European Commission

The Cultural and Creative Cities Monitor

2019 Edition

Joint Research Centre

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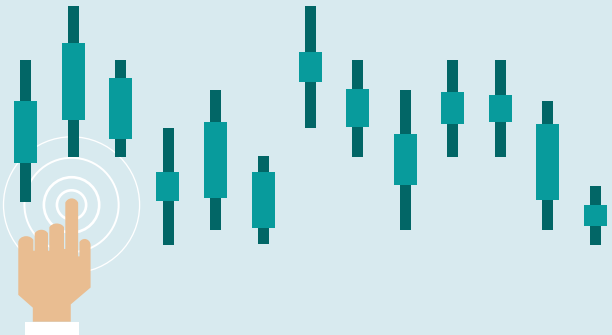
The Cultural and Creative Cities Monitor. 2019 Edition

This second edition of the Cultural and Creative Cities Monitor shows how well 190 cities in 30 European countries perform on a range of measures describing the 'Cultural Vibrancy', the 'Creative Economy' and the 'Enabling Environment' of a city. In 2018, Madrid, Geneva and Győr used the Monitor to pursue different objectives, such as analysing investment needs and re-designing creative industries' strategies. A paper was also published in a top-level journal in the field of urban studies (Cities) to offer policy insights to the scholarly community. As one of the 65 actions of the European Framework for Action on Cultural Heritage, the Monitor wants to support the European Commission's efforts to put culture at the heart of its policy agenda through evidence and success stories in cities.

The Cultural and Creative Cities Monitor

2019 Edition

Visit the **Cultural and Creative Cities Monitor Online**, a web tool offering both quantitative and qualitative evidence on the 190 selected cities along with a number of interactive functionalities to support urban policy making and benchmarking, such as the possibility to add your own data and adjust weights to get 'customised' scores.



Explore now:
https://composite-indicators.jrc.ec.europa.eu/cultural-creative-cities-monitor/

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Foreword by Commissioner Navracsics

Culture and creativity play an important role in our changing societies. In a context of growing social inequalities and divisions, it is more important than ever for policy-makers to fully harness their potential. Culture and creativity boost the creation of new jobs, foster novel business activities and innovation, and they can be powerful tools to bring people closer together, build a sense of community and encourage citizens to be active members of society.

Culture therefore has greater importance at all levels - European, national and local - as a means to support social inclusion, competitiveness and resilience. The experience of many European Capitals of Culture such as Lille in 2004, Mons in 2015 or Matera in 2019 shows that culture enables cities to become more attractive, strengthening cohesion and participatory development.

Nevertheless, due to its multidimensional nature, the impact of culture remains difficult to measure. Evidence is needed to help local policy-makers to assess the potential of culture and creativity, monitor results and share good practices.

Building on the technical expertise of the Joint Research Centre and the policy-making experience of the Directorate-General for Education, Youth, Sport and Culture, the European Commission has continued to develop an open and accessible evidence base highlighting the importance of culture and creativity.

The very first edition of the Cultural and Creative Cities Monitor launched in 2017 has inspired local governments across Europe: cities including Bologna (Italy), Edinburgh (United Kingdom), Geneva (Switzerland), Győr (Hungary), Leeuwarden (the Netherlands) and Madrid (Spain) have been using the Monitor to tailor their policies to better respond to local needs and ambitions.

Madrid, for instance, used evidence included in the Monitor to understand which cultural and creative assets the Spanish capital should focus on in its branding and investment strategy to progressively improve its international ranking. The Monitor also helped the cities of Geneva and Győr to analyse future investment needs and re-design their cultural and creative economy strategies accordingly. In addition, over twenty workshops were hosted by European cities in 2018 alone, using the Monitor to assess strengths and development gaps.

The Monitor provided evidence and food for thought for discussions at the 2017 European Culture Forum and the 2018 European Week of Regions and Cities. It was a basis for the economic impact assessment underpinning the 2018 'New European Agenda for Culture', and is one of the actions included in the 'European Framework for Action on Cultural Heritage' to help ensure that the European Year of Cultural Heritage 2018 has a lasting impact through evidence and examples of success stories in cities.

In this second edition of the Cultural and Creative Cities Monitor, our experts have included 22 additional European cities, taking the total to 190. The Monitor also explores new data sources to better capture the evolving and subtle aspects of culture and creativity. Most importantly, the new edition allows cities and local stakeholders to monitor progress over time. In addition, findings from the spatial analysis of cultural venues strengthen the social inclusion aspect of this tool. And European citizens and cities can now provide their own data on cultural and creative spaces across Europe through the Monitor's companion crowd-sourcing online tool - the Cultural gems app - adding to the Monitor the distinctive traits of local culture and creativity.

I am confident that, together, policy-makers at all levels, the cultural and creative sectors and citizens, can help ensure that we make the most of culture in building a better Europe for the future.

Tibor Navracsics, Commissioner for Education, Culture, Youth and Sport, responsible for the Joint Research Centre

The Mayors' view of the Cultural and Creative Cities Monitor

With the Cultural and Creative Cities Monitor, the European Union is offering us the opportunity to benchmark our current cultural and creative assets, thus providing support for the development of future, and evidence-based, policy frameworks.

Mr Virginio Merola,
Mayor of the City of Bologna, Italy

Comparing Eindhoven with other European cities is a challenge due to its peculiar values and local assets. We recognise in the Cultural and Creative Cities Monitor a valuable tool that enables us to make meaningful comparisons with similar urban areas. The results from the 2017 edition seem to confirm the efforts carried out at the local, but also at the national and regional levels, to foster creativity and cross-sectoral innovation by involving artists, designers, talents, creative entrepreneurs and companies.

Mr John Jorritsma,
Mayor of the City of Eindhoven, Netherlands

In recent years, the city has decided to invest heavily in the development of the creative economy. This was partly related to the European Capital of Culture 2023 bid. The Cultural and Creative Cities Monitor has provided valuable help both in the preparation of our European Capital of Culture bid and in the development of the local creative economy, as we feel that it is worth looking at the creative performance of cities in an international context, too.

Mr Zsolt Borkai,
Mayor of the City of Győr, Hungary

The Cultural and Creative Cities Monitor is an invaluable tool that easily demonstrates where Edinburgh ranks against its nearest competitors and Europe as a whole, and shows the areas in which we excel and where there is room for improvement. It clearly proves the value of investment in the cultural and creative sectors for all cities and the role this plays in developing diverse, open and engaged societies. We were delighted to work with the Monitor's team in a unique collaboration at the Eurocities annual conference in Edinburgh in November 2018. The University of Edinburgh's Data Driven Innovation Programme and the City of Edinburgh Council jointly commissioned a new visualisation tool which was specially designed for this event by the Edinburgh-based company Ray Interactive, using the Monitor's dataset.

Mr Frank Ross,
Lord Provost of the City of Edinburgh, United Kingdom

The Cultural and Creative Cities Monitor is a powerful tool to be used in the formulation, decision and planning of municipal cultural policies and strategies, in the determination of their impacts and results, and even in the articulation with other areas of local governance, for example, the environment and tourism. However, the main added value may be the possibility of promoting an informed and deservedly more participated discussion by the citizens and, consequently, a more active and assertive cultural citizenship. It clearly surpasses the local, regional and national scale, to assume a European dimension and utility.

Mrs Catarina Vaz Pinto,
Councillor for Culture and International Relations
of the City of Lisbon, Portugal

The Cultural and Creative Cities Monitor has been of great value for the City of Leuven. We invested in the local creative and cultural scene and economy, and getting the confirmation by the European Commission that our policy works, via a very well elaborated research tool such as the Cultural and Creative Cities Monitor makes a difference for us. In addition, the Monitor helped us to identify local strengths and to keep culture and creativity at the heart of the municipal policy agenda because of its power to improve society.

Mr Mohamed Ridouani,
Mayor of the City of Leuven, Belgium

Since its launch, the Cultural and Creative Cities Monitor has been a useful tool to measure our city's cultural vibrancy and attractiveness through scores and rankings which are certified by an institutional subject such as the Joint Research Centre of the European Commission. In addition to that, the Monitor enables us to benchmark Milan with other European peer cities with similar population size, income and employment, hence giving insights to develop our future culture policies.

Mr Filippo Del Corno,
Councillor for Culture of the City of Milan, Italy

The Cultural and Creative Cities Monitor presents a valuable asset as it provides decision makers relevant information for the attainment of their cultural policy goals and cooperation opportunities in the field on the European level. The ideal culture and creative city does not exist but this tool presenting comprehensive information and good practices is an important step in this direction.

Mrs Malina Edreva,
Chair of the Commission on Education and Culture in Sofia City Council, Bulgaria, Vice-President of the Bureau of European Committee of the Regions

I believe that a tool like the Cultural and Creative Cities Monitor can truly help stimulate a more informed discussion on what is best for the cultural and creative development of all of Europe, and not just of our capitals. Studies by the European programme ESPON have shown that it is important to support European cities like Umeå contributing to the EU 2020 Strategy and leading to a more polycentric, diverse and sustainable Europe.

Mr Hans Lindberg,
Mayor of the City of Umeå, Sweden

The Cultural and Creative Cities Monitor is an instrument that measures current cultural and creative assets and a hook to create future policy action frameworks. From the Autonomous Community of the Basque country, we support culture- and creativity-led development through the European project CREADIS3. This aims at reinforcing the need to develop indicators having a regional and territorial dimension and at fostering the collaboration between the Cultural and Creative Industries, innovation and research centres, citizens, local and regional stakeholders, under the regional Smart Specialisation Strategy guidance.

Mr Joxean Muñoz,
regional Deputy Minister for Culture, Basque Government, Spain

Acknowledgements

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The Cultural and Creative Cities Monitor project has greatly benefitted for the valuable comments provided by professionals working at international level, including policy-makers, academics and field experts. The authors wish to thank especially Pier Luigi Sacco (IULM-International University of Languages and Media/Harvard University), Catherine Magnant (Directorate-General for Education, Youth, Sport and Culture) and Isabelle Schwarz (European Cultural Foundation, ECF) for their constructive comments from the earliest stages of the Cultural and Creative Cities Monitor project. For the present report, our special thanks go to Barbara Stacher and Dimitra Kizlari (DG Education, Youth, Sport and Culture) for their detailed inputs on the policy context and the Monitor's conceptual framework. In addition, we thank them for having enriched the 'Did you know that ...?' section of the online city pages providing a detailed list of web links to local cultural events calendars to complement the cities' quantitative picture.

Special thanks also go to all the other experts who actively participated in the two consultation workshops that took place back in 2015 and 2016 (17-18 September 2015, in Ispra and 9 November 2016, in Brussels), as part of the development and validation process of the Cultural and Creative Cities Monitor, namely: Tsveta Andreeva (ECF), Andrea Billi (Organisation for Economic Cooperation and Development – OECD, and Sapienza University), Bernd Fesel (European Centre for Creative Economy – ECCE), Marielle Hendriks (Boekman Foundation), Lorena Figueiredo (DG Education, Youth, Sport and Culture), Dimiter Gantchev (World Intellectual Property Organisation – WIPO), Enzo Grossi (Bracco Group), Elisabetta Lazzaro (University of the Arts Utrecht), Robert Manchin (Culture Action Europe – CAE), Cristina Ortega Nuere (Institute of Leisure Studies, University of Deusto), Erminia Sciacchitano (DG Education, Youth, Sport and Culture), Barbara Stacher (DG Education, Youth, Sport and Culture), Ekaterina Travkina (OECD) and Walter Zampieri (DG Education, Youth, Sport and Culture).

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The authors would also like to thank all the JRC colleagues who contributed significantly to the accomplishment of this project: co-author Carlos Jorge Tacao Moura for having realised a major piece of this work, the 'Cultural and Creative Cities Monitor Online'; co-author Valentina Alberti for the graphics work that greatly improved the clarity and visual appeal of the report and of the online tool; co-authors Valentina Alberti and Francesco Panella for the spatial analysis of cultural venues, which added a unique and novel focus to the present report as well as for having conceived and actively promoted the Cultural gems app; William Becker for having carried out the statistical assessment of the Cultural and Creative Cities (C3) Index ('C3 Index') in order to maximise the reliability and transparency of the Monitor's model; and Marcos Alvarez, Giulio Caperna, Marco Colagrossi, Marcos Dominguez-Torreiro and Ana Neves for providing very helpful insights that enhanced the overall quality of the present report and the policy relevance of the findings. For their support in the identification of the new cities to be included in the 2019 edition and the preparation of the 'Did you know that ...?' sections of the Cultural and Creative Cities Monitor Online's city pages, we are also sincerely grateful to the trainees of the European School of Varese: Maxence Sombrun, Niki Barbas, Tara Wood, Victoria Minacci and Valeria Paris.

We would also like to thank all the policy officers who kindly accepted to send us quotes from their cities' Mayors sharing their views on the Cultural and Creative Cities Monitor.

Lexicon

The **Academic Ranking of World Universities (ARWU)**, also known as Shanghai Ranking, is an annual publication of university rankings by the Shanghai Ranking Consultancy. The publication currently includes overall world rankings and subject league tables, alongside the independent regional Greater China Ranking and Macedonian HEIs Ranking.

http://www.shanghairanking.com/

The **Azienda del Consorzio Trasporti Veneziano General Transit Feed Specification (ACTV GTFS)** retrieves data on public transport routes, stops and timetables from the City of Venice open data portal.

http://dati.venezia.it/?q=content%2Factv-general-transit-feed-specification-gtfs

The **Budget allocation method** is a method whereby experts are given a budget of N points, to be distributed over a number of indicators (or dimensions), allocating more to those indicators whose importance they wish to stress. The budget allocation method can be divided into four different phases: (a) selection of experts for the evaluation; (b) allocation of budget to the indicators; (c) calculation of the weights; (d) iteration of the budget allocation until convergence is reached (optional).

https://ec.europa.eu/jrc/en/coin/10-step-guide/step-6#budget-allocation

A **City** is a local administrative unit (LAU) where the majority of the population live in an urban centre of at least 50 000 inhabitants.

http://ec.europa.eu/eurostat/web/cities/spatial-units

The **Cultural and creative sectors (CCS)** include all sectors in which activities are based on cultural values and/or artistic and other forms of creative expression. They include architecture, archives, libraries and museums, artistic crafts, audiovisual (including film, television, video games and multimedia), tangible and intangible cultural heritage, design, festivals, music, literature, performing arts, publishing, radio and visual arts.

http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32013R1295&from=EN

Cultural employment includes all individuals working in a culture-related economic activity (NACE Rev. 2 classification – see definition of 'NACE') regardless of their occupation, as well as all individuals with a culture-related occupation (ISCO-08 classification – see definition of 'ISCO') whatever the economic activity they are employed in. This means that cultural employment statistics include the culture-related occupations (such as writers, architects, musicians, journalists, actors, dancers, librarians, handicraft workers and graphic designers) whatever sector they work in, and all individuals working in a culture-related economic activity (namely book publishing, publishing of newspapers, publishing of journals and periodicals, publishing of computer games, motion picture, video and television programme production, sound recording and music publishing activities, programming and broadcasting activities, news agency activities, architectural activities, specialised design activities, cultural education, creative, arts and entertainment activities, libraries, archives, museums and other cultural activities).

https://ec.europa.eu/eurostat/web/culture/data

The **EU Cohesion Policy** is the policy behind the hundreds of thousands of projects all over Europe that receive funding from the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the Cohesion Fund (Cohesion Fund applies to EU Member States whose gross national income (GNI) per inhabitant is less than 90 % of the EU-27 average – Croatia is not taken into account).

Economic and social cohesion – as defined in the 1986 Single European Act – is about 'reducing disparities between the various regions and the backwardness of the least-favoured regions'. The EU's most recent treaty, the Lisbon Treaty, adds another facet to cohesion, referring to 'economic, social and territorial cohesion'. The idea is that cohesion policy should also promote more balanced, more sustainable 'territorial development' – a broader concept than regional policy, which is specifically linked to the ERDF and operates specifically at regional level.

https://ec.europa.eu/regional_policy/en/faq/#1

The **European Capital of Culture** programme, which was founded in 1985, is now regarded as the most prestigious and popular European cultural initiative. Under the current legal framework[1], the Member States concerned have to publish a call for submission of applications at least six years before the year of the title. During these six years – going from the publication of the call for applications up to the year when winning cities officially hold the European Capital of Culture title – cities increase their cultural activity, reach out to new audiences, transform their image and integrate culture into their long-term development plans.

The following 67 European cities have been awarded the title to date, under different legal frameworks[2]:

Year	City-country	Year	City-country
1985	Athens-Greece	2002	Bruges-Belgium
1986	Florence-Italy		Salamanca-Spain
1987	Amsterdam-Netherlands	2003	Graz-Austria
1988	Berlin-Germany	2004	Genoa-Italy
1989	Paris-France		Lille-France
1990	Glasgow-United Kingdom	2005	Cork-Ireland
1991	Dublin-Ireland	2006	Patras-Greece
1992	Madrid-Spain	2007	Sibiu-Romania
1993	Antwerp-Belgium		Luxembourg-Luxembourg
1994	Lisbon-Portugal	2008	Liverpool-United Kingdom
1995	Luxembourg- Luxembourg		Stavanger-Norway
1996	Copenhagen-Denmark	2009	Vilnius-Lithuania
1997	Thessaloniki-Greece		Linz-Austria
1998	Stockholm-Sweden	2010	Essen-Germany
1999	Weimar-Germany		Istanbul-Turkey
2000	Avignon-France		Pécs-Hungary
	Bergen-Norway	2011	Turku-Finland
	Bologna-Italy		Tallinn-Estonia
	Brussels-Belgium	2012	Guimarães-Portugal
	Helsinki-Finland		Maribor-Slovenia
	Kraków-Poland	2013	Marseille-France
	Prague-Czech Republic		Košice-Slovakia
	Reykjavík-Iceland	2014	Riga-Latvia
	Santiago de Compostela-Spain		Umeå-Sweden
2001	Rotterdam-Netherlands	2015	Mons-Belgium
	Porto-Portugal		Pilsen-Czech Republic

2016	San Sebastián-Spain	2020	Rijeka-Croatia
	Wrocław-Poland		Galway-Ireland
2017	Aarhus-Denmark	2021	Timișoara-Romania
	Paphos-Greece		Elefsina-Greece
2018	Leeuwarden-Netherlands		Novi Sad-Serbia
	Valletta-Malta	2022	Kaunas-Lithuania
2019	Matera-Italy		Esch-sur-Alzette-Luxembourg
	Plovdiv-Bulgaria	2023	Veszprém-Hungary

https://ec.europa.eu/programmes/creative-europe/actions/capitals-culture_en

Europe for Festivals, Festivals for Europe (EFFE) is an online platform for the 760 festivals across Europe that have received the so called 'EFFE Label' since the launch of the initiative in 2014. This is a quality label awarded to European festivals meeting three criteria: artistic commitment, involvement in their local communities and a European and global outlook. The label has been awarded to many different types of festivals, some of which are already well known, such as the Edinburgh International Festival, which has been running for 70 years, the EFG London Jazz Festival, which has taken place since 1993, the Sibiu International Theatre Festival, the most important festival of performing arts in Romania, active since 1993, or MITO Settembre Musica, taking place in Milan and Turin since 2007. The Europe for Festivals, Festivals for Europe initiative is a result of many years of intense collaboration between the European Festivals Association (EFA), the European Commission and the European Parliament. It is the result of a response to a call for projects launched by the European Commission and the European Parliament. The European Commission has now given the EFA the mandate to set up a new, long-term implementing organisation for this project.

http://effe.eu/

Foursquare City Guide is a mobile app and website storing and making available information on a wide range of services and venues in cities. It also allows users to add missing places.

https://foursquare.com/

The **General Transit Feed Specification (GTFS)** is a standard format for public transportation data, in particular timetables, route and stops information with geographical attributes.

https://gtfs.org/reference/static

The **Global Human Settlement Layer – Population Grid (GHS-POP)** is a dataset produced by the European Commission Joint Research Centre providing georeferenced information on the distribution of residential population in a homogeneous grid of cells of either 1 km or 250 m. For the purposes of this report the 250 m grid has been used.

https://ghsl.jrc.ec.europa.eu/ghs_pop2019.php

Gross domestic product in purchasing power standards (GDP in PPS) is GDP converted into purchasing power standards, an artificial currency unit used for international comparisons.

http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Gross_domestic_product_(GDP)_in_purchasing_power_standards

The **International Standard Classification of Occupations (ISCO)** is the classification structure set up by the International Labour Organisation (ILO) for organising information on labour and jobs. It is part of the international family of economic and social classifications of the United Nations. The current version, known as ISCO-08, was published in 2008 and is the fourth iteration, following ISCO-58, ISCO-68 and ISCO-88.

http://www.ilo.org/public/english/bureau/stat/isco/index.htm

The CWTS **Leiden Ranking** is an annual global university ranking based exclusively on bibliometric indicators. The rankings are compiled by the Centre for Science and Technology Studies at Leiden University in the Netherlands. Multiple rankings are released according to various bibliometric normalisation and impact indicators, including the number of publications, citations per publication, and field-normalised impact per publication. The Leiden Ranking also ranks universities by scientific collaboration, including collaboration with other institutions and collaboration with industry partners.

http://www.leidenranking.com/

Metro regions are NUTS 3 regions (see below) or groupings of NUTS 3 regions representing all functional urban areas of more than 250 000 inhabitants.

http://ec.europa.eu/eurostat/web/metropolitan-regions/overview

NACE is the statistical classification of economic activities in the European Union (EU). NACE is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics (e.g. production, employment and national accounts) and in other statistical domains developed within the European statistical system (ESS). NACE Rev. 2, a revised classification, was adopted at the end of 2006 and applied from 2007 onwards.

http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE)

The **Nomenclature of territorial units for statistics**, abbreviated **NUTS** (from the French version Nomenclature des Unités territoriales statistiques), is a geographical nomenclature subdividing the economic territory of the European Union (EU) into regions at three levels (NUTS 1, 2 and 3, moving from larger to smaller territorial units). Above NUTS 1 is the national level of the Member States.

http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Nomenclature_of_territorial_units_for_statistics_(NUTS)

The **Open Method of Coordination** is a form of cooperation between EU Member States to exchange good practice on the way policies and funding schemes are designed. It is used in many policy areas, among which culture.

https://ec.europa.eu/culture/policy/strategic-framework/european-coop_en

OpenStreetMap (OSM) is an open and collaborative project aimed at creating a free editable map of the world, based on volunteered geographic information. Its creation and growth has been motivated by restrictions on use or availability of map information across much of the world.

https://www.openstreetmap.org/

The **Quacquarelli Symonds (QS) World University Rankings** is an annual publication of university rankings by Quacquarelli Symonds, a British company specialising in education. It was previously known as THE-QS World University Rankings. The QS system comprises global overall and subject-based rankings (naming the world's top universities in 46 subjects and five composite faculty areas), alongside five independent regional tables (for Asia, Latin America, Emerging Europe and Central Asia, the Arab Region, and BRICS: Brazil, Russia, India, China and South Africa).

https://www.topuniversities.com/university-rankings

The **Times Higher Education World University Rankings** is an annual publication of university rankings by Times Higher Education (THE) magazine. The publication comprises the world's overall, subject and reputation rankings, alongside three regional league tables for Asia, Latin America, and BRICS and emerging economies.

https://www.timeshighereducation.com/world-university-rankings

The **UNESCO Creative Cities Network (UCCN)** was set up in 2004 to promote cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development.

By joining the network, which today counts 116 partner cities across the globe, cities commit to sharing best practice and developing public-private partnerships as well as partnerships with civil society in order to: strengthen the creation, production, distribution and dissemination of cultural activities, goods and services; develop hubs of creativity and innovation; broaden opportunities for creators and cultural professionals; improve access to and participation in cultural life; and fully integrate culture and creativity into sustainable development plans.

Cities compete for the title of UCC in one of the following seven creative fields: crafts and folk arts, media arts, film, design, gastronomy, literature and music.

64 European cities have been awarded the title to date (2019), meaning 20 cities more compared to the 44 cities that were already holding the title in 2017:

- Alba (Italy) – Gastronomy
- Amarante (Portugal) – Music
- Barcelona (Spain) – Literature
- Barcelos (Portugal) – Crafts and folk art
- Bergen (Norway) – Gastronomy
- Berlin (Germany) – Design
- Bilbao (Spain) – Design
- Bologna (Italy) – Music
- Bradford (United Kingdom) – Film
- Braga (Portugal) – Media arts
- Bristol (United Kingdom) – Film
- Brno (Czech Republic) – Music
- Budapest (Hungary) – Design
- Burgos (Spain) – Gastronomy
- Carrara (Italy) – Crafts and folk art
- Dénia (Spain) – Gastronomy
- Dublin (Ireland) – Literature
- Dundee (United Kingdom) – Design
- Edinburgh – (United Kingdom) – Literature
- Enghien-les-Bains (France) – Media arts
- Fabriano (Italy) – Crafts and folk art
- Gabrovo (Bulgaria) – Crafts and folk art
- Galway (Ireland) – Film
- Ghent (Belgium) – Music
- Glasgow (United Kingdom) – Music
- Granada (Spain) – Literature
- Graz (Austria) – Design
- Hanover (Germany) – Music
- Heidelberg (Germany) – Literature
- Helsinki (Finland) – Design
- Idanha-a-Nova (Portugal) – Music
- Katowice (Poland) – Music
- Kaunas (Lithuania) – Design
- Kolding (Denmark) – Design
- Kortrijk (Belgium) – Design
- Košice (Slovakia) – Media arts
- Krakow (Poland) – Literature
- Limoges (France) – Crafts and folk art
- Linz (Austria) – Media arts
- Liverpool (United Kingdom) – Music
- Ljubljana (Slovenia) – Literature
- Łódź (Poland) – Film
- Lyon (France) – Media arts
- Manchester (United Kingdom) – Literature
- Mannheim (Germany) – Music
- Milan (Italy) – Literature
- Lillehammer (Norway) – Literature
- Norrköping (Sweden) – Music
- Norwich (United Kingdom) – Literature
- Nottingham (United Kingdom) – Literature
- Óbidos (Portugal) – Literature
- Östersund (Sweden) – Gastronomy
- Parma (Italy) – Gastronomy
- Pesaro (Italy) – Music
- Prague (Czech Republic) – Gastronomy
- Rome (Italy) – Film
- Saint-Étienne (France) – Design
- Seville (Spain) – Music
- Sofia (Bulgaria) – Film
- Tartu (Estonia) – Literature
- Terrassa (Spain) – Film
- Turin (Italy) – Design
- Utrecht (Netherlands) – Literature
- York (United Kingdom) – Media arts

https://en.unesco.org/creative-cities/

The **Urban Audit** data collection system provides information on different aspects of the quality of urban life in Europe's cities. The Urban Audit is the result of a joint effort by the participating cities, the statistical offices belonging to the European statistical system (ESS) and the European Commission's Directorate-General for Regional and Urban Policy.

http://ec.europa.eu/eurostat/web/cities

Geographic groupings of EU countries (macro-regions)

Eastern Europe: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia.
Northern Europe: Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Sweden, United Kingdom.
Southern Europe: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain.
Western Europe: Austria, Belgium, France, Germany, Luxembourg, Netherlands.
Source: UNO classification of geographical regions (https://unstats.un.org/unsd/methodology/m49/).
Europe: EU-28, Norway and Switzerland.

Executive summary

Introducing the Cultural and Creative Cities Monitor 2019 – 2nd edition

Launched in July 2017, the Cultural and Creative Cities Monitor (hereinafter: the Monitor) is a novel benchmarking tool designed and developed by the Joint Research Centre (JRC), the European Commission's science and knowledge service. Its aim is to **monitor and assess the performance of 'Cultural and Creative Cities'** in Europe vis-à-vis their peers, based on similar population, income and employment, using both quantitative indicators and qualitative information.

The European Commission amply promoted the first edition of the Monitor in 2018 during the European Year of Cultural Heritage which highlighted the role of cities and regions across the European Union (EU) at the forefront of culture-led development. The Year focused on the urban dimension of cultural heritage and advanced reflections on the contribution of sustainable cultural tourism to urban and regional development. It was also an opportunity to explore how to balance the sustainability of cultural heritage with the benefits of tourism, not just in economic terms but also for the well-being of local communities.

The **2019 edition – which is one of the 65 actions proposed by the European Framework for Action on Cultural Heritage[3] – presents an updated portrait of the cultural and creative resources in an enriched sample of 190 cities in 30 European countries** (the EU-28 plus Norway and Switzerland). They were selected on the basis of their demonstrable engagement in the promotion of culture and creativity – thus, being included in the Monitor is in itself an acknowledgement of these cities' efforts in this domain.

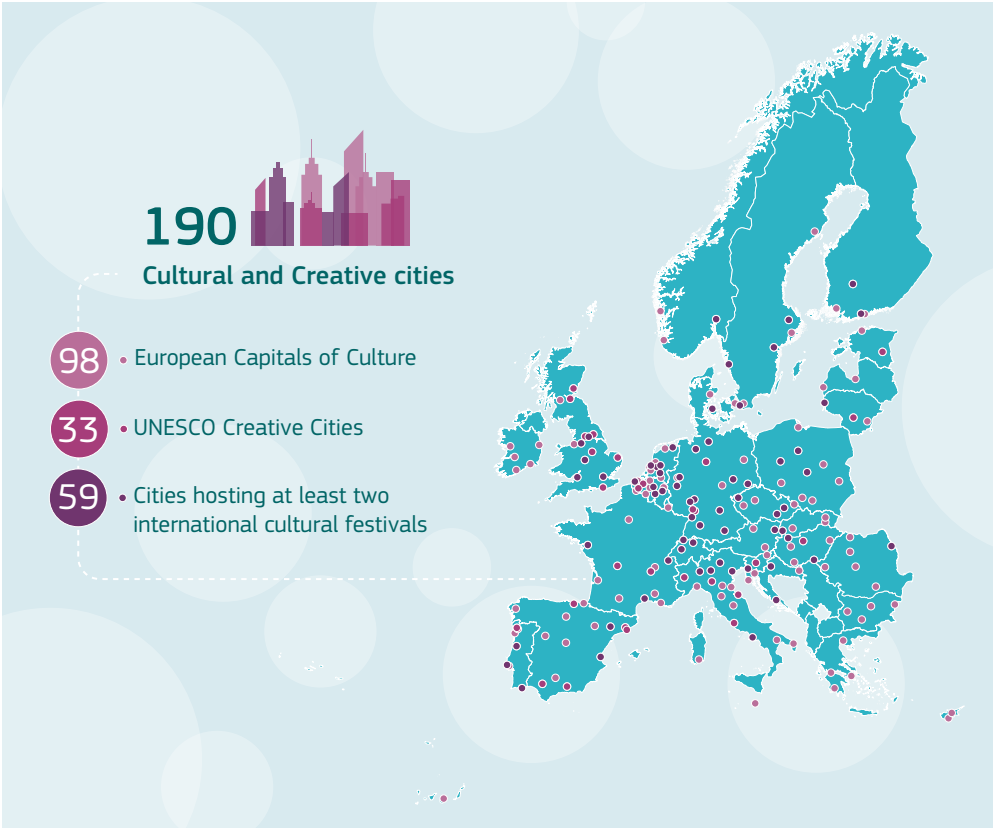


Figure 1.
The Cultural and Creative Cities Monitor's 190 selected cities in 30 European countries – 2019 edition

The Monitor's **quantitative** information is captured in **29 individual indicators** relevant to **nine policy dimensions which** reflect **three major facets** of a city's cultural and socio-economic vitality:

- **Cultural Vibrancy** measures a city's cultural 'pulse' in terms of cultural infrastructure and participation in culture;
- **Creative Economy** captures the extent to which the cultural and creative sectors contribute to a city's economy in terms of employment, job creation and innovation;
- **Enabling Environment** identifies the tangible and intangible assets that help cities attract creative talent and stimulate cultural engagement.

Figure 2.
The Cultural and Creative Cities Monitor's conceptual framework

The **Cultural and Creative Cities (C3) Index** score is then calculated as a weighted average of the 'Cultural Vibrancy' (40%), 'Creative Economy' (40%) and 'Enabling Environment' (20%) sub-index scores. The weights have been designed by a group of 15 professionals with experience in policy or research in the field of culture, creativity and urban development, at the international level.

The **qualitative** component includes highlights of cities' creative economy strategies or best practices in the field of cultural management to illustrate and complement the quantitative evidence.

The policy rationale, methodology and key findings are presented concisely in this **report**, along with some key qualitative facts. Indicators, final scores and qualitative information can be browsed in detail on the interactive **Cultural and Creative Cities Monitor Online**[4] and **its multi-purpose tools, materials and interactive functionalities** which relate to five main policy-relevant areas: Insights and research, Policy design, Crowd-sourcing and data collection, Capacity building and Communication and advocacy.

THE THREE DOMAINS AND NINE DIMENSIONS OF THE CULTURAL AND CREATIVE CITIES MONITOR

CULTURAL VIBRANCY

D1.1 Cultural Venues & Facilities

Dimension 1.1 monitors the extent to which cities are 'culturally rich'. Cultural life is a key element in a city's quality of life and a 'soft location factor' to attract talent. Participation in cultural activities – see also Dimension 1.2 – enhances the connection people have to each other and to the place, and improves their creative skills and psychological well-being.

D1.2 Cultural Participation & Attractiveness

Dimension 1.2 is about cities' capacity to attract local, national and international audiences to participate in their cultural life. Participation is the 'raison d'être' of cultural amenities and facilities: they need an audience to be meaningful. This is the most basic and yet crucial outcome cities might expect as a result of their engagement in promoting arts and culture.

CREATIVE ECONOMY

D2.1 Creative & Knowledge-based Jobs

Dimension 2.1 measures the extent to which cities have access to a pool of highly qualified workers in three creative and knowledge-intensive fields. These comprise the so-called 'cultural and creative sectors': arts, culture and entertainment; media and communication; and creative services such as advertising and fashion. Economists agree that creative and knowledge-based workers play an important role in both innovation and economic growth.

D2.2 Intellectual Property & Innovation

Dimension 2.2 assesses the extent to which a city is conducive to innovation. The cultural and creative sectors and professionals have both stimulated and advanced the digital revolution. Cultural and artistic creativity have clearly contributed to the rapid evolution of new technologies and consumer electronic devices and facilitated their uptake with attractive content and user-friendly design.

D2.3 New Jobs in Creative Sectors

Dimension 2.3 is a proxy of how well a city can translate creative and innovative ideas into new jobs. This is measured in terms of jobs in newly created enterprises in the creative and knowledge-intensive sectors, as listed in Dimension 2.1.

ENABLING ENVIRONMENT

D3.1 Human Capital & Education

Dimension 3.1 captures cities' access to talent in the form of human capital available in the city as well as the appeal of local universities, measured in terms of four international rankings. The presence of highly regarded universities is considered crucial in attracting talent, while graduates in the arts, humanities and ICT are important to a city's creative economy, its cultural dynamism and its capacity to support an innovative and sustainable society.

D3.2 Openness, Tolerance & Trust

Dimension 3.2 measures the tolerance of diversity and mutual trust among inhabitants. Open-minded cities are better able to attract talent from different fields, welcome people from different cultures – including migrants and refugees – and facilitate the flow and implementation of (new) ideas.

D3.3 Local & International Connections

Dimension 3.3 provides a measure of a city's connectedness via air, rail and road links. Connectedness is crucial for culture and creativity to develop as it enables the flow of visitors, talent, ideas and investments.

D3.4 Quality of Governance

Dimension 3.4 assesses the extent to which government delivers its policies in an effective and impartial way and without corruption. State support and fair regulatory systems, for example, are important conditions for culture and creativity to flourish.

KEY ISSUES COVERED BY THE MONITOR

CULTURAL VIBRANCY

D1.1 Cultural Venues & Facilities

- Sights & landmarks
- Museums & art galleries
- Cinemas
- Concert & music halls
- Theatres

D1.2 Cultural Participation & Attractiveness

- Tourist overnight stays
- Museum visitors
- Cinema attendance
- Satisfaction with cultural facilities

CREATIVE ECONOMY

D2.1 Creative & Knowledge-based Jobs

- Jobs in arts, culture & entertainment
- Jobs in media & communication
- Jobs in other creative sectors

D2.2 Intellectual Property & Innovation

- ICT patent applications
- Community design applications

D2.3 New Jobs in Creative Sectors

- Jobs in new arts, culture & entertainment enterprises
- Jobs in new media & communication enterprises
- Jobs in new enterprises in other creative sectors

ENABLING ENVIRONMENT

D3.1 Human Capital & Education

- Graduates in arts and humanities
- Graduates in ICT
- Average appearances in university rankings

D3.2 Openness, Tolerance & Trust

- Foreign graduates
- Foreign-born population
- Tolerance of foreigners
- Integration of foreigners
- People trust

D3.3 Local & International Connections

- Accessibility to passenger flights
- Accessibility by road
- Accessibility by rail

D3.4 Quality of Governance

- Quality of the local governance

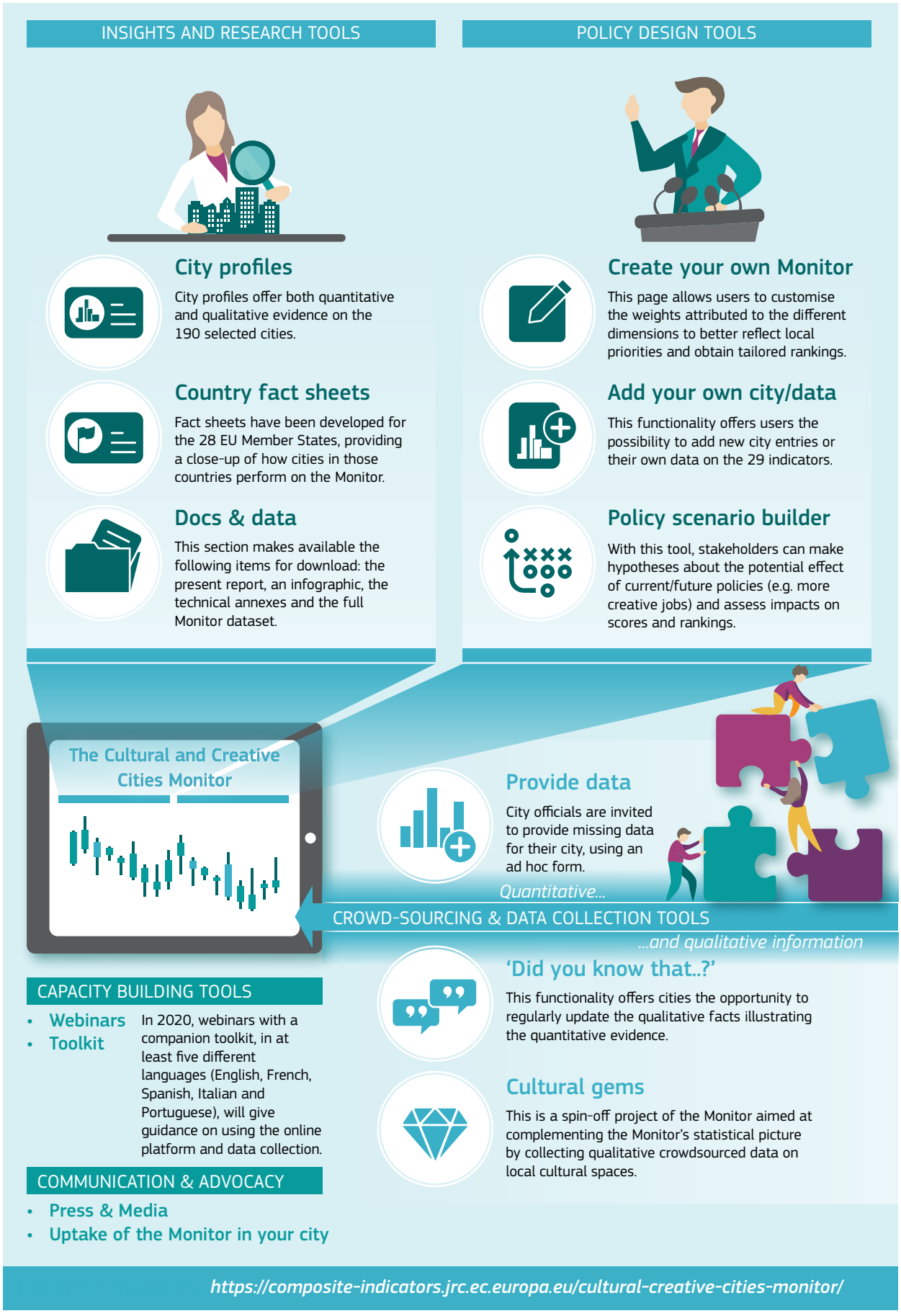


Figure 3.
The Cultural and Creative Cities Monitor Online's tools package

Why a Cultural and Creative Cities Monitor?

About 10 years after the release of the very first European Agenda for Culture, the **'New European Agenda for Culture'**, adopted in May 2018, puts forward the goal to '*do more, through culture and education, to build cohesive societies*' as well as '*a more inclusive and fairer Union, supporting innovation, creativity and sustainable jobs and growth*'.

In a similar vein, the new **EU Work Plan for Culture 2019-2022**, adopted by the Council of the EU in November 2018, identifies five main priorities to be addressed because of their European added value and need for joint action, namely: Sustainability in cultural heritage; Cohesion and well-being; An ecosystem supporting artists, cultural and creative professionals and European content; Gender equality; and International cultural relations. Along with digitalisation, the development of **comparable and reliable cultural statistics** is considered an important additional **horizontal issue** to be tackled with a view to supporting evidence-based policy-making, both at the European and national level.

Both documents pay special attention to the **role of culture at the local level**. A city cannot thrive without a lively cultural offering and healthy creative sectors. Flourishing local culture(s) and creativity improve citizens' quality of life, strengthen social cohesion, reinforce cognitive and relational skills, and enhance business competitiveness. The ambitious culture-led regeneration programmes initiated by the European Capitals of Culture, such as Mons 2015 (Belgium), Linz 2009 (Austria), Liverpool 2008 (United Kingdom) as well as, more recently, Matera 2019 (Italy) show that those city governments which care about sustainable development pay greater attention to policies that valorise local cultural resources and promote creative endeavours.

However, to be effective, **culture-led policies require clarity about the fundamental resources that define the local cultural and creative ecosystems**, as well as an adequate basis for their measurement and evaluation.

With this in mind, in 2015, **the JRC initiated a reflection among a group of 15 experts** working internationally on culture, creativity and urban development. **This led to the launch of the Cultural and Creative Cities Monitor, the first agreed framework** aimed at providing a **common evidence base** on the cultural and creative performance of European cities, with a view to:

- **Supporting policy-makers** in identifying strengths, assessing the impact of policy action and learning from peers;
- **Clarifying** and communicating the importance of culture and creativity for **improving socio-economic perspectives** and **resilience**;
- **Inspiring new research questions** and approaches to studying the role of culture and creativity in cities.

The **Monitor 2017 is already supporting** EU policy-making: the New European Agenda for Culture mentions the evidence provided by the 2017 report (Montalto, Tacao Moura, Langedijk & Saisana, 2017) regarding the positive impact of culture on cities' economic growth and resilience. The subsequent European Commission's Staff Working Document '**European Framework for Action on Cultural Heritage**' invites stakeholders to use the Monitor as a tool to help promote the sharing of good practices and peer learning in cultural heritage and creativity.

A unique and robust tool...

The Monitor is the only tool that brings together an **extensive set of (29) indicators** relating to culture and creativity for a large sample of European cities with diverse demographic and economic features.

Forty international indices were reviewed and were a source of inspiration for the Monitor's development. However, the Monitor can be distinguished from its forerunners in that it provides a comprehensive measurement framework that combines eight key design and quality features not found together in any other single index.

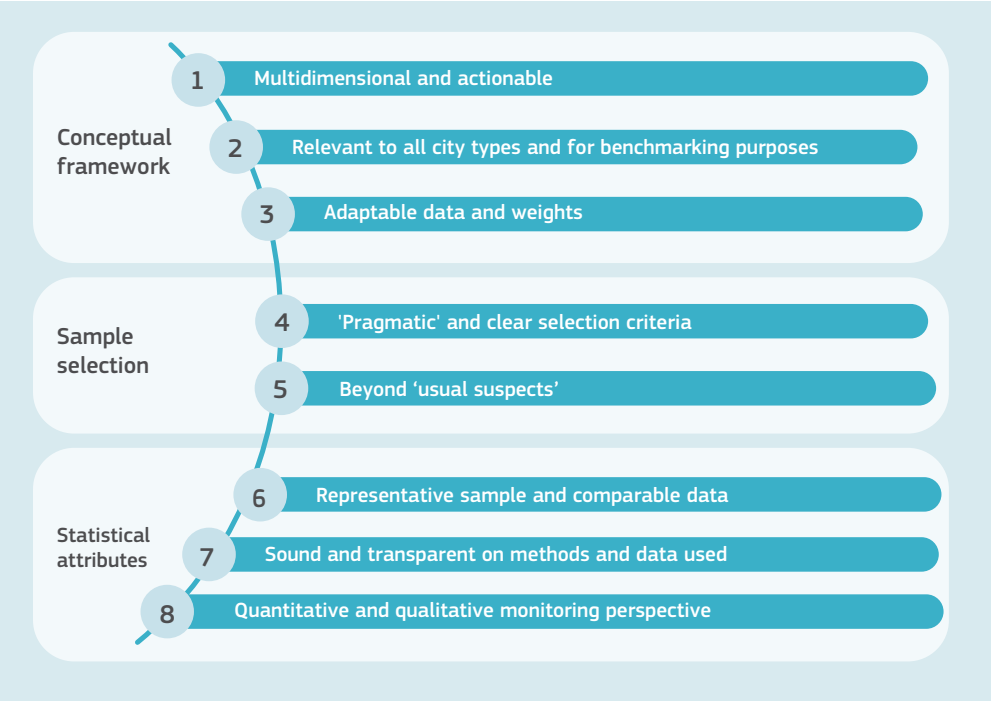


Figure 4.
The Cultural and Creative Cities Monitor's eight key features

...which is being used by diverse stakeholders across Europe

In 2018, the Monitor was **presented** at **over 20 high-level policy and research events** on the invitation of EU institutions, local authorities and universities.

It has been **used** by **policy-makers**, **cultural operators**, **businesses** and **non-governmental organisations as a tool to pursue** different **policy objectives**.

INTERNATIONAL BRANDING

The city of **Madrid** (Spain) used the Monitor's data in the framework of its 'International Promotion Project' with the aim of better positioning the city in reports and rankings of international influence.

POLICY STRATEGIES

The cities of **Geneva** (Switzerland) and **Győr** (Hungary) organised participatory workshops for local cultural operators and business representatives to which the JRC was invited to present the tool and give guidance on data analysis and benchmarking with peer cities for the development of local cultural and creative economy strategies.

GOOD PRACTICE EXCHANGE

The city of **Leeuwarden** (the Netherlands), the **Eurocities** network and the **European Festival Association** invited the JRC to organise a 'world café' around the Monitor with more than 20 European cities. The purpose of the event was to identify common challenges based on data analysis and to share possible solutions.

LOCAL EVALUATION TOOLS

Using the Monitor's data, a new visualisation tool has been developed by the Edinburgh-based company **Ray Interactive** on behalf of **Edinburgh City Council** and the **University of Edinburgh Data Driven Innovation Programme**. It features interactive touch points that allowed the attendees at the Eurocities Conference 2018 to compare city-relevant data and scores in a new and creative way.

In particular, medium-sized cities such as **Bilbao** (Spain), **Bologna** (Italy) and **Umeå** (Sweden) appreciated the European Commission's efforts to develop a cost-effective tool that also includes second-tier cities, helping them to raise awareness of the value of cultural investments among local stakeholders. Representatives from these cities joined the workshop 'How Creative is your City?', which was organised by the JRC in the framework of the 2018 European Week of Regions and Cities, as 'testimonial users' of the Monitor.

As a result of this work, an **academic paper** has also been published in a top-level journal in the field of urban studies (*Cities*) with a view to promoting the use of the Monitor's data among **scholars** (Montalto, Tacao Moura, Langedijk & Saisana, 2019).

What's new this year?

The **2019 edition** embraces **five new features**:

- **22 new European cities from 14 Member States** have been added to give a total of **190** (compared to 168 in 2017);
- **Web data** from a **new source** (OpenStreetMap) have been used to better grasp Europe's cultural vibrancy using more timely data;
- **Novel findings from the spatial analysis of cultural venues** are helping to put the **social inclusion perspective at the core** of our research, alongside economic wealth;
- **A new section in this report on regional performance patterns** shows that EU regional policy funds could further support socio-economic convergence across the Monitor's nine policy dimensions;
- A new, **fully revamped version** of the **Cultural and Creative Cities Monitor Online** enables cities to engage in data collection.

Key findings

I The ideal Cultural and Creative City in Europe is a mix of seven cities, including two new leading cities, compared to 2017

In this year's edition, the 'ideal' Cultural and Creative City in Europe would have the **Cultural Venues & Facilities** of **Weimar** (Germany), the **Cultural Participation & Attractiveness** of **Florence** (Italy), the **Creative & Knowledge-based Jobs**, the **Human Capital & Education** and the **Local & International Connections** of **Paris** (France), the **Intellectual Property & Innovation** of **Eindhoven** (the Netherlands), the N**ew Jobs in Creative Sectors** of **Budapest** (Hungary), the **Openness, Tolerance & Trust** of **Glasgow** (United Kingdom) and the **Quality of Governance** of **Aarhus** (Denmark). Of these seven cities, four have fewer than 500 000 inhabitants, namely Weimar, Florence, Eindhoven and Aarhus[5].

Figure 5.
The Ideal Cultural and Creative City 2019

In order to make meaningful comparisons over time, the 2017 rankings have been recalculated, adopting the methodology and data sources used in the 2019 edition[6]. When compared to these recalculations, Paris continues to strengthen its leading position, coming first on three of the nine dimensions this year, which is one more than in 2017. In addition, for the first time, Budapest and Glasgow have taken the top spot on New Jobs in Creative Sectors (D2.3) and Openness, Tolerance & Trust (D3.2), respectively, replacing Bucharest (Romania), which moves to 11th place, and London (United Kingdom), which takes second place.

Medium-sized cities confirm their remarkable performance on '**Cultural Vibrancy**' with Weimar (in the group of 79 small to medium-sized (S-M) cities with less than 250 000 inhabitants) and Florence (in the group of 40 large (L) cities with between 250 000 and 500 000 inhabitants) ranking first on the underlying dimensions Cultural Venues & Facilities (D1.1) and Cultural Participation & Attractiveness (D1.2), respectively. Larger cities and, most notably, **capital cities** maintain their leadership on '**Creative Economy**', with Paris (in the extra, extra-large (XXL) group of 20 cities with more than 1 million inhabitants) and Budapest (XXL) leading on dimensions Creative & Knowledge-based Jobs (D2.1) and New Jobs in Creative Sectors (D2.3). Eindhoven is an interesting exception to this scenario – it is an inspiring example of a medium-sized city that continues to consolidate its leadership in innovation outputs. A mix of **large and medium-sized cities** from different countries come first on '**Enabling Environment**', namely Paris (XXL), Glasgow (in the extra-large (XL) group of 40 cities with between 500 000 - 1 million inhabitants) and Aarhus (L).

Overall, these results confirm that no single city excels on all the nine dimensions required to make a cultural and creative city. Even such an 'ideal' city would still have significant margins for improvement: its hypothetical C3 Index score – which we calculated by aggregating the above-mentioned seven cities' scores on the nine dimensions – would amount to 77.2/100. This is about 11 points above the highest score on the C3 Index achieved by Paris but is still far from the maximum possible score of 100.

II Paris, Copenhagen, Florence and Lund come first in their respective population groups, with Lund as a 'new entry' among the top cities

While **Paris**, **Copenhagen** (Denmark), **Florence** and **Lund** (Sweden) take the top spot in their respective population groups on the C3 Index, no city leads on all aspects required to be a cultural and creative city. A strong performance in one area can coexist with a weak one in another, where future investments could eventually be directed.

Paris holds on to top spot on the C3 Index among XXL cities, driven by its strong performance on all the underlying sub-indices. For the second consecutive year, the French capital leads on both 'Cultural Vibrancy' and 'Creative Economy' and comes second on 'Enabling Environment'. In the 'Cultural Vibrancy' sub-index, Paris leads on five of the nine indicators (Sights & landmarks, Cinemas, Concert & music halls, Theatres, and Cinema attendance) and comes second on Museums & art galleries. Within 'Creative Economy', it tops five indicators related to jobs and job creation in the cultural and creative sectors, and is first and second, respectively, on Community design applications and ICT patent applications. Within 'Enabling Environment', Paris leads on the Graduates in arts & humanities, Graduates in ICT, Average appearances in university rankings, and Accessibility by rail indicators.

Copenhagen maintains its leading position among XL cities, ranking third on 'Cultural Vibrancy' and 'Enabling Environment' and forth on 'Creative Economy'. Under the 'Cultural Vibrancy' sub-index, it comes second on Cinema attendance and third on Museum visitors. On 'Creative Economy', Copenhagen is first on Jobs in arts, culture & entertainment, third on Jobs in media & communication and second on Community design applications. Under 'Enabling Environment', it ranks first on People trust and Accessibility by rail, second on Tolerance of foreigners and third on Average appearances in university rankings.

Florence ranks first among L cities, thanks to its excellent score on 'Cultural Vibrancy'. The city achieves high scores on most of the underlying indicators, coming first on Tourist overnight stays and Museum visitors, and second on Sights & landmarks, Museums & art galleries, Cinemas, and Concert & music halls. However, it registers important margins for improvement on both 'Creative Economy' and 'Enabling Environment', coming 17th and 34th, respectively. Within 'Creative Economy', although the city performs very well in second place on Jobs in arts, culture & entertainment, it needs to expand its capacity to generate new jobs in the cultural and creative sectors: in the related indicators, it ranks 17th (Jobs in new enterprises in other creative sectors), 30th (Jobs in new media & communication enterprises) and 35th (Jobs in new arts, culture & entertainment enterprises). In 'Enabling Environment', Florence is forth on Average appearances in university rankings, 10th on Foreign-born population, and 12th on Accessibility by rail, but only manages between 19th and 37th on the remaining nine underlying indicators.

For the first time, **Lund** conquers the top spot in the S-M group of cities, mainly thanks to its leading position on 'Creative Economy' but ranks 8th and 13th on 'Enabling Environment' and 'Cultural Vibrancy', respectively. The city shows a remarkable ability to generate new jobs, coming first on Jobs in new media & communication enterprises and fourth on Jobs in new enterprises in other creative sectors. Within the 'Cultural Vibrancy' sub-index, Lund leads on Concert & music halls, while on 'Enabling Environment', it is placed first on Accessibility by rail, second on Quality of Governance and third on Average appearances in university rankings.

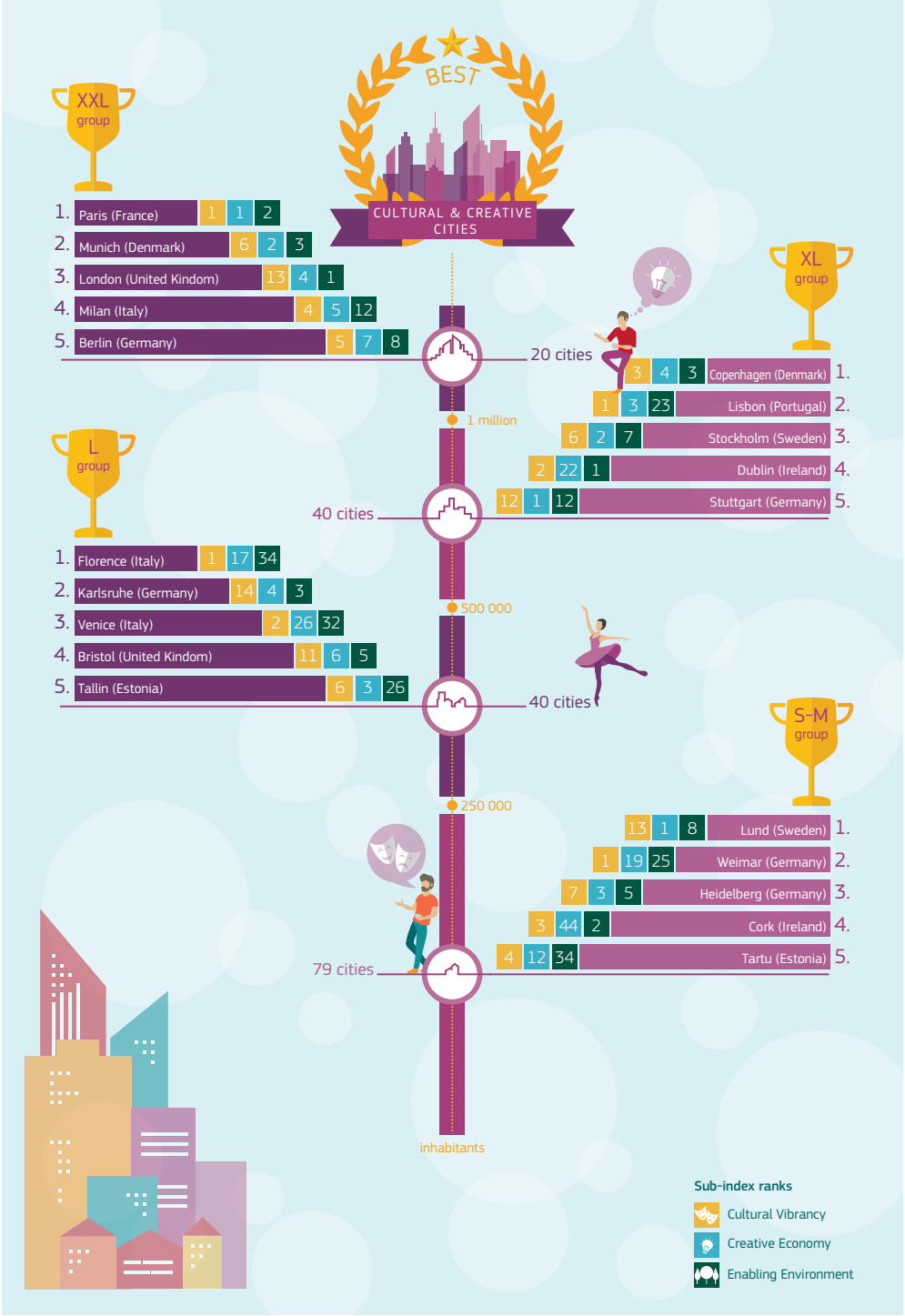


Figure 6.

Top 5 cities in the C3 Index per population group – 2019 edition

Note: Rankings are based on a total of 179 cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details;

III 2019 rankings are mainly stable although some cities in northern and eastern Europe register high-level developments on Creative Economy

On average, 2019 scores remain mainly stable compared to 2017, both on the C3 Index and on the underlying policy dimensions across all population groups, with the exception of D3.4, Quality of Governance. In general, performance on this aspect declined, with a more pronounced downward shift for cities in the XL, L and S-M groups. However, results remain quite heterogeneous across EU macro-regions, as explained by the developers of the Quality of Governance Index underpinning this dimension (Charron & Lapuente, 2018)[7]. While most macro-regions in northern Europe have remained among the top performers, those in western Europe demonstrate the most noticeable decline in quality of governance. Recent years have also seen a decline among numerous southern macro-regions, particularly in Italy, Greece and Spain[8].

However, a closer look at individual cities reveals some significant changes. In particular, some cities in northern and eastern Europe register high-level developments on dimensions D2.1, Creative & Knowledge-based Jobs (which measures the number of cultural and creative jobs per capita, in the most recent year for which data are available[9]), or D2.3, New Jobs in Creative Sectors (measuring the number of cultural and creative jobs in newly created companies per capita, in the most recent year for which data are available), notably **Budapest**, **Vilnius** and **Kaunas** (Lithuania), **Kraków** and **Wrocław** (Poland), and **Tallinn** and **Tartu** (Estonia).

Budapest has improved its score on D2.3 by approximately 24 points thanks to a better performance on all the underlying indicators (Jobs in new arts, culture & entertainment enterprises, Jobs in new media & communication enterprises and Jobs in new enterprises in other creative sectors), gaining about 20 points on each. **Wrocław** also registers an increase of around 20 points on D2.3 thanks to improvements on all the underlying indicators, especially on Jobs in new media & communication enterprise and Jobs in new enterprises in other creative sectors. Kraków has increased its score by about 22 points on the same dimension, mainly due to improvements on Jobs in new media & communication enterprises and Jobs in new enterprises in other creative sectors. **Kaunas** shows an improvement on D2.3 as the result of significant progress on Jobs in new arts, culture & entertainment enterprises. **Tallinn** has also improved on this dimension mainly due to progress on both Jobs in new arts, culture & entertainment enterprises and Jobs in new media & communication enterprises. Finally, **Kaunas** is doing better on job creation following progress on Jobs in new arts, culture & entertainment enterprises.

Vilnius gains around 25 points on D2.1 mainly due to a better performance on Jobs in arts, culture & entertainment. Improvements are also noted on the other two underlying indicators (Jobs in media & communication and Jobs in other creative sectors) which have almost doubled their score.

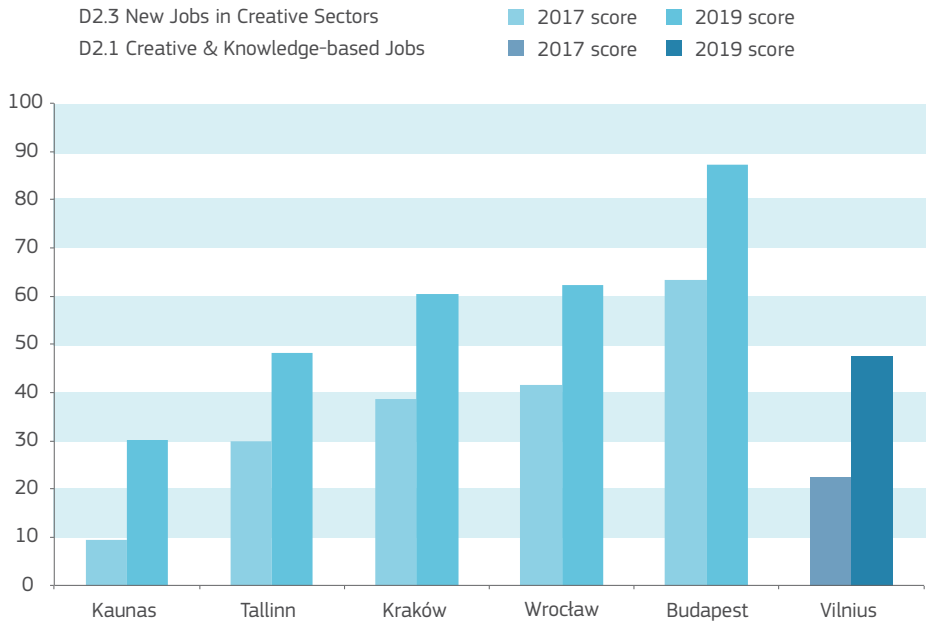


Figure 7.

Cities registering high-level developments from 2017 to 2019 on dimensions underpinning the 'Creative Economy' sub-index

IV Cities in northern Europe lead on the C3 Index while those in southern and western Europe are equally as good on 'Cultural Vibrancy'

The performance of European macro-regions, as measured by the average C3 Index scores of the ranked cities in northern, southern, western and eastern Europe (see the Lexicon at the beginning of this report for the definitions of Europe's macro-regions), shows that northern Europe is the top-performing area, closely followed by western Europe and, some way behind, by southern and eastern Europe.

However, a rather different picture emerges when looking at the average scores at sub-index level. Western Europe leads on 'Cultural Vibrancy', closely followed by both northern and southern Europe. It is also the top performer on 'Creative Economy', with northern Europe coming close behind. Eastern Europe, rated third on 'Creative Economy', performs slightly better than southern Europe. The best 'Enabling Environment' rating is found in northern Europe, followed by western Europe, with a five-point difference in the average score, while southern and eastern Europe come third and fourth, respectively, with very similar points.

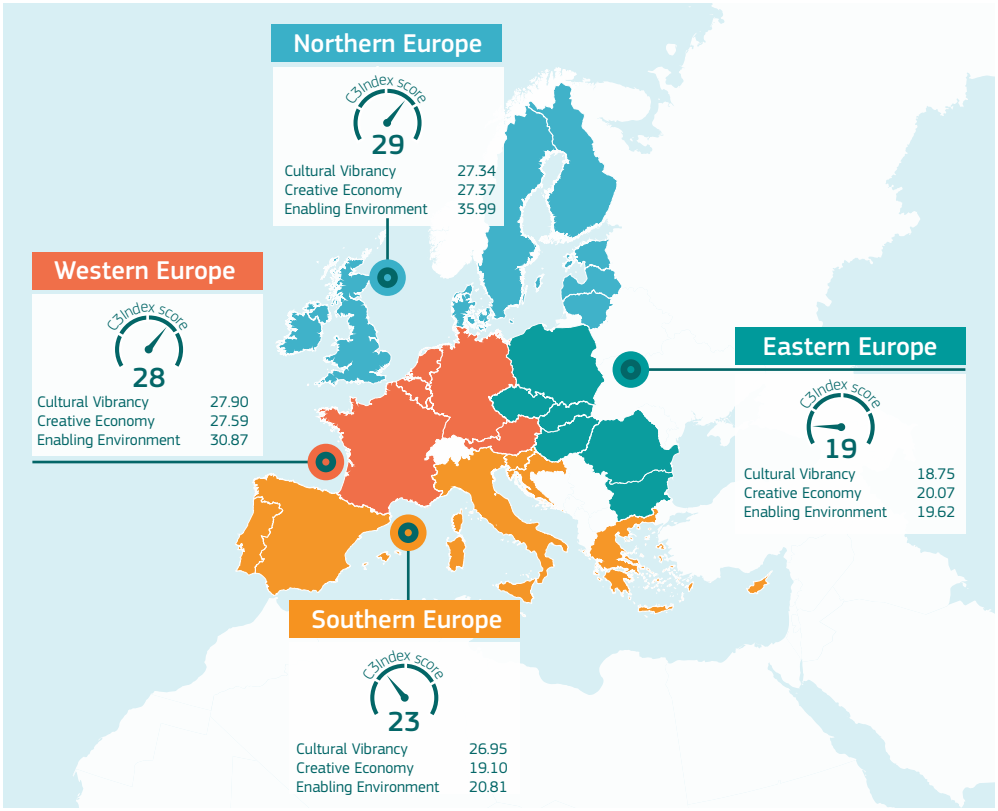


Figure 8.

C3 Index and underlying scores for sub-indices by European macro-region – 2019 edition

Note: Average scores are based on a total of 179 ranked cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

V Cities in more-developed regions are the highest fliers although creative jobs grow just as quickly in less-developed areas

Most of the cities located in more-developed regions, as defined by EU Cohesion Policy (see the Lexicon), achieve the highest scores on the C3 Index: indeed, 68 % of the cities in these regions are found in the second quadrant in Figure 9 (upper right corner). Conversely, nearly all the cities located in less-developed regions achieve the lowest scores.

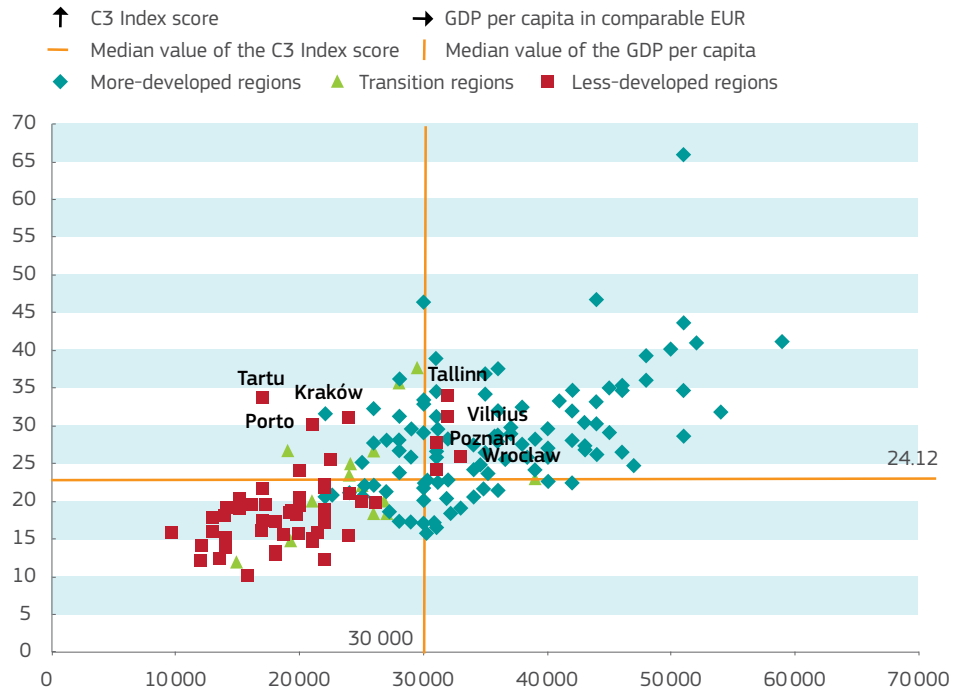


Figure 9.

C3 Index score and cities' annual GDP per capita by Europe's regions in different stages of development – 2019 edition

Note: (a) The graph is based on a total of 179 ranked cities due to better data coverage – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details. (b) The reason why some cities marked as' less developed' have a GDP per capita above the median value is because there are different levels of GDP values: while the median value refers to the cities' GDP, the stage of development depends on the GDP per capita of the NUTS2 region where a city is located. (c) Data on GDP combine the most recent years available from 2014 up to 2016. For technical terms, see the Lexicon.

Source: European Commission, Joint Research Centre, based on data from Eurostat (online data code: nama_10r_3gdp and met_10r_3gdp) and Directorate-General for Regional and Urban Policy.

However, there are some interesting exceptions. Some cities in Estonia (Tallinn and Tartu), Lithuania (Vilnius), Poland (Kraków, Poznań and Wrocław) and Portugal (Porto) perform very well (i.e. above the median score) despite starting with less-favourable socio-economic conditions. This is probably due to the capacity of the regions where they are located to catch up with the EU's more prosperous regions[10].

Such an ability is confirmed by analysing the average performance of more- and less-developed regions across the nine policy dimensions. As can be seen in Figure 10, New Jobs in Creative Sectors (D2.3) is the only dimension where the average performance scores of more- and less-developed regions are aligned. This dimension can be considered a proxy of a city's capacity to generate new jobs as it measures the number of cultural and creative jobs created in new companies established in the most recent year for which data are available. This result may be read in the context of the fast growth rates registered in recent years by some regions in Europe, despite their disadvantaged socioeconomic conditions (The World Bank, 2018).

However, there are margins of improvement on the other dimensions, particularly Intellectual Property & Innovation (D2.2), Local & International Connections (D3.3), Quality of Governance (D3.4) and, to a lesser extent, Creative & Knowledge-based Jobs (D2.1). These results could help guide future Cohesion Policy funds with a view to closing the gaps that may hamper culture-led development.

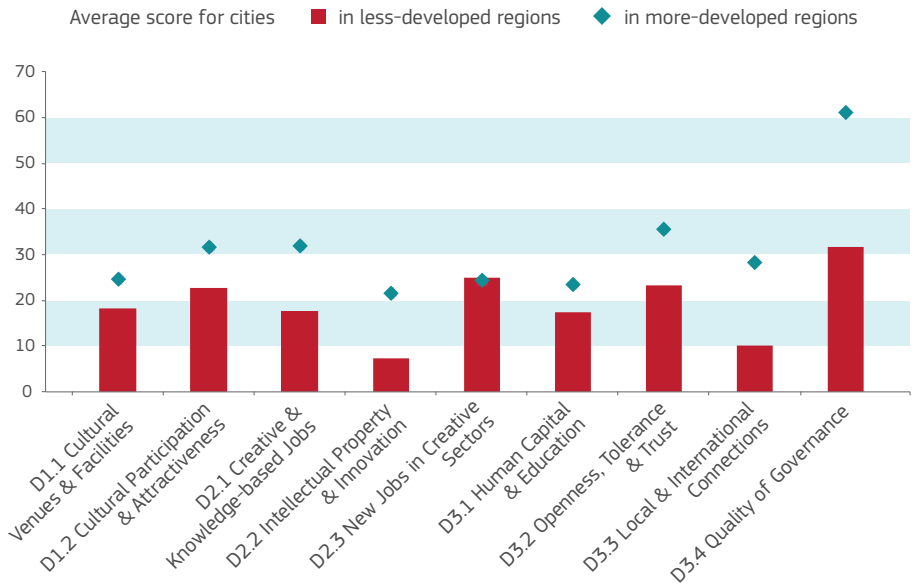


Figure 10.

Cities' performance on the nine Cultural and Creative Cities Monitor's dimensions in Europe's less- and more-developed regions – 2019 edition

Note: Average scores are based on a total of 179 ranked cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

Source European Commission, Joint Research Centre, based on data from of data from Directorate-General for Regional and Urban Policy.

VI Europe's cultural venues can generally be reached within a 30-minute walk and are extremely accessible by public transport

In a context where inequalities and societal discontent in cities continue to rise, **participation in arts and cultural activities can play an important role in achieving broader social policy goals**, such as favouring social inclusion and promoting active citizenship. But to what extent are cultural activities available to everyone? Do all Europeans have (easy) access to a wide range of nearby, free or affordable cultural and creative opportunities?

An analysis of the spatial distribution of Europe's cultural venues is a useful starting point for examining the accessibility potential of Europe's cultural offerings.

In **42 % of the European cities analysed**, more than half of the inhabitants are no more than 2 km away from the closest cultural venue(s). Translated into travelling time, this corresponds approximately to a **30-minute walk** or **5-minute cycle**, as long as the appropriate infrastructure is in place to access services by walking and cycling.

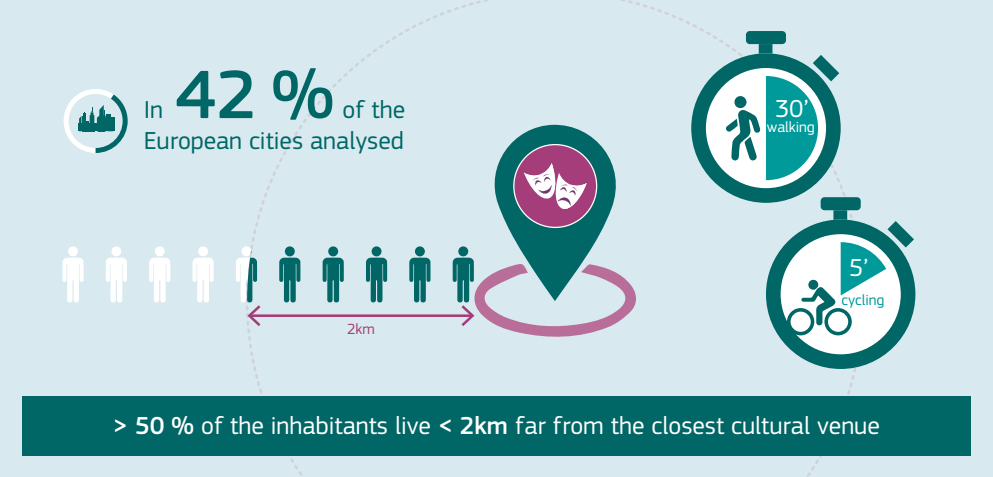


Figure 11.
Walking and cycling distance from Europe's cultural venues

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap and Joint Research Centre (GHS-POP).

An even better picture emerges when looking at the accessibility of cultural venues by public transport. Analysis of the available bus stops shows that most of these venues are (potentially[11]) **very well served by public transport in cities of all sizes** (Figure 12). **In 150 of the 179 European cities[12] analysed (or 84 %), more than 50 % of venues are highly accessible by public transport, meaning that they have 6 or more bus stops within 500 m** – generally used as an acceptable walking distance. In addition, in 74 cities (or 41 %), all the cultural venues considered have at least one bus stop available within 500 m.

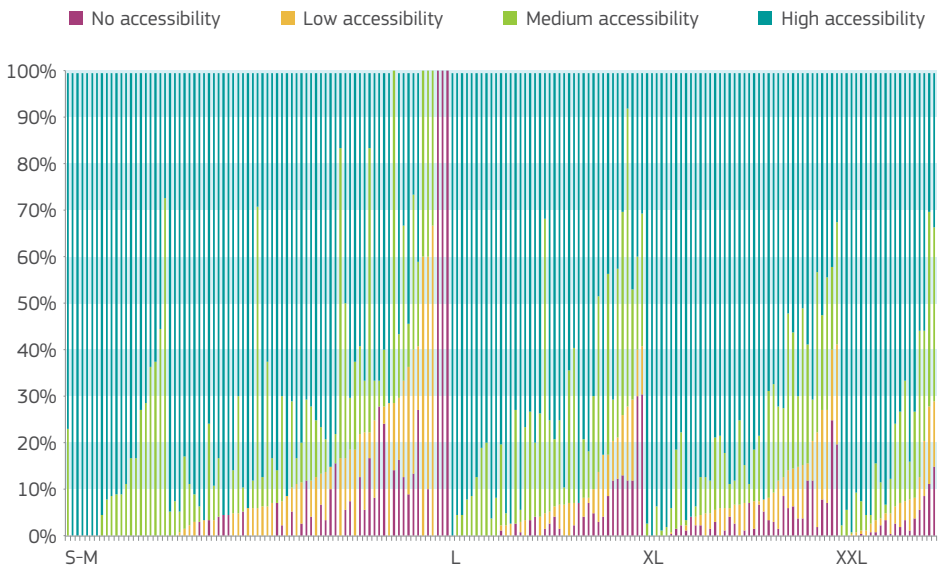


Figure 12.

Percentage of venues with no, low, medium or high accessibility in 179 cities ordered by population size group

Note: High accessibility: ≥ 6 bus stops within 500 m; medium accessibility: 3-5 bus stops within 500 m; mow accessibility: ≤ 2 bus stops within 500 m; no accessibility: no bus stops within 500 m.

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap, Joint Research Centre (GHS-POP) and City of Venice (ACTV GTFS).

VII Leading Cultural and Creative Cities are more prosperous

There is a positive and significant association between the C3 Index scores and the 2016 GDP per capita in comparable euros. In particular, one percent more in the C3 Index corresponds to nearly one percent point more in the annual GDP per capita. In other words, on average, **one percent more in the C3 Index is associated with around EUR 289 more in the annual GDP per capita**[13].

Figure 13.

Culture and economic wealth mutually reinforce each other

Source: European Commission, Joint Research Centre, based on data from Eurostat (online data code: nama_10r_3gdp, met_10r_3gdp and urb_cpop1).

Looking ahead

This second edition of the Monitor enables users to benchmark and monitor progress of an enriched sample of European cities across a range of culture and creativity measures in a way that respects their diverse demographic and economic characteristics.

The 2019 edition confirms the soundness of the conceptual framework, as shown by the strong correlation between all the indicators and their assigned dimensions. In addition, all dimensions correlate strongly with the three sub-indices and the C3 Index itself. This means that the statistical structure of the C3 Index 2019 remains coherent with its conceptual framework. Moreover, confidence intervals have been calculated to help understand how many positions the cities could move in the rankings depending on different modelling set-ups, such as a different set of weights than that agreed with the consulted experts[14]. The fact that such confidence intervals are fairly narrow for the majority of the cities (less than ±3 positions for around 80% of them) implies that the C3 rankings for most cities are sufficiently robust to 'altered' modelling scenarios.

One major challenge remains: the lack of timely data from official statistics, especially for cultural events (such as festivals), cultural participation (i.e. cinema attendance and museums visitors) and public budgets to support culture and creativity. This explains why one of the main objectives for the future is to support capacity building at city level in order to concretely show relevant stakeholders and policy officials how they can fill in data gaps and whether additional data-collection efforts should be undertaken, either at the local or European level. A webinar and policy toolkit (to be delivered in at least four languages: English, French, Italian and Portuguese) will support this objective, along with indications as to how best to interpret the data and gain insights for future policies from the Cultural and Creative Cities Monitor Online.

In line with regularly updating the data sources used, the Monitor will continue to be updated every two years; the third edition is expected to be released in 2021.

1

Culture and creativity at the core of the EU project

The policy context

Culture and creativity are key concepts for the development of the European Union (EU) project: Europe's cultural diversity is a unique element of distinction and inspiration, and creativity offers ways to reinterpret heritage, beliefs and traditions in innovative and sustainable ways.

Europe's rich cultural heritage and dynamic cultural and creative sectors are even more important nowadays, as a response to the increasing need to cope with new sophisticated needs of the economy and society, to generate new jobs and sustainable growth, and to re-establish a sense of belonging towards the EU project. Culture promotes active citizenship, common values, inclusion and intercultural dialogue within Europe and across the globe, strengthening European identity and attractiveness.

On the 60th anniversary of the Treaties of Rome, the **Leaders of the 27 Member States** and **EU institutions** stated their **ambition for a Union 'where citizens have new opportunities for cultural and social development and economic growth**. [...] a Union which preserves our cultural heritage and promotes cultural diversity'[15]. This ambition was confirmed at the Gothenburg Leaders' Summit in November 2017 and by the European Council conclusions adopted in December 2017[16], which also emphasised the **2018 European Year of Cultural Heritage** as an essential opportunity to raise awareness of the social and economic role that culture and heritage play in our societies. By the same token, in its Communication on Strengthening European Identity through Education and Culture adopted in November 2017[17], the European Commission stated that it is 'in the shared interest of all Member States to harness the full potential of education and culture as drivers for jobs, economic growth, social fairness, active citizenship as well as a means to experience European identity in all its diversity'.

Around 10 years after the adoption of the very first European Agenda for Culture 2007 and of a number of subsequent policy documents (see Figure 14), the '**New European Agenda for Culture**'[18] has the goal to **respond 'to the European Leaders' invitation to do more, through culture and education, to build cohesive societies'** as well as 'a more inclusive and fairer Union, supporting innovation, creativity and sustainable jobs and growth'.

Similarly, in November 2018 the Council of the EU adopted the **EU Work Plan for Culture 2019-2022** which identifies **five priorities** and 17 concrete actions to reinforce European cooperation in cultural policy-making, namely: sustainability in cultural heritage; Cohesion and well-being; an ecosystem supporting artists, cultural and creative professionals and European content; gender equality; and International cultural relations. Along with digitalisation, the development of **comparable and reliable cultural statistics** is also flagged as an important additional **horizontal priority** to be addressed with a view to support the design of sound policies at European and national level.

These two latter policy documents deserve special attention to the role of culture at local level. In particular, the New European Agenda for Culture recognises that cities and regions are at the forefront of the culture-led development notion. They 'constitute natural partners for experimentation, anticipating trends and exploring models of social and economic innovation'.

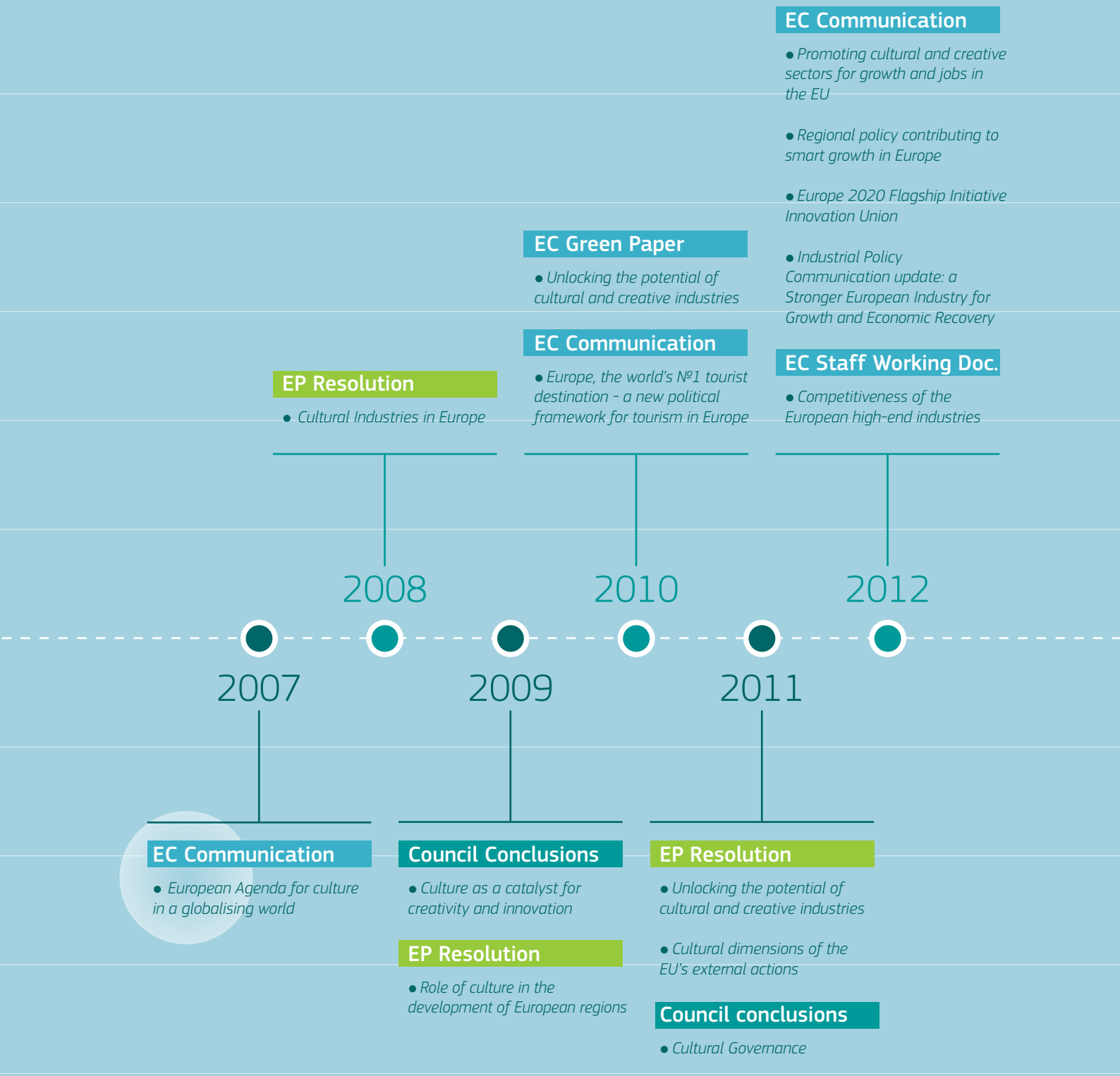


Figure 14.
Main EU policy documents promoting the role of culture for European economic and social prosperity

Council conclusions

- *Bring cultural heritage to the fore across policies in the EU*
- *Work Plan for Culture 2019-22*

EC Communication

- *For a European Industrial Renaissance*
- *Towards an integrated approach to cultural heritage for Europe*

EC Communication

- *Towards an EU Strategy for International Cultural Relations*

EP Resolution

- *Coherent EU policy for cultural and creative industries*

EC Communication

- *A New European Agenda for Culture*

EC Staff Working Doc.

- *European Framework for Action on Cultural Heritage*

2013 — 2014 — 2015 — 2016 — 2017 — 2018

EP Resolution

- *Promoting the European cultural and creative sectors as sources of economic growth and jobs*

Council Conclusions

- *Cultural and creative crossovers to stimulate innovation, economic sustainability and social inclusion*

EC Communication

- *Strengthening European Identity through Education and Culture*

Council conclusions

- *Promoting access to culture via digital means with a focus on audience development*

EC - European Commission
EP - European Parliament

A number of **policy actions** are therefore being initiated to strengthen culture's leverage effects at sub-national level. Within the framework of the Urban Agenda for the EU[19], for instance, a **new Partnership was initiated in 2018 on the topic of Culture and Cultural Heritage**, of which the Joint Research Centre (JRC) of the European Commission is the knowledge partner. It represents a new multi-level working method where local, national and European Commission experts gather to discuss common problems and measures that can be collectively drawn and implemented in cities. Also, the **2018 Creative Europe Work Programme foresees a EUR 1.5 million peer-learning project on cultural and creative spaces and cities**. In recent years, the programme has also supported the creation of a **European Network of Creative Hubs**, which have rapidly developed in numerous cities throughout the EU. **Peer-learning** between cities and regions has been facilitated as well, with projects such as the EU-financed **Culture for Cities and Regions**, with a view to help them make sound investments in culture and elaborate integrated culture-led development strategies[20]. Further activities on **urban and regional capacity-building** are planned at the EU level, including for the upcoming **European Capitals of Culture**[21], within the framework of the ongoing collaboration between the European Commission and the Organisation for Economic Cooperation and Development (OECD)[22]. Peer-learning activities for regional and city-level policy-makers are also planned for 2019 and 2020[23] as part of the **European Framework for Action on Cultural Heritage** aimed at ensuring the positive legacy of the European Year of Cultural Heritage.

The role that culture can play in the development of nations, regions and, more particularly, cities is also increasingly recognised at international level: the **2030 Agenda for Sustainable Development**[24] adopted in September 2015 by the United Nations refers for the first time to culture for the achievement of the Sustainable Development Goals. As both an enabler and a driver of sustainable development, culture – including tangible and intangible heritage and the cultural and creative industries – can make a major contribution to the achievement of several SDGs. Culture and creativity-driven initiatives generate advanced development outcomes, *inter alia* through quality education, job creation, inclusive and equitable economic growth, environmental sustainability, respect for fundamental human rights, promotion of understanding, tolerance and democracy and peace-building. Target objective 11.4 specifically calls for strengthening efforts to protect and safeguard the world's cultural and natural heritage as part of the Sustainable Development Goal 11, aimed at making cities and human settlements more inclusive, resilient and sustainable. Also, the **New Urban Agenda**[25] adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, Ecuador, on 20 October 2016 explicitly recognises the role of culture for, among others, providing an important contribution to the sustainable development of cities[26].

Cities at the forefront of culture-led development and creativity

Cities historically gather most of our built heritage but also enable the development of creative economies thanks to agglomeration advantages and networking effects (Turok, 2003; van Oort, 2008). Culture in cities exerts an important attraction power on talents, visitors and citizens (Carlino & Saiz, 2008; Romão, Kourtit, Neuts, & Nijkamp, 2018) and is highly transversal to many knowledge-led sectors, from ICT to medical services to tourism, boosting cross-sectoral innovation (Bakhshi & Throsby, 2010; Potts, 2009) and local development, as recently underlined by the Open Method of Coordination (see Lexicon) Report on 'The role of public policies in developing entrepreneurial and innovation potential of the cultural and creative sectors'[27], among the numerous publications on the topic.

The latest EU culture statistics from Eurostat confirm[28] **culture's important contribution to Europe's economy** as well as **cities' crucial role in fostering cultural participation**:

- In **2017** around **8.7 million people in the EU were working in a cultural sector or occupation**, that is, **3.8% of the total number of people in employment**. There was a small but steady increase in the number of people working in culture between 2012 and 2017, corresponding to an annual average growth rate of 1.3%. Cultural employment's growth rate was therefore as good as that registered by total employment.
- In 2015, the **cultural participation rate** in the EU was **highest among people living in cities** (69%) and lowest among people in rural areas (57%). Yet, in some Member States – Belgium, Germany, France, the Netherlands, Austria, Portugal and Slovenia – the gap in cultural participation rates between people living cities and those from rural areas did not exceed 5 percentage points[29].

In addition, a **2017 Eurobarometer** survey carried out in preparation to the European Year of Cultural Heritage reports that **53% of respondents consider that Member States are close in terms of shared values**, whereas **40% believe they are distant**[30]. Cultural participation can further improve the sense of belonging to the European project, by helping Europeans experience what connects us.

Culture has thus emerged as a crucial policy response to attractiveness, innovation and social cohesion needs, at all spatial levels of policy interventions (Evans, 2009), including in cities (Miles & Paddison, 2005), also of small size (Jayne, Gibson, Waitt, & Bell, 2010; Richards & Duif, 2018).

The ambitious culture-led regeneration programmes initiated by European Capitals of Culture such as Mons 2015 (Belgium), Linz 2009 (Austria), Liverpool 2008 (United Kingdom), but also, more recently, Matera 2019 (Italy) (Garcia, Melville, & Cox, 2009; KEA 2016; Linz09, 2010; Matera 2019, 2014) show that city governments that care about sustainable development increasingly pay attention to policies that valorise local cultural resources and promote creative endeavours.

Nevertheless, the practical implementation of culture-led development strategies remains a challenge. Among other reasons, this is related to the fact that culture is multidimensional, covering different domains of the economy, society and individuals' lives. Culture-oriented actions require a comprehensive policy approach supported by wide-ranging analytical frameworks. These should help measure the diverse sets of cultural resources that can be mobilised for development purposes and help maximise the positive effects of culture and

creativity, avoiding potential traps – such as cultural elitism or gentrification (Pratt, 2010; Whitt & Zukin, 1996). In the absence of commonly agreed definitions and measurement frameworks, it is likely that the value added of culture for cities and communities remains largely elusive and that cultural budgets are progressively reduced.

A contribution to EU policy action

In 2015, the Joint Research Centre initiated a reflection with a group of 15 experts working on culture, creativity and urban development internationally. The effort led to the launch of the 'Cultural and Creative Cities Monitor', a first agreed framework to measure a city's cultural and socio-economic vitality from a threefold perspective:

- **Cultural Vibrancy** measures the cultural 'pulse' of a city in terms of cultural infrastructure and participation in culture;
- **Creative Economy** captures the extent to which the cultural and creative sectors contribute to a city's economy in terms of employment, job creation and innovation;
- **Enabling Environment** identifies the tangible and intangible assets that help cities attract creative talent and stimulate cultural engagement.

Figure 15.
The Cultural and Creative Cities Monitor's conceptual framework

Building on the first 2017 edition, the Cultural and Creative Cities Monitor 2019 enlarges its scope by adding **22 new cities** and **new experimental data sources**, and by **assessing the culture and creative performance** of an enriched sample of 190 European cities **under broadened lenses**, which embrace both the **economic wealth** and the **social inclusion** perspective.

Complementary to this main **report** – which presents the policy context, methodology and main quantitative findings of the work – other practical features put the Monitor at the service of policy and research publics: an interactive platform – the **Cultural and Creative Cities Monitor Online**[31] – offers both quantitative and qualitative evidence on the 190 selected cities as well as the possibility to 'customise' the index by adding new data, adjusting weights to better reflect local priorities or simulating the desired impact of policy actions (e.g. an increased number of creative jobs) on city performance, thus creating policy scenarios. The online platform also makes available for download **28 country fact sheets**

that allow for easy benchmarking of cities within countries; an **infographic** that concisely summarises the main purpose and findings of the Cultural and Creative Cities Monitor using a visual and user-friendly approach; and the full **dataset** containing the data underpinning this work along with four **technical annexes** (A, B, C, and D) to permit further investigation. **Novelties from this year**'s edition include **online webinars** and a **toolkit** addressing non-technical users. These will be made public in the course of 2020 to help cities build data collection and analysis skills around the Monitor. In addition, a **new 'Get involved' webpage** allows users to engage in the collection of both quantitative and qualitative data.

EU policy impact and value added

The **Cultural and Creative Cities Monitor 2017** has already proven to be a valuable tool to support evidence-based **EU policy-making**. The **New European Agenda for Culture** refers to the data provided by the Monitor to reinforce its strategic objective to foster favourable urban ecosystems for cultural and creative industries: 'Cities that invest in culture can reap substantial rewards, attracting more jobs and human capital than other comparable cities, as shown by the Cultural and Creative Cities Monitor, developed by the Commission's Joint Research Centre' (p. 5). The Monitor is also mentioned in the subsequent European Commission's Staff Working Document '**European Framework for Action on Cultural Heritage**'[32] as a tool that helps foster the sharing of **good practices**[33].

In addition, **cities from all parts of Europe** such as **Bologna** (Italy), **Madrid** (Spain), **Geneva** (Switzerland), **Győr** (Hungary), **Edinburgh** (United Kingdom) and **Leeuwarden** (Netherlands), **have already used the Monitor** for a variety of purposes, ranging from the design of new cultural strategies to building international reputation (see 'Chapter 2 – The Cultural and Creative Cities Monitor 2019: approach and new features' for more details).

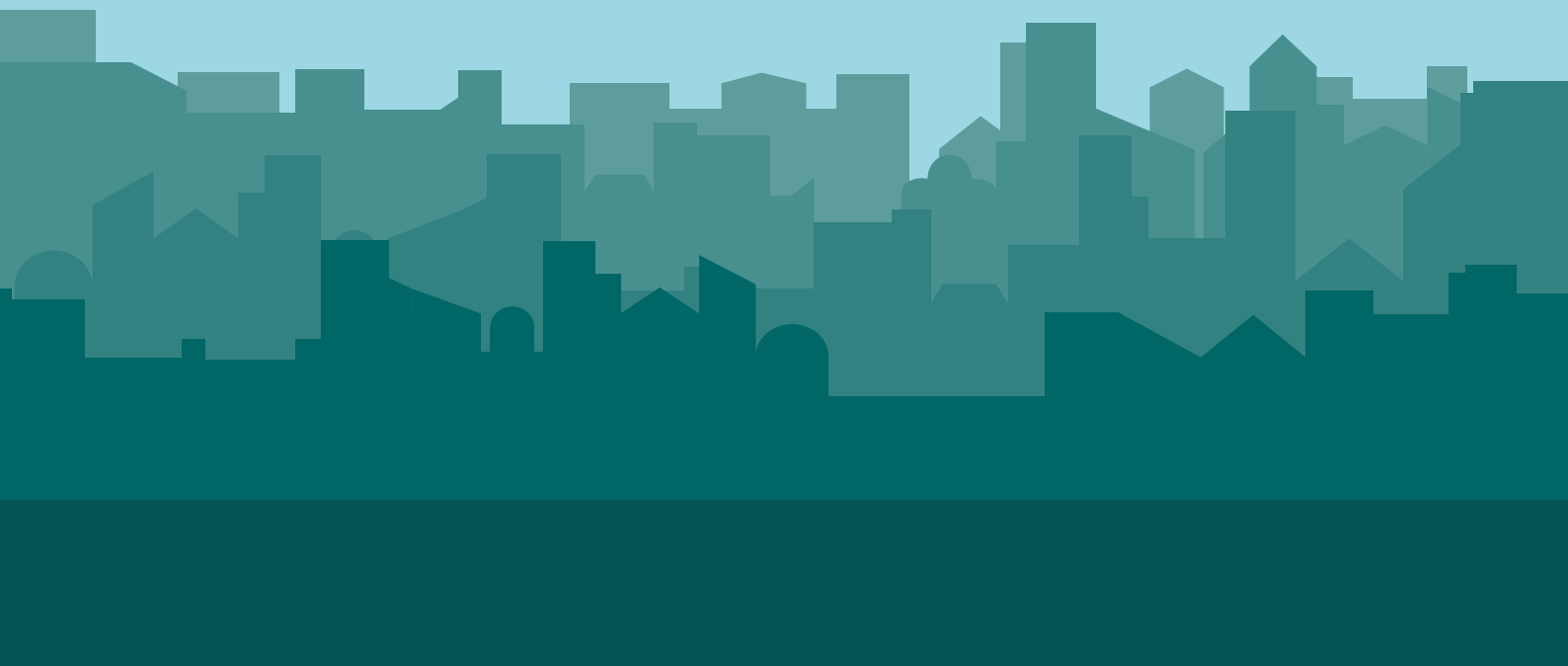
The **European added value** of the Monitor inheres in the following features:

- **cost effectiveness**: the Monitor addresses data gaps in the field of culture and creativity by exploiting comparable data sources already available at European level, including both official statistics and the web. It provides – for 190 cities of all sizes, income and employment levels – a reliable and ready-to-use database that can support policy-making or research, helping to avoid duplication of data collection efforts.
- **benchmarking for decision making**: the possibility of exploring results based on groups of peers, according to population size, gross domestic product (see Lexicon) per capita and employment rates, provides a new basis for realistic international benchmarking and policy action.
- **promotion of good practice**: knowledge on how urban areas evolve is fragmented. By showing what similar cities are good at, the Monitor contributes to the promotion of good practice and exchange between cities. European diversity provides a learning platform for cities interested in identifying new ideas, approaches and partners to better promote their competitive features or further enrich their cultural and creative ecosystems.

The remainder of this report is structured as follows. **Chapter 2** illustrates the development process of the Monitor and its uses by a wide range of stakeholders. **Chapter 3** presents and comments on the quantitative results, presenting the leading cities on the Cultural and Creative Cities (C3) Index and the (new) 'ideal' Cultural and Creative City, the most significant movements in the scores, and performance patterns across European regions. **Chapter 4** examines how cities' cultural and creative performance relates to economic wealth and how cities behave in terms of accessibility to local cultural venues and facilities. Finally, **Chapter 5** offers concluding remarks and sketches plans for the future development of the Monitor.

2

The Cultural and Creative Cities Monitor 2019: Approach and new features



A conceptually and statistically rigorous methodology

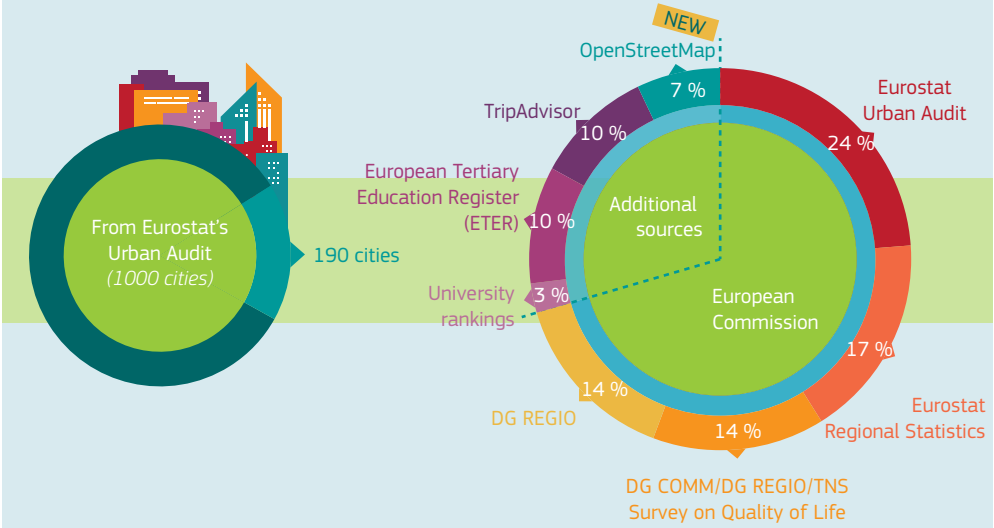
The first edition of the Cultural and Creative Cities Monitor was released in July 2017 (Montalto, Tacao Moura, Langedijk, & Saisana, 2017), building on the review of the founding literature on culture-led urban development up to the most recent research on the topic, along with 40 relevant indices and monitoring tools. A group of around 15 stakeholders (including policy-makers, practitioners and academics with relevant experience in the field) was consulted over two workshops to provide inputs on the construction of the Monitor.

Approximately 200 indicators were proposed and screened. 29 indicators[34] measuring three main areas of a city's cultural and socioeconomic vitality – 'Cultural Vibrancy', 'Creative Economy' and 'Enabling Environment' – from eight different data sources (Box 1) were ultimately retained, based on their theoretical and statistical soundness.

Box 1.

Official and experimental data sources combined

The 2019 edition of the Cultural and Creative Cities Monitor is based on both **official statistics** – mostly coming from Eurostat's Urban Audit and Eurostat's Regional Statistics – and **alternative data sources** – from the Directorate-General for Regional and Urban Policy (DG REGIO), the European Tertiary Education Register (ETER), the Organisation for Economic Cooperation and Development (OECD), and four university rankings (QS, ARWU, Times and Leiden) (see Lexicon). It also relies on what can be called **'experimental' data** which are publicly accessible from the **web**, notably from the open source mapping tool OpenStreetMap (a major novelty of this edition) and the tourist information service website TripAdvisor[35]. For more information on the data selection, see 'Annex A: The Cultural and Creative Cities Monitor methodology in ten steps', available on the Cultural and Creative Cities Monitor Online[36].



Note: due to rounding, the percentage figures do not sum up precisely to 100.

Data checking included a number of steps, amongst which the expression of the indicators in per capita terms to allow for cross-city comparability. Missing data were estimated and imputed indicators normalised, meaning that the scores of each component of the C3 Index (namely the 29 individual indicators, the nine dimensions and the three sub-indices) are on a 0 to 100 scale to ease comparison. As an aggregated measure, the total score on the C3 Index for each city was calculated based on a fixed structure of weights defined by the consulted experts using the budget allocation method (see Lexicon) during one of the workshops organised. The structure gives more prominence to culture- and creativity-related variables and less to enabling factors 'not strictly' related to culture such as transport links or Quality of Governance. In this way, the framework will help inform and guide policy action that can actually lead to the promotion of culture and creativity rather than of 'collateral' factors, and will reward such action in the final scores and rankings. Finally, a number of tests were run for the two editions to check the statistical coherence of the results and the impact of the modelling assumptions (see Technical Annexes B and C – 'Statistical Assessment of the Cultural and Creative Cities Index 2017' and 'Statistical Assessment of the Cultural and Creative Cities Index 2019' on the Cultural and Creative Cities Monitor Online). Given the uncertainties associated with choosing a particular weighting scheme or aggregation rule, confidence intervals have been calculated to test whether the overall city ranks are statistically significant. The development process thus respected the methodological recommendations of the 'Handbook on Constructing Composite Indicators' developed by the JRC and the OECD (2008), summarised in Figure 16.

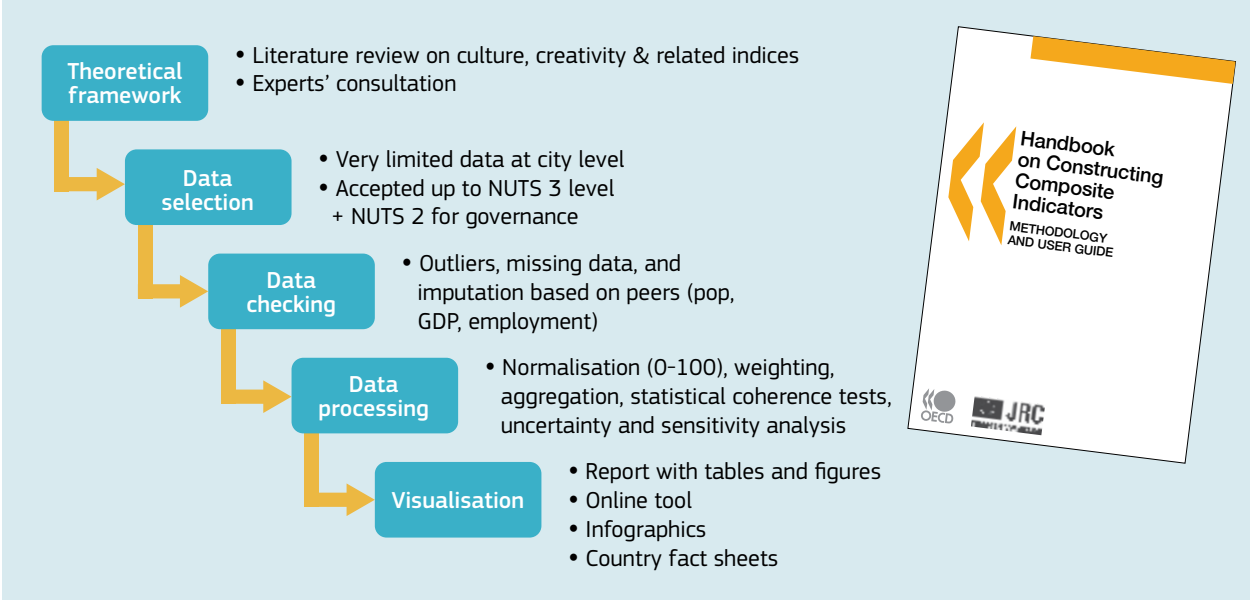


Figure 16.
The Cultural and Creative Cities Monitor's development process: key steps

The end result is a theoretically and statistically consistent indicator framework that covers a wide range of factors relevant to culture and creativity that can be addressed through policy action, namely: cultural facilities, attracted visitors, jobs in cultural and creative sectors, innovation outputs, quality of governance, transport connections, quality of the educational offer, human capital, and the local 'climate' in terms of openness, and tolerance and trust.

In its second edition, the Monitor evolves by expanding its data coverage, sources used, analytical scope as well as its cities' engagement strategy.

The **2019 edition** embraces **five new main features**.

- **22 new cities from 14 Member States** have been added for a total of **190 European cities** (compared to 168 in 2017);
- **Experimental data** from a **new web source** (OpenStreetMap) have been used with a view to better grasp Europe's Cultural Vibrancy with more timely and comprehensive data;
- **Novel findings from the spatial analysis of cultural venues** helps putting the **social inclusion perspective at the core** of our research, alongside the economic wealth angle;
- **A new section in this report [Chapter 3] on regional performance patterns** shows that EU regional policy funds could further support socio-economic convergence across the nine policy dimensions of the Monitor;
- A new, **fully revamped version** of the **Cultural and Creative Cities Monitor Online** enables cities to engage in data collection

Drawing on the inputs collected from both the local and European stakeholders that we are regularly in contact with and the systematic review of the relevant literature, the Monitor framework will be updated every two years to reflect the improved availability of statistics and our understanding of culture in its social and economic dimensions, in a comparative setting. The third edition is therefore expected to be published in 2021.

An inclusive perspective of cultural and creative cities

As in 2017, the Monitor adopts an inclusive approach to cultural and creative cities by including all European cities that host or support international initiatives aimed at promoting arts, culture and creativity along with related professionals (i.e. artists, creative professionals), sectors (i.e. the so-called 'Cultural and creative sectors') and activities. The goal of these initiatives is to deliver cultural, social and economic benefits to the local community – such as greater engagement in culture, strengthened civic identity and pride, job creation, enhanced innovation and competitiveness, and sustainable growth.

Three types of internationally comparable initiatives have been identified in this respect: the European Capital of Culture programme, the UNESCO Creative Cities Network and international cultural festivals (see the Lexicon for more detail about these initiatives). The choice of initiatives shines from the logic of big 'one shot' events: the selected typologies of events aim to promote long-term development and show a good dose of creativity and continuity over time.

The final sample thus includes 190 from 30 European countries (EU-28 plus Norway and Switzerland), among which:

- **98 cities** which have been or will be **European Capitals of Culture** up to 2019, or which have been shortlisted to become an European Capital of Culture up to 2023;
- a further **33 UNESCO Creative Cities** (up to 2017 winners), excluding those cities which have been selected under the previous criterion;
- and **59 cities** hosting at least two **international cultural festivals**[37] running until at least 2017.

These criteria were used in a 'progressive' and 'mutually exclusive' manner to refine the list of about 1 000 cities in the Urban Audit database down to 190 cities that are actively investing in arts and culture and that have good data coverage[38]. This means that it is sufficient for a city to meet one of the three criteria to be included, but many cities actually meet more than one. In addition, while several other European cities from the Urban Audit meet the above criteria, they have not been included in this version due to poor data coverage[39].

The 190 selected cities include 30 capital cities, but most are small and medium-sized cities, with at least 50 000 inhabitants (the minimum threshold available in Eurostat's Urban Audit dataset). 46 % have fewer than 250 000 inhabitants and 68 % fewer than 500 000, thus including cities engaging in the promoting of culture and creativity, well beyond 'usual suspects'.

Cities have then been classified into five income, employment rate and population groups, making benchmarking between peer cities possible (see 'Annex B: Adjustments to the Cultural and Creative Cities Monitor and year-on-year comparability' for 2019 adjustments to the groups, available for the download on the Cultural and Creative Cities Monitor Online). Income is approximated by gross domestic product per capita in purchasing power standards (or comparable euros) (see Lexicon).

With a total of 190 cities in the Cultural and Creative Cities Monitor (of which 179 are based in EU countries and have sufficient data coverage to be ranked – see 'Annex A: The Cultural and Creative Cities Monitor methodology in ten steps', available for the download on the Cultural and Creative Cities Monitor Online), the sample size is comprehensive enough in terms of geographic breadth, population size and income to be representative of European realities.

Table 1.
City peer groups

GDP per capita groups (in PPS)	Number of cities	Employment rate groups	Number of cities	Population groups	Number of cities
> 35 000	20	>79 %	33	> 1 million	20
30 000-35 000	37	75-79 %	38	500 000-1 000 000	41
25 000-30 000	57	70-75 %	50	250 000-500 000	42
20 000-25 000	50	63-70 %	33	100 000-250 000	65
< 20 000	26	<=63 %	36	50 000-100 000	22
TOT	**190**		**190**		**190**

Figure 17.
The Cultural and Creative Cities Monitor's 190 selected cities in 30 European countries – 2019 edition

A multidimensional and actionable framework to measure culture and creativity

Each city has its own peculiarities that make it difficult to develop fully comparable and standardised metrics. The Monitor tries to identify some possibly common traits as an initial step towards assessing the level of culture and creativity in cities and providing an evidence base to inform the development of culture-led strategies and policy actions.

To achieve this goal, the Monitor not only provides an aggregate C3 Index score, but also allows for benchmarking on three sub-indices, nine dimensions and 29 individual indicators.

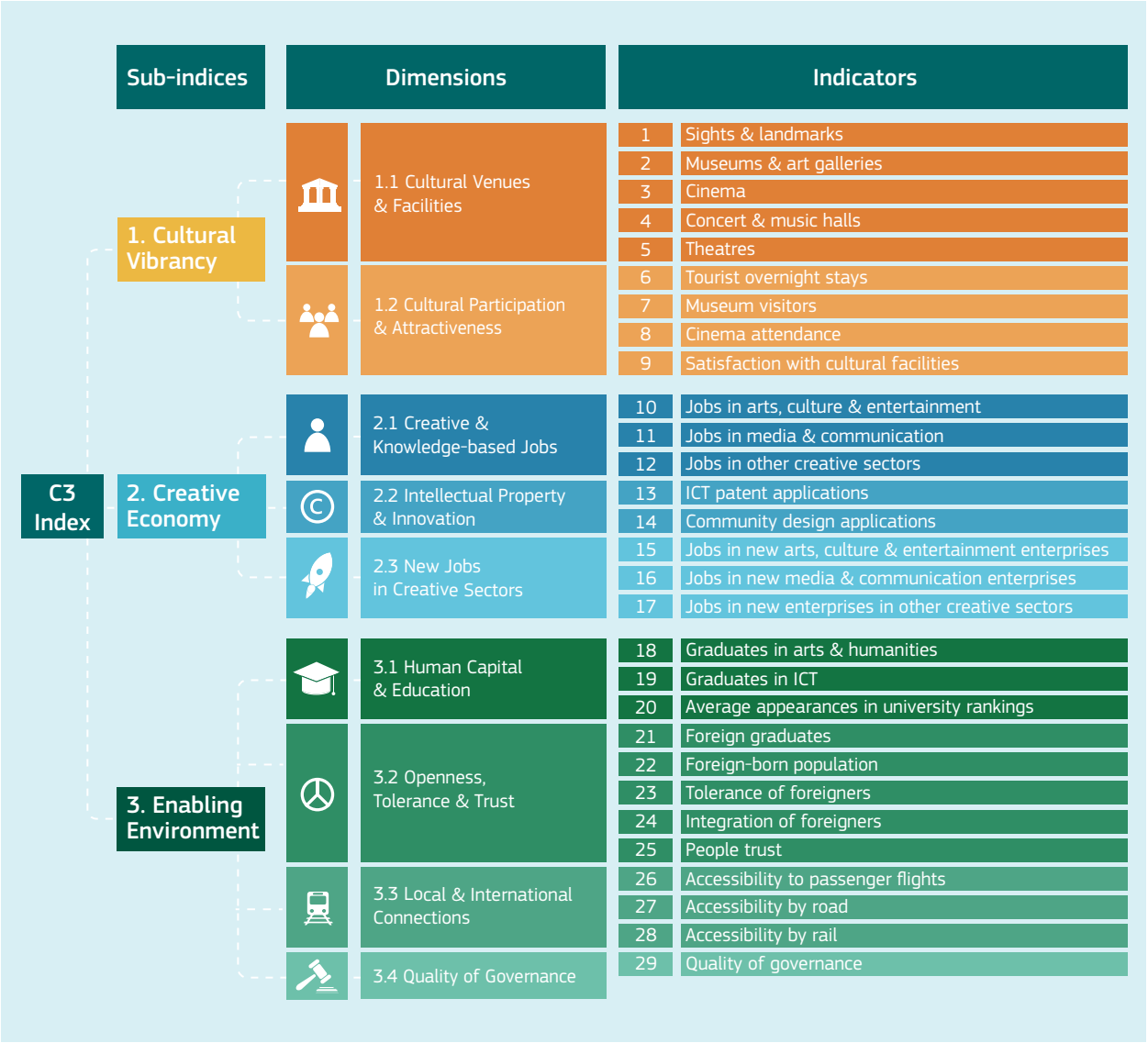


Figure 18.
The Cultural and Creative Cities Monitor's dimensions, sub-indices and indicators – 2019 edition

The C3 Index score is the weighted average of the 'Cultural Vibrancy' (40%), 'Creative Economy' (40%) and 'Enabling Environment' (20%) sub-indices scores.

Cultural Vibrancy

The 'Cultural Vibrancy' sub-index score results from the weighted average of two equally weighted dimensions that capture elements of the 'cultural pulse' of cities[40]: D1.1, Cultural Venues & Facilities (50%) and D1.2, Cultural Participation & Attractiveness (50%).

Dimension 1.1, Cultural Venues & Facilities monitors the extent to which cultural and creative cities are culturally rich, thus offering diverse cultural participation opportunities. In an increasingly globalised context, cultural amenities have acquired even greater relevance than in the past. Culture represents an authentic form of capital (Throsby, 2001) that contributes to defining a city as a unique environment with its own features. Culture can thus help cities 'make a difference', as a key element shaping local life quality and as a 'soft location factor' for citizens, external skilled workers, investments and visitors (Backman &

Nilsson, 2016; Glaeser, Kolko & Saiz, 2001; Richards & Duif, 2018; A. Smith & von Krogh Strand, 2011). It can help develop a sense of place, support socially relevant goals and improve individuals' cognitive and relational capabilities (Buscema, Ferilli, Gustafsson, & Sacco, 2019; Ferilli, Sacco, Tavano Blessi, & Forbici, 2017; Prior & Blessi, 2012). Cultural Vibrancy is here approximated using five indicators relating to the 'physical quantities' of culture-related venues present in a city, namely: sights and landmarks, museums and art galleries, theatres, concert and music halls, and cinemas.

Dimension 1.2, Cultural Participation & Attractiveness, aims at capturing cultural and creative cities' ability to attract both local and international audiences through their cultural offer. Cultural participation is the 'raison d'être' of cultural amenities and facilities: they need a public to be meaningful. This is the most basic and yet crucial outcome that cities might expect as a result of their active engagement in promoting arts and culture. In addition, building new cultural infrastructures and attracting (new) cultural audiences is increasingly seen as a major step towards reaching broader city-relevant goals, going from tourism development (OECD, 2009) to regeneration needs (Evans & Shaw, 2004). Cultural participation and attractiveness is measured through four indicators measuring overnight tourists, museum visitors, cinema attendance, and perceived satisfaction with cultural facilities.

Creative Economy

The 'Creative Economy' sub-index score is given by the weighted average of three dimensions that show how cities are doing in terms of: D2.1, Creative and knowledge-based Jobs (40%), D2.2, Intellectual Property & Innovation (20%), and D2.3, New Jobs in Creative Sectors (40%).

Dimension 2.1, Creative & Knowledge-based Jobs, measures the extent to which cultural and creative cities have access to a pool of highly qualified workers in three creative and knowledge-intensive fields which form the so-called 'Cultural and creative sectors' (CCS): arts, culture and entertainment; media and communication; and creative services such as advertising and fashion. In the breakthrough of the post-industrial transition, culture is indeed also increasingly regarded as a fully-fledged economic sector, having impacts on employment, local competitiveness and economic growth (Currid, 2010; Nelson, Dawkins, Ganning, Kittrell, & Ewing, 2016). The three indicators in this dimension measure the number of jobs in the three above-mentioned economic sub-sectors.

Dimension 2.2, Intellectual Property & Innovation, assesses whether cultural and creative cities are conducive to innovation. Creativity flowing from artists, creative professionals and the CCS fosters innovation in diverse ways, for instance by fuelling content and boosting demand for consumer electronics; by adding value to new products and services through design; or by helping people develop creative skills. Culture's 'value chain' is in fact highly transversal to many other urban functions: the creative knowledge typical of art and culture importantly interacts with other information-intensive economic sectors, ranging from cultural tourism to consumer electronics (Bakhshi, MacVittie, & Simmie, 2008; Potts, 2009; Rausell Köster & Abeledo Sanchis, 2012). Here the focus is on design and technological innovation, subject to data availability. Two indicators on ICT patent applications and design applications are used as innovation proxies.

Dimension 2.3, New Jobs in Creative Sectors, is a proxy of how well a cultural and creative city is able to translate creative and innovative ideas into new jobs. This is measured in terms of jobs created in newly created enterprises in creative and knowledge-intensive sectors, as listed in Dimension 2.1.

Enabling Environment

The 'Enabling Environment' sub-index score is the weighted average of four dimensions that capture tangible and intangible assets of a city that stimulate cultural engagement and help attract creative minds, namely: D3.1, Human Capital & Education (40%), D3.2, Openness, Tolerance & Trust (40%), D3.3, Local & International Connections (15%) and D3.4, Quality of Governance (5%).

Dimension 3.1, Human Capital & Education, measures cultural and creative cities' access to skilled human resources as well as the international appeal of local universities. The presence of universities is indeed a crucial element for attracting highly skilled people (Benneworth, Charles, & Madanipour, 2010; Florida, 1999), for knowledge generation (Wolfe, 2005) as well as for fostering innovation and territorial development (see interesting review on the topic by Smith, 2007). High-quality universities, in particular, can foster productivity and entrepreneurship (Fritsch & Slavtchev, 2007). The three indicators in this dimension thus include the number of tertiary education graduates (bachelor, master and doctoral or equivalent-level graduates) in arts and humanities and in ICT disciplines, and the average appearance in four international university rankings – QS, ARWU, Times and Leiden (see Lexicon).

Dimension 3.2, Openness, Tolerance & Trust, measures tolerance of diversity and mutual trust among inhabitants. Although much more difficult to grasp, the overall 'atmosphere' of a cultural and creative city is another crucial factor for the successful generation and flow of innovative ideas: it is argued that arts and creativity are indeed more likely to flourish in societies that are open to multiple perspectives (Florida, 2005; Landry & Bianchini, 1995) and where there is a high level of trust (Banks, Lovatt, O'Connor, & Raffo, 2000). An open-minded city is able to attract talent from different fields, welcome people with different cultures – including migrants and refugees – and enable the exchange and undertaking of creative endeavours. Five indicators are used to estimate a city's degree of openness, tolerance and trust: the number of foreign graduates in tertiary education and of foreign-born people and people's perception of tolerance towards foreigners, of foreigners' integration, and of trust in each other.

Dimension 3.3, Local & International Connections, provides a measure of cities' connectedness via air, rail and road links. Distance aspects are considered instrumental in facilitating mobility (Castells, 2000; Cooke, 2001) and accessibility to global knowledge and markets (Palhares, 2003; Van Truong & Shimizu, 2017). Transport links are therefore vital for a cultural and creative city to enable the flow of visitors, talent, ideas and investments. This dimension thus includes three indicators of a city's accessibility by flights, road and rail.

Dimension 3.4, Quality of Governance, assesses the extent to which 'government delivers its policies [...] in an effective and impartial way and without corruption'. A cultural and creative city should provide favourable conditions for creative individuals and businesses to flourish, by, for example, providing public support and ensuring a fair regulatory system[41]. The economic geography literature has then demonstrated that institutions promoting local autonomy and protecting economic and political freedom may importantly affect the location choices of creative individuals (Haisch & Klopper, 2015; Serafinelli & Tabellini, 2017) and firms (Sanchez Serra, 2016) as well as creativity and innovation (Sleuwaegen & Boiardi, 2014). In the absence of culture- and creativity-specific institutional indicators (to measure, for instance, the appropriateness of public policies to support culture and creativity), the regional Quality of Government Index developed by the Quality of Government Institute of Gothenburg University was selected as a relatively good proxy of well-functioning government institutions that can contribute to the 'liveability' of a place and its attractiveness for creative talent (Charron, Dijkstra, & Lapuente, 2014; Charron & Lapuente, 2018).

All indicators are attributed equal weight of 1, apart from Sights & landmarks and Museums & art galleries – which each have a weight of 0.5, to make their contribution to the related dimension D1.1, Cultural Venues & Facilities more balanced compared to the other underlying indicators – and Tourist overnight stays, which also has a weight of 0.5 to account for the fact that this variable captures all kinds of tourists (i.e. rather than only cultural tourists).

Box 2.

What the Cultural and Creative Cities Monitor is not intended to measure

Despite being broad, the set of 29 quantitative indicators that feed the Cultural and Creative Cities Monitor captures some of the multifarious aspects of culture and creativity in cities (for a more comprehensive discussion on 'actual' and 'ideal' metrics of culture, see Montalto, Tacao Moura, Langedijk & Saisana, 2019).

In particular:

- In some cases, the indicators do not isolate the 'cultural component': for example, the innovation indicators mainly capture ICT-based innovation and not process, management or artistic innovation; the tourism indicator counts all tourists rather than 'cultural tourists'; and the jobs indicators might include jobs that are not strictly related to culture and creativity. The chosen weights try to re-balance the framework, giving more importance to culture-related dimensions.
- The Monitor's indicators mostly provide a 'static' picture that does not fully reflect the dynamics of labour markets. While a city can have high scores on tertiary education graduates, for instance, it cannot be verified whether they actually entered the (local) job market based on their expertise. In particular, arts and humanities graduates are likely to find a job in a domain other than arts and culture. Comparing data on graduates and jobs from the Monitor could be a useful starting point in this respect as it might signal whether cities need to develop better conditions to retain highly educated people that have been trained locally. However, more detailed data and further analyses are needed for a deeper understanding of the job perspectives of skilled people.
- The Monitor alone is not intended to establish causation or to determine the complex relationships among different dimensions of culture and creativity in cities. Nevertheless, additional analysis has been carried out to explore in greater detail how culture and creativity correlate[42] with cities' economic wealth, approximated by the gross domestic product (see 'Chapter 4 – Culture for Social and Economic Resilience: key findings').

Policy-makers aiming to promote and foster cultural assets and creativity are therefore encouraged to consider carefully all locally relevant factors and to combine different sources, instruments and methods to inform their policy actions. Taking data out of context can lead to unintended or erroneous decisions.

Use and uptake of the Cultural and Creative Cities Monitor

The Monitor has been designed to make it possible to assess a city's performance on key culture-related dimensions, to identify strengths and weaknesses in comparison to peer cities and to track changes over time.

Overall, cities have the opportunity to:

- learn where development gaps lie and investment efforts should be directed;
- detect good practices among peer cities as an inspiration for future policies;
- develop city-to-city cooperation programmes, based on common challenges;
- build capacities around data collection and analysis.

In addition to this report, the **Cultural and Creative Cities Monitor Online** offers a **full package of practical tools, materials and interactive functionalities** to help cities grasp these opportunities which relate to five main policy-relevant areas: Research and analysis, Policy design, Crowd-sourcing and data collection, Capacity building and Communication and advocacy.

THE CULTURAL AND CREATIVE CITIES MONITOR ONLINE

INSIGHTS AND RESEARCH

City profiles

City profiles offer both quantitative and qualitative evidence on the 190 selected cities.

Country fact sheets

Fact sheets have been developed for the 28 EU Member States, providing a close-up of how cities in those countries perform on the Monitor.

Docs & Data

This section makes available the following items for download: the present report, an infographic, the technical annexes and the full Monitor dataset.

POLICY DESIGN

Create your own Monitor

This page allows users to customise the weights attributed to the different dimensions to better reflect local priorities and obtain tailored rankings.

Add your own city/data

This functionality offers users the possibility to add new city entries or their own data on the 29 indicators.

Policy scenario builder

With this tool, stakeholders can make hypotheses about the potential effect of current/future policies (e.g. more creative jobs) and assess impacts on scores and rankings.

CROWD-SOURCING AND DATA COLLECTION

Provide data on the 29 indicators

City officials are invited to provide missing data for their city, using an ad hoc form.

Update the 'Did you know that...?'

This functionality offers cities the opportunity to regularly update the qualitative facts illustrating the quantitative evidence.

Cultural gems

This is a spin-off project of the Monitor aimed at complementing the Monitor's statistical picture by collecting qualitative crowdsourced data on local cultural spaces.

Capacity building

Webinars

In 2020, webinars will give guidance on using the online platform and data collection, in at least four different languages (English, French, Italian and Portuguese).

Toolkit

A toolkit in five different languages (English, French, Spanish, Italian and Portuguese) will accompany the webinar to show cities how to interpret the data and contribute to data collection. Both the webinars and the toolkit will rely on 'testimonial cities' to showcase practical uses.

Communication and advocacy

Press & media

This page provides easy access to the press release and memo prepared for journalists interested in the project and its key findings.

Uptake of the Monitor in your city

In 2020, this (new) page will showcase the use and uptake of the Monitor, including through the experience of testimonial users.

Explore the online tools: https://composite-indicators.jrc.ec.europa.eu/cultural-creative-cities-monitor/

The first edition of the Monitor has already been used by diverse cities across all parts of Europe with a view to support their policy objectives, namely to:

- **Gain international reputation**. The city of **Madrid** (Spain) used the data of the Monitor in the framework of its 'International Promotion Project' having the purpose of better positioning the city in reports and rankings of international influence. The city of **Milan** often referred to the Monitor as a tool helping the city monitor its international reputation;
- **Develop more effective cultural and creative economy strategies**, based on the analysis of strengths, development gaps and the performance of peer cities. The cities of **Geneva** (Switzerland) and **Győr** (Hungary) organised participatory workshops with local cultural operators and business representatives where the JRC was invited to present the tool and offer guidance on the data analysis and benchmarking;
- **Design comparable monitoring and evaluation tools at local level**. The city of **Győr** (Hungary) used the Monitor's conceptual framework to develop a local evaluation system as part of its bid to become a European Capital of Culture in 2023. Also, the **Edinburgh City Council** (United Kingdom) and the **University of Edinburgh Data Driven Innovation** team developed a **new visualisation tool using the Monitor's dataset**. It features interactive touch points that **allowed the attendees of the Eurocities Conference 2018 to compare city-relevant data** in new and creative ways;
- **Facilitate the share of knowledge and good practices**. The city of **Leeuwarden** (Netherlands), the **Eurocities** network and the **European Festival Association** (EFA) that invited the JRC to organise a 'World Café' around the Monitor with more than 20 European cities. The purpose of the event was to identify common challenges based the data analysis and share possible solutions.

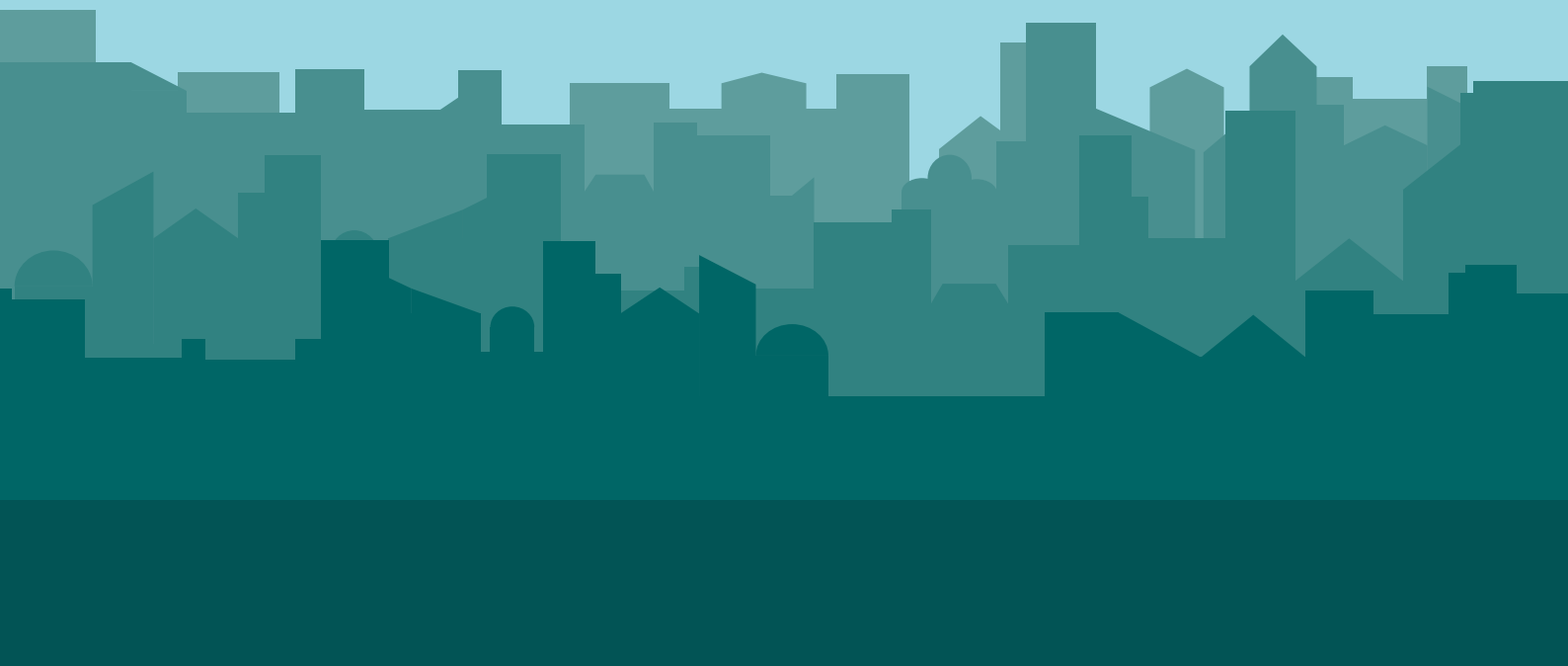
> In 2013, at the beginning of my mandate, I drafted a strategic plan for the development of culture the progress of which is constantly monitored with various tools, among which the most authoritative one, the EU Cultural and Creative Cities Monitor: it positions Milan on the podium of the great European cities for cultural vitality.
>
> *Filippo Del Corno, Councillor for Culture of the City of Milan (Italy)*

Medium-sized cities such as **Bilbao** (Spain), **Bologna** (Italy) and **Umeå** (Sweden) particularly appreciated the European Commission's efforts to develop a cost-effective tool that also includes second tier cities, helping them raise awareness about the worthiness of cultural investment among local stakeholders. Representatives from these cities joined the workshop 'How Creative is your City?' which was organised by the JRC in the framework of the 2018 European Week of Regions and Cities as 'testimonial users' of the Monitor.

As a result of this work, an **academic paper** has also been published in a top level journal in the field of urban studies (*Cities*) with a view to promote the use of the Monitor's data among **scholars** (Montalto, Tacao Moura, Langedijk & Saisana, 2019).

3

2019 Scores and rankings



Top 5 cities per population group

Table 2.

Top 5 cities in the C3 Index per population group

Index Rank		Sub-index Ranks		
Population group	XXL 	**> 1 million inhabitants (20 cities)**		
#	City [Confidence intervals]	Cultural Vibrancy	Creative Economy	Enabling Environment
1	Paris-France [1, 1]	1	1	2
2	Munich-Germany [2, 2]	6	2	3
3	London-United Kingdom [3, 8]	13	4	1
4	Milan-Italy [3, 5]	4	5	12
5	Berlin-Germany [4, 6]	5	7	8
6	Vienna-Austria [4, 8]	3	16	7
7	Budapest-Hungary [5, 15]	14	3	16
8	Prague-Czech Republic [5, 8]	2	13	15
Population group	XL 	**500 000-1 million inhabitants (40 cities)**		
#	City [Confidence intervals]	Cultural Vibrancy	Creative Economy	Enabling Environment
1	Copenhagen-Denmark [1, 2]	3	4	3
2	Lisbon-Portugal [1, 7]	1	3	23
3	Stockholm-Sweden [2, 4]	6	2	7
4	Dublin-Ireland [2, 5]	2	22	1
5	Stuttgart-Germany [4, 6]	12	1	12
6	Amsterdam-Netherlands [3, 6]	4	8	6
Population group	L 	**250 000-500 000 inhabitants (40 cities)**		
#	City [Confidence intervals]	Cultural Vibrancy	Creative Economy	Enabling Environment
1	Florence-Italy [1, 9]	1	17	34
2	Karlsruhe-Germany [1, 4]	14	4	3
3	Venice-Italy [2, 18]	2	26	32
4	Bristol-United Kingdom [1, 5]	11	6	5
5	Tallinn-Estonia [1, 6]	6	3	26
6	Brighton-United Kingdom [4, 8]	10	7	2
7	Eindhoven-Netherlands [3, 10]	17	5	7
8	Graz-Austria [5, 10]	4	12	9
9	Utrecht-Netherlands [4, 12]	15	9	4
Population group	S-M 	**50 000-250 000 inhabitants (79 cities)**		
#	City [Confidence intervals]	Cultural Vibrancy	Creative Economy	Enabling Environment
1	Lund-Sweden [1, 3]	13	1	8
2	Weimar-Germany [1, 8]	1	19	25
3	Heidelberg-Germany [1, 3]	7	3	5
4	Cork-Ireland [4, 6]	3	44	2
5	Tartu-Estonia [3, 5]	4	12	34
6	Mainz-Germany [4, 11]	44	2	9
7	Groningen-Netherlands [5, 15]	17	16	21

Note: (a) Rankings are based on a total of 179 cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details; (b) [Confidence intervals] are based on the results of the statistical assessment. They indicate by how many positions the cities could move in the rankings depending on the modelling assumptions – for more details see 'Annex C: Statistical Assessment of the C3 Index 2019', available for download on the Cultural and Creative Cities Monitor Online; (c) Cities that could have taken up to the fifth position based on the results of the statistical assessment are included in the table, but from the sixth position onwards, lighter colours are used for the background.

The C3 Index 2019 shows consistency in top rankings compared to the C3 Index 2017 recalculated scores (see Box 3). However, there have also been some high-level developments at dimension level this year, as described below.

Box 3.

Adjustments to the Cultural and Creative Cities Monitor and year-on-year comparability

All the **Monitor scores and rankings from 2017 have been re-computed so that results** from one year to the next are **directly comparable**. This means that the 2019 scores and rankings cannot be compared with those published in 2017 but can be compared with the recalculated 2017 scores and rankings, that are used for the analysis of year-on-year changes presented in this report. For **more details** on the methodology and updates, see **'Annex A: The Cultural and Creative Cities Monitor methodology in ten steps'** and **'Annex B: Adjustments to the Cultural and Creative Cities Monitor and year-on-year comparability'**, available on the Cultural and Creative Cities Monitor Online.

Paris holds on to first place on the C3 Index ranking by a clear margin, followed by Munich, London, Milan and Berlin

Paris (France) holds on to first place on the C3 Index driven by its strong performance on all the underlying sub-indices: for the second consecutive year, the French capital leads on both the 'Cultural Vibrancy' and 'Creative Economy' sub-indices and comes second on 'Enabling Environment'. Within the 'Cultural Vibrancy' sub-index, Paris leads on five of nine indicators (Sights & landmarks, Cinemas, Concert & music halls, Theatres and Cinema attendance) and comes second on Museums & art galleries. Within 'Creative Economy', Paris leads on five indicators related to jobs and job creation in the cultural and creative sectors, and it comes first and second, respectively, on the two indicators related to innovation outputs, namely Community design applications and ICT patent applications. Within 'Enabling Environment', Paris leads on Graduates in arts & humanities, Graduates in ICT and Average appearances in university rankings as well as on the Accessibility by rail indicator.

Munich is currently developing a creative quarter with a view to foster contemporary art creation as well as offer spaces for development and production to creative industry actors.

Munich (Germany) remains stable at the second position, mostly thanks to its remarkable performance on 'Creative Economy', where the city ranks second, immediately after Paris. Munich leads on ICT patent applications, while comes second and third on Community design applications and Jobs in media & communication, respectively.

Results for Paris and Munich are particularly robust: the narrow confidence intervals reported in Table 2 indicate that the two cities maintain their first and second position respectively under different modelling scenarios[43].

The combination of new data sources, data update and methodological refinements make **London** (United Kingdom) earn the third position both in the updated 2017 edition and the new 2019 rankings. Still, the city could move down to the eighth position based on the confidence intervals given in Table 2. London confirms its competitive position on 'Creative Economy', taking the fourth spot mostly thanks to its fourth position on Jobs in new media and communication enterprises, and its fifth position on two indicators: Jobs in other creative sectors and Jobs in new enterprises in other creative sectors. London then leads on 'Enabling Environment' thanks the city's first position on three of the underlying indicators: Average appearances in university rankings, Foreign graduates and Accessibility to passenger flights. However, the UK capital comes 13th on Cultural Vibrancy, which may explain the city's rank change under different modelling set-ups. As in the previous edition, nearly all the Monitor's indicators are expressed in per capita terms. This approach is primarily intended to enable cross-city comparability, but finally

rewards potentially more 'inclusive' cities which have more cultural and creative resources per inhabitant. As London dominates all other cities with its population of more than eight million, it does not lead on any dimension in the ranking, but does reach the third spot on the C3 Index in its population group.

Milan (Italy) confirms its competitive and balanced performance on 'Cultural Vibrancy' and 'Creative Economy', ranking fourth and fifth respectively, while it comes 12th on 'Enabling Environment'. Within the 'Cultural Vibrancy' sub-index, Milan reaches the second spot on Cinema attendance and the third one on both Sights and landmarks and Museums & art galleries. Within 'Creative Economy', Milan's notable performance is mostly due to its second position on three of the eight underpinning indicators, namely: Jobs in arts, culture & entertainment, Jobs in media & communication and Jobs in other creative sectors. As suggested by the relatively narrow confidence interval, Milan's results are fairly robust: the city could shift from the third up to fifth position, under different modelling assumptions.

Milan's current cultural strategy aims to maximise the positive impacts of culture on the entire city by increasing the local cultural offer, also as a founding factor of economic development, and by fostering collaboration between the public and private sector.

Berlin (Germany) reaches the fifth position, entering for the first time the Top 5 with a relatively well-balanced performance across all the sub-indices, coming fifth on 'Cultural Vibrancy', seventh on 'Creative Economy' and eight on 'Enabling Environment'. Among the three sub-indices, Berlin conquers the best spot on 'Cultural Vibrancy' (fifth), coming second on Museum visitors, third on Satisfaction with cultural facilities and fourth on both Cinemas and Theatres. Still, Berlin could slip down to the sixth position, based on the statistical assessment. The confidence intervals also show that various cities contend for fifth place, namely Vienna, Prague as well as Budapest, which however features more uncertain results.

The 'James Simon Galerie' – the first new building on Berlin's museums island in almost a century – is a major architectural work having the objective to receive and offer orientation to the island's visitors. It also offers temporary exhibition spaces and an auditorium with around 300 seats.

XL

Copenhagen maintains the top spot on the C3 Index ranking but there are strong contenders

Copenhagen (Denmark) maintains the first position in the group, ranking third on 'Cultural Vibrancy', fourth 'Creative Economy', and third on 'Enabling Environment'. As regards the indicators underpinning the 'Cultural Vibrancy' sub-index, Copenhagen comes second on Cinema attendance, third on Museum visitors and forth on both Cinemas and Concert & music halls. Within 'Creative Economy', Copenhagen is first on Jobs in arts, culture & entertainment, third on Jobs in media & communication, second on Community design applications and forth on Jobs in new media & communication enterprises. On 'Enabling Environment', Copenhagen ranks first on People trust and Accessibility by rail, second on Tolerance of foreigners, third on Average appearances in university rankings and fourth on Quality of Governance.

Despite Copenhagen's top position on the C3 Index, the second city on the C3 Index rank – **Lisbon** (Portugal) – actually performs better than the Danish capital on 'Cultural Vibrancy' and 'Creative Economy', gaining the first and third position respectively. However, Lisbon has a less competitive 'Enabling Environment', coming 23rd on this sub-index. In fact, based on the results of the statistical assessment, Lisbon could potentially come first (see confidence intervals in Table 2). Within 'Cultural Vibrancy', Lisbon excels on Museums & art galleries, Tourist overnight stays and Museum visitors, reaching the first spot, and performs particularly well also on Concert & music halls and Sights & landmarks, ranking second

The Lisbon City Council is a partner of the Horizon 2020 project ROCK through which the city aims at promoting innovative reuse of historic buildings, cultural equipment and unused spaces.

Dublin City Council's Cultural Strategy 2016-2021 aims at positioning culture, creativity and creative industries at the core of Dublin's global reputation as a modern European city, as well as at increasing cultural participation and the resources to support cultural expression.

The Creative Industries division at Stuttgart Region Economic Development Corporation aims at developing the Stuttgart region as a creative location by providing networking opportunities, funds and trainings to creative people and businesses.

and third. Within 'Creative Economy', the Portuguese capital leads on both Jobs in other creative sectors and Jobs in new enterprises in other creative sectors and comes second on Jobs in media & communication.

Stockholm (Sweden) obtains the third position in the group, mostly thanks to its second spot on 'Creative Economy' and its leading position on Jobs in media & communication and ICT patent applications. The Swedish capital also features a well-balanced performance on 'Cultural Vibrancy' and 'Enabling Environment', where it ranks sixth and seventh respectively. Stockholm could however alternatively take the second or fourth ranking position, based on the statistical assessment. Amsterdam, ranking sixth in the group, could come third either together or instead of Stockholm.

Dublin (Ireland) confirms its lively urban environment (coming second on 'Cultural Vibrancy' and first on 'Enabling Environment') but ranks only 22nd on 'Creative Economy', coming fourth on the C3 Index. In particular, the Irish capital excels on Concert & music halls, ranking first, and comes third on Museums & art galleries. It also obtains the first spot on Graduates in ICT and the second on Average appearances in university rankings. Similarly to Stockholm, Dublin could alternatively take the second, third or fifth ranking position.

Stuttgart (Germany) instead records the best result on 'Creative Economy', ranking first, but comes 12th on both 'Cultural Vibrancy' and 'Enabling Environment'. The city's creative performance is mostly explained by its leading position on both ICT patent applications and Community design applications. Stuttgart also ranks second on Jobs in arts, culture & entertainment and fourth on Jobs in other creative sectors. Stuttgart could however slip down to sixth position, currently occupied by Amsterdam, depending on the modelling assumptions.

Florence is the best in class on the C3 Index ranking, significantly driven by the 'Cultural Vibrancy' score

Florence (Italy) ranks first in the group, clearly due to its top position on 'Cultural Vibrancy'. The city comes first on Tourist overnight stays and Museum visitors, and second on Sights & landmarks, Museums & art galleries, Cinemas and Concert & music halls. However, the city falls quite behind on 'Creative Economy' and 'Enabling Environment', coming 17th and 34th respectively. Within 'Creative Economy', the city performs very well on Jobs in arts, culture & entertainment, ranking second, but needs to improve its capacity to generate new jobs in the cultural and creative sectors: on the related indicators, the city ranks 17th (Jobs in new enterprises in other creative sectors), 30th (Jobs in new media & communication enterprises) and 35th (Jobs in new arts, culture & entertainment enterprises). In 'Enabling Environment', Florence ranks fourth on Average appearances in university rankings, 10th on Foreign-born population and 12th on Accessibility by rail, but reaches between the 19th and the 37th position on the other nine indicators.

Venice (Italy), which obtains the third spot in the group on the C3 Index, registers a very similar performance compared to Florence, ranking second on 'Cultural Vibrancy' (mostly thanks to its leading position on Sights & landmarks, Museums & art galleries, Tourist overnight stays and Museum visitors), 26th on 'Creative Economy' and 32nd on 'Enabling

Environment'. However, based on our statistical assessment, both Florence and Venice could actually slip down to the 9th and 18th position, respectively. This is likely to be due to the very good performance of the two cities on just one of the three sub-indices.

The other cities in the Top 5 – notably: **Karlsruhe** (Germany), **Bristol** (United Kingdom) and, to a lesser extent, **Tallinn** (Estonia) – score much better than the two Italian cities, on both 'Creative Economy' and 'Enabling Environment', coming fourth and third (Karlsruhe), sixth and fifth (Bristol) and third and 26th (Tallinn). Tallinn is also strong on 'Cultural Vibrancy', where it takes the sixth position, mostly due to its third place on Museums & art galleries. All these cities could actually come first instead or together with Florence.

In this population group, many more cities could potentially enter the Top 5 in addition to the ones already mentioned, namely: Brighton (United Kingdom), Eindhoven (Netherlands) – which could in particular move up to the third place – Graz (Austria) and Utrecht (Netherlands).

As a UNESCO Creative City of Music since 2017, Bristol aims to bridge the skills shortage in key areas identified by Creative Skillset (the UK-wide strategic skills body for the creative industries). It also want to develop a film and music cross-cutting initiative, fostering the relationship between the two fields and collaborating across the UNESCO Creative Cities Network.

S-M

Lund claims the top spot on the C3 Index ranking, but lags behind on 'Cultural Vibrancy' in comparison to the other top cities

The Top 5 cities in this group have quite different specialisation areas, with the exception of **Heidelberg** (Germany), which displays a relatively strong and well-balanced performance across the three sub-indices, coming seventh, third and fifth on 'Cultural Vibrancy' (particularly thanks to its leading position on Museum visitors), 'Creative Economy' and 'Enabling Environment', respectively.

Lund (Sweden) performs very well on the 'Creative Economy' indicators conquering the first spot. The city shows remarkable ability to generate new jobs, coming first on Jobs in new media & communication enterprises and fourth on Jobs in new enterprises in other creative sectors. Within the 'Cultural Vibrancy' sub-index, Lund leads on Concert & music halls and comes ninth on Satisfaction with cultural facilities. In 'Enabling Environment', Lund comes first on Accessibility by rail, second on Quality of Governance, third on Average appearances in university rankings and fourth on People trust.

As a UNESCO Creative City of Literature since 2014, Heidelberg aims at fostering joint productions combining literature with music, dance, visual arts, film and media arts, and at developing the city's profile as an interdisciplinary city of culture, open to cooperative projects.

Weimar (Germany), **Cork** (Ireland) and **Tartu** (Estonia) instead register the highest 'Cultural Vibrancy' scores in the group, coming first, third and fourth, respectively. Weimar conquers the top spot on three of the nine underlying indicators: Museums & art galleries, Cinemas and Museum visitors; Cork leads on Cinema attendance and comes fifth on Concert & music halls; Tartu comes fifth on Museums & art galleries and sixth on Sights & landmarks, Cinemas and Museum visitors.

Results are fairly stable for Lund and Heidelberg (which might come either first, second or third under different simulated scenarios), Cork (which could take between fourth and sixth position) and Tartu (between third and fifth). The more unbalanced performance of Weimar across the three sub-indices helps explain the larger confidence intervals that would see the city move between the first and eighth position.

The ideal Cultural and Creative City

This year, the 'ideal' Cultural and Creative City would be composed of the following seven European cities, which take the first position on one or more of the nine measured dimensions:

- **Weimar** (Germany) – Top one city on D1.1, Cultural Venues & Facilities
- **Florence** (Italy) – Top one city on D1.2, Cultural Participation & Attractiveness
- **Paris** (France) – Top one city on D2.1, Creative & Knowledge-based Jobs, D3.1 Human Capital & Education and D3.3, Local & International Connections
- **Eindhoven** (Netherlands) – Top one city on D2.2, Intellectual Property & Innovation
- **Budapest** (Hungary) – Top one city on D2.3, New Jobs in Creative Sectors
- **Glasgow** (United Kingdom) – Top one city on D3.2, Openness, Tolerance & Trust
- **Aarhus** (Denmark) – Top one city on D3.4, Quality of Governance

These results show that no city excels on all the nine dimensions that make a cultural and creative city. Even such an 'ideal' city would still have important margins of improvement: its hypothetical C3 Index score – that we have calculated by aggregating these seven cities' scores on the nine dimensions – would amount to 77.2/100. This is about 11 points above the highest score on the C3 Index obtained by Paris, but is still far from the maximum possible score (100).

At the same time, however, it is evident that Paris keeps strengthening its leading position in 2019, coming first on three out of nine dimensions, meaning one dimension more than in 2017.

As can be seen in Table 3, medium-sized cities confirm their remarkable performance on 'Cultural Vibrancy' with Weimar (S-M group) and Florence (L group) ranking first on the underlying dimensions D1.1, Cultural Venues & Facilities and D1.2, Cultural Participation & Attractiveness, respectively. Nearly all cities in second and third positions are also from S-M and L groups (namely: Avignon-France (S-M) and Galway-Ireland (S-M) on D1.1, and Venice-Italy (L) and Paris (XXL) on D1.2). As regards cultural participation, the noticeable performance of both Florence and Venice is mostly explained by their excellent performance on two of the four underlying indicators, namely: Tourist overnight stays on which the two cities obtain the highest score (100/100), and Museum visitors (95.1/100). Although the second indicator is likely to include also local visitors, these scores mostly confirm the two Italian cities' leading role in terms of tourism attractiveness. More disaggregated data at the local level would allow for a more precise understanding of the cultural audiences attracted, with important implications for the development of audience engagement strategies targeting both tourists and the local communities (for a more in-depth reflection on the additional indicators that would help complement the analysis of the cities' performance, see Montalto, Tacao Moura, Langedijk & Saisana, 2019).

Larger cities and, most notably, capital cities instead maintain their leadership on 'Creative Economy' dimensions, with Paris (XXL) and Budapest (XXL) obtaining the first position on the underlying dimensions D2.1, Creative & Knowledge-based Jobs and D2.3, New Jobs in Creative Sectors. Eindhoven is an interesting exception to this scenario as an inspiring example of medium-sized city that keeps consolidating its leadership in innovation outputs.

A mix of large cities from different countries comes first on the dimensions underlying the 'Enabling Environment' sub-index, namely Paris (XXL) and Glasgow (XL) and Aarhus (L). As probably expected, Northern Europe's cities keep leading on dimension D3.4, Quality of Governance, with Aarhus-Denmark (L) coming first, followed by Turku-Finland (S-M) and Gothenburg-Sweden (XL). On D3.2, Openness, Tolerance & Trust, large UK cities clearly exhibit a leading role, especially Glasgow which obtain scores between 71/100 and

100/100 on three of the five underlying indicators (People trust, Integration of foreigners, and Foreign graduates). London follows, obtaining a higher score on Foreign-born population (63.0/100 vs 24.2/100) but a lower one on People trust (43.3/100 vs 100.0/100). While this result confirms the presence of culturally diverse and generally well integrated communities in UK larger cities, it should however be read with caution. The indicators Tolerance of foreigners, Integration of foreigners and People trust are indeed based on personal perception. In addition, most of the underlying data have been estimated due to poor data coverage. Still, these indicators were kept in the Monitor's framework because of their conceptual relevance, as recommended by the group of experts that have contributed to the development of the Monitor (see also 'Chapter 2 – The Cultural and Creative Cities Monitor 2019: approach and new features' for more details on the methodology)[44].

Table 3.

Top 3 cities by policy dimension

Policy dimension	Rank	City	Population group
D1.1 Cultural Venues & Facilities	1	**Weimar-Germany**	S-M
	2	Avignon-France	S-M
	3	Galway-Ireland	S-M
D1.2 Cultural participation & attractiveness	1	**Florence-Italy**	L
	2	Venice-Italy	L
	3	Paris-France	XXL
D2.1 Creative & Knowledge-based Jobs	1	**Paris-France**	XXL
	2	Lisbon-Portugal	XL
	3	Stockholm-Sweden	XL
D2.2 Intellectual Property & Innovation	1	**Eindhoven-Netherlands**	L
	2	Stuttgart-Germany	XL
	3	Munich-Germany	XXL
D2.3 New Jobs in Creative Sectors	1	**Budapest-Hungary**	XXL
	2	Paris-France	XXL
	3	Riga-Latvia	XL
D3.1 Human Capital & Education	1	**Paris-France**	XXL
	2	Dublin-Ireland	XL
	3	Leuven-Belgium	S-M
D3.2 Openness, Tolerance & Trust	1	**Glasgow-United Kingdom**	XL
	2	London-United Kingdom	XXL
	3	Edinburgh-United Kingdom	XL
D3.3 Local & International Connections	1	**Paris-France**	XXL
	2	London-United Kingdom	XXL
	3	Brighton-United Kingdom	L
D3.4 Quality of Governance	1	**Aarhus-Denmark**	L
	2	Turku-Finland	S-M
	3	Gothenburg-Sweden	XL

Note: (a) Rankings are based on a total of 179 cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details; (b) [XXL group] > 1 million inhabitants (20 cities); [XL group] 500 000-1 million inhabitants (40 cities); [L group] 250 000-500 000 inhabitants (40 cities); [S-M group] 50 000-250 000 inhabitants (79 cities).

The leading role of smaller and larger cities on 'Cultural Vibrancy' and on 'Creative Economy', respectively, is further confirmed by Figure 19, which depicts the average scores of the C3 Index and the underlying sub-indices by population groups.

While larger cities usually have greater stock and a broader spectrum of cultural resources, recent literature indeed shows that notable cultural resources can be identified in smaller cities, too. Kresl & Ietri (2016), for instance, argue that smaller cities can have important advantages over larger ones which may include high life quality, educational resources and cultural assets, among others.

As regards the Creative Economy, the largest cities claim the highest average scores. This is the sub-index where the divide is clear between city size groups, with the largest group performing on average close to two times higher than the smallest group of cities. This is due to the greater density and networking opportunities present in large cities – particularly relevant for creative business activities. Creative industries are characterised by their tendency to concentrate in space (Boix, Hervás-Oliver, & De Miguel-Molina, 2015; Cooke & Lazzeretti, 2008; Lazzeretti, Boix, & Capone, 2008) to take advantage of the existence of agglomeration economies (Lorenzen & Frederiksen, 2008). As Turok (2003) shows, the locations of a creative firm close to other specialised firms increase its opportunity to trade and recruit specialised workers, among other advantages. Additionally, the population, the economic size as well as the density of the economic agents of a territory determine the importance of the benefits that creative firms could gain from their co-location, for instance in terms of inter-sector synergies, and better access to public utilities and information centres which facilitate knowledge sharing and innovation.

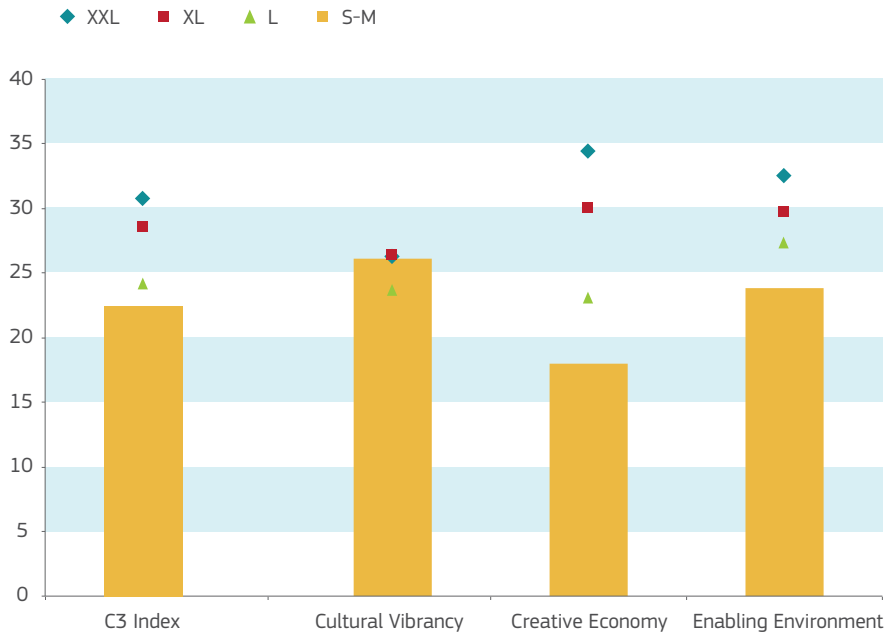


Figure 19.
Average C3 Index and sub-indices scores by population groups

Note: The graph is based on a total of 179 ranked cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

Finally, the average score on the 'Enabling Environment' sub-index is clearly higher for the largest cities but the performance gap with small and medium sized cities is less important than what observed for the 'Creative Economy' sub-index. It is evident, for instance, that

Europe counts on a considerable amount of high quality universities, which are often found both in large and medium-sized cities such as Bologna or Leuven. As regards openness and trust, results can again be mixed. Big cities may indeed feature better levels of diversity and tolerance, as found by Paas & Halapuu, 2012, due to greater face-to-face contact opportunities (McLaren, 2003). However, greater levels of generalised trust may be found in smaller cities due to a stronger sense of community. Previous research has for instance indicated that local trust levels are inversely proportional to population density (Glaeser, Henderson, & Inman, 2000).

Movements in the scores and rankings at dimension level

By population groups

Table 4 shows the average score change by dimension and population groups. No noteworthy variation can be observed, exception made from a slight score decrease on D3.4, Quality of Governance: the performance of all the population groups declined on this dimension, with a more pronounced average downward shift in XL, L and S-M groups. Yet results remain quite heterogeneous across Europe's regions, as explained by the developers of the Quality of Governance Index (Charron & Lapuente, 2018) underpinning this dimension[45]: while most regions in northern Europe have remained among the top performers, regions in western Europe are the ones demonstrating the most noticeable declines in quality of government. Recent years have also seen a fall of numerous southern regions, particularly in Italy, Greece and Spain.

Table 4.

Average 2017-2019 score change on the C3 Index and underlying dimensions across population groups

	Population groups			
C3 Index and underlying policy dimensions	XXL	XL	L	S-M
C3 Index	—	—	—	—
D1.1 Cultural Venues & Facilities	—	—	—	—
D1.2 Cultural Participation & Attractiveness	—	—	—	—
D2.1 Creative & Knowledge-based Jobs	—	—	—	—
D2.2 Intellectual Property & Innovation	↓	—	—	—
D2.3 New Jobs In Creative Sectors	—	↑	—	—
D3.1 Human Capital & Education	—	—	—	—
D3.2 Openness, Tolerance & Trust	—	—	—	—
D3.3 Local & International Connections	—	—	—	—
D3.4 Quality Of Governance	↓	↓↓	↓↓	↓↓

Note: (a) The table is based on a total of 179 ranked cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details; (b) ↓↓ = score change <=-10 and >-20; ↓ = score change <=-5 and >-10; "–" = score change >–5 and <=+5; ↑ = score change >+5 and <=+10.

A few noticeable changes, among which some high level development, can be appreciated if looking more closely at individual cities among the top performers in each population group.

Table 5.

2017-2019 change on the C3 Index and underlying dimensions for Top 5 cities by population groups

Rank	City	C3 Index: Rank Change	D1.1 Cultural Venues & Facilities	D1.2 Cultural Participation & Attractiveness	D2.1 Creative & Knowledge-based Jobs
#	Population group	XXL	> 1 million inhabitants (20 cities)		
1	Paris-France	0	—	—	—
2	Munich-Germany	0	—	—	—
3	London-United Kingdom	0	—	—	↑
4	Milan-Italy	1	—	—	—
5	Berlin-Germany	2	—	—	—
#	Population group	XL	500 000 - 1 million inhabitants (40 cities)		
1	Copenhagen-Denmark	0	—	—	—
2	Lisbon-Portugal	1	—	—	↑
3	Stockholm-Sweden	-1	—	—	↑
4	Dublin-Ireland	2	—	—	—
5	Stuttgart-Germany	0	—	—	—
#	Population group	L	250 000 - 500 000 inhabitants (40 cities)		
1	Florence-Italy	0	—	—	—
2	Karlsruhe-Germany	0	—	—	—
3	Venice-Italy	1	—	—	—
4	Bristol-United Kingdom	3	—	—	↑
5	Tallinn-Estonia	9	—	—	↑↑
#	Population group	S-M	50 000 - 250 000 inhabitants (79 cities)		
1	Lund-Sweden	3			
2	Weimar-Germany	0	—	—	—
3	Heidelberg-Germany	-2	—	—	—
4	Cork-Ireland	1	—	—	—
5	Tartu-Estonia	12	—	↑	↑↑

D2.2 Intellectual Property & Innovation	D2.3 New Jobs in Creative Sectors	D3.1 Human Capital & Education	D3.2 Openness, Tolerance & Trust	D3.3 Local & International Connections	D3.4 Quality of Governance
↓↓	↑	↑	—	—	↓↓
↓↓	—	—	—	—	—
↓	—	—	—	—	—
—	—	—	—	—	↓
↓	↑	—	—	—	↓↓
—	—	—	—	—	↓↓
—	↑	—	—	—	↓↓
↓	—	↓	—	—	↓
—	—	↑↑↑	—	—	↓↓
—	—	—	—	—	↓
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↑	↑	—	—	—	↓
—	↑↑	—	—	—	↓
—	—	—	↑	—	↓↓
—	—	↓↓	—	—	↓
—	—	↑↑	—	—	↓↓
—	↑	—	—	—	↓

Note: (a) ↓↓ = score change <=-10 and >-20; ↓ = score change <=-5 and >-10; "–" = score change >–5 and <=+5; ↑ = score change >+5 and <=+10; ↑↑ = score change >+10 and <=+20; ↑↑↑ = score change >+20; (b) as the city of Lund has not been included in the recalculated 2017 rankings due to poor data coverage (see 'Chapter 2 – The Cultural and Creative Cities Monitor 2019: approach and new features' for more details), the 2017-2019 score changes are not shown in this table.

Paris, Munich and London lead the C3 Index ranking for the second consecutive year, followed by Milan (+1 position) and Berlin (+2)

Both **Paris** (France) and **Munich** (Germany) slightly decrease their performance on Dimension 2.2, Intellectual Property & Innovation mostly due to a decrease of around 15 points in the underlying indicator ICT patent applications, but in fact both remain among the top scoring cities on the D2.2 dimension.

London (United Kingdom) shows no major changes either in performance in the single dimensions or in the overall C3 Index performance and maintains the same position.

Milan (Italy) instead gains one position, moving to the fourth spot, but its score on the C3 Index just slightly improves, by 0.59 points.

Berlin (Germany) jumps to the fifth spot, moving up two positions since last year: although it is possible to observe slightly improved job creation dynamics (D2.3, New Jobs in Creative Sectors), the shift in the ranking might be attributed to changes in the scores of other cities in the same population group, as Berlin's score in C3 Index remained substantially stable (0.01 points change).

The slight decrease in performance in dimension D3.4, Quality of Governance for Paris, Milan and Berlin can be seen in the wider west-European context, which, as mentioned above, has shown a general decline in the quality of government.

Copenhagen keeps leading on the C3 Index ranking while Lisbon and Stockholm exchange the second and third position, followed by Dublin (+2 positions) and Stuttgart (stable)

While **Copenhagen** (Denmark) maintains its first position in the group, Lisbon (Portugal) moves from the third to the second place this year, possibly thanks to the gains on dimensions D2.1, Creative & Knowledge-based Jobs and D2.3, New Jobs in Creative Sectors.

Stockholm (Sweden) registers an improved score on D2.1, Creative & Knowledge-based Jobs. However, the Swedish capital loses one position, probably due to the more positive dynamics registered in Lisbon.

Dublin (Ireland) moves up two positions, thus obtaining the fourth spot in the group. Dublin's improvement on dimension D3.1, Human Capital & Education is mostly due to a considerable increase in the number of Graduates in ICT. This indicator's score raised from 21.16/100 in 2017 to 100/100 in 2019 (see Box 4 for the interpretation of the indicators' scores). However, this increase should be read with a certain deal of caution as this indicator's value has been estimated in the 2017 edition, while actual data have been used for 2019.

Stuttgart (Germany) maintains the fifth position, with no significant changes at dimension level.

Also cities in this population group show a slight decline in performance in D3.4, Quality of Governance and this, as mentioned above, is in line with a wider trend found in west- and south-European regions.

L

Florence and Karlsruhe maintain the first and second position on the C3 Index ranking, followed by Venice (+1 position), Bristol, (+3) and Tallinn (+9)

Cities in the first three positions mostly remain stable: **Florence** (Italy) and **Karlsruhe** (Germany) keep the first and second position, while Venice (Italy) moves from the fourth to the third place, with no noteworthy improvement on the underlying dimensions.

Bristol (United Kingdom) makes slight progress on dimensions D2.1, Creative & Knowledge-based Jobs, D2.2, Intellectual Property & Innovation and D2.3, New Jobs in Creative Sectors, improving its overall position on the C3 Index, where it gains the fourth spot in the group, moving three positions up.

Tallinn (Estonia) registers improvement on both D2.1, Creative & Knowledge-based Jobs and D2.3, New Jobs in Creative Sectors, which makes the city move nine positions up, to the fifth place. Tallinn has indeed considerably improved on Jobs in new arts, culture & entertainment enterprises (where the city nearly doubled its score, passing from 20.1 in 2017 to 38.4 in 2019) and Jobs in new media & communication enterprises (from 29.3 in 2017 to 65.4 in 2019) (see both the following sub-section and Box 4 for the interpretation of the indicators' scores).

Tallinn's well-educated labour force and low taxes have helped to develop the Information and Technology sector – establishing the city among the top digital cities in the world.

S-M

Lund, Weimar, Heidelberg and Cork keep leading the C3 Index ranking, while Tartu jumps up to the fifth place (+12)

Tartu (Estonia) shows the most notable improvement in the group, moving 12 positions up on the C3 Index. The Estonian city improves its performance on all the indicators underpinning dimension D2.1, Creative & Knowledge-based Jobs and particularly so on Jobs in arts, culture & entertainment, passing from a score of 22.65 in 2017 to 63.4 in 2019 (see both the following sub-section and Box 4 for the interpretation of the indicators' scores). Such increase should however be interpreted with caution considering that the 2017 score has been estimated.

Lund (Sweden) comes first in the group. The city seems to have maintained a high position on the C3 Index rankings. However, as the city has not been included in the recalculated 2017 rankings due to poor data coverage, the 2017-2019 score and rank change are not shown in Table 5.

Weimar (Germany) remains stable at the second position, with a slight improvement on D3.2, Openness, Tolerance & Trust, while **Heidelberg** (Germany), which places third, shows a decrease in performance on dimension D3.1, Human Capital & Education. This seems to be due to a slight decrease in the overall number of graduates (In ICT and arts and humanities) and on Average appearances in university rankings. It also slightly worsens its performance on dimension D3.4, Quality of Governance. As a result, the city remains in the 'Top 3' but moves two positions down, to the third position.

Cork (Ireland) moves one position up, coming fourth, with an improved score on D3.1, Human Capital & Education. However, the values for the 2017 edition have been estimated, while 'actual' data are available to calculate the 2019 scores, therefore the shift in performance should be read with caution.

The Estonian University of Life Sciences and a network of Research and Development institutes have helped to make Tartu a centre of education and research.

As a result, a wave of new companies created in the areas of biotechnology, science and IT are able to access these sources of expertise and manpower.

By cities recording the highest level developments

Wrocław is an important centre of the economy, as well as culture, science and tourism. With the number of inhabitants having increased by around 11% in the last 10 years, it is a motor for the development of the Lower Silesia region.

In Vilnius, around 40% of the population has been through tertiary education, making it a particularly attractive environment for investors. In 2011, the New York Times named Vilnius as one of the top 10 smart and well-managed cities of the world.

Some more significant changes can be appreciated if looking at individual cities which do not necessarily conquer the top spots in the rankings. In addition to Tallinn and Tartu already commented in the preceding section, some other cities in northern and eastern Europe indeed register high level developments on dimensions D2.1, Creative & Knowledge-based Jobs or D2.3, New Jobs in Creative Sectors, notably **Budapest** (Hungary), **Kaunas** (Lithuania), **Kraków** (Poland), **Vilnius** (Lithuania) and **Wrocław** (Poland)[46].

Budapest improves its score on D2.3 by approximately 24 points due to its enhanced performance on all the underlying indicators (**Jobs in new arts, culture and entertainment enterprises, Jobs in new media and communication enterprises** and **Jobs in new enterprises in other creative sectors**) which gain about 20 points each. **Kaunas** registers improvement on D2.3 thanks to notable progress made on **Jobs in new arts, culture & entertainment enterprises**. **Kraków** increases its score by about 22 points on the same dimension mostly due to improvements on **Jobs in new media & communication enterprises** and **Jobs in new enterprises in other creative sectors**. **Wrocław** registers an increase of around 20 points on D2.3 as well, led by developments on all the underlying indicators, and especially so on **Jobs in new media & communication enterprise** and **Jobs in new enterprises in other creative sectors**.

Vilnius gains approximately 25 more points on dimension D2.1 mostly due to improvements on **Jobs in arts, culture & entertainment**. Also the other two underlying indicators register higher scores, which are almost doubled.

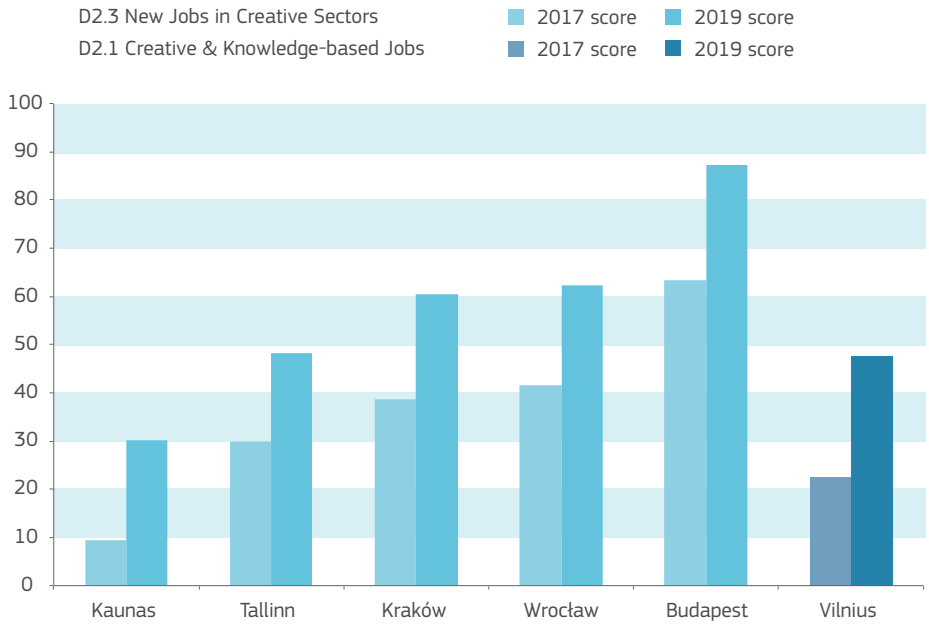

Figure 20.

Cities registering high-level developments from 2017 to 2019 on dimensions underpinning the 'Creative Economy' sub-index

Box 4.

How to interpret the indicators scores: a methodological note

As explained in more details in 'Annex A: The Cultural and Creative Cities Monitor methodology in ten steps', available for download on the Cultural and Creative Cities Monitor Online, all the Monitor indicators have been normalised using the minimum-maximum method, meaning that the scores on each component of the C3 Index are on a 0 to 100 scale to ease comparison.

'Annex E: The Cultural and Creative Cities Monitor data – 2019 edition' (also available online) provides a table with the interpretation scale for each indicator. This shows the correspondence between the normalised score and the raw data. To give an example, an excerpt of this table is given below.

Scale	Jobs in new arts, culture & entertainment enterprises per 100 000 inhabitants	Jobs in new media & communication enterprises per 100 000 inhabitants	Jobs in new enterprises in other creative sectors per 100 000 inhabitants	Graduates in arts and humanities per 100 000 inhabitants	Graduates in ICT per 100 000 inhabitants	Average appearances in university rankings
100	369.02	193.23	871.13	2255.18	393.41	15.5
80	298.25	155.78	703.76	1804.14	314.72	12.4
60	227.49	118.34	536.39	1353.10	236.04	9.3
40	156.72	80.89	369.02	902.07	157.36	6.2
20	85.96	43.45	201.65	451.03	78.68	3.1

According to the table, a score of 40 on Jobs in new arts, culture and entertainment, for instance, corresponds to around 157 jobs created in newly created companies in the field of arts, culture & entertainment, every 100 000 inhabitants. The data refers to the year for which the most recent data are available.

Macro-regional performance patterns

By Europe's macro-regions

Macro-regional performance as measured by the average scores of the C3 Index of all the sampled cities located in northern, southern, western and eastern Europe (see the Lexicon for the definition of Europe's macro-regions) shows that Northern Europe make up the top-performing area, closely followed by western Europe and, at a certain distance, by southern and eastern Europe (Figure 21).

However, a quite different picture emerges when looking at the average scores at sub-index level (Figure 21). On 'Cultural Vibrancy', western Europe leads closely followed by both northern and southern Europe. Western Europe is also the top performer on 'Creative Economy', with northern Europe coming close behind. Eastern Europe, coming third on 'Creative Economy', performs slightly better than southern Europe. It does not probably come as a surprise that the best 'Enabling Environment' is instead found in northern Europe. Western Europe follows, with a five-point difference in the average score, while southern and eastern Europe come third and fourth respectively with a very similar score.

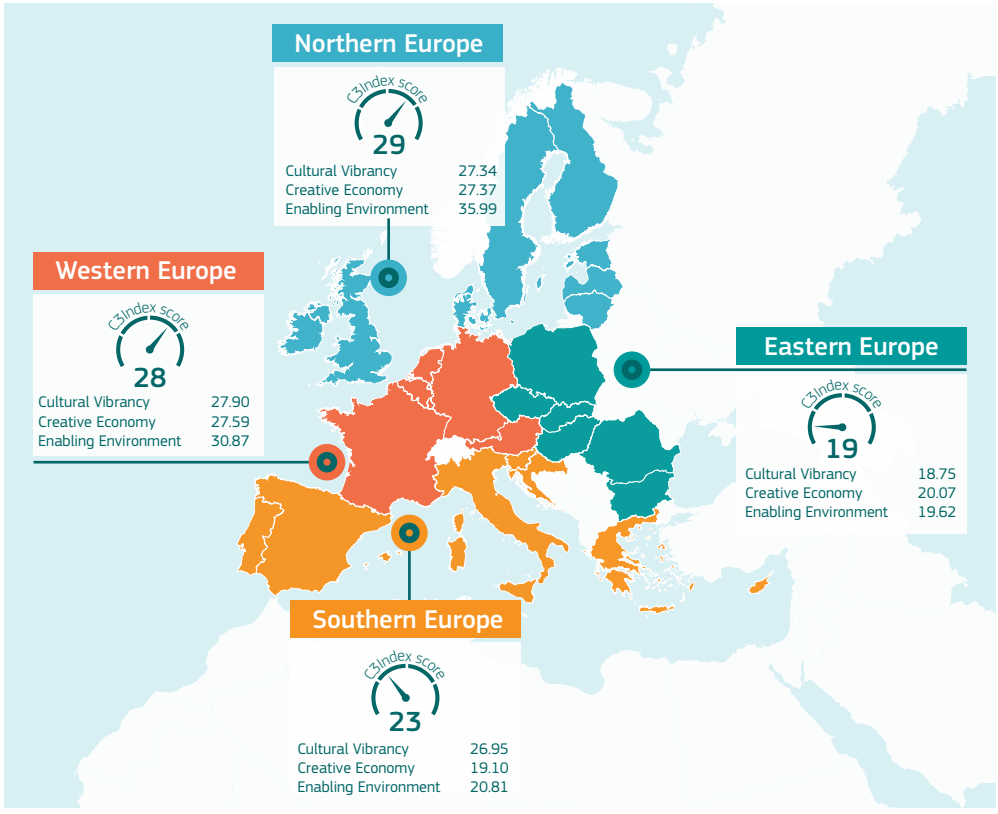

Figure 21.

C3 Index and underlying sub-indices scores by Europe's macro-region – 2019 edition

Note: The figure is based on a total of 179 ranked cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

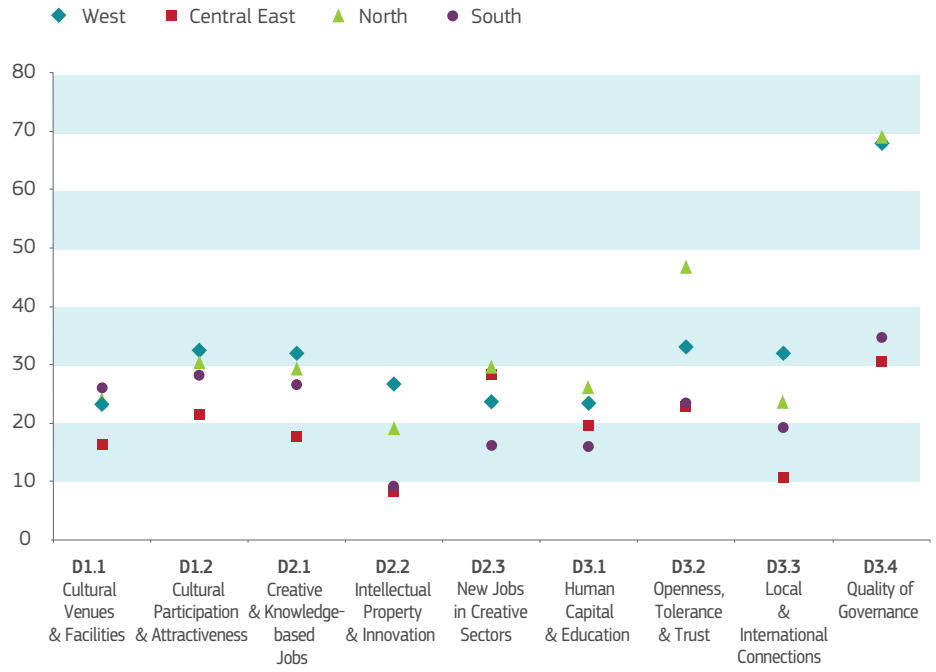

Figure 22.

Cultural and Creative Cities Monitor dimensions scores by Europe's macro-regions – 2019 edition

Note: The figure is based on a total of 179 ranked cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

A similar pattern can be observed at dimension level (Figure 22). Cities in Western, Northern and Southern Europe indeed have, on average, very similar scores on 'Cultural Vibrancy' dimensions.

However, the performance is more heterogeneous on 'Creative Economy' dimensions. In particular, cities in western and northern Europe obtain, on average, the best scores on D2.1, Creative & Knowledge-based Jobs and D2.2, Intellectual Property & Innovation. However, the best job creation dynamics are found in northern and eastern Europe's cities, coming first and second, respectively, on D2.3, New Jobs in Creative Sectors. Cities in eastern Europe, however, still fall behind on the total number of creative jobs (D2.1) and innovation outputs (D2.2). Cities in southern Europe generally have important margins of improvement on 'Creative Economy' and particularly so on D2.2, Intellectual Property & Innovation and D2.3, New Jobs in Creative Sectors.

Within 'Enabling Environment', cities in northern Europe lead in three of the four underlying dimensions (D3.1, Human Capital & Education, D3.2, Openness, Tolerance & Trust, and D3.4, Quality of Governance), very closely followed by cities in western Europe on D3.1 and D3.4. Cities in southern and eastern Europe are relatively close behind on D3.1, but there is still an important development gap on the other three dimensions. In particular, on D3.4, cities in western and northern Europe perform about two times better than cities in southern and eastern Europe.

By EU Cohesion Policy's regions

With cities playing a growing role in the provision of public services and being the recipients of increasingly larger transfers – especially at the European level through the EU Cohesion Policy Funds (see Lexicon) – the data presented here can also help identify development areas where EU funds could be allocated, with a view to strengthen growth across Europe. For the 2014-2020 programming period, the EU Cohesion Policy has indeed a strong focus on strengthening competitiveness and growth and jobs, and provides support to culture and creativity as important drivers and enablers of innovation and entrepreneurship. Culture is recognised as a key driver for increasing tourism revenue, for driving economic transformation towards knowledge-based economy and services as well as for giving a new lease of life to otherwise declining industries, by stimulating the design of new products and services.

The following figure shows the performance of the C3 Index cities, grouped into three typologies of regions based on their different stages of development. This categorisation comes from the EU Cohesion Policy 2014-2020, which differentiates between More developed, Transition and Less developed regions based on their GDP (see Lexicon). Depending on their level of development, regions receive from the EU Cohesion Policy Funds between 50% and 85% of all project costs. The remaining costs have to be paid for by other public (national or regional) or private sources. The overarching aim of the policy is to make Europe's regions and cities more competitive, fostering growth and creating jobs, with focus on less developed European countries and regions in order to help them to catch up and to reduce the economic, social and territorial divide that still exists in the EU.

Figure 23 shows that most of the cities located in More developed regions obtain the highest scores on the C3 Index. 68% of the cities in More developed regions are indeed found in the second quadrant (upper right corner). On the contrary, nearly the totality of cities located in Less developed regions – mostly located in the lower left corner – obtains the lowest scores.

There are, however, some interesting exceptions. Various cities in Estonia (Tallinn and Tartu), Lithuania (Vilnius), Poland (Kraków, Poznań, and Wroclaw) and Portugal (Porto) perform considerably well (i.e. above the median score), despite their less favourable socioeconomic conditions.

This is most likely due to their capacity to catch up with the EU's more prosperous regions[47] (CEPS, 2018). Such ability is confirmed by the analysis of the average performance of More and Less developed regions across the nine policy dimensions: as it can be seen in Figure 24, D2.3, New Jobs in Creative Sectors is the only dimension where the average performance scores of More and Less developed regions are aligned. This dimension can be considered a proxy of a city's capacity to generate new jobs as it measures the number of cultural and creative jobs created in new companies established in the most recent year for which data are available.

Development gaps instead persist on the other dimensions and particularly so on D2.2, Intellectual Property & Innovation, D3.3, Local & International Connections, D3.4, Quality of Governance and, to a lesser extent, D2.1, Creative & Knowledge-Based jobs. This result could help guide future Cohesion Policy Funds with a view to close the gaps that may hamper culture-led development in less-developed regions.

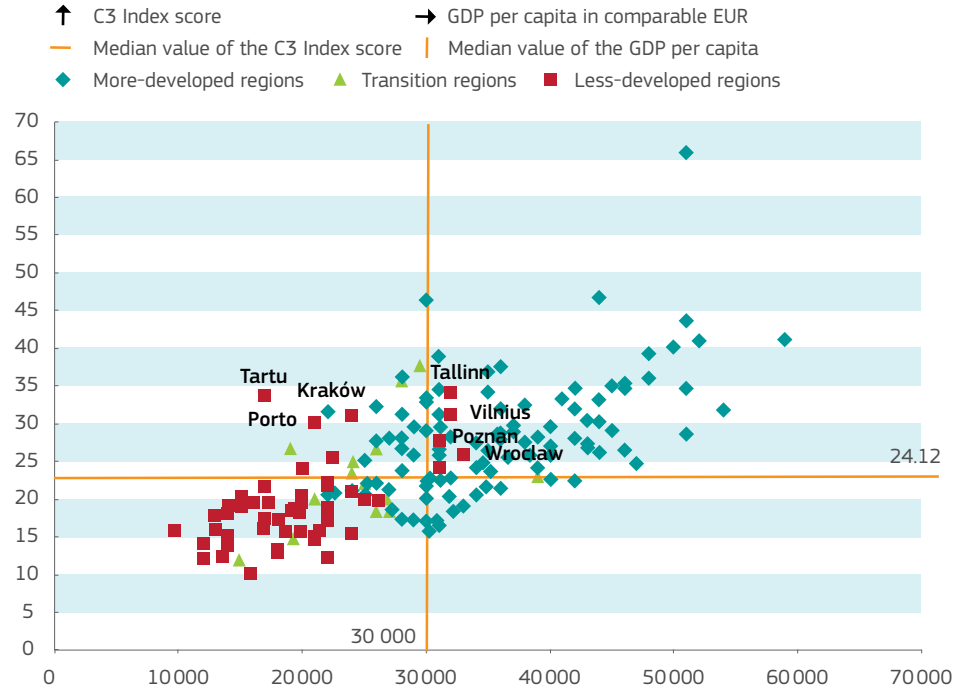

Figure 23.

C3 Index score and cities' annual GDP per capita by Europe's regions in different stages of development – 2019 edition

Note: (a) The graph is based on a total of 179 ranked cities due to better data coverage – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details. (b) The yellow line denotes the median value of the C3 Index score and GDP per capita, meaning the 'middle value' separating the higher half from the lower half of the city sample. (c) The reason why some cities marked as' less developed' have a GDP per capita above the median value is because there are different levels of GDP values: while the median value refers to the cities' GDP, the stage of development depends on the GDP per capita of the NUTS2 region where a city is located. (d) Data on GDP combine the most recent years available from 2014 up to 2016. For technical terms, see Lexicon.

Source: European Commission, Joint Research Centre, based on data from Eurostat (online data code: nama_10r_3gdp and met_10r_3gdp) and Directorate-General for Regional and Urban Policy.

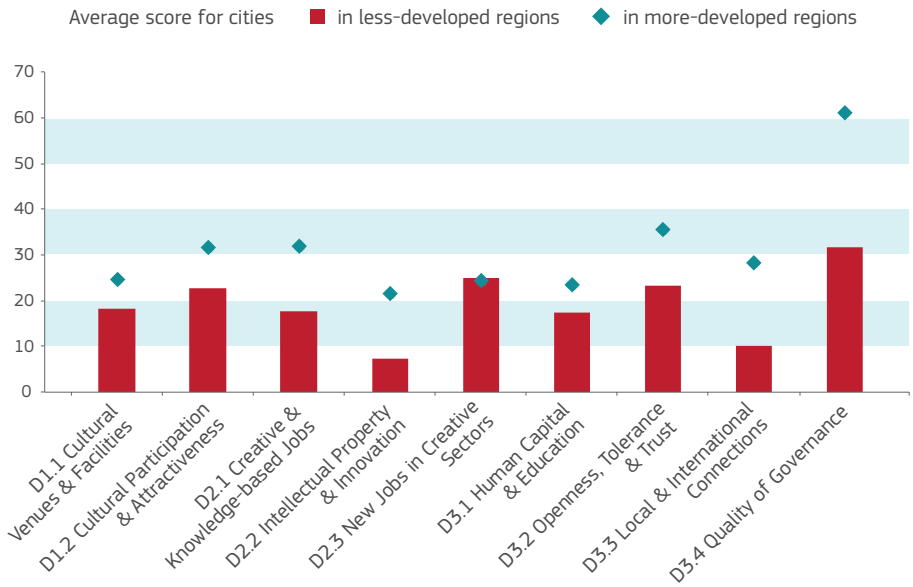

Figure 24.

Cities' performance on the nine Cultural and Creative Cities Monitor's dimensions in Europe's less and more developed regions – 2019 edition

Note: (a) The graph is based on a total of 179 ranked cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

4

Culture for social and economic resilience: Key findings

Assessing the spatial accessibility of European cultural venues as a social inclusion opportunity

In a context where social inequalities are high and generalised discontent keep growing, the **participation in arts and cultural activities can play an important role in the achievement of broader social policy goals**, such as promoting a**ctive citizenship** and **countering social exclusion**. Cultural participation contributes to raise cognitive, creative and relational capabilities that empower people and make them feel part of a community (e.g. Wilson, Gross, & Bull, 2016).

However, Eurostat data[48] show that, in 2015, **more than one third of Europeans do not participate at all in cultural activities**. There is therefore 'clear scope to increase cultural participation and bring Europeans together to experience what connects us instead of what divides us' (European Commission, *A New European Agenda for Culture*, 2018, p. 1).

Cities have a crucial role to play in this respect as **arts and cultural participation opportunities are mostly found in urban areas**. Through ages, and in particular from the Renaissance, the best artworks and the most important circles of intellectuals and creative talents have been closely associated with cities, their power and their economic strength. It is thus not surprising that as of today, the cultural venues and facilities such as theatres, concert halls, museums and art galleries of most nations are found in cities.

But what can we say about accessibility? To what extent are cultural activities available to all? Do all Europeans have (easy) access to a wide range of cultural and creative opportunities nearby, free or affordable for all? What does this imply in terms of (equitable) urban planning, for instance? And to which extent can the spatial distribution of cultural venues and activities affect the participation of diverse people and communities?

Box 5.

What is accessibility?

Accessibility can be broadly defined as the degree to which relevant destinations or services can be reached. Improving accessibility to services is increasingly considered a key policy goal across Europe as it can reduce social and territorial disparities.

Accessibility, however, is very difficult to be operationalised and measured. It is a multidimensional concept that has to do with personal (e.g. education, income, etc.), spatial, financial as well as physical aspects, such as the availability of pedestrian paths, the presence of and accessibility to 'empty spaces' (like vast green areas) or the presence of canals and bridges in 'floating cities' such as Venice, Amsterdam or Copenhagen, to name just a few.

Nonetheless, spatial distance is the first and more direct measure that can provide initial information on the amenities available locally (Apparicio, Abdelmajid, Riva, & Shearmur, 2008) for the promotion of the residents' lives.

These are very much complex questions that require a high amount of very detailed data to be properly addressed. Although researchers have extensively studied how the spatial configuration of diverse assets (e.g. health facilities, parks, etc.) shape people's lives (e.g. Kaczynski, Potwarka, & Saelens, 2008; Talen, 1997; Zhang, Lu, & Holt, 2011), this approach has rarely been applied to the field of arts and culture, let alone in a multi-country context. The lack of data is probably one of the main reasons.

Still, we argue that there is a strong need to channel future research in this direction with a view to support the European overarching objective 'to do more with culture'[49]. The analysis of the currently available data could be a useful starting point to understand what can be examined now and which data would be suitable for a more in-depth investigation of accessibility patterns.

The objective of this chapter is to **take an initial step towards assessing** how **cultural participation opportunities** are distributed **within and across the cities included in the Cultural and Creative Cities Monitor**, using geo-localised data on museums, theatres and cinemas[50]. A **two-fold progressive approach** is adopted. First, we assess to which extent the inhabitants of the analysed European cities are more or less 'exposed' to some forms of cultural offer by calculating the percentage of population having the closest cultural venue(s) within a (potentially) **walking or cycling distance**. However, the availability of cultural venues close to places where people live only partially describes 'spatial accessibility to culture' in a city. This is why, in a second step, we add a new layer of analysis (i.e. the public transport network) and consider cultural venues' accessibility based on the **availability of bus stops** in their proximity[51].

The key findings resulting from this analysis are presented below.

Population distance from cultural venues

In about 40% of European cities, most people would reach the closest cultural venues with a 30 minutes' walk

As shown in Figure 25, in 42% of the European cities analysed, more than half of the inhabitants are not more than 2 km away from the closest cultural venue(s). Translated in travel time, this distance corresponds to, approximately, a 30 minutes' walk or to 5 minutes by bicycle, provided that appropriate infrastructures are in place to access services by walking and cycling or, at least, that no relevant physical or morphological barriers are present.

Box 6.

What is walking and cycling distance?

The concepts of 'walking' and 'cycling' distance are increasingly important in the field of urban planning as they help combining urban development with other societally relevant goals such as health, life quality or social inclusion.

However, there is no definitive acceptable walking/cycling distance standard. This is directly related to the recognition that many variables affect a typical citizen's ability, decision, and/or desire to walk/cycle, as well as the overall perception of the distance and duration of the trip (e.g. Cascetta, Cartenì, & Montanino, 2013; Cheng & Chen, 2015; Schwanen, 2001).

For the purpose of this analysis, it is helpful to refer to the guidance on desirable, acceptable and preferred maximum walking distances for different purposes developed by the United Kingdom Institution of Highways and Transportation (2000). For sightseeing purposes, which can be considered similar to visiting cultural venues, 500 m is considered a 'desirable distance', 1 000 m an 'acceptable distance' and 2 000 m a 'preferred maximum'. The same institution also reports that, in the United Kingdom, the mean average length for walking journeys is approximately 1 000 m and for cycling 4 000 m.

We started by analysing available venues within 500 m and 1 000 m but the following results refer to the 2 000 m threshold only as this is where most of the examined venues appear to be located. For more details, see 'Annex D: Spatial distribution and accessibility of cultural venues in European cities: methodological approach', available for download on the Cultural and Creative Cities Monitor Online.

If we consider cities by population size, however, it is mostly in large cities (in the extra, extra-large (XXL) group of 20 cities with more than 1 million inhabitants, and in the extra-large (XL) group of 40 cities with between 500 000 - 1 million inhabitants) that the majority of people have at least one museum/theatre/cinema within a (potentially) walking/cycling distance: in 55 % of the 20 cities in the XXL group and in 45 % of the 40 cities in the XL group, more than half of the inhabitants are indeed not more than 2 km away from the closest cultural venue(s) (Figure 25).

Interestingly enough, though, small and medium sized cities are not so dissimilar: in 34 cities in the group of 79 small to medium-sized (S-M) cities with less than 250 000 inhabitants (or 43 %), more than 50 % of the local inhabitants can reach the closest venue with a 30 minutes' walk/in 5 minutes by bicycle. However, this percentage shrinks to 30 % for cities in the group of 40 large (L) cities with between 250 000 and 500 000 inhabitants..

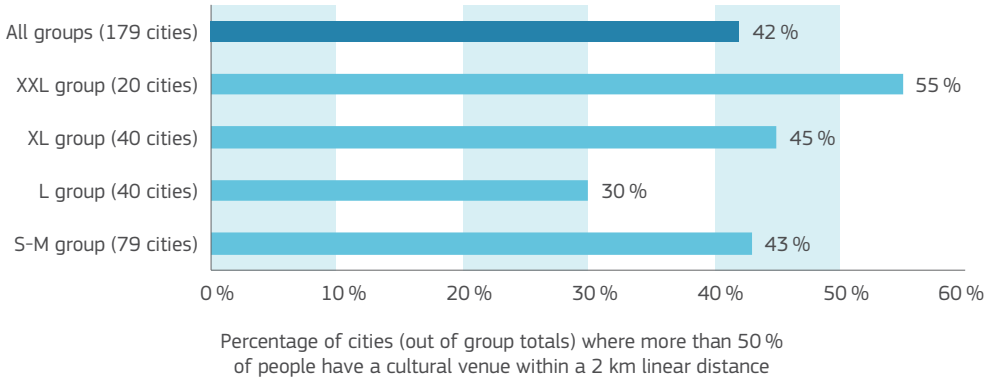

Figure 25.

Cities by population groups where the majority of inhabitants is not more than 2 km away from the closest cultural venue(s)

Note: (a) For consistency with the analysis of the Cultural and Creative Cities Monitor scores and rankings, the Figure is based on a total of 179 cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details. (b) XXL group > 1 million inhabitants; XL group, 500 000-1 million inhabitants; L group 250 000-500 000 inhabitants; S-M group 50 000-250 000 inhabitants.

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap and Joint Research Centre (GHS-POP). See Lexicon for technical terms.

Cities from Southern Europe feature the highest percentages of inhabitants having cultural venues in a (potentially) walking/cycling distance

Among the cities where most inhabitants have venues available within a walkable distance, two capitals, Paris (France) and Athens (Greece), feature particularly notable results: in these cities, more than 90 % of inhabitants live within 2 km from cultural venues.

In the eight following cities (Thessaloniki-Greece, Lisbon-Portugal, Barcelona-Spain, Salamanca-Spain, Florence-Italy, Copenhagen-Denmark, Bilbao-Spain, Tartu-Estonia), this percentage remains above 70 %. In the remaining 65 cities, percentages vary from a minimum of 50 % in Linz (Austria) up to a maximum of 69.8 % in Genoa (Italy).

Cities from southern Europe remarkably dominate the cities with the highest percentages of inhabitants having venues within a 2 km distance: in the top ten cities, seven are from southern Europe. The whole group of 75 cities is mostly composed of cities from both southern (26) and northern Europe (25), followed by cities in eastern and northern Europe (12 cities each).

Athens is a Role Model city in the Horizon 2020 project ROCK having the aim to promote an accessible-to-all concept among citizens and visitors. In particular, the city is supporting the development of socio-cultural entrepreneurial projects to address cultural heritage as a basis for urban regeneration and to facilitate the shift towards a knowledge-based society.

Table 6.

Cities where the majority of inhabitants is not more than 2 km from the closest cultural venue(s)

#	Cities	% of population living within 2 km from the closest cultural venue	Macro-region	#	Cities	% of population living within 2 km from the closest cultural venue	Macro-region
1	Paris-France	95.06	West	41	Essen-Germany	55.70	West
2	Athens-Greece	94.92	South	42	Dublin-Ireland	55.67	North
3	Thessaloniki-Greece	84.78	South	43	The Hague-Netherlands	55.35	West
4	Lisbon-Portugal	80.79	South	44	Trieste-Italy	55.15	South
5	Barcelona-Spain	78.89	South	45	Cluj-Napoca-Romania	54.83	East
6	Salamanca-Spain	77.31	South	46	Cagliari-Italy	54.75	South
7	Florence-Italy	76.42	South	47	Budapest-Hungary	54.52	East
8	Copenhagen-Denmark	76.37	North	48	Prešov-Slovakia	54.16	East
9	Bilbao-Spain	70.96	South	49	Stockholm-Sweden	54.11	North
10	Tartu-Estonia	70.08	North	50	Veliko Tarnovo-Bulgaria	53.64	East
11	Genoa-Italy	69.81	South	51	Marseille-France	53.33	West
12	Brussels-Belgium	69.77	West	52	Saint-Etienne-France	53.29	West
13	Weimar-Germany	68.26	West	53	Waterford-Ireland	53.14	North
14	Leiden-Netherlands	66.11	West	54	Frankfurt-Germany	53.09	West
15	Sibiu-Romania	65.99	East	55	Kalamata-Greece	52.98	South
16	Lyon-France	65.58	West	56	Bordeaux-France	52.78	West
17	Turin-Italy	64.16	South	57	Warsaw-Poland	52.67	East
18	Porto-Portugal	63.47	South	58	Iași-Romania	52.57	East
19	Brighton-United Kingdom	63.39	North	59	Seville-Spain	52.28	South
20	Berlin-Germany	61.59	West	60	Parma-Italy	52.10	South
21	Granada-Spain	61.56	South	61	Maribor-Slovenia	51.86	South
22	Liepāja-Latvia	60.48	North	62	Leeuwarden-Netherlands	51.80	West
23	Pula-Croatia	60.04	South	63	Limerick-Ireland	51.77	North
24	Cork-Ireland	59.47	North	64	Munich-Germany	51.72	West
25	Faro-Portugal	59.08	South	65	Bristol-United Kingdom	51.68	North
26	Vienna-Austria	58.98	West	66	Dundee-United Kingdom	51.56	North
27	Szeged-Hungary	58.60	East	67	Mainz-Germany	51.55	West
28	Pécs-Hungary	58.51	East	68	Košice-Slovakia	51.21	East
29	Amsterdam-Netherlands	58.42	West	69	Lleida-Spain	51.05	South
30	Lille-France	57.99	West	70	Graz-Austria	51.00	West
31	Valencia-Spain	57.71	South	71	Trento-Italy	50.76	South

#	Cities	% of population living within 2 km from the closest cultural venue	Macro-region	#	Cities	% of population living within 2 km from the closest cultural venue	Macro-region
32	Terrassa-Spain	57.66	South	72	Split-Croatia	50.42	South
33	Utrecht-Netherlands	57.32	West	73	Montpellier-France	50.14	West
34	London-United Kingdom	57.29	North	74	Groningen-Netherlands	50.08	West
35	Dresden-Germany	57.23	West	75	Linz-Austria	50.04	West
36	Baia Mare-Romania	56.79	East				
37	Milan-Italy	56.74	South				
38	Veszprém-Hungary	56.57	East				
39	Stuttgart-Germany	56.20	West				
40	Bologna-Italy	56.19	South				

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap and Joint Research Centre (GHS-POP). See Lexicon for technical terms.

The average minimum distance to the closest venue considerably varies across Europe

Although in nearly half of the European cities analysed people are, on average, no more than 2 km away from the cultural facility closest to their home, the average minimum distance to the closest museum/theatre/cinema considerably varies across Europe. It would take less than 10 minutes for people living in Athens (Greece) and Paris (France) to reach the closest venue (i.e. less than 1 km away) while in Norrköping (Sweden) the average minimum distance is not really walkable, being almost 10 times higher (9.6 km).

Taking the macro-regional dimension into account, the highest values for the average minimum distance (i.e. between 7 km and 9.6 km) are indeed generally found in north European cities. For these cities (like the Swedish Norrköping, Umeå, Lund and Uppsala) high distances usually highlight the presence of discontinuous urban areas, meaning small but populated built-up areas located far from the city centre, which is usually surrounded by forests or vast cultivated fields. This might be explained by the different development paths followed by urban areas across Europe, which has been generally more compact in Southern cities and characterised by lower density in north European cities (Kasanko et al., 2006).

Nevertheless, the average minimum distances by Europe's macro-region are quite similar (Figure 26). Although some macro-regional tendencies can be identified, very diverse cities are in fact located in each macro-region. For instance, in Southern Europe the average minimum distance that people have to cover to reach the closest cultural venue goes from a minimum of 853 m in Athens up to a maximum of 8.05 km in Ravenna (Italy), meaning an approximately 10 times higher distance (8.05 km).

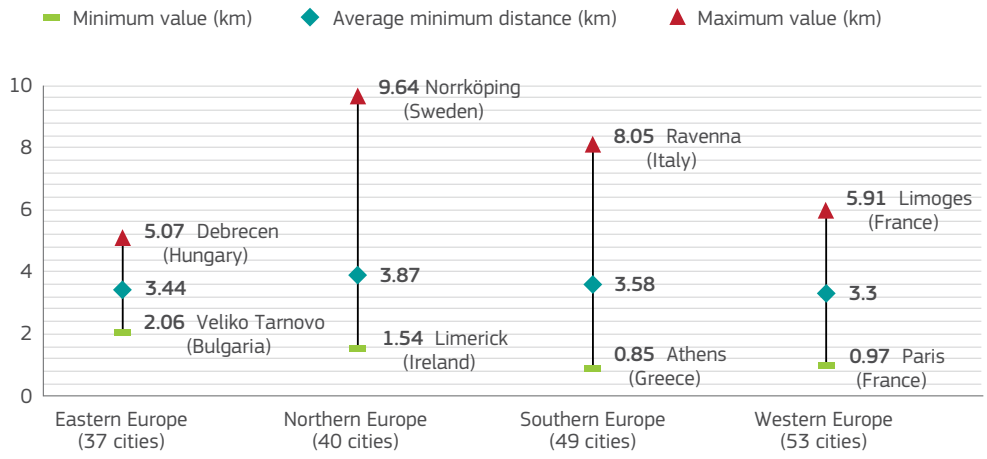

Figure 26.

Average minimum distance to the closest cultural venue and minimum-maximum values by Europe's macro-region

Note: for consistency with the analysis of the Cultural and Creative Cities Monitor scores and rankings, the figure is based on a total of 179 cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap and Joint Research Centre (GHS-POP). See Lexicon for technical terms.

When considering cities by population groups, the average minimum distance is slightly more favourable for the largest cities, although the average distance for cities in the XXL group is just 700 m higher than the average distance for cities in the S-M group (Table 7). Also, as shown by the standard deviation values, the smallest cities display higher heterogeneity in the average minimum distances compared to cities in the other groups.

Table 7.

Average minimum distance to the closest cultural venue and minimum-maximum values by population groups

Population groups	XXL group >1 million inhabitants (20 cities)	XL group 500 000 – 1 million inhabitants (40 cities)	L group 250 000 – 500 000 inhabitants (40 cities)	S-M group 50 000 – 250 000 inhabitants (79 cities)
Average distance (km)	3.08	3.36	3.46	3.78
Minimum average distance (km)	0.96	0.85	1.33	1.54
Maximum average distance (km)	5.10	6.17	6.30	9.64
Standard deviation	*(0.98)*	*(1.02)*	*(1.07)*	*(1.59)*

Note: to remain consistent with the analysis of the Cultural and Creative Cities Monitor scores and rankings, the table is based on a total of 179 cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details.

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap and Joint Research Centre (GHS-POP). See Lexicon for technical terms.

Accessibility of cultural venues by public transport

In European cities of all sizes the majority of cultural venues is highly accessible by public transport

The difficulty to reach cultural venues due to particularly high distances in some of the examined cities can generally be mitigated by transport connections.

The analysis of the bus stops available in close proximity to cultural venues in fact shows that most of these venues are (potentially[52]) very well served by public transport, which overall increases their potential accessibility: in 150 out of the 179 European cities analysed (or for 84 % of the city-sample), more than 50% of venues are highly accessible by public transport, meaning that they have more than 6 bus stops within 500 m. In addition, in 74 cities (or for 41 % of the city-sample), all the cultural venues considered have at least one bus stop available within 500 m.

It is particularly interesting to note that, although cities in the S-M groups seem to be relatively 'penalised' by the population distance analysis, accessibility by public transport completely changes the picture. As can be seen in Table 8, the average percentage of highly accessible venues only barely varies for cities in the XXL and XL groups (78% vs 77%) and in the L and S-M groups (72% vs 69%). Overall, the percentage of highly accessible cultural venues in the smallest cities is not so dissimilar from the same percentage in the largest cities.

The visualisation of the accessibility levels by cities ordered by population size shows even more clearly that accessibility by public transport is not so different across population groups (Figure 27).

Table 8.

Average percentage of venues with high, medium, low or no accessibility analysed by population groups.

	XXL group >1 million inhabitants (20 cities)	XL group 500 000 – 1 million inhabitants (40 cities)	L group 250 000 – 500 000 inhabitants (40 cities)	S-M group 50 000 – 250 000 inhabitants (79 cities)
High accessibility (≥ 6 bus stops within 500 m)	78%	77%	72%	69%
Medium accessibility (3-5 bus stops within 500m)	14%	14%	19%	16%
Low accessibility (≤ 2bus stops within 500m)	4%	6%	4%	7%
No accessibility (no bus stops within 500m)	3%	4%	5%	8%

Note: percentages may not sum up precisely to 100% due to rounding.

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap, Joint Research Centre (GHS-POP) and City of Venice (ACTV GTFS). See Lexicon for technical terms.

Nevertheless, transport can also generate negative societal effects such as accidents, greenhouse gas emissions, air pollution and noise (e.g. Thomson, Jepson, Hurley, & Douglas, 2008). At the city level, the presence of such a well-distributed transport network should therefore be assessed vis-à-vis not only its capacity to provide equal access opportunities but also keeping in mind competing societal and environmental concerns.

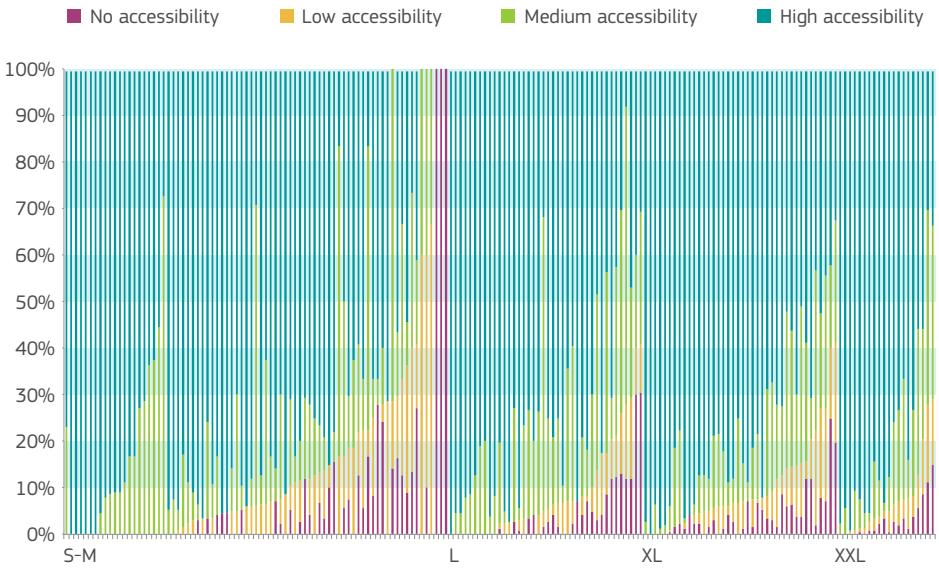

Figure 27.

Percentage of venues with no, low, medium and high accessibility in cities order by population size.

Note: High accessibility: ≥ 6 bus stops within 500 m; Medium accessibility: 3-5 bus stops within 500m; Low accessibility: ≤ 2bus stops within 500m; No accessibility: no bus stops within 500m.

Source: European Commission, Joint Research Centre, based on data from OpenStreetMap, Joint Research Centre (GHS-POP) and City of Venice (ACTV GTFS). See Lexicon for technical terms.

How culture and creativity relate to European cities' economic wealth and resilience

Starting around the 80s, a new economy largely focused on technology and knowledge-intensive sectors has emerged. This has increased the importance of culture for value creation and brought a larger focus on cities for their capacity to foster knowledge exchange, creativity and innovation (Clark, Lloyd, Wong, & Jain, 2002; Florida, 2005; Glaeser, Kolko & Saiz, 2001).

In the literature, two main mechanisms can be identified through which culture would contribute to this new economy. First, the 'Cultural and Creative Sectors (CCS) mechanism', demonstrated by the increasing weight of the CCS in national GDPs and international trade (KEA, 2006; D. Throsby, 2001, 2008; UNCTAD, 2010, 2013). Second, the 'cultural amenities mechanism', confirmed by the capacity of culture-related amenities such as arts centres and cultural heritage sites, but also aesthetics and lifestyles, to attract population, especially the high-skilled (Carlino & Saiz, 2008; Falck, Fritsch & Heblich, 2011; Nelson et al., 2016) as well as leisure visitors (Richards, 1996; Romão, Kourtit, Neuts & Nijkamp, 2018) to cities.

Given such mechanisms, the objective of this section is to determine whether culture is ultimately associated with European cities' economic wealth. The results – presented below – confirm the findings from a similar analysis presented in the Cultural and Creative Cities Monitor 2017 report (Montalto, Tacao Moura, Langedijk & Saisana, 2017).

Culture and economic wealth *mutually* reinforce each other

There is a positive and significant association between the C3 Index scores and the 2016 GDP per capita in comparable euros (see Lexicon). As shown in the scatter plot (Figure 28), higher GDP per capita levels – used here as a proxy of economic wealth – are usually found among the best performing cultural and creative cities.

This correlation could however simply reflect the influence of other common factors, such as national institutions or geographical location. To remove the effect of these other variables, we run an econometric regression model. In this model we take into account the effect of a number potentially significant factors, namely the population size and the country where the cities are located, in addition to the fact of being a capital city or not. Furthermore, we include in the model interaction terms between the C3 Index scores and both the population groups and the dummy variables representing the European regions to assess whether the culture-wealth association is significantly affected by city size or by location in a particular European region.

Figure 28.
C3 Index score and GDP (PPS)

Note: Data on GDP per capita are in PPS (or comparable euros), date from 2016 and combine data at metro level and NUTS-3 level for those cities for which a metro area has not been defined. The sample diminishes to N=155 due to missing data.

Source: European Commission, Joint Research Centre, based on data from Eurostat (online data code: nama_10r_3gdp and met_10r_3gdp).

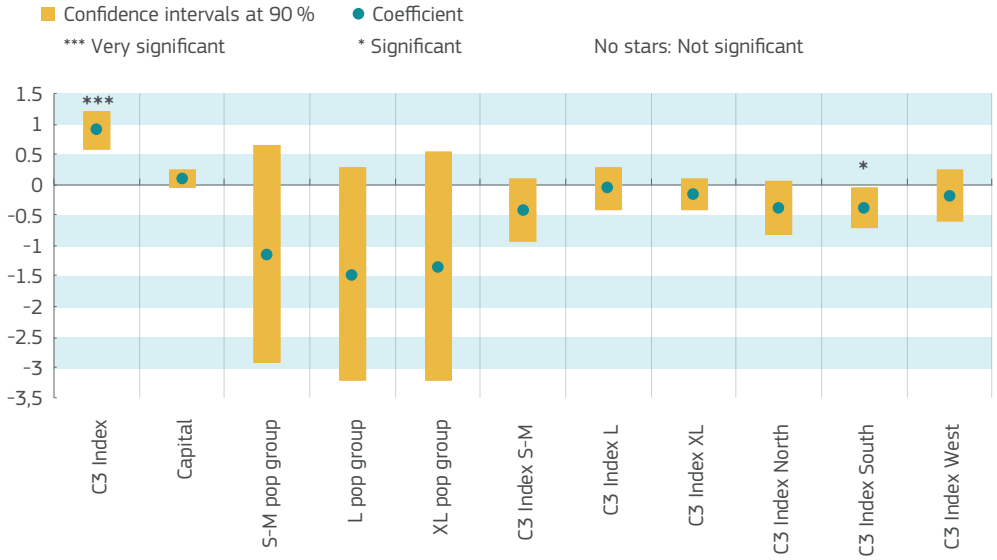

Figure 29.

C3 Index and other determinants of cities' economic wealth

Note: (a) An econometric model was used to determine whether culture (approximated by the C3 Index) is associated with GDP per capita in European cities in 2016. (b) The proposed regression model also takes into consideration other potential explanatory variables, such as the size of the cities and the country, to refine the estimation process and get more precise estimates of such relation. The reported figures refer to the association of the C3 Index as well as of these explanatory variables (except for the countries where the cities are located, which are not shown) with GDP in PPS (or comparable euros) per capita, in percentage points and for each percentage more in the C3 Index (holding all other explanatory variables constant). (c) Non-significant regression coefficients have a p-value above the standard level of significance (0.10). (d) Data on GDP 2016 come from Eurostat (Regional Statistics at metro-level, and NUTS 3 level for those cities for which a metropolitan area has not been defined). (e) The sample size diminishes to N=155 due to some missing data on GDP.

Source: European Commission, Joint Research Centre, based on data from Eurostat (online data code: nama_10r_3gdp, met_10r_3gdp and urb_cpop1).

The estimated coefficients in Figure 29 confirm the insights from Figure 28: there is a positive and significant correlation between the measure used as a proxy for culture and current GDP per capita levels, after controlling for a number of factors.

The value of the regression coefficient for the C3 Index (0.91) means that one percent point more in the C3 Index is linked with to nearly **one percent point more in the annual GDP per capita. In other words, one percent point in the C3 Index links on average to around EUR 289 more in the annual GDP per capita**. In view of this, culture and economic wealth seem to mutually reinforce each other, thus contributing to raise wealthier and economically resilient cities.

Interestingly enough, there are not significant differences between population groups, meaning that the correlation remains positive and significant regardless of the city population size. The fact of being a capital city is not a significant determinant either. On a similar ground, Carlino & Saiz (2008) find that there is substantial variation in amenity services across US cities that is not accounted for by city size. They also show that cities with better weather conditions, lower presence of manufacturing, an abundance of parks and more historic landmarks, among other amenities, are perceived as more attractive.

In addition, the results show that there are some regional differences, as suggested by the negative and statistically significant regression coefficient for the interaction terms corresponding to cities located in southern Europe compared to cities in eastern Europe, that represent the chosen reference group. This means that the effect of culture and creativity on local wealth is slightly stronger for cities in eastern Europe compared to southern Europe. This result may suggest that culture and economic wealth mutually reinforce each other more in regions that, despite their disadvantaged socioeconomic conditions, have registered the fastest growth rates in Europe, in the past few years (The World Bank, 2018).

Although the results are in line with the most recent literature on the topic (e.g. Hristova, Aiello & Quercia, 2018; Tubadji, 2012; Tubadji & Nijkamp, 2015), it should however be pointed out that many other factors could contribute to determine the level of local income, in addition to culture and the other potential determinants included in the regression. This is why we preferred adopting a cautious approach in the presentation of results and avoided referring to 'causal effects'. In addition to that, we might be faced with a problem of reverse causality where wealth determines culture, rather than the other way round, especially due to an overlap in time (i.e. most data underlying the C3 Index date from 2016, as the GDP[53]). The C3 Index, however, captures a broad concept of culture that encompasses cultural heritage landmarks and arts venues but also cultural and creative jobs as well as education-related variables, among others, which have been argued to be major determinants of economic wealth and growth (e.g. Barro, 2013; Bucci & Segre, 2011; Mincer, 1984). It is thus likely that the C3 Index is able to capture the 'composite effect' of culture and that the relation found actually goes in the desired direction (culture → wealth vs. wealth → culture), but further analysis is needed to test this hypothesis.

5

Conclusions and next steps

This second edition of the Cultural and Creative Cities Monitor enables users to benchmark and monitor the progress of 190 European cities across a rich set range of measures of comparable metrics on the 'Cultural Vibrancy', 'Creative Economy' and 'Enabling Environment', taking into account their diverse demographic and economic characteristics.

By considering aspects of city life and environment not strictly related to culture and creativity, the Cultural and Creative Cities Monitor attempts to take a broad view of a 'cultural and creative city'. At the same time, by proposing a reasoned structure of weights which values more culture and creativity-related indicators, it ensures that policy-makers are encouraged to invest more in culture and creativity as genuine engines of sustainable development and growth, and not only in complementary enablers such as the transport infrastructure or an efficient governance system.

As an **assessment** and **monitoring tool**, the Cultural and Creative Cities Monitor makes it possible to measure the local performance on culture and creativity related aspects as well as monitor their progress over time. As a **comparative measurement tool**, it can point to examples of good practice and enable learning by policy-makers, businesses or cultural operators. As an **extensive source of data**, it can inspire researchers to develop new research questions and approaches to understanding the role of culture and creativity in cities.

The **principal value added** of the Cultural and Creative Cities Monitor **is not in establishing rankings**. The main C3 Index serves to summarise the overall performance on culture and creativity that does not emerge directly by investigating the nine dimensions separately. Simultaneously, the results of the statistical analysis also point to the value of taking into account the Monitor's dimensions and indicators on their own merit. By doing so, **city-specific strengths and bottlenecks in promoting culture and creativity can be identified and can serve as input for evidence-based policy-making**. In this way, the Cultural and Creative Cities Monitor shows that there is no single 'formula' to copy, but rather a spectrum of possibilities along which each city has to position itself on the basis of a deep understanding of its unique characteristics and the relevant community's priorities and goals.

The main findings of the 2019 edition can be summarised as follows:

- **The 'ideal' cultural and creative city** would be composed of the following seven European cities, which take the first position on one or more of the nine measured policy dimensions: Weimar (Germany), Florence (Italy), Paris (France), Eindhoven (Netherlands), Budapest (Hungary), Glasgow (United Kingdom) and Aarhus (Denmark). This **confirms that no single city excels on all the nine dimensions** and that there is space for further improvement for European cities of all sizes.
- The **C3 Index 2019** shows **consistency in top rankings of larger cities** compared to the 2017 recalculated scores, with **Paris (France), Copenhagen (Denmark) and Florence (Italy) coming first** in their respective population groups.
- Still, **some cities in northern and eastern Europe** do register **high-level developments on 'Creative Economy' dimensions**, notably Budapest (Hungary), Tallinn (Estonia), Vilnius (Lithuania), Kaunas (Lithuania), Kraków (Poland), Wrocław (Poland) and Tartu (Estonia).
- Macro-regional performance as measured by the average scores of the C3 Index shows that **northern Europe makes up the top-performing macro-region**. However, on **'Cultural Vibrancy'** sub-index, **western Europe leads, very closely followed by both northern and southern Europe. Western Europe is also the top performer on 'Creative Economy'**, with northern Europe coming close behind. If we zoom into each single Monitor dimension, however, the best **job creation dynamics** are found, on average, both in **northern Europe**'s as well as in **central Europe**'s cities. **The best 'Enabling Environment'** is found in **northern Europe**.

- The analysis of the macro-regional performance patterns shows that future **EU Cohesion Policy funds** could further support **socio-economic convergence** and territorial cohesion by focusing on those dimensions showing the greatest divergence in performance, namely **creativity and innovation, transport connections and governance**;
- In the analysed city-sample, cultural venues are generally a 30-minute walk away (or just 5 minutes by bicycle) from where European citizens live and are highly accessible by public transports, as unveiled by the spatial analysis of cultural carried out for the first time in this report, at urban level and on a European scale.
- **Leading cultural and creative cities are** confirmed to be **more prosperous**: there is a **positive and significant association between the C3 Index scores and the 2016 GDP per capita** in comparable euros, even after controlling for a number of potentially confounding factors.

Future directions

The Cultural and Creative Cities Monitor represents a first attempt towards a better measurement and understanding of how cultural and creative cities behave and perform across Europe, based on the most relevant and comparable data available at the city level.

The Cultural and Creative Cities Monitor is not intended to be the definitive yardstick of city performance on culture and creativity. Nevertheless, the dimensions and indicators used in this first edition constitute a sound starting point, as confirmed by the good-to-strong correlations between all indicators and their respective dimensions. Furthermore, all dimensions correlate strongly with the three sub-indices and the C3 Index itself. This means that the statistical structure of the C3 Index 2019 remains coherent with its conceptual framework. In addition, the reasonably narrow confidence intervals for the majority of the cities' ranks (fewer than ±3 positions for around 80% of the cities) imply that the C3 ranks are also, for most cities, robust to changes in modelling assumptions (namely: the chosen weights and normalisation formula).

The Cultural and Creative Cities Monitor is expected to evolve as a 'living tool'. It will be tested thoroughly and continuously enhanced as new and better quality data become available. The domains of 'Cultural Vibrancy' and 'Enabling Environment' in particular are expected to be refined in future versions.

Due to the limitations of current data, the measurement of 'Cultural Vibrancy' is based on a combination of indicators relating to certain typologies of cultural venues (museums and art galleries, theatres, concert halls, cinemas, sights and landmarks of historical interest), tickets sold (at museums and cinemas) and overnight tourists. For the years to come, attention will put on cultural events and, more specifically on festivals, as they would be help better grasp cities' cultural dynamics. However, as exhaustive and comparable data on cultural events are not available also due to their 'elusive' nature, we will assess the feasibility of an ad hoc data collection project to be developed in cooperation with major actors in the field such as the Directorate-General for Education and Culture (DG EAC) and the European Festivals Association (EFA).

As regards the 'Enabling Environment', the objective is to add data on public funding for culture, as this could be an important enabling factor not only for the health of cultural venues, but also to attract artists and creative talent. To date it has not been possible to retrieve this kind of data at city level. The cooperation of cities themselves and, more particularly, with the OECD – which is also working to improve the availability of cultural statistics at sub-national levels – will be crucial to filling this gap.

One of the main objectives for the years to come is to support capacity building at city level with a view to fill in the existing data gaps. The upcoming webinar and a policy toolkit (that will be delivered in at least in four languages: English, French, Italian, Portuguese) will support this objective, along with showing how to best interpret data and gain insights for future policies from the Cultural and Creative Cities Monitor Online. We will also look into the development of international partnerships and projects with a view to join forces to get more and better data on culture-related aspects at city level.

In line with the frequency of update of the data sources used, the Cultural and Creative Cities Monitor will continue to be updated every two years. The third edition is thus expected to be released in 2021.

Annexes

Annex I: Selected and excluded cities

190 selected cities

COUNTRY	CITY	POP GROUP	COUNTRY	CITY	POP GROUP
Austria	Graz	L	Ireland	Cork	S-M
Austria	Linz	S-M	Ireland	Dublin	XL
Belgium	Antwerp	XL	Ireland	Galway	S-M
Belgium	Bruges	S-M	Ireland	Limerick	S-M
Belgium	Brussels	XXL	Ireland	Waterford	S-M
Belgium	Mons	S-M	Italy	Bologna	L
Bulgaria	Plovdiv	L	Italy	Cagliari	S-M
Bulgaria	Sofia	XXL	Italy	Florence	L
Bulgaria	Varna	L	Italy	Genoa	XL
Bulgaria	Veliko Tarnovo	S-M	Italy	Lecce	S-M
Cyprus	Nicosia	S-M	Italy	Matera	S-M
Czech Republic	Ostrava	L	Italy	Perugia	S-M
Czech Republic	Pilsen	S-M	Italy	Ravenna	S-M
Czech Republic	Prague	XXL	Lithuania	Kaunas	L
Germany	Berlin	XXL	Lithuania	Klaipeda	S-M
Germany	Essen	XL	Lithuania	Vilnius	XL
Germany	Weimar	S-M	Luxembourg	Luxembourg	S-M
Denmark	Aarhus	L	Latvia	Liepāja	S-M
Denmark	Copenhagen	XL	Latvia	Riga	XL
Estonia	Tallinn	L	Malta	Valletta	S-M
Greece	Athens	XL	Netherlands	Amsterdam	XL
Greece	Kalamata	S-M	Netherlands	Eindhoven	L
Greece	Patras	S-M	Netherlands	Leeuwarden	S-M
Greece	Thessaloniki	L	Netherlands	Maastricht	S-M
Spain	Burgos	S-M	Netherlands	Rotterdam	XXL
Spain	Cordova	L	Norway	Bergen	L
Spain	Las Palmas	L	Norway	Stavanger	S-M
Spain	Madrid	XXL	Poland	Gdańsk	L
Spain	Salamanca	S-M	Poland	Katowice	L
Spain	San Sebastián-Donostia	S-M	Poland	Kraków	XL
Spain	Santiago	S-M	Poland	Lublin	L
Spain	Zaragoza	XL	Poland	Warsaw	XXL
Finland	Helsinki	XL	Poland	Wrocław	XL
Finland	Turku	S-M	Portugal	Guimarães	S-M
France	Avignon	S-M	Portugal	Lisbon	XL
France	Bordeaux	XL	Portugal	Porto	S-M
France	Lille	XL	Romania	Baia Mare	S-M
France	Lyon	XXL	Romania	Bucharest	XXL
France	Marseille	XL	Romania	Cluj-Napoca	L
France	Paris	XXL	Romania	Sibiu	S-M
France	Toulouse	XL	Romania	Timișoara	L
Croatia	Osijek	S-M	Sweden	Lund	S-M
Croatia	Pula	S-M	Sweden	Stockholm	XL
Croatia	Rijeka	S-M	Sweden	Umeå	S-M
Hungary	Debrecen	S-M	Slovenia	Maribor	S-M
Hungary	Győr	S-M	Slovakia	Košice	S-M
Hungary	Pécs	S-M	Slovakia	Nitra	S-M
Hungary	Veszprém	S-M	Slovakia	Prešov	S-M

Selection criteria:

1. European Capital of Culture	2. UNESCO Creative City	3. Cultural festivals

COUNTRY	CITY	POP GROUP	COUNTRY	CITY	POP GROUP
United Kingdom	Glasgow	XL	Germany	Bremen	XL
United Kingdom	Liverpool	L	Germany	Cologne	XXL
Belgium	Ghent	L	Germany	Dresden	XL
Belgium	Kortrijk	S-M	Germany	Frankfurt	XL
Czech Republic	Brno	L	Germany	Hamburg	XXL
Germany	Hannover	XL	Germany	Karlsruhe	L
Germany	Heidelberg	S-M	Germany	Leipzig	XL
Germany	Mannheim	L	Germany	Mainz	S-M
Estonia	Tartu	S-M	Germany	Munich	XXL
Spain	Barcelona	XXL	Germany	Nuremberg	XL
Spain	Bilbao	L	Germany	Stuttgart	XL
Spain	Granada	S-M	Denmark	Odense	S-M
Spain	Seville	XL	Spain	Lleida	S-M
Spain	Terrassa	S-M	Spain	Valencia	XL
France	Limoges	S-M	Finland	Espoo	L
France	Saint-Etienne	S-M	Finland	Tampere	S-M
Hungary	Budapest	XXL	France	Montpellier	L
Italy	Milan	XXL	France	Nantes	L
Italy	Parma	S-M	Croatia	Split	S-M
Italy	Pesaro	S-M	Croatia	Zagreb	XL
Italy	Rome	XXL	Hungary	Szeged	S-M
Italy	Turin	XL	Italy	Brescia	S-M
Netherlands	Utrecht	L	Italy	Naples	XL
Poland	Łódź	XL	Italy	Trento	S-M
Portugal	Braga	S-M	Italy	Trieste	S-M
Sweden	Norrköping	S-M	Italy	Venice	L
Slovenia	Ljubljana	L	Netherlands	Amersfoort	S-M
United Kingdom	Bradford	XL	Netherlands	Groningen	S-M
United Kingdom	Bristol	L	Netherlands	Leiden	L
United Kingdom	Dundee	S-M	Netherlands	's-Hertogenbosch	S-M
United Kingdom	Edinburgh	XL	Netherlands	The Hague	XL
United Kingdom	Manchester	XL	Norway	Oslo	XL
United Kingdom	Norwich	S-M	Poland	Poznań	XL
United Kingdom	Nottingham	L	Poland	Toruń	S-M
United Kingdom	York	S-M	Portugal	Coimbra	S-M
Austria	Vienna	XXL	Portugal	Faro	S-M
Belgium	Leuven	S-M	Portugal	Sintra	L
Belgium	Liège	L	Romania	Iași	L
Belgium	Namur	S-M	Sweden	Gothenburg	XL
Belgium	Ostend	S-M	Sweden	Malmö	L
Switzerland	Basel	S-M	Sweden	Uppsala	S-M
Switzerland	Bern	S-M	Slovakia	Bratislava	L
Switzerland	Geneva	S-M	United Kingdom	Birmingham	XXL
Switzerland	Zurich	L	United Kingdom	Brighton	L
Cyprus	Limassol	S-M	United Kingdom	Leeds	XL
Czech Republic	Karlovy Vary	S-M	United Kingdom	London	XXL
Czech Republic	Olomouc	S-M			
Germany	Bochum	L			

Cities that met the selection criteria but were not included due to poor data coverage

No	European Capitals of Culture (shortlisted)	Why not included in the Monitor
1	Dubrovnik (Croatia)	Not in Urban Audit, < 50 000 inhabitants*
2	Elefsina (Greece)	Not in Urban Audit, < 50 000 inhabitants
3	Martin (Slovakia)	Not in Urban Audit
4	Paphos (Cyprus)	Not in Urban Audit, < 50 000 inhabitants
5	Reykjavik (Iceland)	Not in Urban Audit
6	Rhodes (Greece)	Not in Urban Audit, < 50 000 inhabitants
7	Segovia (Spain)	Not in Urban Audit
8	Siena (Italy)	Not in Urban Audit
9	Sønderborg (Denmark)	Not in Urban Audit, < 50 000 inhabitants
10	Istanbul (Turkey)	Only a few indicators available
	UNESCO Creative Cities	
1	Alba (Italy)	Not in Urban Audit, < 50 000 inhabitants
2	Amarante (Portugal)	Not in Urban Audit
3	Barcelos (Portugal)	Not in Urban Audit
4	Carrara (Italy)	Not in Urban Audit
5	Gabrovo (Bulgaria)	Not in Urban Audit
6	Kolding (Denmark)	Not in Urban Audit
7	Lillehammer (Norway)	Not in Urban Audit, < 50 000 inhabitants
8	Dénia (Spain)	Not in Urban Audit, < 50 000 inhabitants
9	Enghien-les-Bains (France)	Not in Urban Audit, < 50 000 inhabitants
10	Fabriano (Italy)	Not in Urban Audit, < 50 000 inhabitants
11	Idanha-a-Nova (Portugal)	Not in Urban Audit, < 50 000 inhabitants
12	Óbidos (Portugal)	Not in Urban Audit, < 50 000 inhabitants
13	Östersund (Sweden)	Not in Urban Audit, < 50 000 inhabitants
TOT	23	

** 50 000 inhabitants is the minimum threshold to be included in Eurostat's Urban Audit.*

Annex II: Guide to the Cultural and Creative Cities Monitor indicators and sources[54]

Variable name	Short explanation	Geo level	Reference period	Mode year	Availability	Source
Sub-Index 1	**Cultural Vibrancy**					
Dimension 1.1	**Cultural Venues & Facilities**					
1. Sights & landmarks	Points of historical, cultural and or artistic interest, such as architectural buildings, religious sites, monuments and statues, churches and cathedrals, bridges, towers and fountains, amongst other things, divided by the total population and then multiplied by 100 000.	City	2019	2019	100 %	TripAdvisor
2. Museums & art galleries	Number of museums that are open to the public divided by the total population and then multiplied by 100 000.	City	2019	2019	100 %	TripAdvisor
3. Cinemas	Number of cinemas in the city divided by the total population and then multiplied by 100 000.	City	2019	2019	99 %	OpenStreetMap
4. Concert & music halls	Number of theatres and other music venues (concert halls, clubs, etc.) and current shows divided by the total population and then multiplied by 100 000.	City	2019	2019	100 %	TripAdvisor
5.Theatres	Number of theatres in the city divided by the total population and then multiplied by 100 000.	City	2019	2019	99 %	OpenStreetMap
Dimension 1.2	**Cultural Participation & Attractiveness**					
6. Tourist overnight stays	Total annual number of nights that tourists/ guests have spent in tourist accommodation establishments (hotel or similar) divided by the total population.	City	2011-2017	2017	87 %	Eurostat (Urban Audit)
7. Museum visitors	Total number of museum tickets sold during the reference year divided by the total population and then multiplied by 1 000.	City	2011-2017	2011	81 %	Eurostat (Urban Audit)
8. Cinema attendance	Total number of tickets sold, referring to all films screened during the year, divided by the total population and then multiplied by 1 000.	City	2011-2017	2011	62 %	Eurostat (Urban Audit)
9. Satisfaction with cultural facilities	Percentage of population that is very satisfied with cultural facilities in the city.	City	2015	2015	32 %	Flash Eurobarometer 366 by TNS/ EC (Survey on 'Quality of life in cities')

Variable name	Short explanation	Geo level	Reference period	Mode year	Availability	Source
Sub-index 2	**Creative Economy**					
Dimension 2.1	**Creative & Knowledge-Based Jobs**					
10. Jobs in arts, culture & entertainment	Number of jobs in arts, culture- and entertainment-related activities such as performing arts, museums and libraries, divided by the total population and then multiplied by 1 000 (NACE Rev. 2, R-U).	City	2011-2017	2011	88 %	Eurostat (Urban Audit)
11. Jobs in media & communication	Number of jobs in media and communication-related activities such as book and music publishing, film production and TV, divided by the total population and then multiplied by 1 000 (NACE Rev. 2, J).	City	2011-2017	2016	87 %	Eurostat (Urban Audit)
12. Jobs in other creative sectors	Number of jobs in professional, scientific and technical, administrative and support service activities such as architecture, advertising, design, and photographic activities, divided by the total population and then multiplied by 1 000 (NACE Rev. 2, M-N).	City	2011-2017	2016	87 %	Eurostat (Urban Audit)
Dimension 2.2	**Intellectual Property & Innovation**					
13. ICT patent applications	Three-year average number of ICT patent applications (including: consumer electronics, computers and office machinery, and telecommunications) filed to the European Patent Office (EPO) by priority year divided by the total population and then multiplied by 1 million.	NUTS 3	2013-2015	2013-2015	94 %	OECD Regpat
14. Community design applications	Three-year average number of Community Design applications filed to the Office for Harmonization in the Internal Market (OHIM) divided by the total population and then multiplied by 1 million.	NUTS 3	2014-2016	2014-2016	97 %	Eurostat (Regional Statistics)
Dimension 2.3	**New Jobs in Creative Sectors**					
15. Jobs in new arts, culture & entertainment enterprises	Number of persons employed in the enterprises established in the reference year in arts, culture and entertainment activities such as performing arts, museums and libraries, divided by the total population and then multiplied by 100 000.	NUTS 3	2010-2016	2016	63 %	Eurostat (Regional Statistics)
16. Jobs in new media & communication enterprises	Number of persons employed in the enterprises established in the reference year in in media and communication activities such as book and music publishing, film production and TV, divided by the total population and then multiplied by 100 000.	NUTS 3	2010-2016	2016	63 %	Eurostat (Regional Statistics)
17. Jobs in new enterprises in other creative sectors	Number of persons employed in the enterprises established in the reference year in professional, scientific and technical activities such as architecture, advertising, design, and photographic activities, divided by the total population and then multiplied by 100 000.	NUTS 3	2010-2016	2016	63 %	Eurostat (Regional Statistics)

Variable name	Short explanation	Geo level	Reference period	Mode year	Availability	Source
Sub-index 3	**Enabling Environment**					
Dimension 3.1	**Human Capital & Education**					
18. Graduates in arts & humanities	Number of tertiary education graduates (ISCED 2011 levels 5-8) in arts and humanities courses divided by the total population and then multiplied by 100000.	City	2013-2015	2015	89%	ETER project
19. Graduates in ICT	Number of tertiary education graduates (ISCED 2011 levels 5-8) in Information and Communication Technologies courses divided by the total population and then multiplied by 100000.	City	2013-2015	2015	89%	ETER project
20. Average appearances in university rankings	Average number of universities' appearances in four different university rankings: QS, Shanghai, Leiden and Times.	City	2018	2018	100%	QS, Shanghai, Leiden, Times rankings
Dimension 3.2	**Openness, Tolerance & Trust**					
21. Foreign graduates	Percentage of the total number of tertiary education graduates (ISCED 2011 levels 5-8) who is foreigner.	City	2013-2015	2015	89%	ETER project
22. Foreign-born population	Percentage of the total population who is foreign-born.	City	2011-2017	2017	84%	Eurostat (Urban Audit)
23. Tolerance of foreigners	Percentage of the population who very strongly agrees with the statement: 'The presence of foreigners is good for this city'.	City	2015	2015	30%	Flash Eurobarometer 366 by TNS/ EC (Survey on 'Quality of life in cities')
24. Integration of foreigners	Percentage of the population who very strongly agrees with the statement: 'Foreigners who live in this city are well integrated'.	City	2015	2015	32%	Flash Eurobarometer 366 by TNS/ EC (Survey on 'Quality of life in cities')
25. People trust	Percentage of the population who very strongly agrees with the statement: 'Generally speaking, most people in this city can be trusted'.	City	2015	2015	32%	Flash Eurobarometer 366 by TNS/ EC (Survey on 'Quality of life in cities')
Dimension 3.3	**Local & International Connections**					
26. Accessibility to flights	Population-weighted average number of accessible passenger flights per day, within 1h30 of travel by road.	City	2016	2016	99%	Directorate-General for Regional and Urban Policy
27. Accessibility by road	Population accessible within 1h30 by road, as share of the population in a neighbourhood of 120 km radius.	City	2016	2016	99%	Directorate-General for Regional and Urban Policy
28. Accessibility by rail	Population accessible within 1h30 by rail (average total travel time), as share of the population in a neighbourhood of 120 km radius.	City	2014	2014	99%	Directorate-General for Regional and Urban Policy
Dimension 3.4	**Quality of Governance**					
29. Quality of governance	Computed indicator measuring the quality of government in three areas of public services: education, healthcare and law enforcement.	NUTS 2, NUTS 1 and NUTS 0	2017	2017	96%	Directorate-General for Regional and Urban Policy

Notes: A Community design is a unitary industrial design right that covers the European Union. A design is defined as the appearance of the whole or a part of a product resulting from the features of, in particular, the lines, contours, colours, shape, texture and/or materials of the product itself and/or its ornamentation.

ISCED 5: short cycle tertiary education. ISCED 6: Bachelor's or equivalent levels Programmes. ISCED 7: Master of equivalent level Programmes. ISCED 8: Doctoral or Equivalent level Programmes.

NACE: is the statistical classification of economic activities in the European Union (EU). NACE is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic activity in the fields of economic statistics (e.g. production, employment and national accounts) and in other statistical domains developed within the European statistical system (ESS). NACE Rev. 2, a revised classification, was adopted at the end of 2006 and applied from 2007 onwards.

http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE)

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Endnotes

1 Decision No 445/2014/EU of the European Parliament and of the Council of 16 April 2014 establishing a Union action for the European Capitals of Culture for the years 2020 to 2033 and repealing Decision No 1622/2006/EC
2 https://ec.europa.eu/programmes/creative-europe/actions/capitals-culture_en
3 SWD(2018) 491 final, https://ec.europa.eu/culture/sites/culture/files/library/documents/staff-working-document-european-agenda-culture-2018.pdf
4 https://composite-indicators.jrc.ec.europa.eu/cultural-creative-cities-monitor/
5 Due to its size, London is not among the 'top' Cultural and Creative Cities because nearly all of the Monitor's indicators are expressed in per capita terms. This approach is primarily intended to enable cross-city comparability but also rewards more 'inclusive' cities which have greater cultural and creative assets per inhabitant. As London eclipses other European cities with its population of 8 million (almost three times as big as Berlin, the second largest EU city), it does not lead on any dimension in the overall ranking, but does reach third place among the 20 cities in its population group.
6 To make the 2017 and 2019 scores fully comparable, a number of adjustments have been made retroactively. For instance, the 22 new eligible cities have also been added to the 2017 dataset. More details on the Monitor's methodology and the 2017-2019 adjustments can be found in 'Annex A: The Cultural and Creative Cities Monitor methodology in ten steps' and 'Annex B: Adjustments to the Cultural and Creative Cities Monitor and year-on-year comparability', available for download on the Cultural and Creative Cities Monitor Online.
7 The Monitor uses the EU Quality of Government Index (QoG) as this is – to the best of our knowledge – the only source of comparable data on quality of government at the sub-national (mainly NUTS 2) level. It measures the extent to which citizens think their public-sector services (such as education, healthcare and law enforcement) are free from corruption, are of good quality and are allocated impartially. In the absence of culture- and creativity-specific institutional indicators (to measure, for instance, the appropriateness of public policies to support culture and creativity or cultural heritage governance), the QoG Index was selected as a relatively good proxy of well-functioning government institutions that can contribute to the 'liveability' of a place and its attractiveness for creative talent.
8 Future research could help disentangling the factors explaining these trends, for instance 'by selecting case study regions that either fit – or, quite the opposite, go against – the trend observed in their neighboring regions within the same country' (Charron & Lapuente, 2018, p. 24).
9 Most recent data available are used for each indicator and for each of the cities included in the Monitor. This means that the observed developments happened over different time periods. For instance, the observed increase in Budapest and Kaunas on 'Creative Economy' dimensions occurred between 2013 (i.e. year of the data included in the 2017 edition) and 2015 (i.e. year of the data included in the 2019 edition). For Krakow, Tallinn and Wrocław, the time span considered is of six years (2010-2016). For Vilnius, the time period considered is also of six years but having 2011 as baseline year (2011-2017). For more details on the data selection criteria, see 'Annex A: The Cultural and Creative Cities Monitor methodology in ten steps'available for download on the Cultural and Creative Cities Monitor Online.
10 'There is some tendency […] in that the poorest Member States clearly grew faster (an average growth rate of 6 % resulting in a cumulative increase in real income per capita in some cases of more than 200 % between 1999 and 2016), versus only about 2 % for the richer Member States (resulting in an increase of only 50 % over these years)' (CEPS, 2018, p. 6).
11 Clearly, accessibility by public transport will also depend on several additional factors other than the distance from a bus stop, including the cost of tickets and the frequency of bus rides. Data on the latter have already been identified and will be added to the analysis as part of more in-depth research on spatial accessibility that will be carried out in a follow-up to this report.
12 To remain consistent with the analysis of the Cultural and Creative Cities Monitor scores and rankings, the table is based on a total of 179 cities – see 'Chapter 2: The Cultural and Creative Cities Monitor 2019: approach and new features' for more details of the selected (190) and ranked (179) cities.
13 An econometric model was used to determine whether culture (approximated by the C3 Index) is associated with GDP per capita in European cities in 2016. The proposed regression model also takes into consideration other potential explanatory variables, such as the size of the cities and the country, to refine the estimation process and get more precise estimates of such relation. See 'Chapter 4 - Culture for economic and social resilience: Key findings' for more details.
14 For more details see 'Annex C: Statistical Assessment of the C3 Index 2019', available for download on the Cultural and Creative Cities Monitor Online.
15 Rome Declaration, March 2017, https://www.consilium.europa.eu/en/press/press-releases/2017/03/25/rome-declaration/pdf
16 European Council conclusions, December 2017, https://www.consilium.europa.eu/media/32204/14-final-conclusions-rev1-en.pdf
17 COM(2017) 673 final, https://ec.europa.eu/commission/sites/beta-political/files/communication-strengthening-european-identity-education-culture_en.pdf
18 SWD(2018) 167 final, https://ec.europa.eu/culture/sites/culture/files/staff_working_document_-_a_new_european_agenda_for_culture_2018.pdf
19 The Urban Agenda for the EU, May 2016, https://ec.europa.eu/futurium/en/node/1829
20 http://www.cultureforcitiesandregions.eu

21 https://ec.europa.eu/programmes/creative-europe/content/capacity-building-activities-european-capitals-culture_en
22 'Policy development – culture and cultural heritage for local development project', see 2019 annual work programme for the implementation of the Creative Europe Programme, https://ec.europa.eu/programmes/creative-europe/sites/creative-europe/files/library/c-2018-6687.pdf, pp. 126.
23 See European Framework for Action on Cultural Heritage, https://ec.europa.eu/culture/sites/culture/files/library/documents/staff-working-document-european-agenda-culture-2018.pdf, pages 18 and 22.
24 The 2030 Agenda for Sustainable Development, September 2015, https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
25 The New Urban Agenda, October 2016, http://habitat3.org/the-new-urban-agenda/
26 http://habitat3.org/wp-content/uploads/New-Urban-Agenda-GA-Adopted-68th-Plenary-N1646655-E.pdf
27 https://publications.europa.eu/en/publication-detail/-/publication/5d33c8a7-2e56-11e8-b5fe-01aa75ed71a1/language-en/format-PDF/source-68820857
28 https://ec.europa.eu/eurostat/web/culture
29 Despite the crucial importance of these activities in rural areas as a means of improving local economic and social circumstances, the Cultural and Creative Cities Monitor focuses on cities (or densely populated areas), due to better data coverage. However, some small cities of around 50 000 inhabitants are included in the Monitor, which may offer some insights into the performance of sparsely populated areas.
30 Eurobarometer 87, Spring 2017, http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/Survey/getSurveyDetail/instruments/STANDARD/surveyKy/2142
31 https://composite-indicators.jrc.ec.europa.eu/cultural-creative-cities-monitor
32 SWD(2018) 491 final, https://ec.europa.eu/culture/sites/culture/files/library/documents/staff-working-document-european-agenda-culture-2018.pdf
33 See 'PILLAR 2: CULTURAL HERITAGE FOR A SUSTAINABLE EUROPE - Cluster of Actions 4: Regenerating cities and regions through cultural heritage', p. 17.
34 For more details on the indicators used, see Annex II of the present report.
35 Additional web data sources have been enquired, including Google and Foursquare, to explore the possibility to include more typologies of cultural venues in the framework (e.g. arts centres). Nevertheless, OpenStreetMap has finally been retained as a relevant source for the Monitor as it provides a clearer and more transparent categorisation of cultural venues, and it allows for open data manipulation and reuse.
36 https://composite-indicators.jrc.ec.europa.eu/cultural-creative-cities-monitor/
37 In order to apply the festival criterion in a coherent way across Europe, only Europe-wide comparable data sources have been used, notably: the Europe for Festivals, Festivals for Europe platform - https://www.festivalfinder.eu/) and a Wikipedia page on film festivals in Europe (https://en.wikipedia.org/wiki/List_of_film_festivals_in_Europe). See more details in the Lexicon.
38 To be included, cities have to meet minimum data coverage thresholds, meaning at least 45 % data coverage at the index level and at least 33 % for the 'Cultural Vibrancy' and 'Creative Economy' sub-indices.
39 See Annex I in this report for the list of included cities and their respective population group, as well as the list of excluded cities.
40 Cultural Vibrancy (or vitality) is a very much complex concept that has been more broadly discussed by, for instance, Buscema, Ferilli, Gustafsson, & Sacco, 2019; Jackson, Kabwasa-Green, & Herranz, 2006; Montalto, Tacao Moura, Langedijk & Saisana, 2019. As one of the main objectives of the Cultural and Creative Cities Monitor is to create a harmonised and comparable set of indicators for European cities, the concept has here been proxied by using two main typologies of indicators related to the presence of cultural facilities and cultural participation. No comparable data, however, is currently available for other and equally relevant aspects such as the presence of 'informal' cultural spaces and cultural production.
41 The Cultural and Creative Cities Monitor uses the EU Quality of Government Index (QoG) as, to the best of our knowledge, it is the only source of comparable data on quality of government, available at the sub-national (mainly NUTS 2) level. It measures the extent to which citizens think their public sector services (such as education, healthcare and law enforcement) are free from corruption, of good quality and allocated impartially. In the absence of culture- and creativity-specific institutional indicators (to measure, for instance, the appropriateness of public policies to support culture and creativity or cultural heritage governance), the QoG Index was selected as a relatively good proxy of well-functioning government institutions that can contribute to the 'liveability' of a place and its attractiveness for creative talent.
42 Correlation measures the strength of the linear relationship between two variables. A high correlation suggests a positive relationship between two variables, in which higher values of one variable are usually associated with higher values of the other. However, the existence of a relationship does not necessarily imply that one variable causes the other. Correlation may be evidence of such causal links, but it may also be due to the two variables causing or being caused by a third variable.
43 See 'Annex C: Statistical Assessment of the Cultural and Creative Cities Index 2019', available for download on the Cultural and Creative Cities Monitor Online.
44 The Directorate-General for Regional and Urban Policy (DG REGIO) of the European Commission provides the full methodology to the cities that wish to collect data on these perception-based indicators. Awareness raising and capacity building is one of the main priorities for the years to come with the precise objective of facilitating the uptake of existing data collection opportunities by European cities (see also 'Chapter 2 – The Cultural and Creative Cities Monitor: approach and new features').
45 See endnote 7 and 8.

46 In most cases, these developments happened over a relatively large span of years. Each edition of the Monitor in fact gathers the most recent available data on each indicator for each city. This means that, for instance, the observed increase for the cities of Budapest and Kaunas occurred between 2013 (i.e. year of the data included in the 2017 edition) and 2015 (i.e. year of the data included in the 2019 edition). For Kraków, Tallinn and Wrocław, the time span considered is even of six years (2010-2016). For Vilnius, the time period considered is also of six years but having 2011 as baseline year (2011-2017).

47 "There is some tendency [...] in that the poorest MS clearly grew faster (an average growth rate of 6 % resulting in a cumulative increase in real income per capita in some cases of more than 200 % between 1999 and 2016), versus only about 2 % for the richer MS (resulting in an increase of only 50 % over these years)." (CEPS, 2018, p. 6).

48 Eurostat, November 2017, https://ec.europa.eu/eurostat/statistics-explained/index.php/Culture_statistics_-_cultural_participation_by_socioeconomic_background

49 The 'New European Agenda for Culture' has the goal to respond "to the European Leaders' invitation to do more, through culture and education, to build cohesive societies" as well as "a more inclusive and fairer Union, supporting innovation, creativity and sustainable jobs and growth". See also Chapter 1 on the policy context framing the work presented in this report.

50 For more details on the cultural venues selected and the reason why other relevant venues could not be included in the analysis, see 'Annex D: Spatial distribution and accessibility of cultural venues in European cities: methodological approach', available for download on the Cultural and Creative Cities Monitor Online.

51 For a more detailed explanation of the methodology, see 'Annex D: Spatial distribution and accessibility of cultural venues in European cities: methodological approach', available for download on the Cultural and Creative Cities Monitor Online.

52 Accessibility by public transport will depend also on a number of additional factors than the distance from a bus stop, among which the cost of tickets and the frequency of bus rides. Data on the latter have already been identified and will be added to the analysis as part of a more in-depth research on spatial accessibility that will be carried out as a follow up to this report.

53 The C3 Index is calculated using the most recent data available for each of the 190 cities and each of the 29 underlying indicators. Overall, the 2019 edition of the Index includes data that cover a period that go from 2010 up to 2017 for statistical data and 2019 for web data. Ideally, we would have preferred using the GDP from 2017 or 2018 in order to assess how culture affects 'future' income but data coverage is very poor for recent years. The use of GDP data from 2016 is however coherent with the dataset's structure: the year 2016 is in fact the 'mode year' across the full data sample.

54 The full dataset and metadata are available for download on the Cultural and Creative Cities Monitor Online – see 'Annex E: The Cultural and Creative Cities Monitor data – 2019 edition'.

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