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How sustainable are cultural organizations? A global benchmark

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ABSTRACT

Museums, theaters, and other cultural organizations can be important actors in the sustainability transition, enjoying high visibility and public trust. Yet, we know little about their performance with respect to key sustainability indicators. This study develops a sector-specific sustainability benchmark and applies it in a survey of 206 leading cultural institutions worldwide and 21 semi-structured interviews. The results show that, for the majority of organizations, sustainability did not appear as a management issue until approximately five years ago. Moreover, sustainability commitments do not translate consistently into action. More than half of the organizations obtain poor sustainability scores of below 30 (out of 100) on both the environmental and the social dimension. The presence of a green team and government regulation are associated with higher sustainability scores. Our findings suggest the need for a concerted approach to sustainability in the cultural sector, including a common standard, regular monitoring (for example using this benchmark), and incentivized funding.

Introduction

In August 2022, the International Council of Museums (ICOM) – the global association for the museum sector – changed its definition of a museum. The new definition highlights the role of museums in reaching social and environmental sustainability on a bounded planet whose health is rapidly deteriorating. Its second sentence reads: "Open to the public, accessible and inclusive, *museums foster diversity and sustainability*" (ICOM 2022, 3, emphasis by authors). Theaters, concert halls, and opera houses have also become active in the sustainability transition, with new initiatives such as the Sustainable Theater Alliance for a Green Environmental Shift and the Theater Green Book (Buro Happold 2021), a set of guidelines for sustainable productions in the performing arts. On the academic side, there is a growing but still small literature on the sustainability of the cultural sector. Authors have identified a significant potential of the cultural sector to contribute to the sustainability transition but point to the lack of a suitable framework and of actionable knowledge as main barriers to realize this potential (e.g., Garthe 2022; Hedges 2021).

Cultural organizations are an important but so far neglected lever for advancing the sustainability transition. The high level of public trust in cultural organizations (Wilkening Consulting 2021; Cuno 2018) puts them in a privileged position to raise awareness about sustainability, create alternative visions of the future, encourage sustainable behaviors, and challenge societal norms detrimental to the planet (Laakso et al. 2021; Markard, Geels, and Raven 2020; Newell and Simms 2021). As a strongly growing sector, cultural organizations attract considerable public and private investment (Richards 2018; Towse 2019). The visual and performing arts employ more than 10 million people worldwide and include hundreds of thousands of museums, theaters, opera houses, concert halls, and other cultural venues (Ernst & Young and UNESCO 2015). Moreover, cultural organizations reach a wide audience, acting as multipliers. In 2019, before the COVID-19 pandemic, the top 100 art museums reported an annual total of 230 million visitors (The Art Newspaper 2020).

Starting from the potential of cultural organizations to foster a sustainability transition, this article has three interrelated objectives. First, based on a literature review and feedback from an expert panel, it develops a definition and sector-specific model of a sustainable cultural organization. Second, we use this model to construct a benchmark and analyze the current sustainability achievements of leading cultural organizations worldwide. Third, we identify

potential drivers and barriers for advancing sustainability in cultural organizations. The article builds on this quantitative survey and qualitative semi-structured interviews to present a sector-specific model for sustainability on a global scale. We aim to fill an important gap by creating a benchmark for the sector against which to judge future developments and to identify predictors to better develop measures designed to improve the sustainability of the sector.

Literature review

The sustainability transition implies profound changes in production and consumption, in areas ranging from technology and science to law, economics, politics, but also in cultural production (e.g., Geels et al. 2017; Häyrynen and Hämeenaho 2020; Markard, Raven, and Truffer 2012; Newell and Simms 2021). Despite the significant potential of cultural organizations to shape the sustainability transition, the academic literature on sustainability in the cultural sector is scarce and fragmented. Overall, studies on ecological aspects or featuring a holistic view of sustainability are rare. Garthe (2022) is one of few attempts of a holistic analysis by a practitioner and Kangas, Duxbury, and De Beukelaer (2017) present a landmark special issue that is focused on cultural policy for sustainability, but not on cultural organizations. Løkka (2023) investigates the interconnection between sustainability policy and cultural policy in a report focusing on Norway and suggesting the need for a wider empirical dataset. Most studies, by contrast, highlight one aspect of ecological sustainability in isolation, such as climate change (e.g., Cameron and Neilson 2017). The academic literature on the social dimension of sustainability is slightly more voluminous and covers themes such as diversity, inclusion, activism, and decolonization (e.g., Catlin-Legutko 2021; Cole 2019a; Hicks 2020; Janes and Sandell 2019; Labaronne and Leuschen 2021). The literature on corporate sustainability, while more abundant, does not consider the specifics of the cultural sector, with its dominance of not-for-profit organizations and public funding, and the focus on a societal mission such as education, conservation, and esthetic value creation rather than on creating profit and a business case.

Discussions of the sustainability of the cultural sector mainly take place in grey literature and have mostly started appearing since 2020. Northern European countries have been trailblazers with the publication of a "Nordic Green Roadmap for Cultural Institutions" (Vågen, Linnéa, and Smærup Sørensen 2023) and "Norway's Green Roadmap for the Arts

and Culture Sector" (Hodneland et al. 2021). The Arts Council England, the national funding body for promotion and curation of the arts in England, also publishes goals and annual sustainability reports. In 2023, the French Ministry of Culture presented its "Inspiration and Orientation Guide for the Ecological Transition of the Cultural Sector" (Ministère de la Culture 2023), highlighting five leverage points for the sector. Many individual cultural associations, such as the committee for modern and contemporary art museums (CIMAM), have also started publishing guidelines for action.

While museums, theaters, and other cultural organizations emerge as one important lever for fostering a sustainable future (Janes 2022; M. Rees 2017; UNESCO 2019; Garthe 2022) and promoting the transformations needed to live well within planetary boundaries (O'Neill et al. 2018; Rockström et al. 2009; Steffen et al. 2015), the available literature shows considerable diversity in the conceptualization of the relationship between culture and sustainability. Culture is sometimes seen as a fourth pillar of "cultural sustainability" (Brown and Vacca 2022; Loach, Rowley, and Griffiths 2017; Throsby 2017; c.f. Isar 2017), a "foundation" for sustainability or a "mediator" for achieving sustainability (for overviews, see Dessein et al. 2015; Kangas, Duxbury, and De Beukelaer 2017; Soini and Birkeland 2014).

In the context of this debate, the current article adopts a multi-level perspective (MLP) on the contribution of cultural organizations to the sustainability transitions. In the MLP, sustainability transitions are considered as emerging from an interplay of processes at the macro, meso, and micro levels. The macro level, known as "landscapes," entails large-scale processes such as digitalization and interpretative frames for meaning-making such as ideologies; the meso level refers to so-called "socio-technical regimes," such as transportation and heat generation, while the micro level encompasses "niches," protected spaces of experimentation, often at the local level (e.g., Geels 2002, 2011).

Cultural organizations have the potential to intervene at all three levels of the MLP. At the macro level, museums, theaters, and other similar entities contribute to meaning-making and reflexiveness in societies. They shape values and discourses and are active agents in weaving "a new cultural narrative that is explicitly designed for living on a finite planet" (Rees 2010, 13) and can therefore facilitate transitions toward a new knowledge landscape. At the meso level, cultural organizations form their own socio-technical regime of cultural production and its particular networks of actors, codes of conducts, standards, and resulting challenges of transitioning

toward sustainability in relation to exhibitions and shows, inclusion and diversity, and other areas (Garthe 2022). At the micro level, cultural organizations constitute important niches as protected spaces for experimentation with radical alternatives to current unsustainable modes of production and consumption. According to Geels (2010, 495), "niche-innovations may break through more widely if external landscape developments create pressures on the regime that lead to cracks, tensions and windows of opportunity." Cultural organizations can therefore contribute to a sustainability transition by changing the larger landscape of meaning-making, by accelerating transitions in their own socio-technical regime of the cultural sector, and by nurturing niche experimentation that can lead to wider adoption.

Methods

Definition and model development

For this study, we understand as a "cultural organization" an institution devoted to the study, conservation, creation, and public presentation of art, heritage, or science. As cultural organizations can encompass a wide variety of types of organizations, we limited ourselves to four major types of content-creating organizations for this study: museums, drama theaters, opera houses, and cultural centers (combining several of the first three types).

Although, as noted above, sustainability has been an object of debate in the cultural sector since at least the 2000s, it did not emerge at the management level for most cultural organizations until approximately five years ago. In a first step, we therefore developed a definition and conceptual model for the notion of a "sustainable" cultural organization to form a coherent basis for measuring sustainability as no such model previously existed. We first reviewed the available academic and professional literature to extract key elements from the current debate on sustainability in the cultural sector. In addition to English, we included sources in French, German, Italian, and Spanish to better reflect the diversity of professional debates often taking place in local languages.

Our sustainability model included social and environmental dimensions alongside governance dimensions. This choice followed academic literature on the need to stay within planetary boundaries (Rockström et al. 2009; Steffen et al. 2015), while attaining minimum thresholds of social wellbeing (Hicks et al. 2016). The starting point of this model is the Doughnut Model of sustainability (Raworth 2018) that we downscaled and adapted to the cultural sector. This resulted in a model that includes both planetary boundaries and activities by cultural organizations that have an impact on them. We then submitted both our working definition and the key dimensions of the model for validation to an expert panel. This panel was composed of eleven experts from the cultural sector with expertise in the sustainability field and represented organizations of different types, sizes, and geographical locations (see supplemental material for details of the composition of the expert panel).

After review from the panel of experts a final definition resulted:

> A sustainable cultural organization engages in a continuous process of safeguarding and improving environmental health, while creating social value and promoting human wellbeing throughout the full range of its operations for this and future generations.

The final model (Figure 1) consisted of a total of 20 dimensions in three spheres (governance, social, and environmental). All of the dimensions are aligned with the United Nations Sustainable Development Goals (SDGs), the main policy framework for global action for sustainability (Lanzinger and Garlandini 2019).

Data collection

We then used a mixed-methods research design to benefit from both the generalizability of quantitative data and the in-depth, contextualized insights of qualitative data. For the quantitative part, we operationalized each of the 20 dimensions of the model with a scoring system of self-reported measures. We added scores for each individual dimension using a scorecard approach to create a benchmark (see supplemental material for detail).

We translated the scoring system into a survey that we sent to leading cultural organizations around the world. An organization was classified as "leading" if it satisfied at least one of four proxy criteria: being among the most visited institutions in the world, high capital cost (>US$50 million), importance for the field as evidenced in a corpus of expert literature, or membership in key global associations. These criteria resulted in the identification of a global population of 821 organizations, documented in a freely accessible dataset (Müller and Grieshaber 2024d). The survey ran in the summer of 2022 and yielded 206 valid responses ($N = 206$), corresponding to a relatively high response rate of 25.1%. The final sample was balanced between museums and performing arts organizations and covered all regions of
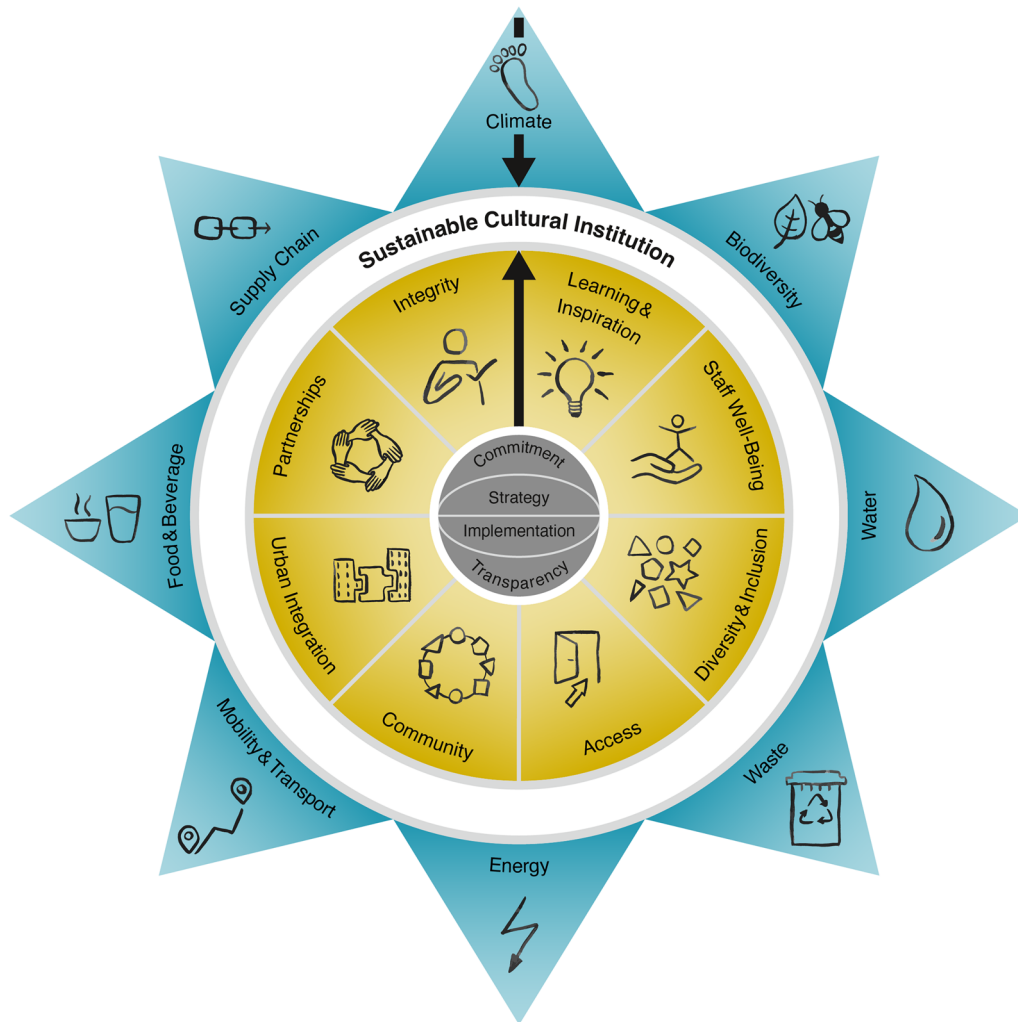
Figure 1. The sustainability star: a model of the sustainability of cultural organizations.
Note: The model consists of three spheres: the governance sphere (grey), with four strategic dimensions for embedding sustainability in cultural organizations; the social sphere (yellow), with eight social dimensions; the environmental sphere (blue), with eight environmental dimensions. Together with a scoring system, the model represents the progress of a cultural organization, or the whole sector, toward sustainability: the closer the scores to the white ring, the higher the sustainability.

the world, with a concentration in Western Europe and North America. It represents organizations with a combined annual attendance of almost 140 million people. A full dataset of responses is available (Müller and Grieshaber 2024b).

For the qualitative part, we conducted 21 semi-structured interviews with sustainability experts from associations and consultancies in the cultural sector, and with representatives of cultural organizations that had demonstrated leadership in at least one of the dimensions of our model. The interviews were designed to explore motivations, experiences, and drivers and barriers to adopting sustainable practices.

Data analysis

After running basic descriptive statistics (i.e., frequencies, means, standard deviations), we employed correlation analysis with Pearson's r as the standardized coefficient for estimating the correlations reported in Figure 3. Finally, to identify predictors

of sustainability, we performed ordinary least squares regression with the enter method, using adjusted R-squared to assess goodness of fit and the percentage of variance explained. The full statistical output of the data analysis and a detailed analysis are available (Müller and Grieshaber 2024a, 2024c).

We coded interviews using Atlas.ti, following an inductive approach from grounded theory. We developed a coding tree (see supplemental material) to identify similar themes relating to the research questions (Bernard and Ryan 2010; Hammersley and Atkinson 1995). Coding followed the three-step procedure of open coding, axial coding, and selective coding proposed by Strauss and Corbin (1990).

Results

Sustainability of the whole sector

The sustainability scores of the cultural organizations in our sample are moderate to low (Figure 2): the
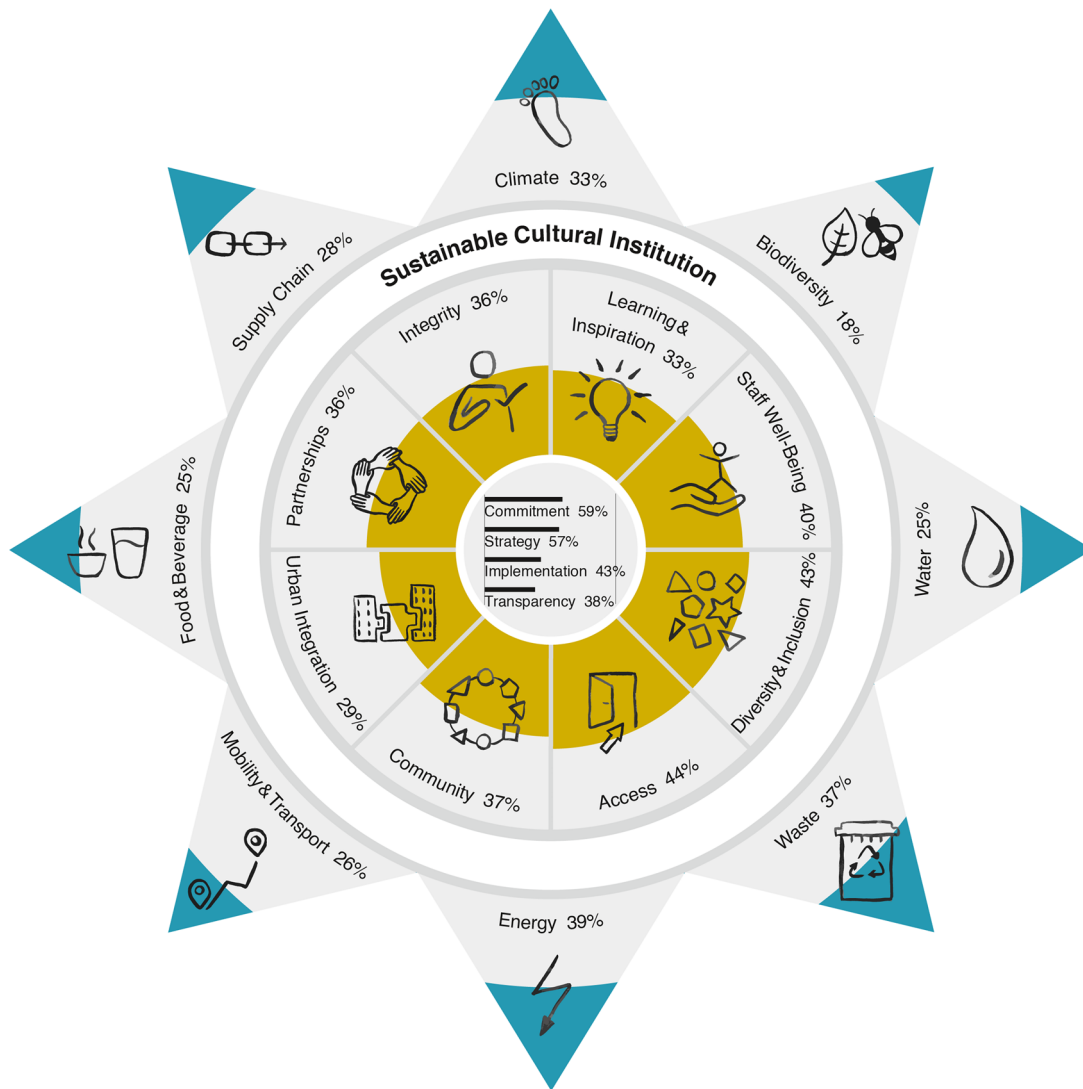
Figure 2. Sustainability benchmark of cultural organizations according to the sustainability star model.
Note: Scores for all organizations in the sample combined (N = 206). Note the low score of the environmental sphere. Box plots showing distributions are in Figures S2 and S3 in the supplemental material.

mean composite sustainability score is 37 (on a scale from 0 to 100) but shows considerable variance (SD = 20), meaning that scores vary widely between organizations. There are important differences in sustainability across the three spheres of our model: the governance sphere scores highest at 49 (SD = 27), the social sphere close to the composite score ($M = 37$; SD = 24), and the environmental sphere scores at only 29 (SD = 21). However, the median values of the social and environmental sphere are identical (Mdn = 25), showing that organizations overperform much more in the social than in the environmental sphere.

A total of 61% of organizations indicated that sustainability had been issue for them for less than five years, showing the relatively recent awareness around sustainability at the management level, despite a longer-standing discussion on sustainability in the sector (e.g., Janes 2007; Sutter 2006; Worts 2011). A sustainability expert we interviewed

suggested that the cultural sector may be "ahead of manufacturing and energy but behind everybody else" (interview E4).

Within governance, Commitment and Strategy obtain the highest scores ($M = 59$, SD = 31 and $M = 57$, SD = 30, respectively), indicating that sustainability issues are starting to become recognized as an important part of the mission of cultural organizations. The middling score shows, however, that this is not the case across the board. There is a sizable drop-off with the other two dimensions of governance: Implementation and Transparency ($M = 43$, SD = 31 and $M = 38$, SD = 31), suggesting that sustainability commitments have not consistently been translated into practical actions and reporting around sustainability is incoherent.

Access and Diversity and Inclusion perform best in the social sphere ($M = 44$, SD = 29 and $M = 43$, SD = 30), whereas Learning and Inspiration and Urban Integration rank last ($M = 33$, SD = 27 and
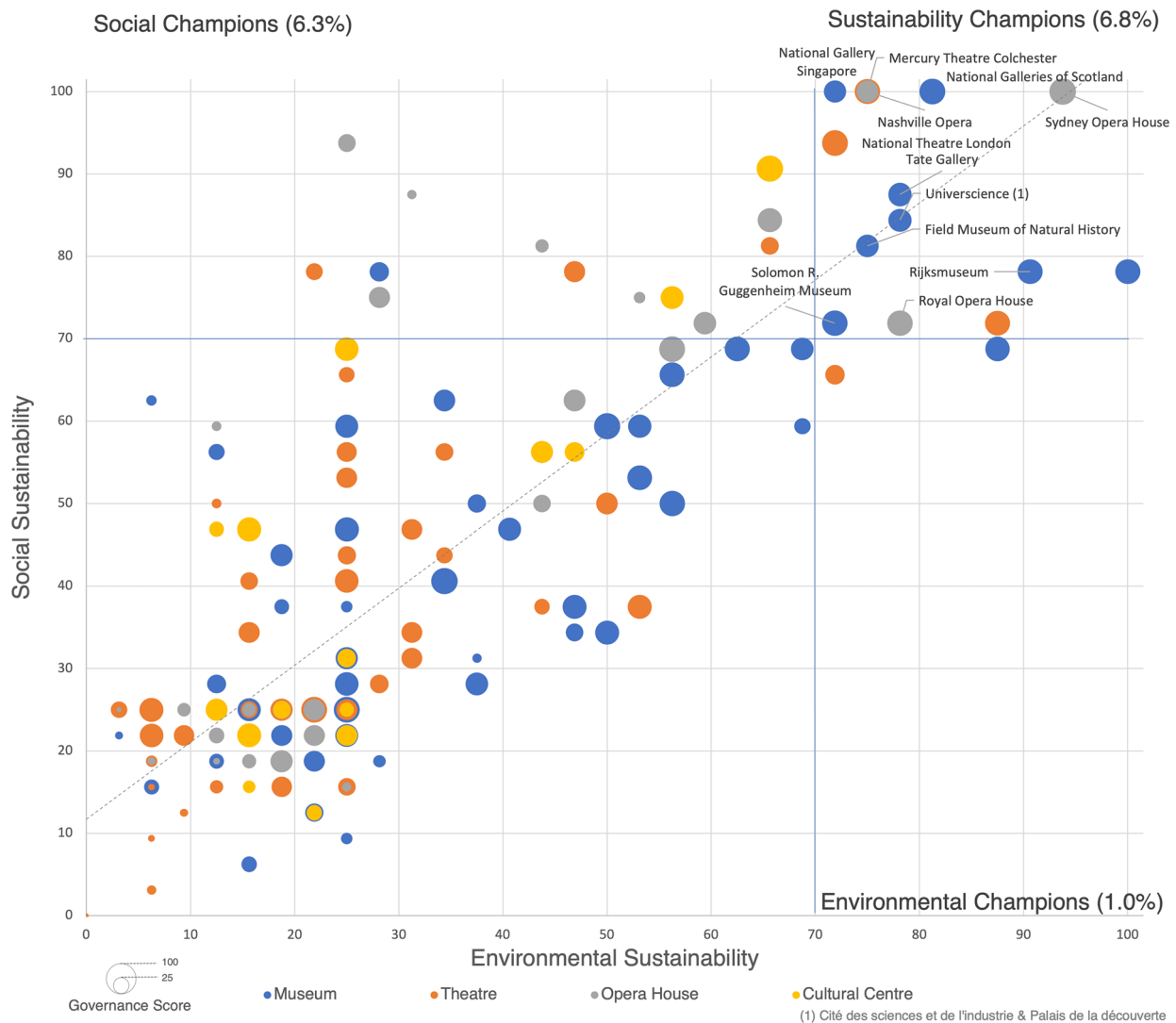
Figure 3. Scatterplot of social vs environmental sustainability scores of cultural organizations in the sample, with regression line (*N* = 206).
Note: Names of organizations ranking above 70 for both the social and environmental sphere are revealed with their approval. Note the concentration in the bottom-left quadrant and the relative absence in the "environmental champions" quadrant. High environmental scores are typically related with high social scores. Of the 14 organizations with social and environmental scores above 70, six are in the UK. Table S6 (supplemental material) provides full details.

$M = 29$, SD $= 27$). In the environmental sphere, we found the best results for Energy, Waste, and Climate ($M = 39$, SD $= 31$; $M = 36$, SD $= 28$; $M = 32$, SD $= 29$). By contrast, Biodiversity trails far behind, with a mean score of 18 (SD $= 26$).

The interviews help us better explain these results. The decline in the dimensions of the governance sphere when it comes to implementation appears related to the lack of a sector-specific guiding framework for sustainability. This absence, mentioned in some of the interviews (for example, interviews E4, E5, I1, I4, and I9), and the professional literature (NEMO 2022), hampers the implementation and reporting on sustainability goals, as a coherent framework of goals, indicators, and actions is missing. Therefore, sustainability actions are often not integrated into a larger sustainability strategy (interviews E4, E5).

The higher score of the social sphere compared to the environmental sphere results from more long-standing concern with questions of social inclusion, participation, and access in the cultural sector. For instance, cultural organizations have sought to reach out to more diverse audiences during the past 20 to 30 years (Cole 2019; Day et al. 2022; Simon 2010). Thus, one interviewee stated, "[W]e are a social institution. So, we reflect and should reflect the interests and the concerns of our community. And certainly [sustainability] is one of them" (interview I2). Against this background, the poor score for Learning and Inspiration is surprising but likely reflects institutional histories of elitism and the associated authoritative didactic approach, rather than a collaborative, dialogical one (King and Lord 2015).

The high ranking of Energy, Waste, and Climate in the environmental sphere tallies with our findings

from the interviews. Consciousness about waste creation was often described as the starting point for a larger concern with sustainability and the formation of internal "green teams," as museums and performing arts venues create significant waste, for example through custom-made sets, displays, fittings, and so forth (interviews I7, I9, I13). Sets are also one of the most visible parts of a production or exhibition, shining a spotlight on how organizations deal with them at the end of a production (interview I1). Respondents also addressed energy consumption as a salient concern, particularly for museums which have large, sometimes poorly-insulated buildings and extensive storage facilities for collections requiring extensive air-conditioning for proper conservation (interviews I2, I3 and I4). Even more recent buildings, constructed during the past ten years or so, face challenges because their unconventional, spectacular architecture is not conducive to saving energy (interview E8) but geared toward attracting tourists and media attention (Ponzini and Nastasi 2016).

A disaggregation of sustainability scores by type of organization reveals very few statistically significant differences, due to the high variance of sustainability scores. The only differences are for museums, which do better than theaters in Mobility and Transport, Climate, and Biodiversity (one-way ANOVA $F(3,202)=2.88$, $F(3,202)=3.47$, $F(3,202)=2.98$; Tukey HSD test $p=0.02$, $p=0.01$, $p=0.03$, respectively). Among museums, natural history and science museums have a much higher score for Biodiversity than other museum types, suggesting that their mission has a direct influence on that dimension of sustainability ($F(3,90)=8.54$; $p=0.01$).

Sustainability by organization

The significant variance in sustainability scores prompted us to examine the distributions of sustainability scores in more detail. There is a strong correlation between the three spheres of the model (governance/social $r=0.46$, $p<0.01$; governance/environmental $r=0.58$, $p<0.01$; social/environmental $r=0.80$, $p<0.01$) and Figure 3 plots individual cases for the social and environmental dimensions. These strong correlations mean that organizations that perform well in one sphere are likely to perform well in the other spheres. Most organizations (86%) in our sample fall into the quadrant with social and environmental scores below 70.

There is a small number (6.3%) of "social champions" whose social score is above 70, but whose environmental score remains below 70. By contrast, there are only two "environmental champions" (1.0%). Organizations scoring above 70 in both

spheres, called "sustainability champions," are still rare and make up only 6.8% of the sample. These results underscore that social sustainability is currently much more widespread among cultural organizations than environmental sustainability.

Among sustainability champions, museums (8) and opera houses (3) are overrepresented compared to the sample (57% of museums, compared to 45% in the sample; 21% of opera houses, compared to 15% in the sample), whereas theaters are underrepresented (21% of theaters, compared to 33% in the sample) and cultural centers are absent (8% in the sample). Six of the leading 14 organizations are in the UK (43%, compared to 11% in the sample) and three in the United States (21%, compared to 8.1% in the sample). The rest are in European countries (France, Netherlands, Bulgaria), Australia, and Singapore. Note the absence of organizations from Germany (7.1% in the sample), otherwise considered a leading country in the sustainability transition (O'Neill et al. 2018).
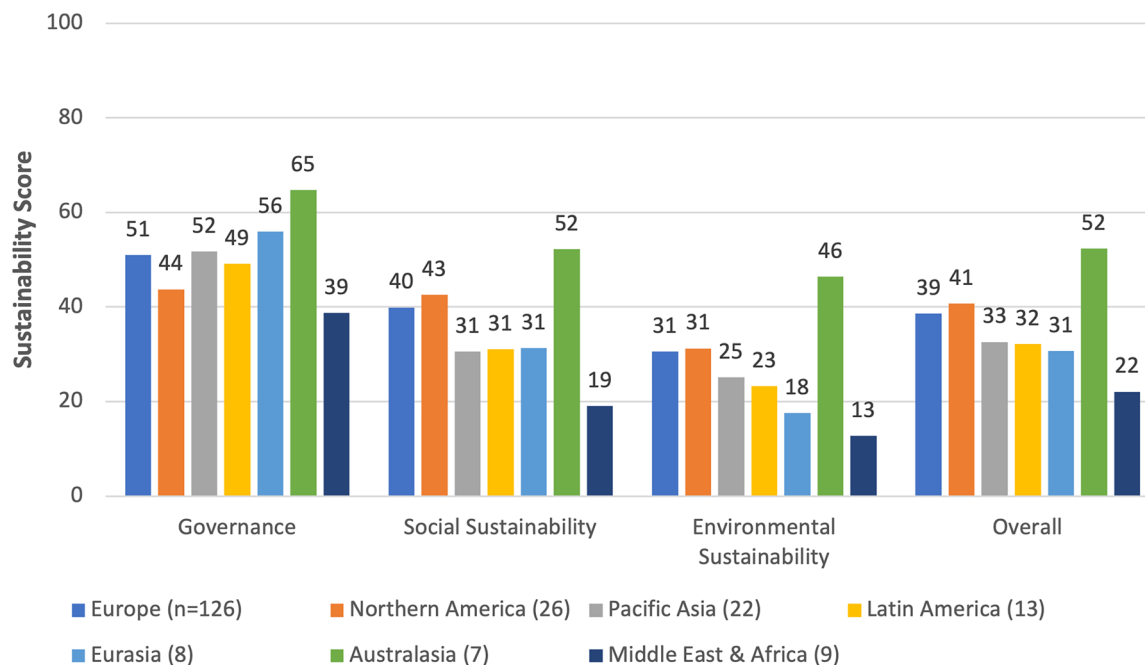
Regional differences

Sustainability scores show significant mean differences for social, environmental, and composite scores between major world regions, as demonstrated in Figure 4 (one-way ANOVA $F(6,204)=2.57$, $F(6,204)=2.67$, $F(6,200)=2.40$; Tukey HSD test $p=0.02$, $p=0.02$, $p=0.03$, respectively). Australasian organizations are leading the sample in all categories, but the small size of this category ($n=7$) limits the statistical significance of differences with other regions. Organizations located in Europe and North America have similar scores, despite the different policy and institutional contexts of these two regions.

Predictors of sustainability

To better understand the dynamics of sustainability scores and support more targeted policy interventions, we wanted to identify potential drivers and barriers. The regression model in Table 1 contains three predictors related to interventions and seven control variables. For each predictor and control variable, we formulated hypotheses based on sustainability (see Table S7 in the supplemental material) and assessed each relationship using regression analysis.

Overall, regression models for the four sustainability scores were significant and explained between 14% (social score) and 25% (environmental score) of the variance. Even with controls, the three predictors emerged as highly significant in most models and showed relationships in the hypothesized direction.

Figure 4. Sustainability scores by world region ($N = 206$).
Note: Differences between individual world regions are not statistically significant, due to the significant variance of scores within regions and the small number of cases (n < 10) of several regions. The strong presence of organizations from Europe and North America in the sample is a result of their greater number among the universe of organizations contacted and their above-average response rates (see supplemental material).

Table 1. Regression models for sustainability scores.

	Standardized beta			
	Governance	Social	Environmental	Composite
Predictors				
Government rules	0.07	0.15*	0.15*	0.14
Green team	0.20**	0.20**	0.25**	0.23**
Strategic relevance	0.15*	0.12	0.09	0.11
Controls				
Museum	0.02	−0.08	0.04	−0.04
Age	−0.03	−0.01	0.02	0
Size	0.23**	0.15	0.22**	0.23**
Mixed funding	−0.03	0.06	0.09	0.06
Location in UK	0.19**	0.08	0.15*	0.15*
Wealth	−0.11	0	−0.02	−0.02
Political rights	0.08	−0.07	−0.10	−0.05
Adjusted R^2	0.18	0.14	0.25	0.21
Df	183	187	187	183
F	5.13**	3.99**	7.29**	5.97**

Note: *=$p < 0.05$, **=$p < 0.01$. Beta denotes the standardized coefficient for each predictor and is a measure of the weight of each predictor in the model on a range from 0 to 1; R^2 denotes the percentage of variance in the sustainability score explained by each model. Detailed statistical results can be found in Müller and Grieshaber 2024a. All predictors are defined in Table S7 in the supplemental material.

The presence of a green team – an internal group advocating for and coordinating sustainability action – emerges as the only predictor present across all four types of sustainability scores and as the most important for three (social, environmental, and composite). In most of our interviews, green teams were self-organized staff initiatives. This observation may suggest that bottom-up organizing is a potential driving factor. It is not clear, however, whether this organizational form is equally dominant among survey participants. Government requirements and the strategic relevance of sustainability in the organization are also significant explanatory factors, but with a lesser weight. In our interviews, government rules regarding sustainability typically referred to reporting requirements regarding SDGs imposed by funding bodies. These are not widespread, and their current role is therefore limited.

Our interviews revealed that the strategic relevance of sustainability can take varied forms, ranging from creating new channels for sponsoring (interview I9), to image improvement and the desire to be perceived as "contributing positively to the environment" (interview I1). In some cases, the arrival of a new director also forged an impulse to make sustainability a strategic priority (interview I13). Overall, the weak explanatory value of strategic relevance in the regression model suggests that sustainability may not be widely embedded in the strategic plans of most organizations.

The size of the organization contributes strongly to explaining outcomes for the governance, environmental, and composite score, but is not significant for the social sphere. This result suggests that larger institutions are better able at formulating and implementing strategic and environmental policies and actions around sustainability. Finally, a location in the UK provides additional explanatory power on top of the other factors above, which hints at the importance of the specific national and sectoral context in that country. The mandatory sustainability reporting for all organizations funded by the British Arts Council could explain this difference (interview E1) (Julie's Bicycle and International Federation of Arts Councils and Culture Agencies 2014) as well as the strong presence of non-governmental

organizations (NGOs) working on culture and sustainability and the large offer of tools and programs available to UK-based institutions (see for example Creative Climate Tools (Julie's Bicycle n.d.)).

It is important to note the absence of certain predictors that we expected to explain sustainability scores: the relative wealth and the status of political rights in the country of an organization. The type of organization, its age, and principal funding also do not explain sustainability outcomes. This is good news, as it means that structural factors, which are hard to change, do not appear to be impediments to obtaining high sustainability scores.

This study focuses on large cultural organizations, but these predictors are likely to apply to smaller institutions as well. Overall, smaller organizations appear to have less external pressure but more freedom to experiment, leading to innovative approach to sustainability (interview I6 and I14).

Best practices for sustainability

The results of our research highlighted the need for more sharing and collaboration in the sector and identified an important number of innovative practices (see Table 2). These can serve as inspiration for taking action, but also as an opportunity to collaborate and exchange knowledge between institutions. However, it remains important to consider the specific features of each organization and its national and institutional context before applying them.

Discussion

Our study shows that sustainability is a recent concern for the world's leading cultural organizations, entering the agenda only during the past five years. While a considerable number of organizations have made sustainability commitments, far fewer are implementing and reporting on their sustainability

actions, revealing an implementation gap. More than half of the organizations in our sample obtain poor sustainability scores of below 30 (out of 100) in both the social and the environmental sphere. Only 7% of our sample score above 70 in both spheres, suggesting the presence of a small group of pioneers. In addition, organizations are more advanced in the social sphere than in the environmental sphere, suggesting an uneven approach to the sustainability challenge. Overall, most cultural organizations still have a long way to go to become exemplars of sustainability that can inspire others. Our results are subject to an optimism bias due to self-selection and self-reporting (see limitations in supplemental material), which means that we likely overestimate the focus on sustainability of the sector.

We identify several factors that explain the sustainability scores. The presence of an internal green team is the most important predictor of relatively higher sustainability scores. This finding suggests that in-house initiatives are important in driving sustainability action, at least in what appears to be the early stage of a sustainability transition in the cultural sector. We expect the balance to shift in favor of regulation and strategic integration over time, as government rules evolve and sustainability becomes mainstream in the sector. We show that large organizations are also more likely to have higher sustainability scores than smaller ones, suggesting that implementing sustainability policies may require funding and human resources that are not readily available in smaller organizations. As small organizations make up the majority of the sector, their needs and specific requirements have to be properly understood and addressed. In contrast, many structural factors, such as the type of organization, the wealth and political situation of the country, and the region of the world in which an organization is located, are not significant in explaining the sustainability scores. This result is

Table 2. Best practices of cultural organizations identified in semi-structured interviews.

Sphere	Dimension	Best practice	Examples
Governance	Commitment	Hiring a sustainability officer	La Monnaie, V&A
		Develop a sustainable visit guide to explain the process and give examples of good practices to visitors and employees	Teatro Solis
	Implementation	Provide dedicated training to staff members	Musée d'ethnographie de Genève, V&A
	Transparency	Create a dedicate website page for sustainability commitments and reporting	Guggenheim Bilbao, V&A, La Monnaie
		Publication of extensive report of its sustainability strategy and accomplishment in line with the GRI standard.	Guggenheim Bilbao
Social	Access	Developing guidelines for accessible exhibition design	Smithsonian
	Integrity	Include Indigenous Peoples as collaborators and co-curators in equal partnerships	Musée d'ethnographie de Genève
	Learning and inspiration	Making a short introduction speech on the SDG and their importance before every show	EcoTeatro
Environmental	Carbon	Hiring consultancy to realize your carbon footprint (scopes 1, 2 and 3)	V&A
	Energy	Reinvest money from energy saving in changing light bulb to LED	Teatro Solis
	Biodiversity	Preserving external space fully devoted to nature	Biomuseo
	Waste	Acquire new partner and funding for a full waste program	MASP

encouraging, as these factors are beyond the control of organizations and could, under different circumstances, be construed as barriers.

Our study contributes to the literature by proposing a conceptual model and providing a benchmark for the sustainability of cultural organizations. It does so by integrating strategic, social, and environmental dimensions, adopting a balanced and multidimensional approach to sustainability. We provide a global assessment of sustainability, going beyond the dominant focus on case studies in North America and Western Europe. By identifying factors that account for different aspects of sustainability, we are also able to suggest potential avenues for policies to improve the contributions coming from these organizations.

Our study focuses on large cultural organizations, making it difficult to generalize to smaller ones. However, we can draw some speculative inferences. Our interviews with smaller institutions suggest that a green team is an effective entry point toward a more ambitious sustainability strategy. Although smaller organizations often lack the resources of larger ones, they are particularly nimble and therefore better able to respond quickly to new challenges. As such, smaller institutions have a greater potential for innovation and experimentation. Sometimes, sustainability can even be the founding rationale for a new project as it is the case for EcoTeatro (interview I14). EcoTeatro is a mid-size theater, located in Milan, Italy, centering on ecological and social sustainability, since it changed leadership in 2018. It produced the first Italian show to be certified under the ISO standard for sustainable events and has since adopted a management protocol in line with the United Nations Sustainable Development Goals. In this case, the presence of a committed individual in a leadership position appeared as a determining factor in the development and implementation of a sustainable agenda. Literature highlights the role of an environmental champion as a driver in the development of a sustainability strategy (Mair and Jago 2010; Mair and Laing 2012). This role might be even more important in a smaller organization that can be more easily modeled according to the personal values and attitudes of its leadership.

Conclusion and policy implications

As a rapidly growing sector, cultural organizations have a particular responsibility in the sustainability transition since this expansion can wipe out any gains in sustainability. Inaugurating new buildings, staging blockbuster shows with international star performers, and attracting more and more visitors each year – common criteria for organizations to be considered "successful" – are at odds with the imperative to reduce energy and material consumption to combat climate change (Janes 2007; Worts 2006). The promotion of culture by municipal governments as a lever for economic growth and urban redevelopment (Evans 2009; Florida 2005; Montalto et al. 2023; Paddison and Miles 2007) and the rise of cultural tourism, now accounting for some 39% of global tourist arrivals, have led to a huge increase in the number of new cultural organizations (Richards 2018). The results of our study suggest three main policy implications for encouraging cultural organizations to advance in the sustainability transition.

First, given the importance of an organizational vision and the recent enshrining of sustainability in the definition of a museum, leading organizations should make a collective, public commitment to a sustainability agenda and create ways to recognize and celebrate when positive steps are taken. This will create momentum for the whole sector to follow.

Second, to address the lack of common standards, the sector should define and adopt sector-specific baseline indicators, for example based on the SDGs, and potentially linked to a monitoring and labeling scheme. This could either be done through creating a new global organization specifically dedicated to that mission or through building new capacities at existing organizations such as ICOM. The benchmark of this study could be used for this.

Finally, a part of funding could be tied to implementing sustainability measures and achieving sustainability targets. This will provide incentives for organizations to monitor and deliver on their commitments, reducing the implementation gap. Policymakers and funding agencies should set common standards while preserving the diversity of cultural organizations and considering their specific features.

Until now, cultural organizations have generally enjoyed public goodwill and have avoided scrutiny by pressure groups. A wave of protest actions in 2022 and 2023, during which activists have tried to damage works of art in major museums around the world to draw attention to the lack of divestment from fossil fuels (e.g., Associated Press 2022; Harris 2022), suggests that this period has ended. Organizations need to step up their game to live up to their social and planetary responsibilities and become leaders, not laggards, in the sustainability transition.

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Data availability statement

The datasets and statistical outputs are posted on Harvard dataverse (see citations in the reference list). Interview transcripts can be shared upon reasonable request.

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