

Taking on the challenge of developing statistical leadership to build organisational capability and equip for the future

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Abstract

Statistics Sweden has in recent years been challenged by a team of external experts, who annually evaluate the quality of a selection of the agency's important statistical products. The challenge presented to us is to develop our statistical leadership in order to deliver statistics that are fit for purpose. Statistics Sweden has taken on this challenge. We recognize that we are professionals with different areas of expertise such as in data, methods, analysis, as well as understanding the statistical quality aspects and the implications of these for the prioritised uses of the statistics we produce. As professionals we adhere to scientific principles and the quality framework of the European Statistics Code of Practice which strengthens the reliability of and trust in the statistics we produce. We also have a responsibility towards our users to meet their present and future information needs such that the statistics suit their intended uses.

To be effective in this task we need to show statistical leadership in our different areas of expertise. This leadership extends outside the organisation to our users, with whom there must be strong engagement. Our statistical expertise and thinking will bring added value to the dialogue with users which we can utilise in translating their needs into statistical solutions. It also requires of us within our agency to be partners in assuring that standards and best practices are being applied across the organisation.

We believe that the extent to which we can develop our statistical leadership as a comparative advantage will help us to strengthen our position in the new and challenging environment that National Statistical Systems meet in the face of an increasing number of actors on the information market.

In this paper we will develop our thinking on what the difference is between leadership in general and statistical leadership as well as why statistical leaders are needed more than ever. We will also highlight what opportunities we see to demonstrate statistical leadership externally and internally. Finally, we will share challenges we experience in the process of building statistical leadership as an organisational capability.

Keywords: statistical leadership, statistical expertise, user dialogue, fit for purpose, statistical leaders

1. Introduction

Since 2011, Statistics Sweden (SCB) has carried out regular and thorough reviews of key statistical outputs using external experts regarding Accuracy, following the European Statistics Principle 4. The programme is called ASPIRE (A System of Product Improvement, Review and Evaluation). Following a renewal of the expert team in 2018, along with a new focus – “Fitness

for purpose”, as opposed to Excellence, the expert team noted in their 2019 report the need for SCB to further deepen its discussions with key users on what their requirements are, based on specific uses that the users have, in order to gain a clearer understanding of the levels of accuracy needed. This dialogue can also benefit the users by raising their awareness of the inherent uncertainty with official statistics, as well as enabling the statisticians to design statistical systems that are fit for purpose.

In 2020 (Linacre et al, 2020), the experts raised the bar in stating that “statistical leadership” is required to make the connections with the users and drive an understanding of quality and its implications. By statistical leadership, the experts mean that statisticians in a National Statistical Office are professionals, with expertise in data, its collection, and analysis, understanding its quality attributes and the implications of these for the key uses of the data.

In 2021 (Linacre et al, 2021), the experts urged SCB to use its new organisational structure to provide the stimulus to develop statistical leadership throughout the organisation at all levels such that each subject matter area is outward looking, able to spend time with users, identify new opportunities for relevance, and problem solve issues. They also encouraged using the central methodological unit to actively build the methodological capability across the agency and to ensure a methodological presence in corporate decision making. Also, to empower especially senior staff to make decisions in a dynamic environment.

By 2022, statistical leadership had become more widely recognised at SCB, the evidence of which is found in SCB’s strategy and plan forward. Despite this development, the experts recommended that SCB’s take steps to further strengthen its statistical leadership at the product level thereby striving to understand the real business of their customers, i.e., knowing what the policy questions are that users want answers to, to feed thoughts on what solution best meets the user needs, and to what quality standard. In short, SCB should become an ‘intelligent supplier’, and users would become ‘intelligent customers’ (Linacre et al, 2022).

In 2023, during the Swedish EU presidency, SCB and Eurostat arranged a High-Level Meeting on the topic of Statistical leadership in the emerging digital societies. Directors-General and Presidents of the National Statistical Institutes of the European Statistical System (ESS) were invited to Stockholm to share experiences and ideas on how to strengthen various dimensions of statistical leadership in the ESS with a view to increase the use of official statistics in policy development and decision-making. One outcome from the meeting were the need for a strong statistical leadership from the ESS, especially in our new environment with several data producers and data brokers that provide their products and insights (Eurostat, 2023).

2. Statistical leadership – the general concept

SCB's work on statistical leadership is inspired by one of the ASPIRE experts, Susan Linacre, and her experiences from many years as manager at the Australian Bureau of Statistics. According to Susan, "statistical leadership is about influence towards a goal, generated not through hierarchy, or formal structures, but through the quality of relationships built with stakeholders; and the value added through statistical thinking and statistical solutions" (Linacre,2023).

Statistical leaders need to understand what the key issues are from a user perspective through relationships and networks and use their skills to identify and implement statistical solutions for key areas of interest. They should also take responsibility for developing other statistical leaders in the organisation. Susan Linacre argues that statistical leaders should be present at all levels in the organisation to make the statistical leadership powerful. This means that the DG and top management need to be supplemented with statistical leaders at lower levels.

Statistical leadership is important for staying relevant as statistical organisation, as we need to be able to test and implement new data sources in our statistical production without risking reputational damage if an inappropriate solution results in misleading statistics. We need to be able to convince key users of the benefits of innovation and why methods and series that are no longer viable need to be let go of. We also need to attract funding and skilled recruits, why it is important with visibility as a result of relevance. We need to be able to argue why official statistics is the "gold standard" in the data ecosystem, as the users can find data everywhere.

The most obvious example of statistical leadership arises in the collaboration between statisticians and external users, where a statistical leader can identify new statistical needs, encourage the appropriate use of statistics, to solve problems and to innovate. However, the collaboration within the statistical agency between for example methodologists and subject matter experts, working to improve and innovate products and services, is equally important.

Statistical leadership is also needed in collaboration with data suppliers to develop cost effective strategies that address data quality issues and build ongoing trust. It also applies in collaboration with academia and research institutions to enhance the development of statisticians, and the quality and relevance of research, particularly in the evolving field of data science. Finally, contacts with the media can encourage the appropriate reporting of statistics, which in turn can lead to building community trust and confidence in both statistics and the handling of data.

As these examples show, statistical leadership needs to be a core organisational capability – it is not a new management philosophy. National Statistical Offices need to grow statistical leaders within our organisations, built on **values** and **skills**. Values, or professional ethics, are described in the ISI Declaration on Professional Ethics (International Statistical Institute, 2010) and the UN Fundamental Principles of Official Statistics (United Nations Statistics Division, 2014). These values need to be understood and upheld by the staff, for example through dilemma discussions. This is important, because statistical leaders must not only hold the profession's values, but also have a clear understanding of their basis, as there will be times where creating a responsive client service might well come into conflict with the values. The organisation can help by having policies and principles in place, but they must be supported by the workplace culture: “the way we do things here”, messages from the top management on what is important, what is actually allowed, what is rewarded, and so on.

Skills, or statistical capability, is crucial for growing statistical leaders. One cannot influence if credibility is lacking in one's field. The set of statistical skills needed in a statistical agency is very broad – both common and more specific skills are needed – for example, those of methodologists, national accountants, or a specialist topic expert. New staff need clear expectations about what skills and knowledge are required, personal development plans can be set up for capability building.

So, how should we develop statistical leaders, people who can influence through the statistical value they bring, without resorting to hierarchy? Susan Linacre describes three levels of “maturity”. At the first basic level the client does the statistical thinking. At the next more mature the statistician does the statistical thinking on a take it or leave it basis. At the third and most mature level the statistician collaborates and co-owns the problem of finding and implementing an effective statistical solution. When given permission and support, statisticians can become statistical leaders in a large or small way and strengthen their communication and listening skills. This may require of them to step outside of their comfort zones.

Susan Linacre argues that we need to nurture the development of statistical leaders by building a supportive environment. We need to be aware of how the organisation sends messages to its staff on the extent to which we want them to take the initiative to add their statistical value, rather than simply perform a set of tasks. We need to encourage collaboration between methodologists, subject matter experts and data experts – who in turn can form collaboration with our main stakeholders. To be an effective leader also requires skills, including the ability to build relationships and to influence others. These skills can be developed. Activities that can help build leadership skills include course-based training, on-

the-job exposure to new and challenging situations, and job rotations between areas, and between agencies.

Given that resources are always limited, it can be useful to prioritise leadership development strategies for staff. Setting up a plan, one might, according to Susan Linacre, start by identifying a group of staff who are particularly promising and who would constitute the talent pipeline for senior positions in the organisation. By their nature, these people will help develop statistical leadership within their own area once they have the skills. Buy-in is also necessary from middle managers, as they are a key group in any organisation. They exert a strong influence on staff, determining 'the way we do things here'. Methodologists, as professional statisticians upon recruitment, have the potential of obtaining an organisational view through their cross-cutting work, as they are often involved in change programs and innovation. They have a frequent need to influence from the side based on statistical value rather than hierarchy. There could be high payoff from building their ability to influence the organisation. Regardless of role, statistical leaders need to be willing and able to step out of their comfort zone and seek to influence others and do this persistently.

Statistical leaders who understand and are excited about the value of good statistics will also engage others to become statistical leaders and step out and take the initiative in line with agreed corporate directions which should spring from the organisation's vision statement building the commitment for staff at all levels to put in the effort to be leaders at all levels.

3. Statistical leadership at SCB – our concept

SCB has developed a description of the concept of statistical leadership in a context that is relevant to us and highlighting the core characteristics of SCB's statistical leadership (Björkesjö, 2024). The purpose of the work was to build a common view and understanding of the concept to be able to take the next step to strengthen SCB's statistical leadership.

At SCB we describe statistical leadership as the leading role SCB must take to fulfil our mission in a responsible way. It is leadership based on SCB's expertise, experience and relationships with stakeholders. Statistical leadership is about strengthening democracy when SCB takes a leading role in matters regarding the development, production and dissemination of statistics, given its experience, holistic view and expertise. SCB's statistical leadership builds on the involvement from everyone working with the production of statistics and their contribution depends on role and expertise.

The core characteristics of SCB's statistical leadership are listening, guiding, building trust and challenging in close partnership with our stakeholders. See Table 1 for an in-depth

description of the meaning of each characteristic that guide us to take on the statistical leadership role.

Table 1: Description of core characteristics of SCB's statistical leadership

Description of characteristics	
Listen	<ul style="list-style-type: none"> • We work closely with our stakeholders in order to maintain the relevancy of our view regarding the information needs of society. • We familiarize ourselves with the actual information needs, by probing and creating dialogue to understand needs and create consensus on issues related to the quality, cost and response burden regarding the statistics. • We are a learning organization and actively participate in national and international initiatives that strengthen us in carrying out our mission. • We monitor what happens in the world around us and are responsive to changes.
Guide	<ul style="list-style-type: none"> • We provide conditions for a social debate that is fact-based by producing objective statistics and making them publicly available. • We give guidance to our stakeholders in the process from identifying their needs to the provision of data and statistics. • We coordinate and explain the definitions, methods and quality of the statistics to enable interpretation, analysis and coherence between different statistics. • We encourage an increased use of statistics, including through analysis and visualization. • We share our expertise in data and register matters to facilitate the digitization of society.
Build trust	<ul style="list-style-type: none"> • We create trust by acting objectively and impartially. • We build trust so that the outside world listens and trusts us, through good relationships and close cooperation with our stakeholders. • We make the necessary priorities so that the statistics fulfil the most important user needs based on the prevailing conditions and are open with our choices and explain why. • We are characterized by our expertise, take responsibility for formulating user needs in terms of a statistical problem and we apply a scientific approach in the implementation of our mission.
Challenge	<ul style="list-style-type: none"> • Based on our expertise, our access to data and our contact network, we take the initiative and act proactively in developing, producing and disseminating statistics. • We continue to build on our strengths as a producer of statistics, reassess and test new approaches.

4. An example of statistical leadership in practice

In late 2019, SCB adopted a new strategy, part of which involved focus on modernising and future-proofing the statistics for the Swedish labour market. This involved a project called *Subject Area Design Labour Market* (Axelson, 2022). The work aimed to analyse and identify current uses and needs of the labour market statistics and propose new statistics. These efforts were conducted in dialogue with central users and carried out in cooperation with the Swedish Public Employment Service, the Swedish Work Environment Authority, and National Mediation Office.

The backdrop for the work was the high user demands for labour market statistics in society. However, because the conditions using sample surveys have deteriorated over time, it was necessary to develop new methods as well as find other data sources that can replace, or reduce, the need for directly collected data. On the other hand, conditions for replacing some of the statistics based on direct data collections have improved in Sweden through access to new administrative data, for example, the monthly PAYE tax returns per employee (AGI) from the Swedish Tax Agency. This data source, now in use, holds great potential for reducing direct data collection and improving conditions for coherence in the labour market statistics.

The project resulted in an implementation plan with the overarching aim that the future labour market statistics will be register-based and sample-assisted, rather than sample-based and register-assisted. The respondent burden will be reduced considerably, as well as costs for direct collection. Regular dialogue with users has been an important dimension of the work and the objective is to continue to work iteratively with users during the plan's implementation.

The plan, which involves a gradual introduction of changes, has prompted a need for SCB to supplement its cooperation with user groups. SCB is now establishing new forms of regular dialogues with key users with two main purposes in mind: to gather input to determine the purpose of the statistics; to include users in the actual development of the statistics.

SCB views the work with *Subject Area Design Labour Market* as groundbreaking and quite exemplary in terms of a National Statistical Office taking a statistical leadership role. The work is and continues to be indicative of a different way of working with users involving closer collaboration, more dialogue, deeper understanding and more user involvement in the development stage of new statistics. SCB has also with this work taken the statistical lead to collaborate with other statistical agencies responsible for labour market statistics with the objective to apply a top-down and holistic approach.

5. Conclusions

Statistical leadership is important for statistical offices to maintain and promote public confidence in statistics and to ensure that reliable, timely and relevant statistics and data are available to support policy development, public debate and decision-making (Eurostat, 2023). To stay relevant and trustworthy, statistical offices need to provide adequate information, corresponding to user needs at the right time. Taking on a statistical leadership role in the dialogues with stakeholders is key in order to prioritise among user needs and develop optimal designs for producing statistics (Eurostat, 2023).

Introducing statistical leadership as a concept within statistical organisations helps explain the leadership role that we must take on to optimize the value we bring as part of a democratic society. Having a good understanding of how one, as a manager, methodologist or subject matter expert, should act as a statistical leader (internally as well as externally) builds confidence and increased influence in meetings with stakeholders. SCB looks at statistical leadership as a way of working that will help us reach our strategic goals, not as a label to be promoted as such to stakeholders or users of statistics. They should experience our leadership by the way we act.

The work done so far has been a good starting point to develop our own understanding of the concept of statistical leadership, what it entails for SCB, but the real work begins when we go from “what to do” to “how to do it”. We also need to make a gap analysis to identify what is already in place and what needs to be strengthened. An example is to raise the knowledge concerning the ESS Code of Practice and how to balance user needs with costs and respondent burden. We also need to increase our understanding of data ethics when using existing data sources. One important part of strengthening the statistical leadership in statistical offices is to offer training for leadership in general but also to address the question of how to handle ethical dilemmas, how to understand and explain the quality in statistics in terms of the quality dimensions based on the user needs.

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References

- Björkesjö, A., Kling, A., Strandell, G. (2024). Statistical leadership at Statistics Sweden, *Statistics Sweden*. (unpublished document)
- Eurostat. (2023). *Statistical leadership in the emerging digital societies*. Summary of the High-Level Meeting organised by the Swedish Presidency of the Council of the EU. <https://ec.europa.eu/eurostat/documents/13019146/17752628/summary-high-level-meeting-sweden.pdf/199241ec-4f32-e106-d4ad-734ce33cd17a?t=1698238002542>
- International Statistical Institute. (2010). ISI Declaration on Professional Ethics. <https://isi-web.org/isi-declaration-professional-ethics-0>

- Linacre, S., Penneck, S., Reedman, L. (2020). A Ninth Application of ASPIRE for Statistics Sweden, *Statistics Sweden*. Linacre, S., Penneck, S., Reedman, L. (2020). Available on request.
- Linacre, S., Penneck, S., Reedman, L. (2021). A Tenth Application of ASPIRE for Statistics Sweden, *Statistics Sweden*. Linacre, S., Penneck, S., Reedman, L. (2021). Available on request.
- Linacre, S., Penneck, S., Reedman, L. (2022). An Eleventh Application of ASPIRE for Statistics Sweden, *Statistics Sweden*.
https://www.scb.se/contentassets/8c5cc234fbae4e0ba731b1f9c8ea2042/an_eleventh_application_of_aspire_for_statistics_sweden_2022-09-29_a2020_2335.pdf
- Linacre, S., (2023). Presentation to Statistics Sweden's management team. (unpublished document)
- Penneck, S., Bailer, J., Humpherson, E., Kotzeva, M., Silva, D. (2023). *Reflections on statistical leadership: Summary of a panel discussion at the WSC 2023*. Statistical Journal of the IAOS, Volume 40 Issue 1. https://content.iospress.com/articles/statistical-journal-of-the-iaos/sjj230123?utm_source=MadMimi&utm_medium=email&utm_content=Out+Now%21+SJIAOS+Volume+39%2C+Issue+5&utm_campaign=20240401_m180409548_SJIAOS+39%3A+5&utm_term=Reflections+on+statistical+leadership_3A+Summary+of+a+panel+discussion+at+the+WSC+2023
- Statistics Sweden (2016), Statistics Sweden's regulations (SCB-FS 2016:17) on quality in official statistics. Statistics Sweden. <https://www.scb.se/en/About-us/main-activity/regulations-and-policies/1.regulations-and-general-guidelines---new/scbs-foreskrifter-for-offentliggorande-m.m.-av-officiell-statistik/scb-fs-201617/>
- Statistics Sweden, (2023) Subject Area Design Labour Market Final report. *Statistics Sweden*.
<https://www.scb.se/contentassets/4151635ea4b74b22a3ba8ecc0c81874f/subject-area-design-labour-market-final-report-may-2021.pdf>
- United Nations Statistics Division. (2014). Fundamental Principles of National Official Statistics (A/RES/68/261 from 29 January 2014). <https://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx>