and who owned these commanding heights. None of the debates focused on environment. Today environment would be as important to our socio-economic discourse as was labour and capital. Whilst in previous discourse we could identify who owned capital, as regards environment, it is co-owned by all of us, although we could have a disproportionate impact on it. The environment is going to affect us all rich and or poor.

Whether like the discourse on labour and capital, the discourse on environment would lead to a polarized world, is yet to be seen and it is for politicians and the public to determine. What is important however, is that the issue of environment is going to have a profound impact on measurement and social discourse and statisticians have to be alive to it and importantly so to be ahead of the measurement game. Otherwise the gains we have made in both economic and to some extent social statistics are going to be lost.

5. What are the ingredients of measurement?

I would not like to pretend that I can bring to the fore a sufficient number of measurement ingredients. My attempt is to isolate a few that are going to act as enablers and catalysts in the area of measurement and thereby provide context to the analysis by Trewin. These can work in combinations or individually, what could be important are the key lessons and or influences that are inferred out of them. These relate to biological sciences in relation to the usefulness of micro-data, technological advancement in relation to micro-data and access to information and democracy in relation to the public claims to rights, privileges, responsibilities and accountability. Action in concert across these three fronts are going to impose major challenges in the management and dispensing of responsibilities by statistical agencies.

5.1 Lessons from biological and medical science

Without any order of priority, lessons from biological and in particular medical sciences have demonstrated that major breakthroughs have been made in this field of study and practice through the robust application of micro-data. However fundamental principles for official statistics uphold the fundamental right to confidentiality and micro-data in the form now required runs the risk of actually violating or generating a perception of violation to confidentiality in the public space. The treatment of, heart disorders, cancer, HIV and AIDS and understanding cause and effect requires micro-data in order for anyone to track the impact of policies. Tunisia and Chile have successfully reduced poverty by a careful application of micro-data to those who are at the risk of poverty. By bringing a cocktail of services to those in need, they have reversed poverty in their respective countries and they have observed a definite movement towards a prosperous nation. How do policy departments interact with statistical agencies in the fight against poverty? How do you do the necessarily ethical? The separation of research from action? theory from practice? Ideas from interest? Knowledge institutions from government? Can statistical agencies manage in this complex environment? The questions of statistical ethics come to the fore. Trewin notes that, especially in the economic statistics environment, it would not take a genius to see which information is for which establishment under survey. An idiot should with a lot of ease identify such.

5.2 Technological advances

The advancement of technology has been useful on two fronts. First it has made anonimisation easier through the application of complex algorithms and increased the scope for access especially to users in the research environment. Technology has also advanced the ability of countries to broadcast data widely through the web.

5.3 Democracy

The advent of democracy has made it imperative that citizens should know. It was Immanuel Kant who arguing on enlightenment strongly advocated the right to know. He

defined in his essay “What is enlightenment?” He says enlightenment is man’s emergence from his self-imposed nonage. He defines nonage as the inability to use one’s own understanding without another’s guidance. **Sapere Aude:** Dare to know. The advent of democracy, spurred by technological advancements has made it possible for citizens to demand more information. Thereby the population is exposed to the possibility of better knowledge and demand more information.

6. Convergence

Data, information, and in the particular case Official Statistics are a cause and consequence of convergence. At the one level the question of comparison is a primary question in the subject of measurement. Can we compare? Can we talk the same language? In describing and defining this language that is similar, there has to be convergence in the tools that measure it, but because convergence introduces efficiencies in production systems through cost reduction, the production systems is influenced to produce items that look alike or similar or those that converge. Homogenisation is a consequence of convergence. The language of convergence becomes the most important language. Viewed differently, perhaps G H Wells might have well said the ability to use statistical language or language of measurement in the future will be as necessary as is the ability to read and write. The need for convergence is the explicit and prime mover of transformation from the notion of the systems of national statistics to that of national statistical systems. The question could be posed to the Scandinavian and Nordic countries as to whether their forebears were driven by the need for convergence? And if the answer is yes then they must be congratulated for being far sighted in defining the vision for the future.

A national statistics system anticipates, directs, encourages, enforces and punishes severely those who fall foul of it. It takes serious advantage of information technology as a tool of recording, transacting, reporting, retrieval, storage and analysis. A national statistical system that is successful has as its end-state a hardwired environment with these attributes. When it is possible to reach this end-state, implicit in it is that the system has defined and implemented its definitions and standards across the system and has created metadata as the key driver of collection, production and dissemination.

7. Preconditions for a national statistical system

Can the world and or some countries explicitly claim that they have now achieved an end-state of a national statistical system or are we all having systems of national statistics? At the global level, at this stage at least we know there only exists a system of global statistics and no global statistical system. If there are any, their experiences will be very rewarding to share, not only in being labeled a country with a successful national statistical system but because they can provide a roadmap they traversed to achieve this end-state. To achieve such an end-state requires statistical leadership in particular and one that anticipates hitherto unknown phenomena. What is required is an anticipating and adaptive mind that may draw from history but not from history exclusively in order to respond to current future and past challenges.

An end-state national statistical system is one that has moved to the successful use of administrative records across all domains of social concern and delivery. The administrative records should form the basis for sampling frames and should be current at all times. Very few countries have developed to this level and possibly the Nordic and Scandinavian countries are close to achieving a truly national statistics system.

Technological and political environments are increasingly making it possible to achieve this end-state and it is an important end-state to emulate. At the 60th anniversary of the United Nations Statistics Commission it can only be appropriate to reflect with a level of satisfaction the advances that the system of global statistics has raised towards the conceptualization of the notion of national statistics systems as well as ensuring rapid enhancements of systems of national statistics. We can confirm without fear of contradiction that we have a good number of countries with reputable and exceedingly useful systems of national statistics and they have provided the lightning rod for many others that are still struggling. We have to build on the success of the evolution of systems of national statistics and be alive to the revolution on us for national statistical systems. This requires in the main a deliberate architecture whose end-state will primarily be led by the management of administrative records. For this to happen we need first and foremost statistical leadership that anticipates, directs, encourages, enforces and punishes severely those who fall foul of the absolute collaboration by participants. It is a leadership that will take full notice of the importance of technology and utilization thereof.

8. Conclusion

Within the next sixty years, it looks quite possible that the use of administrative records is within our reach and the technology and political systems allow for it. This includes the fact that users might see the benefits of the national statistical system as a more preferred one-stop source (the front-end user interface should provide a virtual one-stop service whilst obviously the backend will be networked) of information. This will be successful for as long as confidentiality, quality standards and accessibility are assured. This is an objective worth aspiring for in the next six decades if not, at the Centenary Celebrations of the UNSC in 2047. There is no other institution that can lead this endeavour outside the UNSC and the paper by Dennis Trewin has set the scene for addressing these challenges.