



Making Cross-country Comparisons of Cultural Statistics: Problems and Solutions

International Comparisons of Cultural Sectors: An Exploratory Investigation*

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Abstract

Cross-country comparisons are popular in cultural policy. This paper looks at how cultural statistics are used in the making of such comparisons. Analysts have identified a general 'sloppiness' in current cultural statistics comparisons. The paper documents some of the major problems, in both data production and in data presentation, and provides a 'checklist' of good practice. The paper aims to provide guidance and ideas for anyone making cross-country comparisons of cultural statistics.

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Introduction

This is the first working paper produced as part of the Australia Council research project *International Cultural Sectors: An Exploratory Investigation*, which aims to analyse and compare aspects of cultural sectors in various countries and, where possible, draw inferences and implications for Australia.

This background working paper investigates the current state of cultural statistics and comparative cultural policy research, and outlines problems and issues in making international comparisons of cultural data. The section proposes a number of solutions to overcome limitations in making intercountry comparisons of cultural data. The aim is to provide context and guidance to the data gathering and analysis stages of the project, and to provide an evaluative framework for choosing and assessing the comparisons that will be analysed at the final stage of the project (inferences and implications for Australia).

Cultural statistics

While there has been a surge in the availability of cultural statistics since the 1980s, many cultural policy researchers and policy makers are questioning both the quality and policy relevance of this data (see for example Weisand, 2002; Selwood, 2002; Schuster, 2002a and b; Allin, 2000; European Taskforce on Culture and Development, 1997).¹ In his analysis of the 'state-of-play' in cultural statistics, Schuster (2002a) argues that:

- There has been a dramatic resurgence of investment in information and research in the field of cultural policy;
- Much of the cultural policy research that is being undertaken around the world today might be better thought of as the development of a statistical base of data rather than the conduct of policy-relevant research;
- It is not so much the shortage of data that should command one's attention; rather, it is the lack of use of those data that needs to be addressed; and
- With the proliferation of data from a wide variety of sources, the issue of how to assure the quality of the data has become even more important.

Selwood (2002; 12) echoes many of Schuster's observations:

[A]s a result of initiatives going back to the 1980s we have by now accumulated a mass of primary data. But how valuable has the pursuit of that data for the cultural sector actually been? Whatever the discussions about the quality of evidence gathered, questions also need to be asked about the use, or the lack of use, to which it is put... Until the cultural bureaucracy's analysis of data is guaranteed, and until the evidence gathered can be seen to be being used constructively, it could be argued that collecting data has been a relatively spurious exercise.

To redress the perceived imbalance between the supply and the use of cultural data, much work is now being undertaken to focus the production of cultural statistics more strategically – rather than simply creating data for its own sake, analysts are reviewing what it is that cultural statistics are needed for and how best to target data production to those needs. Statisticians are also assessing in greater detail what it is that cultural

¹ The increase in the production of cultural data appears to be confined to developed nations. Goldstone (1998; 350) suggests that the lack of basic cultural statistics in the 'poorest countries' is 'crippling' (see also Development Gateway, 2002; and Glade, 2003).

variables are measuring, and whether these data make sense in cultural terms (Foote, 2002; Guetzkow, 2002; Princeton University, 2002; Selwood, 2002; Yoshitomi, 2002; McCarthy and Jinnat, 2001; McCarthy et al, 2001; Matarasso, 2001). Some analysts doubt that statistics can ever measure all of the policy-salient aspects of culture, especially if data are to be used for making cross-country comparisons (McCaughy 2002; Price, 1999; Sen, 1998).

This process of review is driven by two notable international agendas. The first is ongoing work to develop meaningful 'cultural indicators' (IFACCA 2004). The second is the aspiration to promote international standardisation in cultural statistics to feed an ever-growing demand for comparative cultural policy analysis (Manninen, 2002; Walker et al 2002; Lievesley, 2001; European Commission, 2000).

A lack of good quality, policy-relevant cultural data appears to have prompted a flurry of reviews about what cultural statistics should be measuring and how such statistics should be generated. This is most evident in work being undertaken to review and reshape cultural statistics 'architectures' - the statistical frameworks, definitions and classifications used to describe art and culture. The variety of topics and range of countries represented at the International Symposium on Culture Statistics, Montréal, October 2002, is testament to the substantial development work currently being undertaken in cultural statistics.²

Such development work will undoubtedly lead to more readily comparable cultural statistics in the future. At present, however, the state of flux caused by development work hampers intercountry comparisons, as innovations in cultural statistics do not occur uniformly across countries.

In summary, there is currently a steady supply of cultural data in developed nations, although concerns over the quality of this data have prompted substantial work to improve data by developing better methodologies and statistical architectures. Two crucial implications for the current project are:

1. There is a concern over the quality of cultural data - cultural statistics should be viewed with a healthy scepticism; and
2. Standardisation is still a work in progress - there are substantial limitations to comparing cultural data between countries.

International comparisons

Comparative cultural policy analysis – the comparing of cultural policies between countries – is an important element of much cultural policy analysis and research, and has been the subject of lively academic debate (Schuster, 1987 and 1996; Kawashima, 1995; Gray, 1996, Belfiore, 2004). A number of reasons have been put forward for cultural analysts' desire for international comparison:

- An innate suspicion of national, and potentially 'nationalistic', cultural policies, meaning that policy development can be only fully trusted in context of independent verification (Schuster and Amad, 2002).

² Symposium papers are available on-line at http://www.colloque2002symposium.gouv.qc.ca/h4v_page_accueil_an.htm.

- Increasing global integration of cultural practices, which makes internationally-focused analysis superior to nationally-focused analysis (Belfiore, 2004; Schuster and Amad, 2002; Foote, 2002).
- Increased global integration of nation states and the rise of cross-national governance (Schuster, 2002, p 35; Jowell, 1998).
- A vagueness in cultural policy, brought about by the esoteric nature of culture, which promotes comparison as a way of contextualising and articulating abstract cultural policy issues (Weisand, 2002).
- A dearth of quality data, discussed earlier, which causes policy analysts to seek overseas information for adapting to local conditions, or for double-checking untrusted local data (Weisand, 2002).

Lievesley's (2001; pg 378) reasons for developing comparative cultural statistics mirror the policy imperatives above:

- To enable countries to gain a greater understanding of their own situation by comparing themselves with others, thus learning from one another and sharing good practice.
- To permit the aggregation of data across countries to provide a global picture, thus enabling the design of international initiatives informed by evidence.
- To provide information for nation-state accountability, and for the assessment, development and monitoring of supranational policies.

Jowell (1998; 168) simply states that '[t]he importance and utility to social science of rigorous cross-national measures is incontestable.'

The surveys in Kelland and Selwood (2002) and Schuster and Amad (2002) indicate that cultural statisticians ply a healthy trade in international comparisons. Schuster (2002b; 21) is optimistic about such comparisons:

Methodology has become sufficiently refined over time and sufficiently similar across countries that, for the first time, it has become possible to envision truly cross-national comparative studies.

Belfiore (2004; 41) takes a more pessimistic view:

The methodologies that currently guide comparative cultural policy research are largely inappropriate, and do not meet the specific requirements of cross-national research.

The next section explores some of reasons why caution should be exercised when making cross-country comparisons of cultural statistics.

International Comparisons: limitations and problems

The current project aims to make meaningful comparisons of cultural data across countries for informing policy and strategic decision-making. A rise in the production of cultural statistics in a number of countries has made the prospect of international statistical comparison a real possibility, and a substantial number of comparative studies already exist. Yet the cultural policy literature is peppered with warnings about international data comparisons (for example, Belfiore, 2004; Glade, 2003; IFACCA, 2002; Lievesley, 2001, p. 378; Price, 1999; Sen, 1998; European Taskforce on Culture and Development, 1997; Mitchell, 1996a and b). With apparent hypocrisy,

stern warnings about comparisons are sometimes made by analysts who are themselves undertaking a comparison.

There is a long list of documented problems in making intercountry comparisons of cultural data. A good introduction can be found in Mitchell (1996a and b). For simplicity, the problems highlighted in this working paper will be grouped into two types: data production problems, and data presentation and utilisation problems.

Data production problems

Data supply issues present the most obvious barriers to making cross-country data comparisons. Some of the more common supply issues are listed below.

Data availability

As already noted, although many developed countries have amassed a substantial base of cultural data, data availability is still lacking in many countries. This limits the scope of comparative analyses.

Data quality

As noted earlier, concerns have been expressed over the quality of cultural data. Issues of quality identified include: inherent difficulties in quantifying culture; methodological shortcomings in extant data; and unreliability of data generated in self-serving research by cultural agencies (Selwood, 2002; Schuster, 2002b, p.21; Nielson, 1999; Goldstone, 1998; van Puffeln, 1996). If cultural data reflect poorly the cultural reality *within countries*, problems are exacerbated when comparing data *between countries*.

Non-standardisation of data

Despite a rising standardisation in cultural statistics, it is still extremely rare for cultural data to be gathered in exactly the same way in different countries. It is useful to consider two types of differences: differences in definitions and classification, and differences in methodologies.

Differences in definitions and classifications

Different countries have different definitions of culture (ie. differences in the scope or boundaries of culture) and different classifications of culture (ie. the cultural domain is broken down in different ways). Many of these fundamental differences result from differences in institutional arrangements in the cultural policy arena (for example, some cultural ministries have responsibility for the design sector, others do not, and their definitions will reflect this difference). Other differences may be philosophical, theoretical, historical, or simply arbitrary. However they arise, differences in definitions reduce the degree of comparability of cultural data. In the case of arts participation surveys, for example, Pronovost (2002;3) notes that 'there is little consensus on the international level as to the choice of categories of cultural activities,' so that 'identifying an activity as simple as reading is a problem.' Schuster's (2003; 8) three approaches to dealing with issues of boundary definition in comparative analysis – namely inclusive, floating and anchored boundaries - are now well-documented. The floating boundaries approach, where the definition of the arts or culture is allowed to vary between countries, appears to be the most common choice for cross-country comparisons of cultural data.

Differences in methodologies

There are few surveys that use the same survey questionnaire and format across countries (a recent exception is the Euro barometer survey of Europeans' participation in cultural activities; Spadaro, 2002). Countries more commonly design their own survey instruments, which means that methodologies also tend to differ. Although surveys may measure broadly similar cultural phenomena, such as arts participation, more often than not the surveys are for different years, different time-frames (eg.: last four weeks; previous twelve months), and different age groups, and use different question formats, wording of questions, and different survey instruments (eg: phone, face-to-face or postal surveys; Census or sample populations). Even with commonplace variables that might appear highly comparable, such as cultural participation rates, methodological differences can make comparison difficult or impossible. The slightest difference in methodology can prevent a 'true' comparison.

Attempts to account for methodological differences are fraught with difficulty. An adjustment may require the recalculation of a survey's raw data, which is not always practical; or it may require the estimation of a counterfactual, which is prone to inaccuracy. A valid adjustment may simply not be possible.

Structural inter-country biases

Even where data are produced in similar ways, structural differences between nations can cause biases that complicate inter-country comparisons. Schuster (2001; 6) demonstrates how structural differences between countries can bias data on *per capita* government arts expenditure. Cultural differences between countries can also bias data, even when data are generated from the same survey. For example, in the Eurobarometer survey of Europeans' cultural participation, problems were experienced in comparing national data due to differences in local interpretations of apparently familiar terms such as 'concert', 'opera' and 'museum' (Skaliotis, 2002).³ Belfiore (2004; 44) argues the case for a methodological *contextualisation* in comparative analysis that accounts for the 'social, cultural and political contexts in which social phenomena manifest themselves.'

The list of problems above is hardly unique to culture – they are the curse of comparative statisticians in all areas of public policy.⁴ The issue for comparative cultural research is whether these problems are significant enough to make comparisons futile or ill-advised. Glade (2003; 23) takes a pessimistic view:

So varied, from country to country, are the definitions of the cultural sector and its components and so varied the methodologies applied to its study, starting with data collection and classification, the task of finding data with sufficient comparability to be useful in comparative analysis is monumental.

³ Here cultural differences between countries are being blamed for causing problems in comparing data that measure culture. The paradox is endemic to cultural analysis more generally and is unraveled in detail in McHoul (2004).

⁴ Similar problems are noted by researchers in policy areas with more established statistical traditions than culture. Examples are for: crime statistics (Barclay et al, 2002); labour force statistics (Capdevielle and Sherwood, 2002); and agricultural industry statistics (American Association of Agricultural Economics, 2000).

At first sight it might appear that many of the problems outlined above would be avoided through standardisation. But they are present even in cross-national surveys – or standardised surveys applied across a number of countries. Jowell (1998) records a long list of problems in cross-national studies, using as a test case the International Social Survey Programme, which is ‘widely regarded as a conscientious, rigorous, and successful model of a cross-national social survey’, and for which, ‘despite its high ambitions and the relative diligence with which it applies its standards and rules, inconsistencies between countries still abound’ (Jowell, 1998; 196). Similar sentiments can be found in Skaliotis (2002) and Spadaro (2002) for the Euro barometer survey on Europeans’ participation in cultural activities. Lievesley (2001; 381) pessimistically suggests that ‘[n]o cross-national study can be perfect as far as comparability is concerned and it is only too easy to find reasons why the data should not be taken seriously.’

Data presentation and utilisation problems

There are indications of a general sloppiness in the presentation of comparative cultural data (Kelland and Selwood, 2002; IFACCA, 2002). Some of the major issues are set out below.

Presentation without context

The most common concern is that data are presented without proper context. Lievesley (2001; 378) finds that ‘[h]ow indicators are presented can be a cause for concern. They are often stripped of their essential metadata.’⁵ As UNESCO (2003; 51) notes, ‘[p]roper metadata systems provide information on methodology required in order to ascertain whether the data set in question is fit for use in cross-national comparisons.’ As Belfiore (2004) points out, contextualisation can extend beyond simply describing statistical metadata to include accounts of differences and similarities in the social, cultural and political systems of countries being compared.

Although many cross-country tabulations do not pretend that data are comparable, the very act of presenting data in the same table only encourages comparison and therefore misuse. Any inferences taken from uncontextualised data are more than likely to be wrong, and the practice is to be strongly discouraged.

Presentation with obscured context

More sophisticated analyses attempt to account or adjust for underlying differences in data, or if differences cannot be reconciled, at least note these irreconcilable differences as caveats (some examples of these more detailed analyses are: Arts Council of Ireland, 2000; European Commission, 2000; Feist, 1998). However, IFACCA (2002; 6) finds for many of these more carefully constructed analyses that ‘caveats are typically buried within the text, while data remain boldly tabulated side-by-side. Differences underlying the data are thus obscured, and too often conclusions are drawn from incomparable data’.

⁵ ‘Metadata’ includes such information as data dictionaries, record layouts, questionnaires, sample designs and standard errors (UNESCO, 2003; 52).

League tables

League tables are so common and so controversial that they deserve a special note. The league table is the archetypal cross-country comparison: it is a data table that ranks countries by some chosen variable (*per capita* government arts expenditure is a particularly popular league table in cultural policy). Schuster (2002; 7) notes:

Through the 1970s and the 1980s, the league table became the *sine qua non* of much comparative research on arts funding. In the mid 1980s I counted sixteen different studies in English that had generated sixteen different such tables and was able to demonstrate that, depending on the methodologies and the biases of each of the studies, countries jumped all over the time series graphs on which I compared the results of these studies. Their popularity continues unabated, though subsequent research has made it more and more difficult for researchers to remain ignorant of the issues [raised earlier in Schuster's paper]. Nonetheless, the literature is full of such tables; they are very hard to resist.

Schuster demonstrates the dangers of the league table using the example of arts funding *per capita*. He concludes that the flaws of league tables are simply 'apparent'. Lievesley (2001; 378) agrees, expressing grave concerns over the way in which league tables are constructed, presented, manipulated and misused. She concludes that 'it is debateable whether the creation of these league tables is a statistical exercise.'

Misuse, misinterpretation and strategic hazard

A common concern about international comparisons of data – and league tables in particular – is in how the comparisons are interpreted and re-used by others. Cautious researchers may provide a full list of warnings and caveats about data limitations, but they have little control over how others use their work. Even the most carefully tabulated, fully-caveated, comparative analyses can be misinterpreted, used out of context, reproduced without caveats, manipulated or otherwise abused.⁶ Schuster (2002; 7) illustrates one such instance of 'strategic hazard':

In 1984-85 I was asked by the Policy Division of the National Endowment for the Arts to conduct a comparative study of the structure and level of funding for the arts and culture in eight countries in Western Europe and North America... In the latter stages of my research I received a call from a Canadian government researcher. His minister had passed along an emergency request. He needed to know how Canada stacked up against others in arts funding, and he needed to know yesterday. This researcher pleaded with me to release my preliminary figures to him. His job would be so much easier if he could take advantage of work that had already been done. I relented, and we spent considerable time going over the numbers and my lengthy list of methodological caveats and footnotes. Within a day or two said minister was on national television citing new comparative research showing that per capita expenditures for culture in Canada were at a high level, on a par with Sweden, France, Germany, and the Netherlands. I no longer have perfect recall of these ensuing events, but I seem to remember that the Canadian figure had managed to increase, rather substantially, overnight.

Lievesley (2001; 381) describes other hazards of which the comparative statistician should be wary:

[F]requently politicians or senior civil servants are dismayed by the relative results for their countries and tend to blame the messenger rather than examining the

⁶ Such misuse might be thought of as a 'strategic hazard', a generalised form of 'moral hazard' that is well-documented in the social sciences and policy analysis.

message... An outcome of this unhappy state of affairs is the withdrawal from cross-national research of those countries which achieve disappointing results, and occasionally a more catastrophic effect on the career of the national statisticians involved.

Researchers and statisticians tend to covet clarity and objectivity, and are prone to disappointment when these principles are overlooked by others who may not share their standards of excellence. Although they may be unable to control others' actions, they would be wise to anticipate the vested interests for which their findings may be appropriated and try to take precautions to prevent the misuse of their research output. Equally, though, statisticians can beneficially exploit the strategic environment in which their research is communicated and interpreted. For example, Lievesley (2001; 378) notes that, for development indicators, 'international statisticians have sometimes been reluctant to elaborate on the limitations of league tables because they can see that the media and political attention given to league tables raises the profile of development.'

Strategic issues such as these reinforce the importance of being clear about the objectives of comparison: the desired ends are often in conflict with the statistical means. Before comparison is made, it should be clear *to what end* the comparison is to be put, and these should be clearly communicated as an integral part of the research.

Mitigating the problems of comparison

Jowell (1998; 174-176) outlines ten 'rules of thumb' for mitigating some of the problems of intercountry data comparisons, including⁷:

- Compare familiar countries: 'Social scientists should undertake not to interpret survey data relating to a country about which they know little or nothing.'
- Limit the number of countries: 'Analysts of cross-national data should resist the temptation to compare too many countries at once.'
- State limitations clearly: 'Social scientists contemplating or engaged in cross-national studies should be as open about their [study's] limitations as they are enthusiastic about their [study's] explanatory powers.'
- Apply the strictest of quality controls: '[T]he same technical standards as we would impose for national surveys should apply to cross-national surveys too. Arguably, they should be even higher in view of the fact that country will inevitably be one of the major independent variables in the analysis.'
- Be sceptical: 'Analysts of cross-country data should undertake to suspend belief initially in any major intercountry differences they discover.'
- Be aware of data context. 'All too often, analysts seem to compare national data sets *in vacuo*.' This is more than simply understanding differences in frameworks and methodologies, it is also about considering the broader context within which a

⁷ It should be remembered that Jowell is focussing on cross-national surveys; ie. on single surveys applied across a number of countries. However, the principles apply equally well to comparisons of independent national surveys.

comparison is being made. Take for example comparisons of government expenditure on the arts: these comparisons cannot account for the many indirect forms of government support, such as tax relief for artists, tax incentives for arts consumers (eg. consumption tax exemptions), tax incentives for philanthropic giving, and the variety of other forms of indirect support that governments provide to the arts. It is misleading to use direct government arts expenditures as an indicator of *overall* levels of government support for the arts *without* accounting for indirect forms of support.

Lievesley (2001; 380) expresses doubt about how achievable the first two are in practice, but declares the last three ‘very important lessons for international statisticians.’

A number of other recommendations might be added to Jowell’s list in light of the discussion here:

- Clear objectives: Be clear about why a comparison is being made. Furthermore, if ‘real’ intercountry differences in data are found (rather than differences brought about by measurement biases), have a clear idea about how to interpret the differences and what the differences imply for policy. This point was stressed at the seminar on comparative research reported in Arts Research Digest (2003).
- Avoid ‘league tables.’
- Use trend data. Trends will be less influenced by methodological and contextual differences, as long as these differences are stable over time. For example, it may be unwise to compare levels of government support between countries for any particular year, but trend data may provide a more reliable indication of which countries support is increasing, and which countries support is decreasing (assuming that structural changes and other such exogenous influences can be accounted for).
- Use ratios and statistical indicators. Ratios and other statistical measures can circumvent many of the problems with comparisons. For example, rather than compare artists incomes between countries, the *ratio* of artists’ incomes to average incomes might be used as a comparison statistic. The ratio allows implications to be drawn out about artists’ relative earnings between countries while avoiding the need to choose an appropriate real exchange rate. Choice of exchange rate is also an issue when comparing government *per capita* arts expenditure is being compared.

Schuster (1987; 2) proposes a set of thirteen key questions that should be ‘kept in mind’ when undertaking, evaluating or reading international comparisons. These thirteen questions are as relevant today as they were in 1987:

- 1) What appears to be the central research question in the study?
- 2) What is really at issue? Is there an underlying political agenda?
- 3) Is the research intended to compare or to explain? Do the methodological choices made by the researcher facilitate or frustrate that goal?
- 4) What is the boundary of analysis? Is it clear?
- 5) Is the boundary of analysis appropriate to the research?
- 6) How was the choice of countries made?

- 7) Are [the countries] appropriate to the research?
- 8) How were the data collected?
- 9) What were the data sources? Are they reliable?
- 10) Are the financial calculations made in agreement with the boundaries of analysis?
- 11) What summary statistics are used? Are they appropriate to the research?
- 12) Are the conclusions justified by the evidence?
- 13) Are the conclusions modestly presented, recognising the limitations of the research method, the data, and the analysis?

These rules of thumb and analytical questions serve as a good evaluative tool before and after undertaking cross-country comparisons. They are summarised in Appendix 1 as a 'checklist' guide.

Summary

Despite significant advances in the production of cultural statistics, our ability to make intercountry comparisons of cultural data is still limited. Data are generated in different ways and for different reasons. Differences in social and institutional environments between countries are difficult or impossible to account for. Structural differences between countries can significantly bias data. Many of these problems are present even in cross-country data that are generated from the *same* survey.

Cross-country differences in cultural data may, therefore, be due to differences in measurement rather than to 'real' differences in cultural phenomena. Benchmarking, or drawing policy and program implications from such data should be strongly discouraged.

On the other hand, there are a number of real benefits from undertaking comparative cultural policy analysis. Comparative statistical analyses can uncover information that is indispensable for domestic policy formulation and evaluation. The list of problems documented here may seem overwhelming, but measures can be taken to mitigate their impact on comparative data and allow limited, cautious comparisons to be made. But, if the decision is made to undertake a cross-country comparison despite all the drawbacks, pitfalls and strategic hazards, there is one crucial question that needs to be clearly thought out and articulated: why is a comparison being made at all?

Appendix 1: Checklist for cross-country cultural data comparisons

Below is a selection of recommendations and issues to be considered by anyone wishing to undertake an international comparison of cultural data. These are taken from the literature and analysis in the previous pages, and grouped into three broad categories. Please feel free to suggest further items for the list by emailing info@ifacca.org.

1. Planning the comparison

- Be sceptical
- Be clear about why is a comparison being made
- State the research question
- State the research objectives
- Clearly define the domain that is the basis for comparison (art, culture, cultural industries, creative industries etc) and its constituent elements (visual arts, music, etc.)
- Decide whether boundaries for the definition will be ‘inclusive, ‘floating’ or ‘anchored’
- Consider how the comparison will be reported and used by others. Anticipate and consider how to avoid possible misuse.

2. Selecting countries and statistical variables

- Compare familiar countries
- Limit the number of countries being compared
- Use trend data, ratios and statistical indicators
- Use information sources as close as possible to the data source
- Assess possible statistical indicators to be used:
 - Are they unambiguous?
 - Are they appropriate for the research objectives?
 - What do changes in the indicator mean?
 - How sensitive are the data to differences in definitions, data architectures and statistical methodologies?
 - What external (or ‘exogenous’) factors might cause apparent cross-country differences in data?
- Consider other institutional and structural differences that might influence the comparison.

3. Presenting the results

- Clearly state the reasons why countries are chosen
- Provide ‘metadata’ for each country’s collection
- Provide contextual information on relevant social, cultural and political aspects of the arts and culture for each country
- State data limitations clearly in a set of caveats
- Place caveats within - or as close as possible to - data tables and graphs
- State clearly how ratios and indicators are calculated
- Avoid league tables
- Avoid conjecture: only draw conclusions that are clearly supported by the data; do not draw conclusions that can be disputed from alternative interpretations of the same data.

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