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Cultural indicators in Abu Dhabi: theoretic framework and challenges for their building

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Abstract

Evidence-based decision-making in Abu Dhabi cultural sector is increasingly being influenced by the development of data generation from a coordinated statistical system. The Department of Culture and Tourism Abu Dhabi has increased its support of this focus by funding new research instruments, including CultureSTATS-AD project. One of the methodological challenges of CultureSTATS-AD project consists in articulation of the locally anchored and the internationally comparable dimensions of the evolving culture statistics system. The present paper addresses this methodological challenge by adopting a pragmatic approach to Abu Dhabi culture vocabulary. The practical usages of culture definitions by policymakers, academics and culture professionals replicate a myriad of underlying social processes. We suggest a transversal contextual analysis of Abu Dhabi culture documentation in order to understand in what conceptual, legal and social contexts each of the currently used culture definitions is inserted. Next, we propose to develop the culture indicators that emphasize these contexts. Finally, the paper offers methodological approaches to selection, definition and data population of culture indicators in Abu Dhabi. Even though our approach does not pretend to be exhaustive, it allows identifying the first linchpins of culture indicator building in Abu Dhabi and permits further alignment with the international standards.

1 Introduction

Evidence-based decision-making in Abu Dhabi cultural sector is increasingly being influenced by the development of data generation from a coordinated statistical system, and more actors are involved in data collection and analysis process. Administrations, research institutions and cultural actors collaborate to share and structure existing cultural data, as well as to find appropriate strategies for further data collection and assessment. At the same

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time, these processes are conditioned by the need to adjust to major international cultural statistics systems (e.g. EU, UNESCO). The focus is increasingly on developing, updating, and adapting of the methodology of existing frameworks for cultural statistics, in order to establish comparable cultural statistics in Abu Dhabi.

Since 2019, Department of Culture and Tourism Abu Dhabi has increased its support of this focus by funding long-term research projects, including CultureSTATS-AD project. The starting point of CultureSTATS-AD project involves centralised collection of pre-existing cultural data and proposition of Abu Dhabi culture indicators. However, the methodology of this extensive work is still relatively undefined and fragmented. The definition of the field of 'culture' for statistical purposes needs to be elaborated along with the collection and structuration of the relevant data; simultaneously, cultural concepts and terms need to be defined in order to demarcate the scope of the culture data elements and systematise the corresponding metadata. The methodological framework should also enable gradual implementation of key indicators in domains such as, among others, cultural employment, the financing of culture and cultural practices.

Evidently, the accurate reproduction of the international statistics systems is problematic in the context of Abu Dhabi, as existing data is conditioned by a different historical, administrative and legislative context. Nonetheless, a partial correlation between the taxonomies of Abu Dhabi and the international approaches is still possible, and may become a basis for building an adapted, tailor-made and internationally compatible Abu Dhabi Cultural Statistics system.

The aim of the primary stage of CultureSTATS-AD Project—Cultural Activities Baseline (CAB) is to develop an epistemological approach that allows for a legitimate articulation of the international statistical frameworks and Abu Dhabi developing culture data. One of the methodological challenges of this articulation consists in adjustment of the locally anchored and the internationally comparable dimensions of the emergent culture statistics system.

The present paper addresses this methodological challenge by adopting a pragmatic approach to Abu Dhabi culture vocabulary. At first glance, the Abu Dhabi culture vocabulary seems similar to the common international practice. However, the practical usages of culture definitions by the policymakers, culture professionals, academics, etc. replicate a myriad of underlying social processes. We suggest a transversal contextual analysis of Abu Dhabi culture documentation in order to understand in what conceptual, legal and social contexts each of the currently used culture definitions is inserted. Next, we propose to develop the culture indicators that emphasize these contexts. Finally, the paper offers methodological approaches to selection, definition and data population of culture indicators in Abu Dhabi. Even though our approach does not pretend to be exhaustive, it allows identifying the first "linchpins" of culture indicator building in Abu Dhabi and permits further alignment with the international standards.

2 Purpose of the paper and research questions

This paper seeks (1) to understand how the nebulose of existing resources (existing data sources, cultural policies, administrative practice in the cultural field, etc.) can provide the linchpins for culture indicators building in Abu Dhabi, but also (2) to reflect on the

potential of statistical indicators to give an initial view of the social and administrative system in which the evolving cultural statistics will be taken into account.

For this, we focus on the main pre-existing Abu Dhabi statistical sources and discern the rationale for a specialized set of culture sector performance indicators. Followingly, we examine the articulation between the generalized international statistical frameworks (EU, UNESCO), and the Abu Dhabi context. We consider the role of the local context that determines both how the cultural statistics are structured, and how the cultural indicators are composed. Finally, we suggest a cultural vocabulary-based approach to indicator elaboration.

The existing researches (e.g. Hatchuel and Weil 1992; Desrosières 2008a) analyze how members of different sectors construct their arguments—and assert the role of statistical indicators in the development of debates. This approach highlights the discursive dimension of the statistical tools mobilized by the actors in the sector in their justification of arguments aimed at criticizing, supporting and constructing representations of phenomena of interest within the industry.

The proposal of this paper adopts an opposite logic and consists in exploring the discursive dimension as a primary source for emerging statistical indicators. The larger goal of this paper is to launch further discussion on the evolving cultural statistics in the UAE.

3 Evidence-based decision making: competitive intelligence process in developing Abu Dhabi cultural influence

The etymology of term "statistics" evokes the Latin word "status" (state, but also condition, estimation, position).[1] Therefore, "at each period, a way of thinking about society, modes of action within it, and modes of description, in particular statistics" (Desrosières 2008a) are closely related to the state. In Abu Dhabi, the emirate statistics are constructed from two main sources: statistical registers and surveys.[2] Today, these sources assess the culture sector only partly, and do not cover the level of precision that is progressively required by the evolving public management of Abu Dhabi.

Since several years, Abu Dhabi develops competitive intelligence process that involves the collection of information, internal, external and from competitors, but also from customers, suppliers, technologies, environments, and potential business relations (Calof and Wright 2008). Competitive intelligence is designed to provide early warning and help to predict the moves of competitors, customers, and governments (Gilad 1996). As a part of competitive intelligence framework, CultureSTATS-AD project should cover the competitive environment of the cultural sector on at least two levels: (1) at the level of the cultural stakeholders in Abu Dhabi and in the UAE, and (2) at the international level of already existing and emerging cultural hubs (e.g., through comparison of sector-level competitiveness indices). This systematic information management, including noticing and interpreting competitive stimuli, is critical for DCT to facilitate strategic planning processes and to avoid any preventable crisis (Patton and McKenna 2005).

The competitive intelligence implications are becoming even more crucial as Abu Dhabi is increasingly expanding its cultural influence by promoting cultural institutions,

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[1] Waite, M. (dir.): Oxford Thesaurus of English. Oxford Univ. Press. (2009) p. 834

[2] Statistics Centre—Abu Dhabi (SCAD) is the official source of statistical data in Abu Dhabi Emirate.

exhibitions, events and festivals, preserving and sustaining the Emirati cultural heritage, but also by investing on the cultural cluster on Saadiyat Island, that includes Louvre Abu Dhabi, Zayed National Museum, Guggenheim Abu Dhabi and Berklee Abu Dhabi. The culture industry is perceived as one of the powerful levers for a long-term economic and social development of the emirate. Furthermore, the culture plays a growing role in cultural diplomacy and international positioning of Abu Dhabi both regionally and internationally (Zacharias 2019). Consequently, the challenge of the emerging system of cultural statistics goes beyond representing the Abu Dhabi cultural landscape *per se* and consists in creation of new instruments of inciting and controlling.

The public management of Abu Dhabi progressively encourages the elements of neo-liberal logic. The state is "thought of as a set of administrative poles whose relations are negotiated, contractually and regulated by law" (Salais 2010; Eyraud 2004). The political decision-making is partly based on the evaluation of performance and on rankings based on quantified indicators. The statistical indicator systems do not cover a coherent set of variables linked to one another (as for the Keynesian state), but a heterogeneous set of performance indicators for each sector. These performance indicators are becoming essential for steering cultural economies: "it is not so much the quantification itself that is at stake as the innovations in the political use of the statistical argument" (Salais 2010).

At the level of the Department of Culture and Tourism (DCT) Abu Dhabi, the culture-related data is collected by several internal entities inside the organisation. These entities structure the administrative data, perform regular surveys and investigate the big data approaches in order to facilitate cultural reporting and monitor impacts of cultural policies. However, as the data collected in DCT is *a priori* limited by the scope of DCT assigned responsibility, a much wider range of the Abu Dhabi culture-related social phenomena is not included in these data collection processes.

The Abu Dhabi emirate registers originate from an administrative source (management files), and reflect the existing action of the state. In the field of culture, transition between the management files and the construction of culture indicators does not necessarily go smoothly. The form of the data from the statistical registers depends on a set of equivalence conventions necessary for their construction. However, these equivalence conventions may vary from those necessary for the construction of cultural sector performance indicators. For example, the currently existing Abu Dhabi statistics on art education do not separate artistic disciplines and abilities (dance, music, literature) from other non-artistic subjects and abilities, and includes both in same categories (e.g. Dance is included in "Psychomotor Ability", Art and Music are merged with "Physical Education", Literature and Poetry are not separated from other "Social Studies", etc.)

From this perspective, it is the role of CultureSTATS-AD project to make this link between the collection and processing of individual data and aggregated information: "like the detective, the statistician […] moves back and forth between individual information and aggregated information that reflects a larger reality" (Desrosières 2008b).

The surveys as the source of statistics aim to be knowledge tools that aim to "describe the reality" (Desrosières 2008b) and explore the new issues within society. However, before engaging any surveys to collect culture data, it is necessary to define the concepts to be measured. The limits are linked here to issues of absence in Abu Dhabi of culture glossaries on the one hand, and the granularity and scope of the information that needs to be collected on the other. The absence of culture definitions leads to the difficulties in demarcating suitable statistical proxies of phenomenons identified in the process of data collection. Consequently, it becomes difficult to systemize the levels of granularity of the culture indicators that should be collected through the survey. Sometimes, the relevant culture data

is either not collected at all by existing surveys, either it is "hidden" inside a more generic statistical category. As the timeframe of action of the policymakers in the culture sector and that of the production of statistics are not the same, the usefulness of the currently existing regular statistical surveys for the culture sector is limited.

4 Abu Dhabi cultural statistics and the existing statistical frameworks

The rationale of evidence-base policymaking is based on the proved causal links between a policy intervention—and the truth of the fact that this intervention worked in a particular context. For instance, the multiple research show that "iconic buildings" (Jencks 2005), that act as a "hard-brand" for city in which they are located (Evans 2003) contribute in transformation of post-industrial cities into vibrant international hubs. However, the fact that such policies worked in Europe ("Bilbao effect") is not straightforwardly relevant to the conclusion that they will work in the context of Abu Dhabi.

At the same time, the international competitiveness in the field of culture sector development has induced a strong demand of harmonization of cultural statistics in the various countries. The latter is focused predominantly on an harmonization of outputs, already practised by national accountants: the statistical variables are defined in common, then each country measures them according to its own means. To measure the impacts of cultural policies both locally—and in the context of international competitiveness, the culture indicators should be both comparable internationally, and anchored in the local context. From this point of view, "the various harmonization levels are compared with the various forms of connection and convertibility between the national currencies" (Desrosiers 2000).

Consequently, the baseline culture indicators (such as cultural participation, public expenditure of culture, etc.) that seem at first glance to be comparable internationally are having different causal factors and support factors in different local contexts. Cartwright and Hardie (2012) define support factors as causal factors specified by the causal principle that are not the focus of the intervention (but are jointly necessary with the focused causal factor). So, whether we choose the term "causal factor" or "support factor" depends only on the focus of intervention (Cartwright and Hardie 2012). In the field of cultural statistics, both causal factors and support factors are embodied by the heterogeneous statistical indicators (already existing or that still need to be developed). In order to understand what assessments are relevant to the cultural landscape of Abu Dhabi, it is thus necessary to proceed to both "horizontal" and "vertical" searches (Cartwright and Hardie 2012).

Horizontal search is focused on identifying the full set of necessary support factors (e.g. are the social variables that explain cultural participation in Abu Dhabi the same than in other countries? If not, how can we identify them?). Because support factors are not the target of an intervention, they are easy to dismiss. But if they are missing, the indicator will not function properly. For instance, the specific definition of "household" in Abu Dhabi will obviously impact the statistical indicators related to "household expenditure of culture". It will also impact the harmonization of these indicators on the international level.

In the perspective of "horizontal search", CultureSTATS-AD needs to consider and adapt the international statistical frameworks that assess both the causal factors that operate the culture sector per se (e.g. cultural participation), and the supporting factors across different policy areas partly correlated with culture (e.g. social inclusion). Among the important international frameworks that relate culture to a broader specter of support factors, the UNESCO Culture 2030 Indicators framework presents a set of thematic indicators

that put cultural variables in relation with different Sustainable Development Goals. The OECD programs articulate the impacts of culture with local development goals and focus on culture as a tool for the social integration and economic well-being. The OECD research projects, such as *Project on the International Measurement of Culture*[3] exanimated feasibility of producing reliable international comparative measures of the culture sector, and thus present an important methodological source on the subject.

In a vertical search, one thinks about whether one has described the cause at the right level of description (Cartwright and Hardie 2012). There is a tension between making culture statistics concrete enough to be useful and abstract enough to be comparable internationally. For instance, if an Abu Dhabi specific cultural practice (e.g. "Al Maled" (art of recitation) needs to integrate a classification (e.g. "Performing arts"), on what level of detail it should be placed inside this category?

Among the existing culture statistic classifications, ESS-Net Culture framework (that derive from Eurostat's European Working Group on Cultural Statistics) is the most extensively documented: it captures all core domains and functions of a cultural sector and proposes a systemized set of definitions and a methodology. While being fully compatible with the UNESCO framework, it is more focused on capturing the cultural assets and their value and allows the creation of a cultural resource framework and mapping, able to support future research. Even though Abu Dhabi is a priori not able to integrate a regional framework such as ESS-Net Culture framework, it offers a tool of systematization that allows a primary attempt of putting together, comparing and assessing the heterogeneous Abu Dhabi culture data elements.

5 Methodological challenges: how to build culture indicators from scratch?

We suggest taking into account both normative documents and related documented administrative practices as a basis for culture indictor building. This approach lies together in a circular reasoning (1) international best practices, definitions and measurements in the area of culture indicators building and (2) a broad range of Abu Dhabi documentation related to stakeholders' requirements, policymaking practices, cultural processes, etc., in order to structure long-term compatibilities between Abu Dhabi and international approaches to culture statistics, as well as establish coherent definitions, technical documentation and data collection mechanisms (see Fig. 1 below).

The texts (normative documents, administrative documents, publications, etc.) which are produced and disseminated make it possible to register a particular representation, constructed collectively, of the cultural phenomena discussed (Taylor and Lerner 1996). They integrate conversations and negotiations that form representations of "what is" the cultural sector in Abu Dhabi and carry messages that are subject to the stakeholder's interpretation.

Michel Foucault stated that subjects are created in discourses: 'discourse is not the majestically unfolding manifestation of a thinking, knowing, speaking subject' (Foucault 1975). Instead, 'individual self becomes a medium for the culture and its language' (Kvale 1992). In this sense, the discourse analysis is interrelated with the pragmatic approach that

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[3] Gordon, J., Beilby-Orrin, H.: National Accounts and Financial Statistics: International Measurement of the Economic and Social Importance of Culture. OEDC eds., Paris (2007).
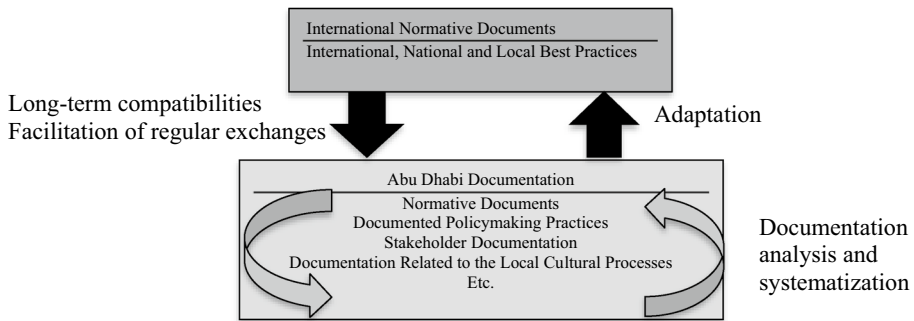
Fig. 1 Abu Dhabi culture field documentation as a basis for culture indicators (Illustration made by the authors)

perceives networks and organizations as arenas of experience and action, articulated by juxtaposition of objects, in which the actors are involved according to hybrid judgments, discourses and contexts. It brings out plural grammars of the community, the actor and the collective (Cefaï 2009).

Linked to the management tools, the pragmatic approach to discourse analysis seeks to understand how the actors (e.g. policymakers, managers, etc.) attribute different importance to a subject, and how they elaborate interpretative schemes that will influence decision-making. While discourse analysis is focused on explanation, a pragmatic optic will uncover the contextual intentions that depend on the situation in which the actors find themselves (Lorino 2002), that reveal the implicatures that would not be visible otherwise.

The Table 1 below summarizes the main phases of the methodology that we suggest. It describes the suggested methods and approach, as well as the expected results of each stage of indicator elaboration, starting from identification of the indicator thematic blocks, and up to indicator population with the data.

This approach is based on the assumption that the effects of management tools (e.g. Abu Dhabi emerging cultural statistics) are not linked to their own existence or to their use (Berry 1983) but in "capacity to relate them to a common discourse" (Detchessahar and Journé 2007)—par example, a discourse on the Abu Dhabi cultural policies as a whole. The intertextuality (Kristeva 1980) of management tools therefore takes on an essential dimension, since it is the reader's comparisons and relationships made with other texts that make it possible to construct the meaning of the text read (Riffaterre 1980), but also identify the aspects that need to be measured through the indicators.

Even though at the current stage of our research we are still not able to create exhaustive protocols for each of these phases, we have already identified the principal milestones to pass. In the following parts of the paper, we will discuss each of these milestones in more detail.

6 Adjustment to specific Abu Dhabi stakeholder needs

Adjustment to specific Abu Dhabi stakeholder needs requires defining the priorities and "entry points" that build connections between Abu Dhabi cultural policies and international best practices (e.g. ESSnet-Culture framework). To accomplish this task, our

Table 1 Research phases, methods and expected results

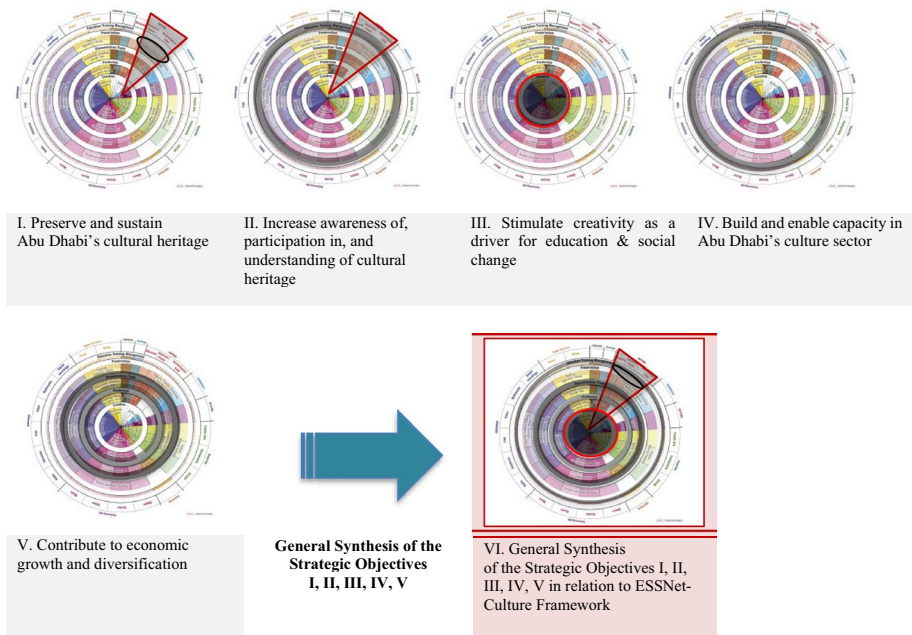| Main research phases	Methods and approach	Expected results
1. Identification of the indicator thematic blocks (*Preparatory phase*)	Semantic analysis of definitions that make part of DCT Strategic Objectives (e.g. through the graphic analysis methods)	Adjustment to specific Abu Dhabi stakeholder needs
2. Identification of legal rules, working rules and informal practices that frame the identified thematic block	Extraction and systematization of the key culture definitions approved by the legal rules (Constitutional Level, Policy Level) Questionnaire survey and interviews to identify the working rules (Operational Level)	Taxonomy of legal rules and working rules (Ostrom 2005) that regulate the cultural filed in Abu Dhabi
3. Contextual analysis	Formulation of potential indicators based on keywords associations (a transversal approach to Constitutional Level, Policy Level and Operational Level)	Understanding of the policy objectives and social processes underlying the construction of an indicator
4. Indicator selection	Experts and stakeholder's workshops/questionnaire surveys	Elaboration and selection of the indicators; Identification of the gaps
5. Indicator definition	Identification and description of the technical attributes of each indicator	Integration the selected indicators in the data management structures and processes
6. Indicator population	Data collection Data imputation	Constant set of indicators and data sources

I. Preserve and sustain Abu Dhabi's cultural heritage

II. Increase awareness of, participation in, and understanding of cultural heritage

III. Stimulate creativity as a driver for education & social change

IV. Build and enable capacity in Abu Dhabi's culture sector

V. Contribute to economic growth and diversification

General Synthesis of the Strategic Objectives I, II, III, IV, V

VI. General Synthesis of the Strategic Objectives I, II, III, IV, V in relation to ESSNet-Culture Framework

Fig. 2 The correlation between the key notions that structure ESS-Net Culture framework and the Strategic Objectives of DCT Abu Dhabi (Illustration made by the authors with the graphic elements retrieved from: Beck, M., Frank, G.: ESSnet-Culture Final Report, EU Online Publications. Beck and Frank (2012), p. 48)

methodological approach suggests first to proceed to a semantic analysis of definitions that make part of the Department of culture and Tourism Abu Dhabi (DCT) Strategic Objectives, that frame Abu Dhabi cultural ecosystem.[4]

A graphic visualization of relations among the key Abu Dhabi and international culture policy concepts can be a powerful tool as it provides quick visual summaries of concepts correlations and independencies. Graphical methods provide information that may not be otherwise apparent from quali-quantitative statistical evaluations, so it is a good practice to evaluate data using these methods prior to performing statistical evaluations. Graphical techniques can be used initially to display data for qualitative assessments prior to selecting appropriate tests on further stages of in-depth exploration.

The Fig. 2 below shows the correlation between the key notions that structure ESS-Net Culture framework and the Strategic Objectives of DCT Abu Dhabi obtained by a simple graphic superposition of the local cultural policy strategic objectives and the ESS-Net Culture chart that synthetized cultural domains and cultural functions.

The Strategic Objective I "Preserve and sustain Abu Dhabi's cultural heritage" requires definitions of the following notions: Preservation, Sustainability, Abu Dhabi, and Cultural Heritage. Next, the logic links between these notions and related conceptual fields are explored. For instance, under the prism of ESS-Net Culture framework, "Heritage" is qualified as a cultural domain related to six functions: Creation, Production, Dissemination,

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[4] Aamir, M.: DCT-Abu Dhabi showcases Abu Dhabi's cultural agenda WAM (Emirates News Agency), Abu Dhabi (2019).

Preservation, Education and Management (see Fig. 2 above). The EU framework will be tested against Abu Dhabi administrative and cultural context in order to identify the compatibilities and the gaps between the two systems. For example, the charts below demonstrate the correlation between the key notions that structure (1) ESS-Net Culture framework and (2) the Strategic Objectives of DCT Abu Dhabi.

The preliminary graphic analysis allows the following hypotheses:

- The DCT Strategic Objectives are reasoning more in terms of *Cultural Functions*, than *Cultural Domains* (grey circles);
- Whereas the *Cultural Functions* are considered as transversal, *Preservation* Function is related mainly to *Heritage* domain;
- The DCT Strategic Objectives have a strong emphasis on *Heritage.*

This example highlights the potential of developing tailored methodological tools in order to identify the compatibilities and the discordances between the endogenous perceptions of the culture-related definitions, locally and internationally. The further application of this approach on the policy documents may contribute into a better understanding of the policy objectives, that tend to be formulated in broad, abstract, or even vague terms. Some analysts put this down to a 'weak theory base' in cultural policy [Baeker 2002, cited in IFACCA report (2005)]. Hugoson (1997), however, argues that such abstraction is a necessary condition for cultural policies. Whatever the reason, to develop the clear policy indicators, abstraction or vagueness in cultural policy needs to be reduced through a better understanding of the underlying objectives and concerns.

7 Identification and systematization of the key culture definitions

A reflection on cultural indicators based on the existing cultural policy documents and related statistical data lacks practical applicability, as the administrative and the legal systems that frame the cultural sector in Abu Dhabi are still emerging. To resolve this issue, we elaborated a transversal explorative approach that aims understanding how a variety of concerned institutions and actors outline culture-related definitions through a variety of related administrative and social practices (e.g. licencing, trading, social promotion, registration, etc.), commonly noticeable in the contemporary context of Abu Dhabi.

To do this, we will first define the scope of the current Abu Dhabi cultural policy based on the hierarchisation of levels of social choice, rules and outcomes (Ostrom 2005; Cole 2017) that starts from the Constitution and the Federal Laws, and gives significance to any factually existing documents and administrative practices in case if a more consistent formal framework still does not exist (see Fig. 3 below).

The Abu Dhabi cultural policies characterize themselves by an unequal coverage of the different areas of cultural action (e.g., museums, performing arts, arts education, etc.) by the approved normative documentation: some regulations are approved and implemented, others are still under development. We borrowed the epistemological tools from the institutionalist analysis method that embraces the articulation between formal legal rules and working rules (Ostrom 2005). The existing Abu Dhabi legal rules (federal or emirate-scale legal and policy frameworks) are often not yet enforced by an approved working documentation. Consequently "some legal rules that could be working rules if strictly enforced are not coextensive with the working rules" (Cole
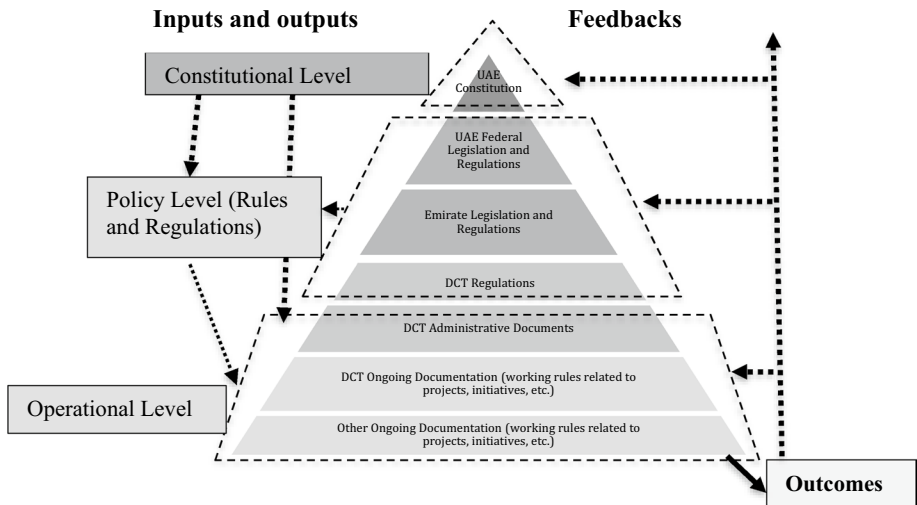
Fig. 3 Best practices of hierarchisation of levels of social choice, rules and outcomes (Illustration made by the authors)

2017). In this case, the working rule combines a formal legal rule with some informal norms. In case of DCT these informal norms translate as practice-induced adoption of international practices and approaches in situations when the relevant Abu Dhabi formal legal rule is not yet established.

In October 2020, we implemented a questionnaire survey among the DCT Departments in order to learn more about the informal practices of international benchmarking that support the DCT Regulations and administrative documentation in case if the relevant norms do not exist. The questionnaire survey results will be followed by a set of ethnographic interviews with the managers of different parts of the organization. In a longer term, the comparable surveys need to be implemented in the other organizations that manage the fields adjacent to the culture (e.g. the arts education, community development, etc.).

In parallel, we collect and structure the approved Federal and Emirate level legislations and regulations in the cultural field. To define the core culture concepts that exist already and that need to be measured by the statistical indicators, we have already identified a set of culture definitions that derive from the Abu Dhabi approved public policies. These definitions will become a starting point for the Abu Dhabi Culture Glossary, a long-term initiative focused on the systematization and explanation of culture concepts.

8 Contextual analysis

The definitions of "Preservation", "Sustainability", "Abu Dhabi", and "Cultural Heritage" that make part of the DCT Strategic Objective I are all defined in the Cultural Heritage Law and The Executive By-law. The Cultural Heritage Law defines Tangible Cultural Heritage through the following characteristics: (1) cultural significance, (2) moveable or an

Table 2 A transversal contextual breakdown of Abu Dhabi culture definitions: Proposition of Culture Indicators

Example 1: Proposition of culture indicators for Abu Dhabi

Definitions according to the Cultural Heritage Law and the Executive By-law		Transversal contextual analysis of keyword association in the Federal Cultural Heritage Law		
1. Definition of Tangible Cultural Heritage: Any tangible heritage of cultural significance, whether it is a moveable or an immoveable property, including antiquities, ensembles, historic buildings, cultural sites, cultural landscapes and modern architectural heritage, as has been specified herein.	2. Need to define the following attributes of the definition of Tangible Cultural Heritage: (1) cultural significance (2) moveable property (3) immoveable property (4) antiquities (5) ensembles (6) historic buildings (7) cultural sites (8) cultural landscapes (9) modern architectural heritage	3. Example: How to define Antiquities?		
		a. Keyword association of "Antiquities" in the text of the Cultural Heritage Law and the Executive By-law	b. Abu Dhabi-Specific Indicators derived from the Cultural Heritage Law and the Executive By-law	c. EU, UNESCO indicators
		Licenses trading antiquities (e.g. Art. 69)	Number of licenses: indicator?	Compare/adjust/complement
		Found by chance (e.g. Art.4)	Number of antiquities found by chance: indicator?	Compare/adjust/complement
		Significant for Emirate (national antiquity) (e.g. Art.4)	Number of antiquities significant for Emirate: indicator?	Compare/adjust/complement
		Exportation/Importation (e.g. Art. 7)	Number of antiquities imported/exported: indicator?	Compare/adjust/complement
		Excavation (e.g. Art. 41)	Number of antiquities found in excavations: indicator?	Compare/adjust/complement
		Antiquities and Museum Objects (e.g. Art. 5)	Number of antiquities displayed in museums: indicator?	Compare/adjust/complement
		Etc.	Etc.	

Table 3 A transversal contextual breakdown of Abu Dhabi culture definitions: Proposition of Culture Indicators

Example 2: proposition of culture indicators for Abu Dhabi		
a. The Cultural Heritage Law and the Executive By-law associate Tangible Cultural Heritage to:	b. Abu Dhabi Indicators derived from the Cultural Heritage Law and the Executive By-law	c. EU, UNESCO indicators
World Heritage lists (e.g. Art. 54)	Total number of the elements of Abu Dhabi Tangible Heritage integrated in world Heritage lists: indicator?	Compare/adjust/complement
Licenses for trading tangible cultural heritage (e.g. Art. 69)	Total number of licenses for trading tangible cultural heritage: indicator?	Compare/adjust/complement
Licencing infrastructure works at cultural sites or the surrounding areas (e.g. Art. 13)	Total Number of licenses issued for infrastructure works at cultural sites or the surrounding areas: indicator?	Compare/adjust/complement
Number of antiquities merchants (e.g. Art. 69)	Total number of antiquities merchants: indicator?	Compare/adjust/complement
Preparation for reception of visitors (e.g. Art. 54)	Total number of visitors: indicator?	Compare/adjust/complement
Etc.	Etc.	Etc.

Table 4 Selection of individual and composite culture indicators

List of proposed Individual Indicators Theme Areas	
Selection process I (For Individual Indicators)	Selection process II (For Composite Indicators)
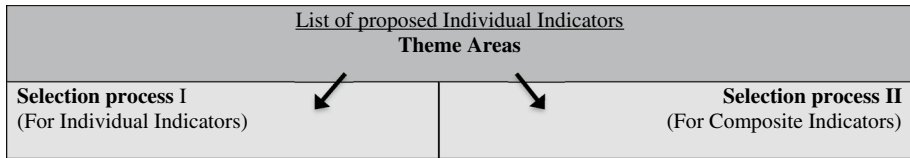
immoveable property. Tangible heritage includes (3) antiquities, ensembles, historic build-ings, cultural sites, cultural landscapes and modern architectural heritage.

After defining the concepts, we will next proceed to a contextual analysis in order to understand in what conceptual, legal and social contexts each of the definitions is inserted, and then propose the related indicators that reflect these contexts. This approach is (1) evi-dently anchored in the context of Abu Dhabi and (2) allows a bottom-up approach to indi-cator proposition. At the same time, the proposed indicators can be easily aligned with the international standards.

The Tables 2 and 3 below illustrate the approach to proposition of culture indicators for Abu Dhabi that are (1) integrated in Abu Dhabi legal framework for the tangible cultural heritage and (2) measure the social activities preconized by the Cultural Heritage Law and The Executive By-law. These indicators might be useful for both Abu Dhabi culture poli-cymaking, and creation of long-term compatibilities between Abu Dhabi and international culture statistics.

This methodology will be next replicated on all of the key Abu Dhabi cultural policy concepts and definitions. A list of Abu Dhabi-anchored culture indicators will be proposed and will contain both the specific "narrow" indicators useful for the local policymaking, and more generic indicators useful for the international comparison. As a supplementary output if this work, a taxonomy of legal rules and working rules (Ostrom 2005) that regu-late the cultural filed in Abu Dhabi will be created.

9 Selection of culture indicators

The indicator selection process needs to (1) define the most pertinent individual indicators that will be used *per se*, and (2) define individual indicators that will be aggregated into composite indicators.[5] For this, the indicators proposed on the previous stage will be struc-tured around main theme areas. Key goals and desired outcomes of each theme area will provide the basis for the further selection of indicators.

The selection of both individual and composite indicators (Table 4) below requires a rationalized method that understands scoring and weighting according to a set of common significance criteria. At the international level, no uniformly agreed methodology exists to score and weight statistical indicators. Also, no matter which method is used, scores and weights are essentially value judgments and have the property to make explicit the

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[5] Composite indicators will be formed by compilation of thematic indicators into a synthetic index consid-ered as a single composite measure. A composite indicator measures multi-dimensional concepts (e.g. com-petitiveness, e-trade or environmental quality), which cannot be captured by a single indicator. Ideally, a composite indicator should be based on a theoretical framework/definition, which allows individual indica-tors/variables to be selected, combined and weighted in a manner which reflects the dimensions or structure of the phenomena being measured.

objectives underlying the construction of an indicator.[6] Commonly used methods for indicator selection are based on (1) statistical models (principal components analysis, data envelopment analysis, regression analysis, etc.), and on (2) public/expert opinion (analytic hierarchy process, conjoint analysis, etc.). Evidently, the statistical models of indicator selection require already existing data that corresponds to the indicators. In the context of Abu Dhabi, the relevant culture data is currently in a process of gradual consolidation. In consequence, the methods based on expert opinion (academic experts, but also experts from Statistics Centre—Abu Dhabi (SCAD), Department of Economic Development (DED), Media Zone Authority (MZA) etc.) seem more adapted.

The methods of indicator selection based on expert opinion has been extensively used internationally. For instance, Observatoire de la culture et des communications du Québec (OCCQ) adopted a broad and practice-based set of criteria that might be applicable in the Abu Dhabi statistical practice as well (IFCCA Report 2005). The *theoretical* criterion refers to the internal validity of the indicator, which ensures the adequacy between the indicator and the dimension to which it refers. In the context of Abu Dhabi, this criterion embraces particularly the problem of definition of key and spill over indicators for each outlined theme area. The *methodological* criterion refers to the reliability of the indicator, that is to say, when a modification of the indicator means a change in the phenomenon measured. In the context of Abu Dhabi, this criterion integrates especially the questions related to the definition of the local cultural activities. The *analytical* criterion refers to the comparability of the indicator in time and in space. For Abu Dhabi, international comparability presents a particularly important dimension of this criterion. The *practical* criterion refers to the existence and availability of the data necessary for the construction of the indicator. The issues of data availability and the approaches to data collection in Abu Dhabi are the aspects of this criterion that need to be discussed in more detail. Finally, the *political* criterion refers to the interest represented by the indicator and its ability to influence political action.

The evaluation of indicators according to the established criteria may be proceeded by an expert vote. For instance, the experts may be asked to fill in the evaluation form for each criterion. In the case of OCCQ (Allair 2007), the following notation system has been chosen:

- A− means that the quality criterion is absent for this indicator.
- A+ means that the quality criterion is only partially present or that it is subject to certain verifications.
- A++ means that the quality criterion is present with certainty

We recommend, among others, Analytic Hierarchy Process (AHP) method for multi-attribute decision making. AHP incorporates both qualitative and quantitative aspects of a problem in the evaluation process. First, a set of criteria is arranged in a hierarchy. Next, opinion is systematically extracted by means of pairwise comparisons, by firstly posing the question "for which of the indicators the given evaluation criteria is relatively stronger?" and secondly "by how much?". The strength of preference per pairs of indicators is expressed on a semantic scale of 1 (equality) to 9 (i.e. in the case A, a criterion can be voted to be 9 times more important than in the case B). The relative weights of the criteria

[6] European Commission, Competence Centre on Composite Indicators and Scoreboards: 10 Step Guide. Publications Office of the European Union, Luxembourg (2019).

Table 5 A possible process of Selection of Individual Indicators for Abu Dhabi

Input: List of proposed Individual Indicators clustered in Theme Areas

  One-step selection process
(For Individual Indicators)

  I. Selection process:
  Experts and Stakeholders Workshop (DCT experts, University professors, researchers, policymakers, etc.):
  Alternative option: distribution among experts of an Indicator evaluation form (questionnaire)
  Selection of the indicators according to the following criteria:
  (1) validity (signification, key/spillover value, etc.)
  (2) accuracy (methodological reliability, consistency, etc.)
  (3) comparability (national and international)
  (4) utility for policymaking (ability to influence policymaking)
  (5) data availability.
  Possible evaluation method: Analytic Hierarchy Process (AHP)

Output: The list of the most pertinent individual indicators that will be used in Cultural Activities Baseline *per se*

are then calculated using an eigenvector technique, which allows to resolve inconsistencies, e.g. A better than B better than C better than A loops.)

The Table 5 below describes a possible process of Selection of Individual Indicators for Abu Dhabi:

The selection of the individual indicators is primordial for the emerging culture statistics system of Abu Dhabi, as it creates a fundamental frame of the whole approach to measuring culture. According to the experts of the JRC-COIN team,[7] the multi-dimensional nature of most performance areas argues for a set of individual indicators and against composites. Composite indicators by their nature may be incapable of reflecting the complexity of performance and policies or of capturing the intricate relationships between indicators. A simple composite indicator, formulated as an average of individual indicators, implicitly assumes the substitutability of its components. For example, composite environmental indicators imply that clean air can compensate for water quality. The more comprehensive a composite, the weaker it may be in adequately reflecting actual country performance.[8] As the theoretical underpinning of most composite indicators is very underdeveloped even at the international level,[9] adjustment of Abu Dhabi composite culture indicators to the international standards should be particularly well-thought-out and based on the acknowledged best practices.

In consequence, for elaboration and selection of the composite indicators, a more complex mechanism needs to be implemented. We suggest a two-step approach that combines composite indicators (1) proposition and (2) selection stages. The Table 6 below describes this process in more detail:

The process of composite indicator theorization and selection may require not only the individual indicators that will already exist following Indicator Proposition stage, but also the individual indicators that will be missing in the primary Abu Dhabi Cultural Activities

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[7] European Commission, Competence Centre on Composite Indicators and Scoreboards: 10 Step Guide. Publications Office of the European Union, Luxembourg (2019).

[8] *Ibidem.*

[9] *Ibidem.*

Table 6 Selection process for composite indicators

Input: List of proposed Individual Indicators clustered in theme areas

Two-step selection process:
(For Composite Indicators)

   I. Proposition of composite Indicators
   Work Package commissioned to Abu Dhabi-based statisticians.
   This step involves:
    (1) the conceptual aspect:
    A clear explanation of multidimensional phenomena to be measured in each theme area.
    Respect of the international best practices
    (2) the practical aspect:
    List existing and missing Abu Dhabi individual indicators that can be aggregated into suggested composite indicators.

  II. Selection process:
  Experts and Stakeholders Workshop (DCT Experts, University professors, researchers, policymakers, etc.):
  Other possibility: distribution among experts of an Indicator evaluation form (questionnaire)
  Selection of the indicators according to the following criteria:
   (1) validity (signification, key/spillover value, etc.)
   (2) accuracy (methodological reliability, consistency, etc.)
   (3) comparability (national and international)
   (4) utility for policymaking (ability to influence policymaking)
   (5) data availability
  Possible evaluation method: Analytic Hierarchy Process (AHP)

Output:

The list of the composite indicators

The list of the existing and missing individual indicators that can be aggregated into suggested composite indicators

Examples of Indicator Definition: UNESCO and EU

Fig. 4 Indicator Definition (UNESCO Culture 2030 (on the left) (Ottone, E. (dir.): UNESCO 2030 Culture Indicators. UNESCO Editions, Paris (2019)), the EU work documentation (on the right) (Statistics Explained 2020)

Baseline. In order to gradually fill in the identified gaps, a tailored cultural data collection methodology will be suggested.

10 Definition of culture indicators

In parallel with the gradual advancement of the previous stage of indicator selection, the indicator definition process needs to be implemented. For this, each selected culture indicator (Individual and Composite) will be defined according to the international standards. As a result, each indicator will be summarized in a formalized template that describes its main attributes.

The Fig. 4 below illustrates (1) the UNESCO 2030 Culture Indicators approach that broadly defines every suggested culture indicator and (2) the EU more focused description methodology that includes the specific features of each indicator, such as Data Requirement, Data sources, Method of collection, Formula, etc. The focused indicator definition (the EU-inspired approach) seems more pertinent for the Abu Dhabi context, as it creates enhanced conditions for the practical applicability of the indicator system both at the level of the Emirate, and at the international level.

As the MENA region countries has not yet elaborated their cultural statistics systems, the defined Abu Dhabi cultural indicators are able to become references for the regional cultural statistics. In order to document the conceptual and methodological aspects of indicator definition, we suggest to implement the two complementary glossaries: (1) a glossary of Abu Dhabi culture statistics-related definitions (e.g. "Heritage", "Sustain", "Education", etc.) and (2) a technical glossary that defines the concepts related to the methodology (e.g. "data", "individual indicator", "composite indicator", "variable", etc.) .)

11 'Population' of indicators and data collection

Some of the data required for the emerging culture indicators system will be available or at least potentially accessible. However, the most statistical series will be plagued by problems of missing values. There are a number of approaches for dealing with missing values, for example:

- Data deletion—omitting entire records when there is a substantial number of missing data;
- Mean substitution—substituting a variable's mean value computed from available cases to fill in missing values;
- Regression—using regressions based on other variables to estimate the missing values;
- Multiple imputation—using a large number of sequential regressions with indeterminate outcomes, which are run multiple times and averaged;
- Nearest neighbor—identifying and substituting the most similar case for the one with a missing value;
- Ignore them—take the average index of the remaining indicators.[10]

However, despite of the evident facility, all of these methods have considerable flaws, and are associated to substantial risks. According to Dempster and Rubin, "the idea of imputation is both seductive and dangerous. It is seductive because it can lull the user into

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[10] European Commission, Competence Centre on Composite Indicators and Scoreboards: 10 Step Guide. Publications Office of the European Union, Luxembourg (2019).

the pleasurable state of believing that the data are complete after all, and it is dangerous because it lumps together situations where the problem is sufficiently minor that it can be legitimately handled in this way and situations where standard estimators applied to real and imputed data have substantial bias" (Dempster and Rubin 1983). In consequence, a data collection process needs to be launched to populate the culture indicators. The data collection process will need to follow at least the three essential steps: (1) formulation of "imperative data" lists that are needed to fill in the gaps in the primary cultural statistics framework, (2) data sourcing process and data sharing processes that involve the Abu Dhabi-based institutions, enterprises, administrative units, etc. that dispose the relevant cultural data, (3) the collection of missing cultural data that implicates an important field-work research.

12 Conclusion

Our main aim in this study was to address the lack of methodological reflection on building of cultural indicators in Abu Dhabi.

The implementation of cultural statistics responds to different challenges, such as cultural management and policymaking, monitoring of national trends, and international harmonization of statistics. On the first two aspects, care must be taken to ensure that the cultural statistics do not result in a formatting effect on the cultural activities that particularize the unique landscape of each territory. However, regarding the third aspect, it is essential to meet international standards. In this perspective, our reflection was focused on adjustment of the emerging Abu Dhabi cultural indicators system to both comparative international assessments and the local cultural ecosystem.

We have done so by suggesting a pragmatic methodology which consists of combining a bottom-up approach (transversal contextual analysis of Abu Dhabi culture-related documentation) and a top-down approach (adjustment to international indicator systems, such as ESSnet-Culture and UNESCO Culture 2030 Indicators Frameworks).

Accordingly, the first major contribution of the present research is that it provides a methodology for initial development of Abu Dhabi cultural indicators. A transversal contextual analysis of Abu Dhabi cultural documentation embraces a wide range of evidence on the local cultural processes, and allows understanding in what conceptual, legal and social contexts the key cultural concepts are inserted. We have proposed to use the identified contexts as linchpins of cultural indicator development. As the Abu Dhabi culture-related documentation is in the phase of gradual establishment, our approach adopts an explorative perspective, and considers both normative documents (e.g. emirate laws), as well as the other relevant documents. Subsequently, we have designed a strategy for the indicator selection, definition, and data population.

A second important implication of our reflection derives from the need of international adjustment of cultural indicators and supplies the construction of a conceptual vocabulary that builds connections between Abu Dhabi cultural policies and international best practices. In order to conceptualize the rapports between Abu Dhabi and international cultural statistics, we used the notions of "causal factors and "support factors" (Cartwright 2012) applied to the backgrounds of cultural phenomena to be measured. These factors that are strongly variable according to local contexts, despite the seeming international comparability of the indicators that may derive from them.

A third implication stems from our research methodology that connects the cultural policy definitions, often vague and broadly formulated, with the underlying aspects of their application. In this sense, building of cultural indicators contributes into an inductive reconstruction of the scope of the cultural policies, and contributes into clarifying of values and ideas of the whole sector. As statistics seeks a pragmatic connection to reality, their precision is a relative value: it is better to have an evaluation tool, even imprecise, rather than having no evaluation framework at all. However, even if the indicator takes into account a priori imperfect and indirect representations of the phenomena to be represented, it is still possible to enhance its relative reporting capacity. This highlights the crucial position of indicator development within the policy development cycle, as the perception of culture and cultural policy inevitably changes as data reveal new insights and new challenges (IFACCA Report 2005).

However, our approach does not pretend to be exhaustive and presents a considerable number of limits. Anchoring of cultures indicators in the currently available documentation and policy objectives is only able to identify the first linchpins to a much broader structure of cultural indicators that needs to be established in Abu Dhabi in the following years. We have shown that a vocabulary-based approach is useful for both disclosing the underlying local concerns and international comparability of the cultural statistics, but we were not able to suggest the entire framework of bottom-up cultural indicator building. An extensive anthropological fieldwork research on the Abu Dhabi cultural practices, expenditure of culture, cultural consumption, etc. needs to be implemented for the sustainable development of the cultural statistics.

Our study, being of an exploratory nature, offers only a theoretical consideration of the indicator proposition, selection, definition, and data population processes. The semantic approach to the Abu Dhabi cultural policies vocabulary needs to be tested empirically as well. In contrast to the countries where the statistical indicators are developing on the basis to the existing data, the Abu Dhabi cultural indicators system is developing in a strong coherence and interference with the new culture data collection processes. The mutual adjustment between the approaches to data collection and indicator building is a long-term process which the current reflection is not able to embrace.

Finally, we are aware that the culture statistics are able to not only report on a social reality, but also guide it as well. A dashboard of cultural indicators used in a policymaking practice is able to structure the behaviors of the concerned actors and the whole sector. Therefore, the statistical indicators may have a number of unintended consequences on the social and economic impacts of the cultural policies. A further work is required to conceive the tools for taking into account and controlling these consequences.

Compliance with ethical standards

Conflict of interest The Author(s) declare(s) that there is no conflict of interest.

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