CULTURE AS A DRIVER OF SUSTAINABLE DEVELOPMENT IN EUROPE

Natalja Verina¹, Kristina Astike², Virginija Grybaite³, Jelena Budanceva⁴

¹EKA University of Applied Sciences, Riga, Latvia, natalija.verina@eka.edu.lv

²Vilnius Gediminas Technical University, Vilnius, Lithuania, kristina.astike@vilniustech.lt

³Vilnius Gediminas Technical University, Vilnius, Lithuania, virginija.grybaite@vilniustech.lt

⁴EKA University of Applied Sciences, Riga, Latvia, jelena.budanceva@gmail.com

Received 13 November 2021; accepted 5 December 2021

Abstract

Research purpose. The link between culture and sustainable development has been frequently debated by European authorities and academicians. Culture is treated as a tool for the implementation of Sustainable Development Goals (SDGs) and considered as the fourth pillar of sustainable development. The research goal is to investigate the relationship between culture-related indices and a country's sustainable development based on European sample data.

Design / Methodology / Approach. To complete research, culture-related statistics indicators from Eurostat were collected and regressed against the SDG index, based on data covered 2016-2019.

Findings. The relationship between culture-related indices and SDG score was specified using European statistical data. The most significant impact on sustainable development measure was revealed regarding the factors "cultural employment" and "government expenditure on culture".

Originality / Value / Practical implications. The current research differs from most studies that investigated cultural issues using the mathematical apparatus versus the commonly used practice of interviewing consumers or representatives of the cultural sector. The results of this research could be used by municipalities, the cultural private sector, and NGOs by arguing for funding and applying for EU grants. On the other hand, the results and approach of this research could be transposed to other regions to understand the common cultural impact on sustainable development in the non-EU part of the world.

Keywords: sustainable development; culture impact; culture economy; European countries.

JEL codes: Q01; E20; Z10.

Citation: Verina, N., Astike, K., Grybaite, V., Budanceva, J. (2021). Culture as a driver of sustainable development in Europe. *Economics and Culture*, 18(2), 73-82. <https://doi.org/10.2478/jec-2021-0016>

Introduction

The role of culture in sustainable development and the achievement of the Sustainable Development Goals (SDG) has been discussed and explained in various documents and reports. "Global report on culture for sustainable urban development" prepared by UNESCO (UNESCO, 2016) recognises the role of culture in urban renewal and innovation. The Secretary of State for International Cooperation and Ibero-America, Kingdom of Spain, in his preface to the report, stated that "it is no longer possible to imagine sustainable development without culture." The COST Action IS1007 "Investigating Cultural Sustainability" sees culture as "the necessary overall foundation and structure for achieving the aims of sustainable development". (Dessein et al., 2015). The Council of the European Union (2014) emphasises the role of cultural heritage "...in creating and enhancing social capital..." and recognises "...important economic impact, including as an integral part of the cultural and creative sectors..."

During the last decades, the interest in investigating the role of culture in sustainable development has been increasingly grown. For instance, doing a search in Web of Science Core Collection with the keywords "culture sustainable development", the number of results for 2017-2021 is larger than the number of identified sources published in 1990-2016.

The authors usually discuss policy issues (Dessein et al. 2015; Duxbury et al., 2017), the role of specific aspects of culture, such as “cultural heritage” (Nocca, 2017), “tourism” (Rinzin et al., 2007), “Creative industries” (Yang&Cerneviciute, 2017; Kaymas, 2020).

The authors of the given paper analysed the literature focusing on the methods used to investigate the role of culture in sustainable development. In general, the researchers discuss the documents and previous studies or interview experts (Wiktor-Mach, 2020; Bakri; 2018; Zheng et al., 2021; Bervar&Trnavcevic, 2019). The number of papers employing the quantitative methods is quite limited (Streimikiene et al., 2019; Lin et al., 2016; Sisto et al., 2020; Kostis, 2021). Besides, the content of each paper is rather specific, and the methods to measure the impact of culture on sustainable development differ widely.

The incentive for this research was the authors’ intention to show the role of culture in sustainable development based on statistical indicators. Thus, the goal of the research is to investigate the relationship between culture-related indices and a country's sustainable development based on European sample data.

To achieve the research goal, data from the *Europe Sustainable Development Reports* (SDSN & IEEP, 2016-2019) and data from *Eurostat* (Eurostat 2021a; 2021b; 2021c; 2021d) were collected. The general measure for assessing the level of a country's sustainable development is the Sustainable Development Index (SDGI). SDGI is "an indicator of strong sustainability that measures nations' ecological efficiency in delivering human development." (Hickel, 2020) SDI was regressed against culture-related statistical indices for 27 European Union countries and the UK. To ensure data consistency, information was collected about 2016-2019 because periods of data availability differed for each indicator. The logistic regression method was applied for data processing. Dependent variable SDGI had two possible values labelled with "0" (if SDGI for a country was below EU average) and with "1" (if SDGI for a country was above EU average).

Literature review

Culture and sustainable development

The Policy statement “Culture is the Fourth Pillar of Sustainable Development” approved in 2010 by the Executive Bureau of United Cities and Local Governments (UCLG) promoted culture to become a specific dimension of sustainable development because “culture ultimately shapes what we mean by development and determines how people act in the world.” However, the debates on the relationship between culture and sustainable development began in the 1990s. To follow the historical path of merging these two concepts, one can study the works of Dallaire&Colbert (2012), Al-Zo’by (2019), Parameswara (2020) and others. The authors of the given paper collected some definitions and extracts from the papers published in 2001-2021 to substantiate the fact that many voices advocate for a strong link between culture and sustainable development (Table 1).

Table 1. Link between culture and sustainable development (Source: authors’ compilation, based on analysis of previous studies)

Source	Research	Citation
Hawkes (2001, preface, summary)	The fourth pillar of sustainability: Culture’s essential role in public planning.	"Cultural vitality is as essential to a healthy and sustainable society as social equity, environmental responsibility and economic viability"
Throsby (2009, p.7)	Sustainability and Culture: Some Theoretical Issues	"... largely thanks to work within UNESCO...the importance of culture as a component of national life, and of cultural development as a matter of international concern, has been

		increasingly recognised. Yet, these two phenomena, sustainability, and culture, have sat somewhat awkwardly together. “
Duxbury& Jeannotte (2010)	Culture, sustainability, and communities: Exploring the myths	"Growing attention and thinking about culture and sustainable communities is evident in Australia, New Zealand, Canada, and Europe, in writings from Asia on sustainable urbanisation and culture; in European theorisation on arts and sustainability; in Brazilian writing on cultural economies and sustainable development; and in papers from Africa and the Caribbean on cultural essentials of sustainable development. “
UN System Task Team on the Post-2015 UN Development Agenda (2012, p.6)	Culture: a driver and an enabler of sustainable development	"Culture is a transversal and cross-cutting concern and, as such, affects all the dimensions of development."
Soini&Dossein (2016, p.3)	Culture-Sustainability Relation: Towards a Conceptual Framework	“... <i>culture in sustainability</i> ... sees cultural sustainability as parallel to ecological, social, and economic sustainability.” “ <i>culture for sustainability</i> suggests that both material and immaterial culture are seen as an essential resource for local and regional economic development”. “ <i>culture as sustainability</i> encloses the other pillars of sustainability and becomes an overarching dimension of sustainability.”
Laine (2016, p.53)	Culture in Sustainability – Defining Cultural Sustainability in Education	“The “culture in sustainable development” approach views culture as having a separate, independent role as part of sustainable development, as a so-called fourth pillar in addition to ecological, economic and social sustainability.”
Vila et al. (2021, pp.85-86)	Cultural Sustainability and the SDGs: Strategies and Priorities in the European Union Countries	"...proposals of the EU's cultural policies are aligned with the sustainable development..."

Cultural aspects are essential for achieving the Sustainable Development Goals (SDGs). (Yildirim et al., 2019; British Council, 2020; Streimikiene et al. 2019). Zheng et al. (2021) analysed SDGs and concluded that culture has an impact on the achievement of 133 of 160 SDG targets. Vries (2020) analysed five out of 17 SDGs and eight of 169 SDG targets to illustrate “the scope and potential of culture as a dimension of EU policy to implement the SDGs.”, for instance:

- “Target 4.7: By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including *appreciation of cultural diversity and of culture’s contribution to sustainable development...*
- Target 8.9: By 2030, devise and implement policies to promote sustainable tourism that creates jobs and *promotes local culture* and products.
- Target 11.4: Strengthen efforts to protect and safeguard the world’s *cultural and natural heritage...*”.

Culture measures

Measuring the contribution of culture to sustainable development is a big challenge (UNESCO, 2021a). Attempts to analyse related issues and propose practical guidelines have been made by many researchers and organisations (Snowball, 2007; Vries, 2020; UNESCO; World Bank, 2021).

Analysing the literature on measuring culture impact, one of the most frequently mentioned notions is "Cultural Impact Assessment" (CIA) that has been discussed in detail by Partal&Dunphy (2016).

Members of the Mackenzie Valley Review Board listed some tools and methods to conduct CIA (Mackenzie Valley Review Board, 2009).

A comprehensive overview of progress in measuring the impact of culture was made by Liu (2018). “Historical background of measuring the economic contribution of cultural industries” was described in UNESCO Framework for Cultural Statistics Handbook (UNESCO Institute for Statistics, 2009). However, the authors of the given paper were primarily interested in concrete indices to apply the statistical methods. The results of the authors' search are summarised in Table 2.

Table 2. Culture-related indices (Source: authors' compilation)

Source	Culture-related indices
European Commission (2006)	<ul style="list-style-type: none"> – Turnover – Value-added to EU GDP – Contribution to EU growth – Employment
UNESCO Institute for Statistics (2009)	<ul style="list-style-type: none"> – Gross value added (3 indices in this group, e.g., “share of cultural industries sub-sectors in total gross value added/GDP of cultural industries in absolute and relative terms”). – Employment (4 indices in this group, e.g., “share of cultural industries employees in total employment (%)”) – Business activity (6 indices in this group, e.g., “number of new businesses in cultural industries per 10,000 persons”).
Montalto et al. (2019)	<p>Indices for cultural and creative cities (29 indices in total):</p> <ul style="list-style-type: none"> – Cultural venues & facilities (5 indices in this group, e.g., “cinema seats“) – Cultural participation & attractiveness (4 indices in this group, e.g., “Museum visitors“) – Creative & knowledge-based jobs (3 indices in this group, e.g., “Jobs in arts, culture & entertainment“) – Intellectual property & innovation (2 indices in this group, e.g., “Community design applications“) – New jobs in creative sectors (3 indices in this group, e.g., “Jobs in new arts, culture & entertainment enterprises“) – Human capital & education (3 indices in this group, e.g., “Graduates in arts and humanities“) – Openness, tolerance & trust (5 indices in this group, e.g., “Foreign graduates“) – Local & international connections (2 indices in this group, e.g., “Passenger flights“) – Quality of governance
OECD (2021)	<ul style="list-style-type: none"> – Cultural and creative sectors as a share of employment – Cultural and creative sectors as a share of value-added – Employment in cultural and creative sectors – Share of expenditure on recreation and culture – Share of creative goods in total exports – Share of creative goods in total imports – Total government expenditure on recreation, culture, and religion

One of the UNESCO initiatives in response to the issue of measuring culture contribution to sustainable development is the development of "UNESCO Culture for Development Indicator Suite" (CDIS) – "...an advocacy and policy tool that assesses the multidimensional role of culture in development processes through facts and figures." (UNESCO, 2021b) CDIS covers seven interrelated policy dimensions and includes 22 indicators. UNESCO document "Thematic Indicators for Culture in the 2030 Agenda" – "framework for measuring and collecting data on culture is foundational both for advocating for the role of culture in the SDGs, as well as for integrating culture into development plans and policies at the national and urban levels and within the United Nations Development Assistance

Frameworks (UNDAF)" – includes not only indices but also a description of assessment methodology. (UNESCO, 2019)

Methodology

The positive relationship between cultural indicators and sustainable development was confirmed in previous studies (Mosaferi *et al.*, 2019; UNESCO; World Bank, 2021). The selection of culture-related indices for the current research was determined by data availability for European countries. To ensure data relevance, the statistics were collected for the period of 2016-2019.

The dependent and independent variables are presented in Table 3.

Table 3. Research variables and data sources (Source: summarised by authors)

Variables	Index	Unit of measure	Label	Data available	Source
Y	SDG score	Points for ranking	SDGI	2016-2021	SDSN & IEEP (2021)
X1	Cultural employment by sex	thousand persons	CultEmp_males	2011-2020	Eurostat (2021a)
X2			CultEmp_females		
X3	Number of enterprises in the cultural sectors	number	NoEnt	2010-2018	Eurostat (2021b)
X4	Intra-EU trade in cultural goods	thousand EUR	IntraEU_import	2010-2019	Eurostat (2021c)
X5			IntraEU_export		
X6	General government expenditure by function (cultural services)	million EUR	GovExp	2010-2019	Eurostat (2021d)

Based on the selected explanatory variables, four hypotheses have been formulated:

H1: There is a statistically significant relationship between cultural employment and the sustainable development of a country.

H2: There is a statistically significant relationship between the number of enterprises in the cultural sector and the sustainable development of a country.

H3: There is a statistically significant relationship between the trade volume of cultural goods and the sustainable development of a country.

H4: There is a statistically significant relationship between government expenditure on culture and the sustainable development of a country.

In order to find out the impact of the selected independent variables on the dependent one, the logistic regression for panel data is established. For that purpose, the SDGI data was restructured (Table 4). First, the average of SDGI was calculated and based on that; the countries were assigned with the SDGI level represented by 0 and 1. If the country's SDGI is above the average, the level of 1 was assigned; if the SDGI is below average, the country was given 0.

Table 4. SDGI of European Countries and average SDGI, 2016-2019 (Source: SDSN & IEEP (2021))

Country	2016	2017	2018	2019	Country	2016	2017	2018	2019
Austria	79.1	81.4	80	81.1	Italy	70.9	75.5	74.2	75.8
Belgium	77.4	80	79	78.9	Latvia	72.5	75.2	74.7	77.1
Bulgaria	71.8	72.5	73.1	74.5	Lithuania	72.1	73.6	72.9	75.1
Croatia	70.7	76.9	76.5	77.8	Luxembourg	76.7	75	76.1	74.8
Cyprus	66.5	70.6	70.4	70.1	Malta	72	77	74.2	76.1
Czech Republic	76.7	81.9	78.7	80.7	Netherlands	78.9	79.9	79.5	80.4
Denmark	83.9	84.2	84.6	85.2	Poland	69.8	75.8	73.7	75.9
Estonia	74.5	78.6	78.3	80.2	Portugal	71.5	75.6	74	76.4
Finland	81	84	83	82.8	Romania	67.5	74.1	71.2	72.7
France	77.9	80.3	81.2	81.5	Slovak Republic	72.7	76.9	75.6	76.2
Germany	80.5	81.7	82.3	81.1	Slovenia	76.6	80.5	80	79.4
Greece	69.9	72.9	70.6	71.4	Spain	72.2	76.8	75.4	77.8
Hungary	73.4	78	75	76.9	Sweden	84.5	85.6	85	85
Ireland	76.7	77.9	77.5	78.2	United Kingdom	78.1	78.3	78.7	79.4

The average SDGI value is 74.86, 77.88, 76.98 and 77.95 for 2016, 2017, 2018 and 2019, respectively.

The logistic regression model is presented below:

$$\ln \left(\frac{\mathbb{P}(Y=1)}{\mathbb{P}(Y=0)} \right) = \beta_0 + \sum_{i=1}^n \beta_i x_i,$$

where $Y = 1$ – the countries with the level of SDGI above the EU average;

$Y = 0$ – the countries with the level of SDGI below the EU average;

β_0 – intercept;

$\beta_i (i = 1, 2, \dots, n)$ – coefficient associated with independent variables $x_1, x_2, \dots, x_n$.

Results

First of all, the data was tested for cointegration. According to the Kao Augmented Dickey-Fuller test (p-value = 0.000), all the panels are cointegrated, and further research could be conducted. Secondly, the logistic regression was performed. From the initial analysis, it became evident that the coefficients of X3 and X4 are statistically insignificant (p-values greater than 0.1); hence those two variables were removed from the research. It means that the second and third hypotheses H2 and H3 are rejected.

The results obtained after the recalculation are presented below.

$$\ln \left(\frac{\mathbb{P}(Y = 1)}{\mathbb{P}(Y = 0)} \right) = -1.597 - 0.036X_1 - 0.0002X_2 + 0.00000273X_5 + 0.007X_6$$

In the presented regression equation, according to which the calculations were performed, we see that when y is equal to **0**, SDGI is below the EU average, and when y is equal to **1**, SDGI is above the EU average. Thus, the calculations performed according to the given equation showed that the values of X1 and X2 are minus, i.e., X1 and X2 increase the probability that the SDGI will be below the EU average, while values of X5 and X6 are positive, i.e. these factors increase the likelihood that a country's SDGI will be above the EU average.

Variables X1 and X2 are Cultural employment by sex, and the fact that these variables influence the acquisition of a dependent variable, which is below the EU average, is also shown by other research examining the impact of gender equality on sustainable development goals. Kerras, Sánchez-Navarro, López-Becerra, & de-Miguel Gomez (2020) states that gender equality contributes to sustainable development goals, but gender segregation to men and women does not have a significant impact on the sustainable development goals. Manandhar, Hawkes, Buse, Nosrati & Magar (2018) emphasise the need to change attitudes and not to divide the employment sector into male or female, but to create equal conditions for both sexes by working in different fields, thus contributing to the goals of sustainable development. Thus, for this reason, the obtained research results do not contradict the scientific literature and theory.

Variable X5 is Intra-EU trade in cultural goods export; this variable affects the probability that SDGI will take on a value of **1**, i.e., will be above the EU average. Proper export of cultural goods contributes to EU cultural cooperation, promotes equal and high-quality access to culture (Omri & Ben Mabrouk, 2020). Throsby (2012) emphasises that such exports of cultural goods increase social inclusion and thus contribute to the goals of sustainable development but also pose certain risks to the less developed EU countries. The poorer EU countries are failing to adequately protect their cultural goods, in which case the export of cultural goods from these countries becomes excess, so it needs to be appropriately regulated.

Variable X6 is General government expenditure by function (cultural services); this variable is estimated to have the most significant impact on affecting the probability of SDGI in EU countries being above the EU average. This impact is also supported by science research Omri & Mabrouk (2020), Bestvina Bukvic, Bjelic & Sain (2020) states that efficient financing of the cultural sector increases the number of employees in the cultural sector, improves the infrastructure of cultural objects, promotes innovations in the cultural sector. All this increases the country's cultural attractiveness, promotes cultural tourism, and contributes to the implementation of sustainable development goals. The results show that the fourth hypothesis H4 is confirmed.

Thus, summarising the study, it can be seen that all the variables mentioned have an impact on the EU SDGI average (and for its probability of gaining a value of **1** or **0**); however, the export of cultural goods and the financing of cultural services have the most significant impact, as they are directly related to cultural income, which is also supported by scientific sources. It means that the first hypothesis, H1, is confirmed.

Conclusions

The authors of the given paper made an attempt to confirm the fact that culture positively contributes to the sustainable development of a country, based on statistical data and applying a quantitative approach. The results of the testing of the stated hypotheses are as follows:

- H1 has been confirmed based on the research results that revealed that most all of the distinguished factors measuring cultural performance do impact SDGI.
- H2 has been rejected as, based on the performed calculations, it was found that the number of enterprises in the cultural sector is insignificant and, hence, we cannot claim that there is a relationship between the mentioned variable and sustainable development.
- H3 has been rejected for the same reasons as the H2, i.e., the coefficient of the variable is not significant; hence, the relationship cannot be proved.
- H4 has been confirmed since the analysed variable was found as the most significant and had the highest impact on the sustainable development of a country.

Limitations of the study are related to the availability of statistical data for culture-related indices. Most of the indices are available from 2010 through 2019. In turn, the SDG score was started to be calculated only in 2016. It discovers the potential for research extension when researchers will have SDG score

statistics for a more extended period. Besides, the statistical data warehouse is expected to be enlarged, considering the results of UNESCO contribution to the field with its comprehensive set of 22 culture-related indicators. The research can also be conducted within a particular country based on internal statistical data. However, the potential researcher should evaluate data appropriateness. For instance, the Latvian Statistical Bureau provides data on employment by sectors, but there is no information about the cultural sector only, but about "Arts, entertainment and recreation, activities of households as employers". However, on the other hand, it is possible to extract more indices – for instance, data about average monthly wages, etc.

References

- Al-Zo'by, M. (2019). Culture and the politics of sustainable development in the GCC: identity between heritage and globalisation. *Development in Practice*, 29(5), 559-569. <https://doi.org/10.1080/09614524.2019.1602110>
- Bakri, M. (2018, March). The role of culture in implementing the concept of sustainability. In *IOP Conference Series: Earth and Environmental Science*, 126 (2018) 012137. <https://doi.org/10.1088/1755-1315/126/1/012137>
- Bervar, M., & Trnavčević, A. (2019). Importance of Culture for Sustainable Development. *Managing Global Transitions: International Research Journal*, 17(3), 195-209. <https://doi.org/10.26493/1854-6935.17.195-209>
- Bestvina Bukvic, I., Bjelic, K., & Sain, M. (2020). Efficiency of the European Union Programme in Fostering and Financing the Culture and Creative Sectors in the Republic of Croatia. *Pravni Vjesnik*, 36, 201. <https://doi.org/10.25234/pv/10187>
- Dallaire, G., & Colbert, F. (2012). Sustainable development and cultural policy: do they make a happy marriage. *ENCATC Journal of Cultural Management and Policy*, 2(1), 6-11. Available: <https://cercles.diba.cat/documentsdigitals/pdf/E140060.pdf>
- Dessein, J., Soini, K., Fairclough, G., Horlings, L., Battaglini, E., Birkeland, I., & Reimer, M. (2015). Culture in, for and as sustainable development: Conclusions from the COST Action IS1007 Investigating Cultural Sustainability. University of Jyväskylä. <https://doi.org/10.13140/RG.2.1.3380.7844>
- Duxbury, N., & Jeannotte, M. S. (2010, August). Culture, sustainability and communities: Exploring the myths. In: *6th International Conference on Cultural Policy Research*, Jyväskylä, Finland (pp. 24-27). Available: https://www.ces.uc.pt/publicacoes/oficina/ficheiros/2982_353.pdf
- Duxbury, N., Kangas, A., & De Beukelaer, C. (2017). Cultural policies for sustainable development: Four strategic paths. *International Journal of Cultural Policy*, 23(2), 214-230. <http://dx.doi.org/10.1080/10286632.2017.1280789>
- Eurostat (2021a). *Cultural Employment by sex*. Available: <https://sdgindex.org/reports/>
- Eurostat (2021b). *Number and average size of enterprises in the cultural sectors by NACE Rev. 2 activity*. Available: https://ec.europa.eu/eurostat/databrowser/view/cult_ent_num/default/table?lang=en
- Eurostat (2021c). *Intra and extra-EU trade in cultural goods*. Available: https://ec.europa.eu/eurostat/databrowser/view/cult_trd_prd/default/table?lang=en
- Eurostat (2021d). *General government expenditure by function*. Available: [https://ec.europa.eu/eurostat/databrowser/view/gov_10a_exp\\$DV_578/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/gov_10a_exp$DV_578/default/table?lang=en)
- Hawkes, J. (2001). *The fourth pillar of sustainability: Culture's essential role in public planning*. Available: <http://www.culturaldevelopment.net.au/community/Downloads/HawkesJon%282001%29TheFourthPillarOfSustainability.pdf>
- Hickel, J. (2020). The sustainable development index: Measuring the ecological efficiency of human development in the anthropocene. *Ecological Economics*, 167, 106331. <https://doi.org/10.1016/j.ecolecon.2019.05.011>
- Kaymas, S. (2020). Is development possible without cultural policies? Rethinking creative industries and sustainable development in the case of Turkey. *Creative Industries Journal*, 13(1), 72-92. <https://doi.org/10.1080/17510694.2019.1652026>
- Kerras, H., Sánchez-Navarro, J. L., López-Becerra, E. I., & de-Miguel Gomez, M. D. (2020). The impact of the gender digital divide on sustainable development: Comparative analysis between the European Union and the Maghreb. *Sustainability*, 12(8), 3347. <https://doi.org/10.3390/su12083347>

- Laine, M. (2016). Culture in sustainability—defining cultural sustainability in education. *Discourse and Communication for Sustainable Education*, 7(2), 52-67. <https://doi.org/10.1515/dcse-2016-0016>
- Lin, J., Cai, J., Han, Y., Zhu, H., & Cheng, Z. (2016). Culture sustainability: Culture quotient (CQ) and its quantitative empirical application to Chinese cities. *Sustainability*, 8(12), 1235. <https://doi.org/10.3390/su8121235>
- Manandhar, M., Hawkes, S., Buse, K., Nosrati, E., & Magar, V. (2018). Gender, health and the 2030 agenda for sustainable development. *Bulletin of the World Health Organization*, 96(9), 644. <https://doi.org/10.2471/BLT.18.211607>
- Nocca, F. (2017). The role of cultural heritage in sustainable development: Multidimensional indicators as decision-making tool. *Sustainability*, 9(10), 1882. <https://doi.org/10.3390/su9101882>
- Omri, A., & Mabrouk, N. B. (2020). Good governance for sustainable development goals: Getting ahead of the pack or falling behind?. *Environmental Impact Assessment Review*, 83, 106388. <https://doi.org/10.1016/j.eiar.2020.106388>
- Parameswara, A. (2020). Exploring the approaches of culture on sustainable development. *South East Asia Journal of Contemporary Business, Economics and Law*, 21(5), 177-185.
- Rinzin, C., Vermeulen, W. J., & Glasbergen, P. (2007). Ecotourism as a mechanism for sustainable development: the case of Bhutan. *Environmental Sciences*, 4(2), 109-125. <https://doi.org/10.1080/15693430701365420>
- SDSN & IEEP (2021). *Sustainable Development Report*. Available: <https://sdgindex.org/reports/>
- Sisto, R., García López, J., Quintanilla, A., de Juanes, Á., Mendoza, D., Lumbreras, J., & Mataix, C. (2020). Quantitative Analysis of the Impact of Public Policies on the Sustainable Development Goals through Budget Allocation and Indicators. *Sustainability*, 12(24), 10583. <https://doi.org/10.3390/su122410583>
- Soini, K., & Dessein, J. (2016). Culture-sustainability relation: Towards a conceptual framework. *Sustainability*, 8(2), 167. <https://doi.org/10.3390/su8020167>
- Streimikiene, D., Mikalauskiene, A., & Kiausiene, I. (2019). The impact of value created by culture on approaching the sustainable development goals: Case of the Baltic States. *Sustainability*, 11(22), 6437. <https://doi.org/10.3390/su11226437>
- The Council of the European Union (2014). *On cultural heritage as a strategic resource for a sustainable Europe* (2014/C 183/08). Available: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XG0614\(08\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XG0614(08)&from=EN)
- Throsby, D. (2009). Sustainability and Culture: Some Theoretical Issues. *Cultural Policy*, 4(1), 7-20. Doi: <https://doi.org/10.1080/10286639709358060>
- Throsby, D. (2012). Article 13: integration of culture in sustainable development. In *The UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions* (pp. 361-370). Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-25995-1_15
- UN System Task Team on the Post-2015 UN Development Agenda (2012). *Culture: a driver and an enabler of sustainable development*. Available: https://www.un.org/millenniumgoals/pdf/Think%20Pieces/2_culture.pdf
- UNESCO (2016). *Culture: urban future; global report on culture for sustainable urban development*. Available: <https://unesdoc.unesco.org/ark:/48223/pf0000245999>
- UNESCO (2021a). *Culture for Sustainable Development*. Available: <http://www.unesco.org/new/en/culture/themes/culture-and-development/the-future-we-want-the-role-of-culture/measuring-the-immeasurable/>
- UNESCO (2021b). *UNESCO Culture for Development Indicators (CDIS)*. Available: <https://en.unesco.org/creativity/activities/cdis>
- Vila, S. F., Miotto, G., & Rodríguez, J. R. (2021). Cultural Sustainability and the SDGs: Strategies and Priorities in the European Union Countries. *European Journal of Sustainable Development*, 10(2), 73-90. <https://doi.org/10.14207/ejsd.2021.v10n2p73>
- Wiktor-Mach, D. (2020). What role for culture in the age of sustainable development? UNESCO's advocacy in the 2030 Agenda negotiations. *International Journal of Cultural Policy*, 26(3), 312-327. <https://doi.org/10.1080/10286632.2018.1534841>

- Yang, J., & Černevičiūtė, J. (2017). Cultural and Creative Industries (CCI) and sustainable development: China's cultural industries clusters. *Entrepreneurship and Sustainability Issues*, 5(2), 231-242. [https://doi.org/10.9770/jesi.2017.5.2\(6\)](https://doi.org/10.9770/jesi.2017.5.2(6))
- Zheng, X., Wang, R., Hoekstra, A. Y., Krol, M. S., Zhang, Y., Guo, K., ... & Wang, C. (2021). Consideration of culture is vital if we are to achieve the Sustainable Development Goals. *One Earth*, 4(2), 307-319. <https://doi.org/10.1016/j.oneear.2021.01.012>
- Vries, G. d. (2020). Culture in the Sustainable Development Goals: The Role of the European Union. (2nd revised edition) (ifa-Edition Kultur und Außenpolitik). Stuttgart: ifa (Institut für Auslandsbeziehungen). <https://doi.org/10.17901/AKBP1.06.2020>
- Yildirim, et al. (2019). *Culture in the Implementation of the 2030 Agenda*. Culture2030Goal campaign. Available: <https://www.ifla.org/wp-content/uploads/2019/05/assets/hq/topics/libraries-development/documents/culture2030goal.pdf>
- British Council (2020). *The missing pillar: Culture's Contribution to the UN Sustainable Development Goals*. Available: https://www.britishcouncil.org/sites/default/files/the_missing_pillar.pdf
- European Commission (2006). *The economy of culture in Europe*. Available: https://ec.europa.eu/assets/eac/culture/library/studies/cultural-economy_en.pdf
- Kostis, P. C. (2021). Culture, Innovation and Economic Development. *Journal of Innovation and Entrepreneurship*, 10, 22 (2021). <https://doi.org/10.1186/s13731-021-00163-7>
- OECD (2021). *Economic and social impact of culture and creative sectors*. Available: <https://www.oecd.org/cfe/leed/OECD-G20-Culture-July-2021.pdf>
- Partal, A., & Dunphy, K. (2016). Cultural impact assessment: a systematic literature review of current methods and practice around the world. *Impact Assessment and Project Appraisal*, 34(1), 1-13. <https://doi.org/10.1080/14615517.2015.1077600>
- Mackenzie Valley Review Board (2009). *Status Report and Information Circular / Developing Cultural Impact Assessment Guidelines: A Mackenzie Valley Review Board Initiative*. Available: https://reviewboard.ca/upload/ref_library/may_2009_cultural_impact_assessment_guidelines_status_report_1242859917.pdf
- Liu, J. (2018). Measuring the value and impact of culture: Why and how? A literature review of academic and practical works. *Cultural Management: Science and Education*, 2, 9-30.
- UNESCO Institute for Statistics (2009). *UNESCO Framework for Cultural Statistics Handbook*. Available: http://uis.unesco.org/sites/default/files/documents/measuring-the-economic-contribution-of-cultural-industries-a-review-and-assessment-of-current-methodological-approaches-en_1.pdf
- Snowball, J. D. (2007). *Measuring the value of culture: Methods and examples in cultural economics*. Springer Science & Business Media. <https://doi.org/10.1007/978-3-540-74360-6>
- UNESCO (2019). *Thematic indicators for culture in the 2030 agenda*. Available: <https://unesdoc.unesco.org/ark:/48223/pf0000371562>
- Montalto, V., Moura, C. J. T., Langedijk, S., & Saisana, M. (2019). Culture counts: An empirical approach to measure the cultural and creative vitality of European cities. *Cities*, 89, 167-185. <https://doi.org/10.1016/j.cities.2019.01.014>
- Mosaferi, A., Aboutorabi, M. A., & Hajamini, M. (2021). The Causal Relationship of Public Expenditure on Culture and Sustainable Development: The Case of the European Union. *Iranian Economic Review*, 25(3), 587-601. <https://doi.org/10.22059/ier.2020.74567>
- UNESCO; World Bank. (2021). *Cities, Culture, Creativity: Leveraging Culture and Creativity for Sustainable Urban Development and Inclusive Growth*. Paris: UNESCO, and Washington, DC Available: <https://openknowledge.worldbank.org/handle/10986/35621>