



Intellectual
Property
Office

Guide to Evidence for Policy



Introduction

In its response to the Hargreaves Review ¹ the Intellectual Property Office (IPO) published guidance on standards of evidence used in the development of policy. This was first issued in 2011, and has been discussed in academic and industry fora. Many experts contributed to this second edition, and their support is invaluable.

Evidence comes in many forms, and this guide is aimed at reports and research to inform policy-makers. Hargreaves' observations on evidence-based policy applied to both public and private bodies. The standards in this guidance are what we aspire to ourselves and ask from those who submit evidence to government. Where the standards are met, evidence will be considered robust and assured consideration.

Although IPO sets this bar for reports and commissioned work, we will continue to accept evidence that doesn't meet these standards where appropriate. Smaller businesses in particular face challenges in assembling evidence and their contributions will be assessed sympathetically; we further want to emphasise that individual experience and ideas are always welcome in the evidence debate. There is much work on what defines evidence ^{2 3} and academic journals have set criteria for submitting scholarly papers and evidence. There are also interesting parallels with criteria for business audits. The IPO has drawn on this 'prior art' to set out the criteria for submissions that it could use as robust evidence for policy making.

Our aspiration is that evidence used to inform public policy, or intended to inform government, meets the following three criteria: that it be **clear, verifiable** and able to be **peer-reviewed**. This is not an exhaustive list of how to overcome every eventuality, but a guide to what constitutes good evidence and what that means. By way of example, we list here a few common concerns we have with sources of evidence and offer some suggestions on how these might be addressed by stakeholders while minimising disclosure of potentially sensitive information. Businesses or organisations who intend to commission research may want to make these criteria clear to those they commission.

The criteria are relevant to social research, to case study work and to economic evidence. Policy evaluation often depends on all three, especially where economic costs and benefits need to be weighed against social impacts and effects on behaviour.

Case studies can be particularly valuable in demonstrating to policymakers how economic and social impacts work in practice, and some of the most effective submissions to Hargreaves used them. Case evidence is most powerful when presented in conjunction with statistical support. At the very least case studies can increase their relevance for policy assessment by showing that they are representative of the people and businesses they set out to portray.

1. Clear Explanation

Documents should be written in clear language, with a summary given, where possible without over-use of technical language. Assumptions made in the study should be stated explicitly. By stating the assumption and providing an explanation of why it is being made, it is both clearer what is being done and why, and allows others to test the impact of different assumptions.

Common concern: key assumptions in economic studies are often left unstated, such as prices not varying with demand (often done when no data on elasticity ⁴ is available). This can lead to studies coming to very different conclusions from similar data, with very little indication as to why.

Solution: State key assumptions, even when they seem basic or obvious, and giving a simple justification for why they have been made (and what their value is, if they are part of a calculation). It is also helpful to set out any likely consequences of the assumption and/or the conditions under which it is most likely to be valid.

When estimations are made, full calculations need to be disclosed either in the text or an appendix. That means every calculation, so that results can be re-produced by a third party without reference to other documents. Both the formulae any variables need to be clearly set out, and source data clearly described.

Common concern: it is clear how the basic calculation in a study works, but key variables (say revenues or elasticities) are not given, on the basis that they are derived from industry data and commercially confidential. It is then not clear how the final figure has been arrived at.

Solution: Include the variable explicitly, and where you have derived figures from confidential data, providing the basic statistical description of the underlying data – i.e. mean, median, sample size, aggregate, minimum, maximum etc. Where graphs and figures are produced, underlying data should be included as an electronic appendix, compatible with common spreadsheet software – as in the Hargreaves Review's Supporting Document FF. ⁵ Others can then analyse the data.

An important part of public policy making is transparency. It should be made clear who has commissioned and funded the research as well as who has carried it out.

Common concern: Imagine for example that research has been done on the relative benefits of a poultry-based Christmas dinner and a vegetarian one. People will be interested in whether the research has been done by, for example, a health charity, an organisation for animal welfare or a major turkey producer, and may give different significance to the research as a result as the availability of data may be different for different organisations.

Solution: Explain in a paragraph who has funded the research and who sponsors them. Provide a link to relevant websites and declare interests. Clear indication of funding should not undermine good research evidence which meets the criteria.

2. Verifiable

Conclusions of analysis should be verifiable by a third party. There are usually two separate stages of verification. The first is **Data**.

Where possible, reports should include any data you have used. Data should be available in a suitable format for interested parties to view, analyse and draw comparisons. If you have undertaken a survey, the original survey questions need to be included in the documentation, and should preferably have been peer-reviewed in advance so that the questions are neutral.

A description of the survey results should be included, covering summary statistics of the surveyed population, aggregates of the un-weighted responses to all questions, a clear description of the weighting method if applicable, and a clear description of how the sample has been aggregated up to represent the population if appropriate.

Common concern: It is often assumed that survey results can be scaled up by a simple ratio to reflect the population as a whole. This is not necessarily the case. For example, if 80% of respondents to a survey of 1000 people said X, it does not follow that 80% of the UK population would say X: Respondents to the survey may not be representative of the UK population as a whole. Establishing the representativeness of the sample is an important part of a credible study.

Solution: For a nationally representative sample consulting with a professional survey organisation, the method of selecting who is surveyed is normally spelled out. If sampling members or customers of an organisation, or another specific group, it is important to be clear who is in the sample and what kind of population they represent.

If using data collected by your organisation, explain clearly how the data is collected, for what purpose, from whom it is collected, and if scaled up or weighted, a clear description of the weighting method if applicable. As above, a clear description of how the sample has been aggregated up to represent the population is needed if that is done.

When using official data, from the Office for National Statistics (ONS), or other official sources, please include a link to the original dataset in the references. Where feasible you may include the data itself. If the official data is modified, weighted or sampled for analysis, a clear description and the calculations for any changes need to be included in the figures. ONS often provides the information needed to support this, for both social and economic data.

Common concern: Studies which relate activities or trends to overall activity in the economy sometimes express their results as a proportion of GDP. In some cases they are not clear how boundaries and definitions are drawn (for example gross sales in an activity turnover) is compared to GDP (value added) thus inflating the proportion. Growth rates may not distinguish clearly between real and nominal values. Similar issues can arise expressing behavioural data as a proportion of population, when it may not be clear that the numerator exhibiting the behaviour and the population denominator are consistently defined.

Solution: Where using official data checking that the definitions of comparisons made are consistent, and making clear what they are. If using ONS data-series they all have a data-series identifier which should be cited (e.g. 'ABMM' is Gross Value Added at basic prices).

Data and **analysis** are two separate stages. Well-documented data can be considered facts, while their interpretation constitutes analysis, and arguments can be made from it. Analysis uses statistical methods, econometric methods, inference or other tools, and the workings should be included so that interested parties are able to re-create the given conclusions without the need to use other sources and without the need to assume any steps by the authors.

Common concern: Subtle differences in methodology can lead to differences of outcome. For example, the impact of IP infringement can be assumed to be the sum of the impact each individual infringer has. Many studies however calculate impacts on the basis of multiplying the mean number of infringers by the mean impact of infringement. That represents an assumption about the population of infringers which may, in fact, not be valid in all cases, and where it is, it can bias the results up or down depending on modelling choices ⁶.

Solution: Ensure that it is clear what is being calculated. Investigating the sensitivity of results to assumptions made – in the footnoted example, for instance, there is an implicit assumption that there is no link between the volume of downloading and willingness to pay for downloads, which could be tested and (if it were a poor approximation) alternative methods developed.

When you draw on other work, a reference, and link to the original work should be included. References to other people's work should have the relevant web link, book or journal cited, including the page number. Quotes should be directly referenced to the published source from which it was taken (including page number) so that it can be located easily. It is important to recognise that work based on third party sources rests on the validity of other people's assumptions. Where those assumptions are not clear and verifiable, it will make it correspondingly difficult to verify the analysis which references such studies.

The main point of having verifiable evidence submissions as outlined above is so that all those commenting on policy can do so on the basis of agreed data, confident that they can verify that analytical methods have been applied without bias.

3. Peer Review

The IPO believes that the best way to generate good evidence-driven discussion about policy is to expose data and analysis to peer-review. This means making reports and submissions available to other interest-groups and the public to get feed-back and comments in a public forum before submitting to Government. If this is not possible, studies should at least be published in a form which makes peer review possible.

Such peer review can be most effective if analysis is clear and verifiable, where the data underlying the analysis can be shared openly. That is the standard by which the IPO as a Government agency will judge submissions and it is also the standard the IPO has set in taking forward evidence based policy making. IPO commissioned research will appear in a peer-reviewable format before going to final press, and will be available to the public to comment on through the researchers' own websites or the IPO website.

Open sharing of data is not always possible, because of commercial confidentiality or data protection constraints, and this is as true of data collected by public bodies such as ONS as of private sources. This is not a barrier to peer review; systems such as the Secure Data Service available to academics and the Virtual Microdata Laboratory run by ONS have pioneered methods for secure use of confidential to test research ideas. Similar approaches to private sector data have been developed in some fields, and there are real benefits from such collaboration in areas where data is scarce or non-existent

Impact assessments, which are carried out as part of the policy making process, will be subject to independent scrutiny from the Regulatory Policy Committee,⁷ and submitted to the publicly accessible impact assessment library⁸. Wherever possible the evidence underlying these assessments will follow the principles set out in this guide, recognising that in some cases there is a need to estimate economic and behaviour changes in new situations, of which there is no prior UK experience.

If evidence is clear, verifiable and amenable to peer review, we can expect the quality of data and analysis used by government to inform policy decisions to improve. Policy design can then focus on the best way of meeting the needs of interested parties rather than disputes over how the evidence describing those needs is best described.

End Notes

1. Ian Hargreaves. 2011. *Digital Opportunity: A review of Intellectual Property and Growth*. London: IPO, page 18-19 in particular: www.ipo.gov.uk/ipreview-finalreport.pdf
2. Philip Davies. 2004. "Is evidence-based government possible?" www.ebpdn.org/download/download.php?table=resources&id=1305
3. Louise Shaxson. 2005. "Is your evidence robust enough? Questions for policy makers and practitioners." *Evidence and Policy: A Journal of Research, Debate and Practice*, Vol. **1**(1): pp. 101-11
4. i.e. the way in which demand for particular goods or services alters with price
5. www.ipo.gov.uk/ipreview-doc-ff.xls
6. As an example using purely illustrative figures, which can give an estimated loss of £6, £55 and £451 depending on how the same numbers are worked.

If 9 pirates download one film each and a tenth downloads 91, the average number of films downloaded is 10 per pirate. If each of the 9 pirates were willing to pay £5 per download and the tenth would pay £10 to download the whole 91, then, assuming loss to be foregone willingness to pay, makes the infringement total loss £55 ($[9 \times £5] + [1 \times £10]$).

But using the same figures in a different calculation for the mean willingness to pay would be $([9 \times £5 / 1 \text{ download}] + [1 \times £10 / 91 \text{ downloads}]) / 10 = £4.51$ per download, and if you multiply that by the number of pirates you get a total loss of £451 (100 pirates \times £4.51). This is significantly larger than the figure of £55 in this hypothetical scenario.

If, on the other hand, the 9 pirates ascribed essentially no value to these downloads, while the tenth valued them at £55, the mean willingness to pay would be $([9 \times £0 / 1 \text{ download}] + [1 \times £55 / 91 \text{ downloads}]) / 10 = £0.06$ per download, for an assessed total loss of £6 - much smaller than the loss of £55.

These examples illustrate that order-of-magnitude differences, both under - and over - estimates, could result under some circumstances from a common methodological choice.

7. regulatorypolicycommittee.independent.gov.uk/
 8. www.ialibrary.bis.gov.uk
-

Concept House
Cardiff Road
Newport
NP10 8QQ

Tel: 0300 300 2000
Fax: 01633 817 777

For copies in alternative formats please
contact our Information Centre.

**When you no longer need this booklet,
please recycle it.**

DPS/IP Research-01/14

