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Performance indicators

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Performance indicators (PIs) are used in relation to concepts for which a direct measure is not always observable when monitoring development towards a desired goal. For this reason, they are devised as combined relevant quantifiable values that can be followed in time to give a partial metric of a given action. PIs may be used to report effectiveness by measuring profitability within the commercial sector, for example. In contrast, arts and cultural organisations, as well as other non-profit sectors, have a specific legal and financial structure to support the organisational goals related to delivering intangible services (such as a cultural experience, education, health, or sustainability) and to advance societal values (Forbes, 1998). In addition, services provided may have public good characteristics, may be a natural monopoly, may suffer from socially inefficient levels of consumption (or production) due to information asymmetries, and may receive public subsidy or be publicly provided, requiring a different approach than a simple investor-management accountability system. As a result, PIs to measure effectiveness are not easy to define, and if developed, may not indicate whether the organisation is operating on its production frontier, that is, efficiently (Peacock, 2003).

PIs are intended to support decision making on the allocation of resources by evaluating opportunity costs and, in the cultural sector, have often responded to changes in cultural policy. Schuster (1997) notes three characteristic periods: in the 1960s, the concept of social indicators was developed to complement economic indicators; in the 1980s, attention moved towards making inventories of the size and activity of the sector; and in the 1990s, a focus on monitoring the management of the use of public funds for accountability drove the design and use of PIs. We can add two additional turning points in the development of PIs for the arts and culture sector. First, the recognition of

intangible cultural heritage and, to a certain extent, digital heritage[1] by UNESCO in 2003, which have raised the need for revised indicators. The publication of the latest UNESCO framework for cultural statistics in 2009 reflects this effort. Second, as we approach 2020, the increased availability of digital metrics has made quantitative measurement more amenable to arts and culture, particularly the creative industries, and exploration of new metrics and PIs is underway.

PIs can be grouped into three main types, depending on their function: for internal quality improvement (*formative assessment PIs*), for external accountability (*summative assessment PIs*), or simply for descriptive purposes (*descriptive PIs*) to understand the given area of inquiry. We describe each type and provide some examples.

Formative assessment PIs

PIs of this type are used for: i) internal quality assessment; ii) respond to a specific internal policy decision process; iii) are meant to document internal performance and iv) are change-oriented in order to improve quality of the work being performed. These PIs are tailored to the specific goals, make-up and history of an organisation and may not always be compatible with those of other organisations. The type of PIs created for formative assessment can also be referred to as *micro indicators* (Madden, 2005). Generally, organisations develop a set of critical PIs, selected and defined to support management in monitoring factors of particular interest regarding an activity, an organisational unit, or a desired goal. These are referred to as Key Performance Indicators (KPIs) and are aligned with the organisation's strategy.

For example, an institution such as a museum may want to produce large quantities of scanned material for online publication, where the goals are to increase access for research, to reduce the risk of damage or theft of the originals by users and to lower the price per scan. In this case, the quality of the process is defined by the ability to capture the relevant parts of the object in an image and by the correctness of the file name, audited mostly automatically across the production chain with some manual quality controls. Such an institution would develop a set of PIs that document the price per error-free scan and the number of requests of scans by consumers over time. In contrast, another institution may consider the number of objects manually photographed using

the highest quality of standard (for example regarding colour, sharpness, light, or background) and the file format, giving less attention to economies of scale, focusing instead on custom imaging. These examples demonstrate that while two institutions can have a similar goal (that of creating accessible quality digital images of the collection), they may nevertheless approach evaluating differently and use different PIs. Taking another example from museums, quality of output can be reported as the number of donors and amount of funds in a year to make a certain number of acquisitions possible, while another museum may decide to stop acquisitions altogether and rather focus on repatriation or restitution of collections, reporting use of private funds to achieve this.

Indicators measuring resources, their provision and costs, are the most widely use, followed by indicators of service provision. These indicators can respond to questions of internal efficiency in the allocation of resources to a given goal, such as number of staff needed to deliver a service in a given time.

Instead, measures of outcome are not simple to design, and pose methodological problems as they can be profoundly influenced by factors beyond the control of the arts and culture institution. Whereas an effective healthcare system, for example, is measured by the ability to attain improvements in health (say, to decrease post-neonatal mortality rate), effectiveness in arts and cultural services is less easy to express. In addition, factors that profoundly influence the outcome will have to be considered, such as the local social and economic circumstances.

Increasingly, arts and culture institutions are asked to articulate their value propositions or to demonstrate the impact of the services provided. Few institutions keep track of *consumers* (repeat visits), and most instead report general *consumption*, where the volume of ticket sales is used as indirect indicator of artistic quality. Documenting change in composition or participants has proven challenging.

A certain level of harmonisation in PIs can be achieved when comparison between institutions is desired, eventually making formative assessment PIs part of a set of summative assessment PIs. Such is the case of library PIs which evolved from an internal work process and have been standardized internationally (see the ISO 11620 Information and documentation – Library performance indicators) (ISO, 2014). Such an international standard aims at endorsing the "use of performance indicators regarding the quality of library services in libraries and to spread knowledge about how

to conduct performance measurement" (https://www.iso.org/standard/56755.html). For museums, there is an international standard on the collection of statistics (ISO 18461 International museum statistics) (ISO, 2016), while an international standard on the formulation of PIs in underway (ISO 21246 Information and documentation – Key indicators for museums) (ISO, forthcoming).

Summative assessment PIs

PIs of this type are designed to verify performance, mostly for external accountability based on comparisons with a set benchmark or desired quality of service, or to verify compliance with a certain regulation. PIs created for external accountability are designed by government bodies such as cultural councils and international organisations such as UNESCO. These institutions make use of the available data to respond to their policy questions but can also develop tools to gather the desired data. These indicators are used to specifically capture performance in a particular type of cultural form, such as music, or institution type, such as museums ('meso indicators'), or for national or regional comparison across the entire sector ('macro indicators').

The UNESCO Culture for Development Indicators (CDIS) describe a set of 22 qualitative and quantitative indicators across seven policy dimensions to map the role of culture in development. Culture may have an impact on: i) development processes in the economy, measured by contribution to GDP, employment and household expenditure; ii) in education, measured by type of education and professional training; iii)in governance, measured by policies, infrastructures, and civil society; iv) in society, measured by participation, identity-building, and trust; in gender, measured by equity; v) in communication, measured by freedom of expression, Internet use and diversity of media content; and vi) in heritage, measured by heritage sustainability (UNESCO, 2014).

PIs used for external accountability have encountered some issues. Schuster (1997) noted that PIs can be extremely powerful to dictate behaviour when attached to financial rewards, as cultural institutions may want to manipulate results to gain a greater benefit. This opportunistic strategic behaviour is further observed as managers choose to cite or ignore indicators when convenient. Another issue is the difficulty of generalizing results across institutions, using the same method to report performance, as this may lead to skewed comparisons. This is because institutions because may pursue different

objectives (responding to their organisational mission), may have different needs (for instance, a video museum has different expenses than a historical museum when delivering a service), may have different costs (for instance due to organization size or location), may benefit from different levels of managerial competence in the use of resources, or there may simply be errors in the measurement (as organisations manipulate results for their benefit).

Descriptive PIs

Descriptive PIs, used for monitoring activities, are not specific to an organisation or a programme but are instead meant to track changes across larger periods of time. For example, the measurement of the number of museums in a given region relative to the population in the same region can be used as indicator of the cultural infrastructure available or the equity in service delivery; similarly, the share of the population that participates in a cultural activity can be used as indicator of cultural vitality or social engagement; and the number of volunteers per visitor can be used as indicator of economic impact or community engagement.

Challenges

There are three main challenges to the construction of indicators: the interpretative nature of definitions and concepts, availability and quality of data, and the ever-changing requirements.

Definitions

All indicators are constructed to provide an approximate numerical measure of a concept, which is generally done by means of a set of PIs. PIs are hence strongly susceptible to the definitions guiding them (Madden, 2005). It may be inevitable that by selecting certain PIs, some aspects may become visible while others may be marginalised. Taking a museum example, using the number of visits as indicator of quality of an exhibition excludes the number of citations of a publication reporting the curatorial investigation behind the given exhibition. PIs are ‘conceptual technologies’ that shape which issues are discussed and how.

PIs are meant to measure and monitor activities, to compare against a strategic vision or a regulation, but they are not able to explain why such results are obtained. This is

the role of the analyst interpreting the data (methods generally include ratios, relations, cluster analysis, regression analysis, data envelopment analysis, and creation of composite indicators). The selection of PIs is crucial, as is transparency of their analysis. This is particularly noticeable when devising metrics for abstract, heterogeneous concepts, where quantification is fuzzy, such as for quality of service. Often, proxies or surrogates are devised, for example to quantify quality based on the novelty of programming or prestige and recognition of the artists (Gómez-Vega and Herrero-Prieto, 2019).

Because PIs are based on quantitative metrics, differences in the definitions of related terms may also prove a challenge. Such is the case of the application of the definition of 'museum', which in some countries may include institutions open by appointment only while other countries only include institutions open regularly throughout the year. All country definitions are *interpretations* of the official ICOM (International Council of Museums) definition of a museum. This makes the work of large statistical centres highly valuable, to homogenize when possible, as in the case of Eurostat.

Data availability and quality

PIs "lie at the nexus between the *production* of cultural data and the *analysis* of cultural phenomena" (Madden, 2005:221). That is, data is gathered based on what is to be analysed and with an understanding of the services developed. However, due to the cost of data collection, there is a tendency to focus on measures available (such as concert tickets or streaming sales), neglecting less easily quantifiable phenomena (such as participation in amateur choirs). One of the most difficult metrics is quality of service, making it nearly impossible to truly assess efficiency. Quality of data is further an important issue, where results may reflect the collection and analysis process rather than the service being evaluated.

Data availability may be affected by change in policy priorities, which may expand, change, reduce data gathered across years, or changes in funds available to gather the data, making it difficult to analyse changes in time. In the Netherlands, the national statistical office (CBS) has stopped collecting data about archives due to a budget reduction; this had not been taken up by any other national institution at the time of writing. Museum data, on the other hand, has been streamlined and collected collaboratively with the National Museum Association (NVM). Increasingly, digital

technology allows for automated logs of all transactions, yet these are generally privately owned and rarely available for public analysis or academic research.

Data gathering requires commitment, systematic work and long-term vision. These are not always available. An example can be found in the data available about museums in the European Group of Museum Statistics (EGMUS), which show varying activity across countries, years and data reported. Besides the efforts of individuals employed in statistical offices (or other responsible institutions), quality data gathering requires resources as well as a policy directive to guide the recurrent production and analysis of records and surveys.

The increasingly digital lifestyle has in fact allowed the documentation of a number of transactions, that could very well feed a comprehensive analysis of arts and cultural activities and lead to eventual correlations. Statistical offices are partnering with telecom firms to purchase datasets on the behaviour of tourist groups from a given region, for example. The challenge of the new available *big data* lies in the rules and regulations protecting privacy, though, as well as in the cost of data acquisition and analysis, particularly when held by a private firm (such as Google).

Changing requirements

With the emerging need for evidence-based policy, new indicators require new data sources. UNESCOs Sustainable Development Goals (SDGs), for example, envision culture to play a key role in the development of economies, societies, and individual capital. Furthermore, new forms of cultural production and consumption are emerging, which allow for new insights in the arts and culture ecosystem. This requires policy makers, as well as institutions, to devise new PIs to better respond to their needs.

Whereas PIs for education have a more robust collection system, for instance to consider educational attainment (counting resits, drop out rates, and progression) and employment and earning benefits, to date cultural indicators remain a snapshot of a population group, even if they are tracked across time, because of the lack of analysis of digital consumption tracking mechanisms, such as online consumption or digital sales. Currently available data on cultural participation does not allow for estimating the financial incentives to invest in arts and culture (measured by the private and public costs and benefits for an individual attaining a certain level of participation). This is an

established measure in education (OECD, 2018). The position may change as result of the SDGs and the increasing prominence of the creative industries within the economy.

Policy implications

There is a complex relation between the production of PIs and their interpretation, the former generally responding to the needs of policy analysis for the later (Madden, 2005; Bonet, 2004). PIs are in fact a strong transformative tool because of their capacity to reflect and explain determinants. The principal-agent relation in the arts and culture sector is extremely complex. The government provides funding, as well as regulations, and requires PIs for accountability and future policy strategy decisions. Indeed, the value of statistical information to support PIs is dependent on the relevance of the data collected, on its comparability, and on its sustainability (homogeneous data series) (Bonet, 2004).

Development of PIs for the arts and culture sector could benefit from a policy practice of evaluating services across sectors and across time periods. Whereas education and health are understood as systems[2], provision of arts and culture remains ad hoc and is not treated holistically within regions or across time. Why are PIs in for arts and culture programmes lagging behind other sectors such as health or education? Schuster (1997) proposed three main reasons: policymakers rely on evaluations of the producers and allocate funds accordingly, evaluations are costly and resources scarce (paying for an evaluation will reduce available grants), and negative evaluations are not welcomed.

It is important to keep in mind that "there is no such thing as 'the performance' of cultural institutions", but that PIs provide a quantitative measure on the area to be evaluated, and are never an exhaustive representation of an arts and culture organisation (Pignataro, 2011:336). Similarly, PIs should not be prescriptive in their interpretation, rather, they should serve as tools for further reflection into the quality of the service or ability to reach a policy goal.

See also:

Non-profit organisations, political economy, public support.

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Further reading

Literature on PIs for the health or education systems is much richer than literature on PIs for arts and culture. However, Madden (2006) provides a useful a global overview of IPs and related issues at the turn of the century. For a methodological discussion, Srakar, Čopič and Verbič (2018) provide an example of the economists' approach to constructing a cultural index as composed indicator on public financing and participation, education in culture, and private financing of culture. Sacco, Ferilli and Tavano (2018) propose the application of existing indicators towards eight areas of cultural participation impact: innovation, welfare and cultural welfare, sustainability, social cohesion, entrepreneurship, lifelong learning, soft power, and local identity.

1 Digital heritage was first recognized by UNESCO in 2003 with the Charter on the Preservation of Digital Heritage in which digital production of, access to and preservation of information and creative expression was identified to be part of a new cultural legacy. In 2015, the UNESCO Guidelines for the Recommendation Concerning the Preservation of, and Access to, Documentary Heritage Including in Digital Form recognized cultural documentary information to be at the core of all archive, library, and museum collections. These collections are increasingly digital, enabling the emergence of new services and forms of consumption.

2 The health care system is focused on the service providers (health prevention, promotion, and protection) while the health system is conceptualized broader to include non-health care factors, such as lifestyle, the socio-economic context of the consumer or human biology (Arah, et al., 2006).