

Why measure trust in Official Statistics?
58th World Congress of the International Statistical Institute, Dublin,
21-26 August 2011

Richard Alldritt and Jacob Wilcock, UK Statistics Authority

Abstract

Official statistics are not inherently trustworthy. They are rarely complete counts like football scores. For the most part, they are estimates drawn from whatever sources are available. It is right to expect them to be the best estimates that can be produced - at the time and given available resources. But that is not the same as being 'right'. Even when statistics are known to be accurate, such as those of school examination results, they can tend to mislead. These and many other statistics do not measure quite what the user might assume they measure. So what is it we are asking the public to trust?

Trust matters because it affects the utility of the statistics; and utility affects the value to government and society, and this is what ultimately matters. Less trust means less use and less value. But it is not trust in the figures themselves that is the central issue; it is trust in the service provided to the user. If the weaknesses and limitations of the statistics are fully and frankly explained, and their usefulness established, even less reliable statistics can be trusted in some important respects. They can be trusted to be the best estimates possible, to be the most relevant for a particular use, and to be fully and honestly explained. Those are important tests for official statistics, and they prompt the question of whether such public trust exists currently.

In the UK, various attempts have been made to measure levels of trust and the results are both revealing and give some cause for concern. However, we conclude that what is needed is not more and more surveys of public trust but a focused dialogue with 'opinion formers' – the better informed users and commentators who can be expected to lead public opinion in the longer term and whose views offer richer insights. We need to ask them the right questions and pay close attention to the answers.

Three dimensions of trust

Statistics is the science of incomplete data. By their nature, incomplete data are not inherently trustworthy, no matter how diligently collected and presented. They are for the most part, estimates drawn from whatever sources are available and affordable, whether that is sample surveys or, increasingly, administrative data originally collected for other purposes.

In this paper we consider three aspects of what it means to trust statistics:

- We must be able to trust the statistical agency to tell us all it knows about the statistics, and in a helpful way;
- We must be able to trust it to produce the best estimates possible, within reasonable timescales and resources; and
- We must be able to trust it to determine the right statistics to produce – in the sense of having planning systems that are responsive to society's changing needs for statistics.

These are three independent dimensions of trust; any two can exist without the third. Together they provide a simple framework within which the concept of trust can be given a tractable meaning. For the reasons set out above, they do not relate to the

statistics themselves but to the organisations, and the statisticians, who produce the statistics.

Why statistical offices want to measure trust

Before looking further at these three aspects, it is worth considering *why* statistical agencies want to measure trust. An increasing number of national statistical agencies, and some international ones, are carrying out surveys of trust among the general public: trust in the statistical offices themselves and trust in the statistics they produce. To the extent that this is intended as a diagnostic tool, designed to inform remedial action, the aim will usually be to monitor trends in public views over time, so that the need for further steps to enhance trust can be evaluated and decisions on such steps taken in an informed, evidence-based, way. That is the intuitive rationale for such work.

However, the measurement of trust can be as much about the promotion of an existing positive reputation as about diagnostic investigation. In some cases at least, the intention appears to be to *demonstrate* that the statistical office *is* trusted and, by so doing, to reassure the public and *encourage* greater trust. These motivations are reasonable in themselves but this is more than pure research and we should understand it for what it is. There is a risk that a concern to demonstrate and promote trust, rather simply than to analyse it, could create an incentive within the measurement process, perhaps encouraging a vague, non-analytical approach leading to false conclusions. It could also stimulate competition between statistical offices to see which can produce the best 'score'. Whilst competition to be the most trustworthy would probably be a good thing, statistical agencies should not drift from that in to focusing on international rankings in terms of measured trust.

The United Kingdom statistical service is unlikely ever to be among the highest ranked in terms of public trust. The UK system does not have the long established reputation of some; and public trust in UK government institutions is generally low by international standards, prompted in part by our aggressive and often cynical news media. So, our efforts to measure trust have never been about demonstrating high scores or rising up world rankings, but rather about searching for the levers that might help to enhance trustworthiness, and trust, where possible. We should judge the value of such surveys by whether or not they lead to specific insights and remedial actions. In this sense they are like other official statistics; the goal must be practical utility rather than publicity. It has been noted that in the UK case, measuring trust has tended to lead to negative, rather than positive, publicity but again that cannot be accepted as a rationale not to measure trust.

Taking each of the three dimensions listed above in turn:

1. Being trusted to explain

To illustrate the first dimension we might take the example of trends in crimes of domestic violence (violence within the family or household), a matter of concern both to social policy-makers and to the public, and thus a matter on which a national statistical service might properly seek to report. In doing so, it might look to sources such as statistics based on crime records, medical and hospital records, and perhaps victim surveys where those exist. But it does so in the knowledge that the statistics from all those sources are inevitably going to be incomplete, probably inconsistent between each other and between geographical areas and over time, and likely to be biased –some forms of domestic violence will be better reported than others of equal consequence for victims and for policy.

In what sense then might we trust the resulting statistical product when it suffers from so many weaknesses? This question is important as the answer defines what trust in statistics means in practice. Whilst the statistics themselves may have shortcomings, we can at least expect that in their published form, they will be presented to high professional standards, with a full explanation of the likely types and sources of error, the likely impact of such errors, and the implications for interpretation and use of the statistics. We should also expect that the strengths and weaknesses of the different sources will be discussed frankly and any conflicts in apparent trends or geographical patterns will be noted and explained where possible, regardless of any political sensitivities arising from those trends or patterns.

The user of the statistics might also reasonably expect the statistical agency to offer guidance as to what weight of interpretation the statistics will bear. Is it right to interpret increasing numbers of crimes of domestic violence as being due to a real increase, or could it be that it is due to increased recording? In effect, we want to be able to trust the statistical agency to tell us what they know, and what we need to know, about the statistics in a way that is helpful to us.

Whilst the challenge is greatest when the statistics are intrinsically unreliable, such as those of domestic violence, even reliable statistics can mislead if not well explained. In the UK, statistics on school examination results (also called school attainment) are accurate and detailed. But the trend in such statistics over time is not necessarily quite what it seems – it can be influenced by inconsistency between years in the standard of examinations and other related effects such as examiners adjusting scores to compensate for excessive changes from year to year. Whilst there may not be clear evidence for such problems, there is no doubt that such effects are *possible* and the statistical publication should draw the users' attention to such possibilities when discussing the trends in the data – just as an expert statistical consultant would draw the attention of a client wanting to use those statistics as the basis for policy or action.

More generally, a characteristic shared by many statistics – whether accurate or not - is that they do not always mean quite what they seem to mean. A wealthy area of England can have low GDP per capita - perhaps because it has a large retired population. A rise in recorded thefts from shops can be due to increased police attention to such crimes. Statistics of migration exclude short term migrants and a rise in their numbers may not be visible. Population statistics for a city centre will usually exclude the large day-time population of tourists and commuters. Statistics of road accidents may be missing large numbers of accidents about which the police were not informed. The common strand in these examples is that the statistics have some important limitations that are not obvious from the figures themselves. We want to be able to trust that these limitations will be frankly and honestly explained to the user.

This aspect of trustworthiness – whether we are told everything we should be told - lends itself to direct observation as well as survey techniques. We can look at the statistical products in a systematic way with a professional eye and see if they are in fact trustworthy in this respect; we do not need to rely on public opinion, interesting as that may be (arguably, public opinion on the quality of explanation will relate more to the treatment of statistics by the news media than the professional product itself).

The UK's statutory Assessment arrangements, which require sets of statistics to be formally checked for compliance with the Code of Practice for Official Statistics, offers a direct method of looking at whether the statistical offices are telling all that they know about the statistics.

2. Trusted to be the best available

The second dimension of trust is that the published official statistics should be the best estimates that could reasonably be made at the time. That means that the methods employed should comply with the highest professional standards, the statistics should be as up to date as they can be and free from any partisan or political influence in their construction or presentation. This is often what people have in mind when they speak of trust in statistics. Do we trust them to be 'right'; not necessarily accurate but the best possible.

Of course, statistics from sample surveys can usually be improved, at least at the margins, by spending more money on larger samples; and administrative data can often be improved by waiting longer for records to be updated. So there is an implicit acknowledgement here that the 'best estimate' is simply the best that could be done within the available budget and at the time of publication. It is not an absolute. It is more about whether the statisticians did a fully professional job than whether the statistics are right in some more profound sense.

Whilst we can ask the expert and the public whether they believe that the statistics published pass this test, the answer that they give is more likely to relate to their faith in the statistical office. The public are unlikely to know whether the statistics are the best. There is an analogy here with trust in the news media. When people say they believe, or trust, news stories on the BBC (or another broadcaster), they are really commenting on their faith in the broadcaster, not in the news stories. The best way to establish whether the statistical estimates are in fact the best available is again most likely to be a process of professional review.

3. Trusted to be the most relevant

The third dimension of trust is whether the published statistics are the right ones to have been collected and presented on the topic. They may be fully and honestly explained; they may be the best estimates; but are they actually the ones we need to understand the topic? Are the police crime statistics the right ones to look at if your concern is crime prevention? Is GDP the best measure of national progress or success: might it be better supplemented with measures of social wellbeing, as is now proposed? Is public health, as reported by health services, actually the measure we want to know about? Are school examination results the best measure of the added value of school education?

The general public cannot be expected to deliver a considered verdict on whether the right statistics are being produced. That is just too hard a question to answer. They could be asked if they trust the statistical office to make the right judgements in this regard but here again they have little evidence either way. This question demands the views of the leading experts in each social or economic field to which the statistics relate.

Drawing conclusions

The main conclusion that we might draw from these points is that generalised questions to the public about their trust in statistics do not mean much and nor will the answers. There are however some more valid questions that could be asked – as discussed above - but in most respects the answers to any of these questions are likely to be based on the public reputation of the statistics office; attitudes to, and understanding of the subject of statistics; and in some respects the reputation of government and public services more generally.

In a country such as the UK where the news media tend to regard all government functions with substantial cynicism, we cannot reasonably expect the trustworthiness of the statistical service to be reflected in the views of the general public. By the same token, we would not expect changes in trustworthiness to have much impact on public trust. Annex 1 which summarises the results of the various public surveys that have been carried out indicates that there is little evidence of change in the low levels of public trust that exist. It tells us nothing about trustworthiness.

Nonetheless there is a case for continuing to ask the questions of the public; and a case to improve those questions to make them more meaningful. Whilst public trust may not be driven directly by the trustworthiness of the statistical service, the views and attitudes of the general public are still a real and influential part of the environment in which the statistical office works. To the extent that there is a problem with public trust, it is important to know the nature and extent of that problem, even if there is little that can, in practice, be done to improve it directly.

At the same time, the question of the *trustworthiness* of the service (the extent to which it *deserves* to be trusted) can be, and needs to be, addressed constructively and as directly as possible. There are perhaps two main ways to approach this. One is to employ a form of professional audit to look at the more objective elements of the aspects of trust considered in this paper – in particular to look at matters such as whether the explanation of the statistics at the time of publication is full, honest and as helpful as possible; whether the estimates produced are the best possible; and whether the planning arrangements are sufficiently sensitive to society's needs for statistical data. In the UK the need for this sort of professional audit is recognised within the statutory framework established under the Statistics and Registration Service Act 2007. The process involves a clear Code of Practice and a formal process of assessment against the Code.

Another, and complementary, approach is to ask leading users of statistics and other prominent commentators (we call such people 'opinion formers') for their views on the service and explore those in an ongoing dialogue. Annex 2 explains how we have approached that in the UK and identifies some of the main messages that have emerged. Their views contain information relevant to enhancing both trustworthiness and trust.

One virtue of the dialogue with 'opinion formers' is that it is their opinion that is likely to be most influential on the future of the statistical service and its governance. These are the people who are likely to give independent evidence to Parliamentary enquiries about the arrangements for official statistics, and the people who speak to the news media when there is an issue of controversy. Engaging with their views in a systematic way is more than a diagnostic tool, it is the key to building a strong reputation for the future, at least among the better-informed community. There is scope to further develop the UK approach to engagement with opinion formers and get more from it. The early work shows that it promises both to be a rich source of valuable insights and the best way to influence wider opinion in the longer term.

There is perhaps also a conclusion that may be drawn about the hazards in seeking high scores in surveys of public trust. It may ultimately prove a distraction and to offer false reassurance. Whilst to be held in high public esteem is clearly something of real merit, it is not the same thing as providing a trustworthy service or commanding the trust of those individuals whose opinions will prove most influential in the long run.

ANNEX 1 - SURVEYS OF PUBLIC TRUST IN OFFICIAL STATISTICS IN THE UNITED KINGDOM

Surveys of public confidence in official statistics in the UK were conducted in 2004, 2005, 2007 and 2009. Given the complexity of the UK statistical service, with official statistics produced by some 200 organisations in four political administrations, the surveys have aimed to explore the issues rather than simply trying to produce a single headline measure of trust. Although some of the survey content has changed over the years, all the surveys have covered perceptions of the accuracy of official statistics and the level of political interference; the level of trust in specific statistical series; and the reasons driving these opinions. Since 2005, the surveys have investigated what sources of information are used to form opinions, the level of interest in politics and views on the importance of official statistics.

Views on official statistics and how opinions are formed

The results from the surveys have been quite consistent over the years. When asked about the importance of official statistics, 70% of respondents said that official statistics are fairly or very important for making decisions.

Television has been cited by most people as a source of information used to form opinions (about 70% of respondents) with newspapers (about 60%) family and friends (about 45%) and radio (about 30%) also important. The internet has become more important over the years, only cited by 15% of respondents in 2005, but 30% in 2009.

In 2009, respondents were also asked about their level of understanding of official statistics. Over 70% of respondents said they had a good understanding.

Perceptions of accuracy and political interference

In 2004, 2005 and 2007 respondents were split almost evenly on the subject of the accuracy of official statistics, with about one third agreeing that official statistics are generally accurate, one third disagreeing and one third in the middle (with some slight variation over the years). In 2009 there was a shift, with two fifths disagreeing, although still a third agreed. Of those who disagreed (that official statistics are generally accurate) the most common reasons they gave centred on a belief that the statistics are manipulated or misrepresented, either for political purposes or by the media.

Respondents' views on whether official figures are produced without political interference have remained quite consistent over the years, with the majority (almost 60%) disagreeing. In 2009 respondents were also asked whether they felt newspapers present figures honestly, with very similar results – 61% disagreed.

Trust in specific statistical series and trust in the UK Government

All the surveys have asked respondents about their levels of trust in specific statistical series, using a scale ranging from zero (do not trust at all) to ten (trust completely). Respondents were then asked to give reasons why they did (or did not) trust each of the series. The statistical series have been chosen to represent the range of official statistics, but not all the same series have been used in each survey.

The results show a mixed picture across the statistical series:

- Trust score was highest for population statistics, 5.68 in 2009, but this has fallen from 6.91 in 2005.
- Trust in domestic burglaries statistics was low, 5.21 in 2009, and no clear trend since 2004.

- Trust in cost of living statistics fell from 5.93 in 2005 to 5.32 in 2009.
- Trust in hospital waiting figures rose from 4.61 in 2004 to 5.44 in 2009.

Respondents' trust or distrust in the statistics often appears to be driven by whether the statistics reflect their personal experience. This was the main reason given (in 2009) for low levels of trust in the cost of living statistics, hospital waiting figures and domestic burglaries statistics. It was also often cited as the main reason for those who *did* trust the statistics (along with a belief that the statistics are easy to count). However, there are other important reasons driving low levels of trust in the statistics. For example, those respondents who had low levels of trust in the unemployment figures cited reasons relating to the Government's vested interest and interference in the statistics, and figures being misrepresented by politicians or the media.

Exploring relationships

The surveys allow analysis of responses by demographic variables and other factors, such as education and income, to determine whether there are meaningful relationships.

Three factors have been associated with lower perceptions of the accuracy of official statistics:

- older respondents (aged 35 and over) were more likely to be less trusting of official statistics;
- those who claimed to have a poorer level of understanding of official statistics had worse perceptions of the accuracy of official statistics; and
- those with lower levels of trust in the UK Government also had worse perceptions of the accuracy of official statistics.

When looking at levels of trust in the specific statistical series, different relationships emerge:

- those respondents who thought that statistics are important to making decisions were more likely to give high trust ratings;
- similarly, those respondents who reported having a fairly good understanding of the statistics were generally more likely to give high trust ratings;
- higher trust ratings tended to be associated with younger (16 – 24) age groups and those educated to degree level or above; and
- households with a high income tended to report higher levels of trust in the cost of living figures, while households with low income were associated with high levels of trust in unemployment figures.

Sources: *Public Confidence in Official Statistics 2009*, March 2010, NatGen

ANNEX 2 - ENGAGING OPINION-FORMERS IN THE UK

In 2009 the UK Statistics Authority commissioned qualitative research to explore views about official statistics. The research was based on sixty face-to-face interviews with leading users of official statistics and other prominent commentators.

The Authority worked with a major commercial survey company (IPSOS Mori) to identify a wide range of stakeholders (see table below). From this list, a shorter list was produced of the most authoritative users and those with a prominent position in the statistical community.

These people were contacted by letter, informing them of the aims and format of the research and providing contact details. Letters were followed up by interviews based on a discussion guide, which set out (for the interviewer) the questions to ask and the areas to probe more fully. The Interviews were mostly conducted one-to-one and in person, to encourage stakeholders to share opinions more freely.

During the interviews, which lasted about 45 minutes, attitudes and opinions were explored in detail, to provide insight into the key reasons underlying their views. The notes of all the interviews were then analysed to establish common themes and identify the main messages. The final set of interviews covered 24 of the high priority stakeholders and 36 other stakeholders.

Sector	Number of interviews
Academic / Think Tank	13
Whitehall (Civil Service)	11
Business	7
Journalist	7
Regulator	6
Trade Unions / Industry Associations	4
Local Government	2
Scotland / Wales	2
Voluntary Sector	2
International	2
Police	2
Tourism	1
Parliamentarian	1
Total	60

The main messages for official statistics as a whole fell into three broad categories, as described in the final report.¹

Views about official statistics

Generally, official statistics were viewed positively. This was because they provide an evidence base, and are also useful in holding both politicians and government to account. In addition, participants described how they allow others, include opposition parties, to lobby for change, and are emblematic of an honest and transparent system of governance. Participants perceived them as being freely available to all, and stated that they cover all sectors and areas of public interest.

¹ *Opinion formers' perceptions of official statistics*, 2010, Ipsos MORI

However, participants felt that the public views statistics with suspicion and some felt that this was due to the increasing amount of data produced. It was felt that this could be helped by clearly distinguishing which statistics are 'official' and which ones are not. Another idea that was supported was the inclusion of contextual information to accompany the statistics. This is especially true in this economic and political climate; with the country facing economic difficulties, and trust in parliamentarians low, it was felt that there is an increasing need for statistics, but an increasing risk to them if they are not protected by statisticians.

The use and treatment of official statistics

While there was positive comment about the production of official statistics, there were concerns with the way in which statistics are treated by the media and politicians, the two key conduits of statistical information to the public.

The British media was believed to be uniquely negative, persistent in its treatment of news, and was not felt to take stories at face value. Some participants stated that this presents a danger to statistics as the media tends to search for the angle which allows them to report a release in a negative light, and often to sensationalise the story. On the other hand, others felt that the media has a difficult job in disseminating large and complex statistical releases and cannot be expected to fully understand them in the way that the producers do. However, the rise of new media and blogging, which allows unregulated content to be publicly shared, was believed to present an even greater danger to the ability of the public to get the correct and complete statistical picture.

Participants felt that politicians are also guilty of selectively reporting statistics, often, in the case of the Government, in order to announce good news. Politicians were also believed to be guilty of misrepresenting statistics – in particular not comparing 'like with like'.

User engagement

Many felt that they had a good relationship with statistical producers, and particularly the Office for National Statistics (ONS). Journalists in particular spoke of having established relationships with individual staff in ONS, and reported being satisfied with this level of engagement. In contrast though, other stakeholders stated that there needs to be a better approach to building relations with users. It was thought that this could be achieved by improving communications around both the statistics and the statistical context, and by ensuring that the statisticians themselves communicate the 'story' behind the statistics they have produced, as this is often as important as the numbers themselves.

The relationship that users have with producers of statistics was described as being one-directional, with few having any experience of ONS roadshows or events, for example. There was a feeling that such events need to be promoted better, and, for those that were critical of them, be more about a two-way dialogue between users and producers, rather than self-promotion.