



Office for
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UK Statistics
Authority

Quality in official statistics: building confidence through culture, rigour and openness

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The Office for Statistics Regulation

Statistics should serve everyone, helping enhance knowledge about every section of society and the economy, and people's place within them.

The Office for Statistics Regulation (OSR) provides independent regulation of official statistics produced in the UK. Official statistics are statistics produced by Crown bodies and other organisations listed within an [Official Statistics Order](#), on behalf of the UK Government or the devolved governments. We help ensure that statistics serve the public good as public assets that are widely used to provide insight, inform understanding and shape action.

We aim to enhance public confidence in statistics produced by government by setting the standards that they must meet in [the Code of Practice for Statistics](#). We ensure that producers uphold these standards by conducting reviews of statistics against the Code. We also report publicly on system-wide issues and on the way statistics are being used, celebrating when the standards are upheld and challenging publicly when they are not.

Contents

Quality in official statistics: building confidence through culture, rigour and openness 4

 Fit for purpose not perfection.....4

 One part of an essential framework.....4

 Quality as confidence in use.....5

 A culture of quality 6

 Rigour in data, methods and judgement.....6

 Being open about quality 7

 Keeping quality under review.....8

 Putting quality into practice.....8

 What producers can do now 9

Quality in official statistics: building confidence through culture, rigour and openness

This article is for statistics producers and analytical leaders involved in producing and communicating official statistics. It explores the Quality standards in the Code of Practice for Statistics: Prioritise Quality, Be Rigorous and Be Open About Quality. It does not introduce new requirements. It is intended to support producers in considering how these standards apply in practice.

Fit for purpose not perfection

The starting point for quality is that statistics are never perfect measurements. They are estimates shaped by data sources, methods, assumptions, systems and professional judgement. Quality therefore depends not only on how well a statistic is produced, but on how well it represents the real-world phenomenon it is intended to describe. That is why quality cannot be reduced to a final check before publication. It has to run through the whole statistical system: the culture that encourages challenge and learning, the rigour applied to data and methods, and the openness with which strengths, limitations and uncertainty are explained to users. These ideas are central to the [Code of Practice for Statistics](#) and to [OSR's vision](#) that statistics should serve the public good.

This means uncertainty is not an occasional problem to be mentioned only when it is large or difficult. It is a normal and unavoidable feature of statistical evidence; recognising it is central to judging quality. The three Quality standards can be understood as a practical response to that uncertainty: creating a culture that is willing to recognise it, applying rigour to understand and reduce it where possible, and being open so users can interpret the statistics responsibly.

Openness is therefore part of how quality is created, not just the final act of publication. By being open about data sources, methods, assumptions, limitations and uncertainty, producers make it possible for users, colleagues and other experts to scrutinise the evidence and understand what the statistics can and cannot support. In practice, openness means showing the workings: not only the final statistics, but the choices, trade-offs and areas for improvement that sit behind them.

One part of an essential framework

Quality is one of the three core principles in the Code, alongside Trustworthiness and Value. It connects with these principles by focusing on whether statistics are suitable for their intended uses and whether users are given the evidence they need to use them well.

It requires well-built systems, skilled staff and a culture that supports professional judgement. Producers also need to understand the contexts in which their statistics will be used.

This wider understanding of quality is not unique to the UK Code. It is reflected in international quality assurance frameworks, including the [European Statistical System Quality Assurance Framework](#) and the [International Monetary Fund Data Quality Assessment Framework](#). It is also consistent with the [UN Fundamental Principles of Official Statistics](#), which emphasise professional standards, transparency and public trust.

Taken together, this wider perspective reinforces a key message of this paper: quality is not only about producing robust statistics, but about enabling users to understand and use them appropriately.

Quality as confidence in use

Statistical quality is often treated as a specialist concept, focused on matters such as accuracy, methods and data validity. These factors matter, but they are not enough on their own. Quality also depends on whether users are given a clear account of what the statistics show, what is uncertain, which conclusions are well supported, and which uses the evidence cannot support.

A fuller view of quality is broader than methodological correctness alone. It brings together organisational culture, professional judgement, effective quality assurance and clear communication with users. It also recognises that quality is not static; as data sources evolve, technologies change and user needs develop, producers must continue to question, review and improve their statistics.

The three Quality standards in the Code show how producers can put this broader view of quality into practice.

- [Standard 5 Prioritise Quality](#) focuses on the culture and conditions that support quality
- [Standard 6 Be Rigorous](#) focuses on the evidence, methods and assurance behind the statistics
- [Standard 7 Be Open About Quality](#) focuses on communicating strengths, limitations and uncertainty clearly

Together, the standards show that quality is a continuous and open process. They provide a practical way of responding to uncertainty: creating the right culture to recognise and challenge it, applying rigorous data and methods to understand and reduce it where possible, and being open with users about strengths, limitations and areas for improvement. Professional humility is central to this: acknowledging what the evidence can and cannot show, inviting scrutiny and avoiding claims that go beyond what the statistics can support.

A culture of quality

Standard 5, Prioritise Quality, makes clear that quality is shaped by culture. Because statistics are shaped by judgement and uncertainty, statistical quality cannot be limited to checks at the end of production. It grows from an organisation's values, behaviours and expectations.

This means creating an environment that supports learning and encourages improvement. People should be able to challenge assumptions and suggest better ways of working, including raising concerns when needed. Teams should be helped to learn from mistakes and from examples of good practice. Rather than treating quality issues as failures to be hidden, organisations should use them as opportunities to strengthen processes and build resilience.

A culture of quality also depends on people feeling able to be candid about what is uncertain, unfinished or difficult. Teams need the confidence to ask better questions, recognise when assumptions need testing and treat challenge from colleagues, suppliers and users as a route to stronger statistics rather than as criticism.

This approach also reaches beyond the statistics team. Quality depends on collaboration with data suppliers, subject experts, other producers and users. Producers need to understand how data are collected, maintained and interpreted, and how those choices affect the statistics. Collaboration is strengthened by different perspectives and open challenge.

This shared mindset of mutual support, respectful challenge and improvement helps ensure that everyday judgements about data, methods and users' needs are questioned, tested and strengthened.

Rigour in data, methods and judgement

Rigour turns this culture into practice by ensuring that decisions about data and methods are supported by assurance, evidence and documentation that can be tested and challenged.

Standard 6, Be Rigorous, reflects a straightforward expectation: official statistics should be built on suitable data and sound methods. Suitability depends on the question being answered, the context in which the statistics will be used, and the decisions they may inform. Quality therefore requires professional judgement about whether statistics are fit for purpose, rather than simple adherence to a method.

This judgement begins with understanding data. Producers should know where their data come from, what potential biases may exist and how changes in data collection might affect the resulting statistics. This can be difficult when data sources are complex, such as administrative data, linked datasets, new or innovative sources and methods.

Understanding these sources of uncertainty helps producers decide what assurance is needed and how far the resulting statistics can support different uses. The task is not simply to access more data, but to use data responsibly and ensure the statistics remain relevant and reliable.

Rigour also means grounding methods in recognised professional standards and maintaining proportionate quality assurance throughout the statistical production process. Statistics should be validated and reviewed to ensure they continue to meet user needs, with comparisons to other evidence where possible. Quality is strengthened when producers remain curious about where weaknesses might arise, rather than assuming established systems will always perform as expected.

That includes testing the relationship between the statistic and the real-world phenomenon it is intended to represent. Producers should ask whether the estimate makes sense in the wider evidence landscape: what other data, intelligence or user insight supports it, and what might call it into question? Triangulating with other sources can help identify potential bias, changes in data behaviour or emerging quality concerns that would not be visible from the production process alone.

This kind of rigour depends on testing professional judgement as well as applying technical expertise. Producers need to make informed decisions, but they also need to test those decisions against evidence, alternative explanations and user challenge.

Viewed this way, rigour is more than a production process. It is a disciplined commitment to examining evidence carefully and making frank judgements about whether statistics are suitable for their intended uses.

Being open about quality

Rigorous production is essential, but users also need to understand the evidence and assurance behind the statistics. Producers should therefore explain that evidence clearly, rather than relying on careful production alone.

Standard 7, Be Open About Quality, makes clear that quality should be visible to users. Producers have a responsibility not only to understand the quality of their statistics but also to explain it clearly. This means providing prominent information on strengths, limitations, uncertainty and potential sources of bias, so users can judge whether the statistics are appropriate for their needs.

Because statistics are estimates, openness should help users understand the choices and uncertainty behind them. Producers should explain the strengths and limitations of the data, methods and judgements used, so users can draw conclusions that are proportionate to the evidence.

Quality information should not be written only for specialists. It should help users understand which uses are supported, and which are not, and it should be easy to find at

the point users need it. Measures of uncertainty, information about data sources and explanations of methods are essential to responsible statistical communication.

Transparency has a wider role in sustaining confidence. When producers are open about limitations, planned changes and areas under development, they demonstrate professionalism and accountability. This helps users understand the evidence behind the statistics and the basis on which they can be used.

That level of openness can feel uncomfortable because it may reveal uncertainty, gaps, trade-offs or areas for improvement. But that is precisely why it matters. Users are more likely to have confidence in statistics when producers are clear about what is known, what is less certain and what is being done to improve the evidence.

Keeping quality under review

Openness about quality should lead to review. Data sources evolve, systems are updated, methods improve and user expectations shift. Producers therefore need to learn and adapt through continuous monitoring, curiosity and a willingness to revisit previous decisions in the light of new evidence. In practice, this brings the three standards together: a culture that supports learning, rigorous testing of data and methods, and open communication about what is changing and why.

The need for review is particularly important as the statistical landscape changes. New data sources and emerging technologies offer significant opportunities, but they also introduce new challenges around bias, uncertainty and public understanding. In these circumstances, the quality standards provide a framework for maintaining confidence by helping producers keep their statistics relevant, reliable and clearly explained.

Putting quality into practice

Quality is built through the everyday choices producers make about data, methods, limitations, scrutiny and changing user needs. Standards 5, 6 and 7 provide a practical framework for creating the conditions for high-quality statistics, testing the evidence behind them, and explaining clearly what users can and cannot conclude.

This matters because confidence in official statistics cannot rely on authority alone. It depends on producers being open about what the statistics show, where uncertainty remains and how quality is being improved. Public confidence is strengthened when producers are honest about the evidence and its limits, rather than implying false precision. That is how statistics continue to serve the public good: by providing insight that informs understanding and supports action.

What producers can do now

The Code's Quality standards can be put into practice through simple, regular habits that help producers test their evidence, explain limitations and keep users' needs in view.

Producers can:

- Build regular discussion of quality risks, assumptions and user needs into planning, production and review
- Document key judgements about data sources, methods, assurance and known trade-offs
- Strengthen challenge and peer review by involving colleagues, data suppliers, subject experts and users
- Triangulate estimates with other relevant sources, user insight and contextual evidence to test whether they make sense in the real-world context they are intended to describe
- Explain quality in clear terms, including what the statistics can show, which comparisons or conclusions may be unreliable, and how uncertainty should affect interpretation
- Use feedback, corrections and quality concerns as opportunities to improve processes, guidance and communication

