

## **Science Culture Index (SCI)**

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### **Cultural Indicators:**

The term refers to the performance of the culture industry, the sector of the economy that includes design, architecture, advertising, cinema, arts, music, museums, the production and consumption of products and performances. Culture is seen as a productive sector, also known as the 'creative industry'. Indicators account for it like for any other sector of the economy, by its added value to GNP, its share of employment, its relative growth and export value (eg for the UK the Work Foundation, 2007). It is well established that the advertising sector is closely tied with the economic cycle and a long-term constant ratio of GDP in many contexts (Chang & Chan Olmstead, 2005) <sup>1</sup>.

\* The role of Indigenous Knowledge Systems (IKS) in, for example, the craft sector is a crucial aspect to consider.

UNESCO uses the term to compile statistics on cultural diversity including languages, religions, festivals, sites of nature and heritage, museums, communication and translation efforts, and the consumption of cultural goods like cinema or museum visits and concert going. Diversity is a problem of differential access, but also a source of creativity and thus an intangible economic asset. The system of indicators is still in development, but aspires to global reach and consistency.

FAO (2003) sponsored an initiative on 'Cultural indicators for SARD', i. e. sustainable agricultural development. Here the term serves as the title for a questionnaire among indigenous peoples and their representatives to assess the significance of local and traditional knowledge in their agricultural practices. Here the term confers significance to traditional knowledge as an asset of traditional agriculture.

The term has a history in mass media research. Here cultural indicators refers to the 'cultivation' research programme which studies the mid-range power of the mass media to cultivate ideological beliefs about the world, such as 'the world is generally mean' (Gerbner, 1996) <sup>2</sup>. This programme combines systematic mass media scoring, the cultural indicator, with large scale survey research, the public belief, to assess the extent to which belief is 'cultivated' in function of exposure to television:

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<sup>1</sup> There are 40 million craftspeople in India who possess some 13 million small businesses, adds 45% to the production of goods, 8% to the national GDP and who exports 40% of their products (Hester du Plessis. Research Chair in Design Education and Innovation, National Institute of Design (NID), Ahmedabad, India. Report to the Faculty of Art, Design and Architecture (FADA), University of Johannesburg. April 2010).

<sup>2</sup> The current 'happiness index' could serve as a case study to refer to: the intensity of reporting in the Mass media on 'the world is generally mean' and the populations score in 'happiness' could be correlated.

the more hours a day you watch TV the more you assimilate your worldview to that of the average TV program. These studies were paradigmatically focussed on the presentation of violence on TV and the resulting belief in a mean world. Similar effects were found on gender images or public opinion on Science and Technological (S&T) developments in society. Here culture mostly means the 'unrealistic world of TV' empirically de-facto mainly in the US, which is a driver of everyday beliefs, the independent variable in the research programme.

The term cultural indicators arise in cultural sociology that maps cultural change on the bases of mass media analysis (Klungemann, Mohler & Weber, 1982). Here the data stream is mass media material coded with the systematic rationale of longitudinal content analysis. An interesting feature of these discussions is the distinction between 'social' and 'cultural' indicators. Social are *indicators of actions*, metrics by which one evaluates social interventions. They can indicate the successes and failures in the management of social affairs like poverty, infant mortality, crime, analphabetism, etc. By contrast, cultural are *indicators for action*. They map a context to be considered for action, but not to be acted upon at least in the first instance. This context might be very diverse and uncontrollable (Melischek, Rosengren & Stoppers, 1984). Before the climate was anthropogenic, one would have used the metaphor of 'moral climates' as opposed to the 'daily weather of opinions'. This notion suggest to open the view for alternative data streams other than the representative survey based on standardised questionnaires responses, e. g. to map the public climate for science through systematic mass media monitoring (Bauer, 2000).

The term 'culture' appears in forms of co-variance analysis of literacy data. For example the international assessment of mathematical literacy (TIMSS) uses variety of scales that measure different cognitive demands of mathematical problem solving. With different profiles of average strength and weaknesses, these scales characterise 'national cultures of mathematics': the US focussing on declarative and procedural knowledge, France emphasising advanced concepts, Sweden oriented towards practical problem solving and Germany is good in graphical representations. These profiles reflect traditions of teaching some mathematical competences at the expense of others (Klieme & Baumert, 2001)

The term culture appears in large scale survey research to refer to *a class of questionnaire items* which tap into cultural dispositions with a long cycle of change, namely *values*. By contrast more 'superficial' opinion, attitudes and beliefs have a shorter life cycle. Here the problem is to operationalize this class of variables with survey items, and to monitor the long-term changes in and across the populations. Examples are the research into 'post-materialism' (Inglehart, 1990) and subsequent global efforts of the 'world value survey' around values orientations of survival, life style, well-being and happiness. These efforts must be seen as a part of the subjective '*social indicators movement*', which since the 1970's gathered pace and established monitors of the 'subjective state of the nation'. For example, the measure of 'confidence in institutions' has received critical methodological reflection as to potential sources of error: the measures vary with the company that does the survey, inferences on a change must be based on large scale differences in order not to be misleading (Turner & Krauss, 1978).

**For the present we would like to retain several, but not all of the above concerns, in particular the concerns for**

- The global quest for a routine science culture index with a global validity

- Culture as a context for action rather than a focus of management
- Datasets based on representative surveys of the population.

## References

**Content sourced from: The Science Culture Index (SCI): construction and validation. A comparative analysis of engagement, knowledge and attitudes to science across India and Europe. Concept paper. Shukla, R. and Bauer, M. Supported by the Royal Society of London, UK. London and Delhi. September 2007.**

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