Cultural and Creative Industries in the Brussels Region. Challenges and opportunities of the ecosystem

Ruba Saleh and Christian Ost

Abstract:

Brussels Region has a very ambitious circular economy program which is starting to show its fruits in the sectors of interest of the region, namely: construction, resources and waste, logistics and commerce. Although the region is also very rich of diversified Cultural and Creative Industries (CCIs), the contribution of CCIs to this regional green transition has not yet been really taken into consideration neither in the regional circular economy agenda nor by the lifelong learning programs. The 2019 edition of the Cultural and Creative Cities Monitor places Brussels 92nd out of 190 European cities in terms of overall cultural performance. This research paper aims at mapping the CCIs ecosystem in the Brussels Region and exploring what reskilling/upskilling programs are needed to enhance their role as levers for local and sustainable tourism development.

For this preliminary mapping, desk research was carried out between April and October 2021 while for mapping the reskilling/upskilling programs, a survey was sent to the mapped ecosystem. Throsby's concentric circles model theoretical framework was adopted and the CCIs were classified accordingly. This preliminary mapping of 1,170 CCIs took into consideration the 19 municipalities of the Brussels Region and consisted of desk research. It is worth mentioning that this mapping is neither conclusive nor exhaustive. It is instead a first step towards creating a common understanding of the richness and diversity of existing actors and activities. A nugget of information aimed at triggering reflection on the needs and how the ecosystem could be enhanced in the future.

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Keywords: Brussels Region, Cultural and Creative Industries (CCIs), upskilling/reskilling, sustainable tourism, cultural entrepreneurship.

Introduction

The Cultural and Creative Industries (CCIs) are now part of a context of economic transition and sustainable development (EY 2021, KEA 2020a, KEA & PPMI 2019; IDEA Consult et al., 2021; OECD and ICOM 2019, Potts 2021; Throsby 2018, UNESCO and the World Bank 2021; Voices of culture 2021). The economic transition is based on the theories of long economic movements that have gone through history and in particular ensured the industrial revolution and its expansion through long cycles of growth separated by ebbs and major crises. The succession over time of basic inventions (steam engines, electricity, iron and steel, transport technology, digital technology and biotechnology) have anchored new industries in a dynamic economic and social fabric. The principle of innovation, a phenomenon derived from creativity itself, made it possible to transform inventions into new products, services, and organizations (Delbeke 1984). The example of the automobile industry is characteristic of it, since the invention of the thermic engine was accompanied by innovations of cars, innovations of associated services, and organizational innovation (assembly lines).

Even if creativity is an artistic concept at its origin, the creative industries have only accompanied these long economic movements in recent years. The marginal economic nature of cultural activities in the Global Production Network (GPN), together with the difficulty of applying economic and managerial theory to these non-market sectors, explains why the Cultural and Creative Industries have taken longer to develop than in other productive sectors (Blaug 1980).

It should be noted that the processes of growth, of cyclical crisis and of transition towards new forms of production, consumption, and organization, are also cultural and social phenomena which can explain a wide disparity in the forms of development of CCIs in different countries.

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Culture and artistic activities are not managed or financed in the same way everywhere, and the innovative character of the CCIs sometimes comes from a vision of culture as a public or common good, or a vision of culture based on entrepreneurship and individual risk-taking.

It has also been argued that creativity was a dominant urban feature. Richard Florida's creative class (2002) used to be broken down into super creative class (like engineering, research, arts, design, media workers), creative class (like healthcare, business, finance, administration, education), and bohemians (small and marginal groups). Florida (2002) found that companies were keen to locate their facilities where creative workers were, and that the urban realm would become attractive for more of them. Florida also argued that urban authorities could invest in cultural and artistic activities, sport facilities, accommodations for creative workers, and quality urban design, instead of keeping ancient industrial areas which are destined to collapse in the long run. Here again, the timing is crucial, because urban development taken as a long-term process would accompany new innovations, rather than facing radical changes that could jeopardize the whole city and spur gentrification. It is generally accepted that a robust link does exist between culture and urban areas' appeal. In 2009, INEUM Consulting conducted study for the Forum d'Avignon. The study "Culture - A symbolic or economic success factor for urban development planning?" documents 32 cities across the world and posits a barometer of the cultural appeal of territories. It concludes that urban area's appealing features were made of the combination of cultural policies, development of knowledge-based economy, and living environment. Although it is not mentioned explicitly, creativity is part of the knowledge-based economy, hence contributes to one of the four features for success (Figure 1).

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Type of feature	Features
Features linked to the level of cultural activity	• Action-packed towns • Infrastructures and cultural services • Showcasing architecture • Diversity and multiculturalism
Features linked to the knowledge-based economy	• Quality of education • Knowledge of languages • Qualification of human capital • Research and innovation
Features linked to living environment and the general environment	• Quality of health care • Nightlife • Living environment • Quality of life • Quality of telecommunications • Internal transport
Features linked to business development	• Competitiveness over wages • Economic diversity • Competitiveness of office space prices • Market access • External connectivity

Figure 1: Urban area's appealing features. Source: INEUM Consulting (2009:4).

This research paper aims at mapping the CCIs ecosystem in the Brussels Region and exploring what reskilling/upskilling programs are needed to enhance their role as levers for local and sustainable tourism development.

Cultural and creative industries (CCIs) in Brussels Region

In 2010, INEUM Consulting documented the cultural appeal of the Brussels Region. The conclusion was displayed as a SWOT grid that provides Strengths, Weaknesses, Opportunities and Threats of the possible role of culture in the territorial development (Figure 2). The analysis highlights creativity as part of historic Brussels brand: "A creative city, which was the cradle of many artistic movements (Art nouveau, Cobra, Art Nouveau, Surrealism ...) and has been the refuge of many thinkers (Victor Hugo, Brontë, Marx…)" (INEUM Consulting 2010:3).

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Strengths	**Weaknesses**
▪ *First-rate artistic and cultural offer: contemporary dance, opera, jazz scene, plastic arts, film, rich museum heritage, electronic music, etc.* ▪ *European crossroads between Amsterdam, London, Cologne and Paris (by Thalys, Brussels is 1hour 20 minutes from Paris, under 2 hours from London and 2 hours 38 minutes from Amsterdam).* ▪ *Officially bilingual and multicultural city (French and Dutch).* ▪ *Very good quality of life: Brussels ranks 14th in the world.* ▪ *Other distinction: Brussels ranks 18th on the 2007 Anholt City Brand Index, mainly due to the presence of European institutions.*	▪ *Impacts, strengths and dynamics of the economy of culture in Brussels inadequately understood* ▪ *Metropolis lacks a strategic and comprehensive cultural vision* ▪ *"Cultural" know-how and funding fragmented among various actors whose policies and actions are not streamlined* ▪ *No space for culture not strictly French- or Dutch-speaking* ▪ *Few incentives for making financial contributions to culture (tax exemptions, for example)* ▪ *Lack of clarity regarding higher learning opportunities in culture and the arts in Brussels* ▪ *Economic growth gauged primarily by productivity with little regard for job creation* ▪ *Funding for territorial development of the Region in a context where taxes benefit the hinterland instead of the Capital-Region.*
Opportunities	**Threats**
▪ *Good coordination between cultural actors working at ground level: Cultural Plan (RAB-BKO), "Metropolitan Brussels" (Chamber of Commerce), etc.* ▪ *Growing awareness of the links between cultural economy, creativity, innovation and growth (since 2009-2010)*	▪ *Growing urban social fracture and social unrest* ▪ *Increasing competition from the other urban regions of Europe*

Figure 2: SWOT of the possible role of culture in the territorial development of the Brussels Region. Source: INEUM Consulting (2010:1).

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The Cultural and Creative Cities Monitor 2019, provides a tool for assessing and benchmarking 190 European cities from 30 countries. It is composed of three major facets of the cultural, social and economic vitality of a city that break out into 9 dimensions (Figure 3). 29 indicators correspond to the nine dimensions and provide quantitative data measuring cultural performance at urban level (Montalto et al. 2017; 2019) (Van Puyenbroeck et al. 2020).

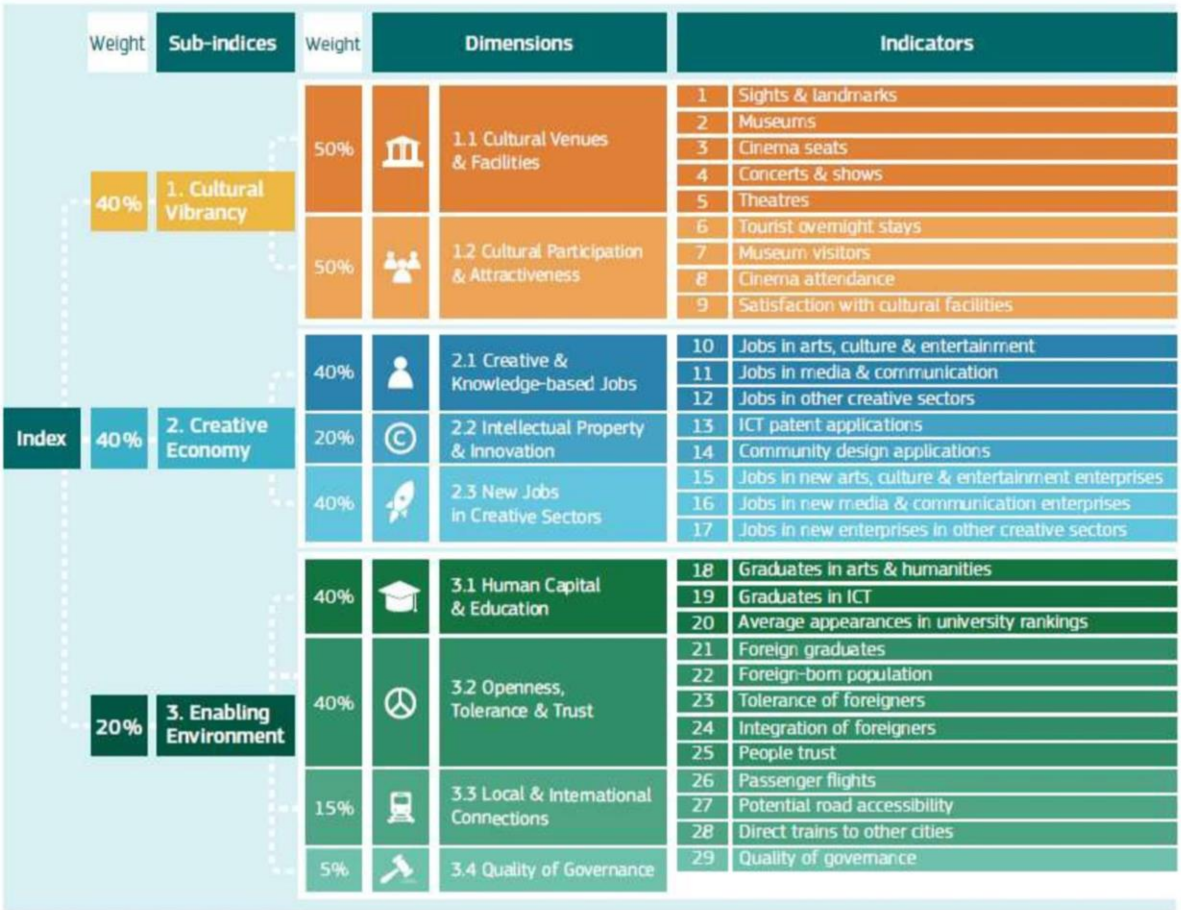

Figure 3: The Cultural and Creative Cities Monitor's conceptual framework, weighting scheme and indicators (Montalto et al., 2017)

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According to the Cultural and Creative Cities Monitor, in 2017, Brussels was a leading city in culture and creativity within its population group[1]. Indeed, it was ranked 5th out of 21 cities under this category (Figure 4). For the first sub-index, cultural vibrancy, Brussels is ranked 10th, for the second sub-index, creative economy, it is ranked 3rd while for the third sub-index, enabling environment, it is ranked 13th.

Index Rank		Sub-index Ranks		
#	City-country [confidence intervals]	1. Cultural Vibrancy	2. Creative Economy	3. Enabling Environment
[XXL group] >1,000,000 inhabitants (21 cities)				
1	Paris-FR [1, 1]	1	1	2
2	Munich-DE [2, 2]	9	2	3
3	Prague-CZ [3, 6]	2	6	16
4	Milan-IT [3, 4]	3	11	8
5	Brussels-BE [5, 9]	10	3	13
6	Vienna-AT [4, 8]	4	17	5

Figure 4: Top 5 cities in the C3 Index per population group (source: Montalto et al. 2017)

In 2017, under cultural vibrancy Brussels exceled in the number of museums & art galleries and theatres which reaffirms the findings of the INEUM Consulting study in 2010. Under creative economy Brussels outshined particularly under the dimension D2.3 New Jobs in Creative Sectors where it is positioned one of the top five cities in its population group especially for the following indicators: Jobs in new arts, culture & entertainment enterprises; Jobs in new media & communication enterprises and Jobs in new enterprises in other creative sectors. This is an important improvement in comparison with the conclusions of the INEUM Consulting study which found at the time that although the number of businesses were rising, the number of jobs were decreasing (2010:4). However, it is worthwhile mentioning that the scores of these indicators have been estimated due to missing data (Montalto et al. 2017:70). Under enabling environment, Brussels scored highly under D3.2 Openness, Tolerance & Trust thanks to the high number of foreign-born population and under D3.3 Local & International

[1] Twenty-one cities with a population greater than 1 million inhabitants. In alphabetic order: Barcelona, Berlin, Birmingham, Brussels, Bucharest, Budapest, Cologne, Hamburg, Lille, London, Lyon, Madrid, Marseille, Milan, Munich, Paris, Prague, Rome, Sofia, Vienna, Warsaw.

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Connections for the good accessibility by both road and rail. Nonetheless, it is worth mentioning that under the sub-index enabling environment particularly under D3.1 Human Capital & Education, the scores of the indicators: Graduates in arts and humanities; and Graduates in ICT, have been estimated due to missing data. The Human capital was evaluated positively by the INEUM Consulting study. In comparison, the educational offer was assessed rich but fragmented (2010:3).

The 2019 edition of the Cultural and Creative Cities Monitor places Brussels 92nd out of 190 European cities in terms of overall cultural performance (The Cultural and Creative Cities Monitor 2019) (annex 1). Moreover, Brussels is not anymore one of the top five per population group (Table 1)[2].

City	GDP group	Employment rate group	Population group	Region typology
Brussels	> 45,000	63-70%	> 1 million XXL	more developed

Table 1: Dataset Brussels.

Source: The cultural and creative cities monitor dataset 2019.

C3 index 2017	C3 index 2019	Weight	Sub-index	2017 score	2019 score	Weight	Dimensions	2017 score	2019 score
24,28	24,64	0,4	1.Cultural vibrancy	20,22	20,19	0,5	D1.1 Cultural Venues & Facilities	16,35	16,47 ↑
						0,5	D1.2 Cultural Participation & Attractiveness	24,10	23,91 ↓
		0,4	2.Creative Economy	24,38	25,05	0,4	D2.1 Creative & Knowledge-based Jobs	33,77	35,97 ↑

[2] Twenty cities with a population greater than 1 million inhabitants. In alphabetic order: Barcelona, Berlin, Birmingham, Brussels, Bucharest, Budapest, Cologne, Hamburg, London, Lyon, Madrid, Milan, Munich, Paris, Prague, Rome, Rotterdam, Sofia, Vienna, Warsaw.

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						0,2	D2.2 Intellectual Property & Innovation	17,85	10,84 ↓
						0,4	D2.3 New Jobs in Creative Sectors	18,24	21,24 ↑
		0,2	3.Enabling Environment	32,18	32,73	0,4	D3.1 Human Capital & Education	27,07	28,77 ↑
						0,4	D3.2 Openness, Tolerance & Trust	33,18	33,23 ↑
						0,15	D3.3 Local & International Connections	37,18	37,18 =
						0,05	D3.4 Quality of Governance	50,08	47,07 ↓

Table 2: comparison between Brussels 2017 and 2019 index.

Source: The cultural and creative cities monitor dataset 2019.

If we compare the index's data from 2017 and 2019, it is clear that the cultural performance has not much evolved (Table 2) (Annexes 2-4). Departing from the fact that the New Jobs in Creative Sectors, and Human Capital & Education data were estimated due to missing data. We assume that working towards enhancing these two dimensions will boost the cultural performance of the Brussels Region. According to UNCTAD[3] "the quantity and quality of a country's "human capital" set the parameters for success" (2004:3).

In 2016, the Regional Circular Economy Programme was adopted by Brussels regional government. This ambitious program is starting to show its fruits in the sectors of interest of the region, namely: construction, resources and waste, logistics and commerce. Although the region is a hotbed of a diversified cultural and creative industries (CCIs), the contribution of

[3] UNCTAD: United Nations Conference on Trade and Development.

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CCIs to this regional green transition has not yet been really taken into consideration neither in the regional circular economy agenda, nor by the lifelong learning programs.

The cultural and creative industries are more concerned with continuing education and learning programs that can accelerate the implementation of innovation by giving its workforce a mix of creative, digital, managerial, network and entrepreneurial skills (EC 2018, OECD 2018). A new wave of innovation is always correlated with an adaptive curricula and training programs (Ost and Saleh 2021). As new needs emerge in CCIs, a new education market should offer tailored teaching and learning opportunities for CCI stakeholders. Although the movement is global and indicates the common goal of the education sector to face these challenges, CCIs draw on a very wide range of artistic and cultural actors. Multidisciplinary programs are needed, as well as international and intercultural programs that reflect the global reach of the new wave of innovation (VVA et al., 2021).

In November 2020, the European Commission launched a Skills Pact, a model of shared engagement for skills development in Europe. Five months later, the European Commission organized a high-level roundtable on skills for the ecosystem of cultural and creative industries. The objectives of this roundtable were to: discuss upskilling and reskilling challenges of the cultural and creative industries workforce; identify the necessary support for skills development at European level and, more specifically, how the new European skills strategy, including the Skills Pact, could support the different CCIs and secure commitments from participants engaged in the discussion regarding their contribution to the Skills Pact. A Skills Pact for the ecosystem of cultural and creative industries is expected to become operational by the EC by the end of 2021 and actively contribute to the New European Bauhaus initiative.

To date, there is no agreed upon definition of the Cultural and Creative Industries and discrepancies still exist on how to measure their social and economic impacts. A number of international organizations collect data and publishes statistics with no harmonized categories

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or definitions (Eurostat 2021, KEA 2020, UNCTAD 2004;2018, UNESCO 2005, UNCTAD and UNDP 2008, OECD 2020; EY 2021, UNESCO and The WORLD BANK 2021). This lack of internationally comparable statistics hinders the design of tailored policies aimed at boosting CCIs (Montalto et al. 2017, Kloosterman et al. 2019, OECD 2021). Scholars from H2020 project CICERONE conducted a thorough literature review of the existing different taxonomies and came to the conclusion that the definition of empirical measures is problematic because there are "three ways in which economic activities are classified for statistical purposes: occupation, industry and trade. There are two more significant categories of problem. First, the debate about 'creative and non-creative' activities… Second, the problem of material and immaterial/invisible goods and services." (Kloosterman et al. 2019:13).

This research paper embraces the type of value embodied and generated by the cultural goods and services. According to Throsby, cultural goods and services are experience goods that can be defined according to the value they embody and/or generate. The duality of value is crucial for distinguishing cultural goods and services from commercial commodities. As highlighted by Throsby, "Cultural value…is multifaceted concept reflecting qualities such as the aesthetic, symbolic, spiritual or historical values attaching to a particular item" (Throsby 2010:20). Departing from the fact that cultural goods and services embody cultural value and yield cultural and commercial values, they are therefore, valued by the person who makes them but also by those who consume them because of a cultural value attributed to the good/service. In addition to the duality of value, Throsby argues that cultural goods and services encompass three distinctive qualities: "they require some input of human creativity in their production; they are vehicles for symbolic messages for those who consume them; …they contain, at least potentially, some intellectual property" (Throsby 2010:16).

Throsby elaborates on the relationship between the cultural goods and services and the creative goods and services and suggests that the former is a sub-set of the latter which he defines as:

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"products that require some reasonably significant level of creativity in their manufacture, without necessarily satisfying other criteria that would enable them to be labelled 'cultural'". (Throsby 2010:16-17). The main difference is the value that these products embody and the one(s) they produce.

For the sake of this research paper, we define Cultural and Creative Industries (CCIs) as the sectors and activities that rely on the input of human creativity for creating symbolic, economic, and social values through intellectual property and frame of mind that prospects an integrated value chain (creation, production, dissemination, distribution and engagement).

Mapping methodology

Under the framework of C-SHIP4 project, in April 2021 and with the help of an intern[5], a preliminary desk mapping of the Cultural and Creative Industries in the Brussels Region kicked-off. Throsby's concentric circles model (Figure 5) theoretical framework was adopted and the CCIs were classified accordingly (Throsby 2001:2008). It should be noted that this tentative rendering of CCIs classification is open to discussion. Cultural significance may vary from places to places, and there is no global consensus about 'what makes culture and arts unique'. Although the core creative arts may be commonly considered as central, other disciplines are not. Let us just mention the example of cultural heritage made of both tangible and intangible assets, whose specific significance may change across different cultural context. It is also important to highlight that external circles gather activities directly or indirectly related to core creative arts, with the methodological constraint of dealing with very large industries. Advertising for example, has a component of artistic creativity, but relies in a substantial way on marketing and management fields. This preliminary mapping of 1,170

[4] C-SHIP is a professional training program in cultural entrepreneurship aimed at making culture sustainable, impactful and viable. https://www.ichec.be/en/c-ship-project

[5] In total, three interns worked on this mapping exercise. The first intern worked on building the database and creating the map. The second and third intern worked on updating the dataset.

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CCIs (Figure 6) took into consideration the 19 municipalities of the Brussels Region and consisted of desk research (Table 3). It is worth mentioning that this mapping is neither conclusive nor exhaustive. It is instead a first step towards creating a common understanding of the richness and diversity of existing actors and activities. A nugget of information aimed at triggering reflection on the needs and how the ecosystem could be enhanced in the future.

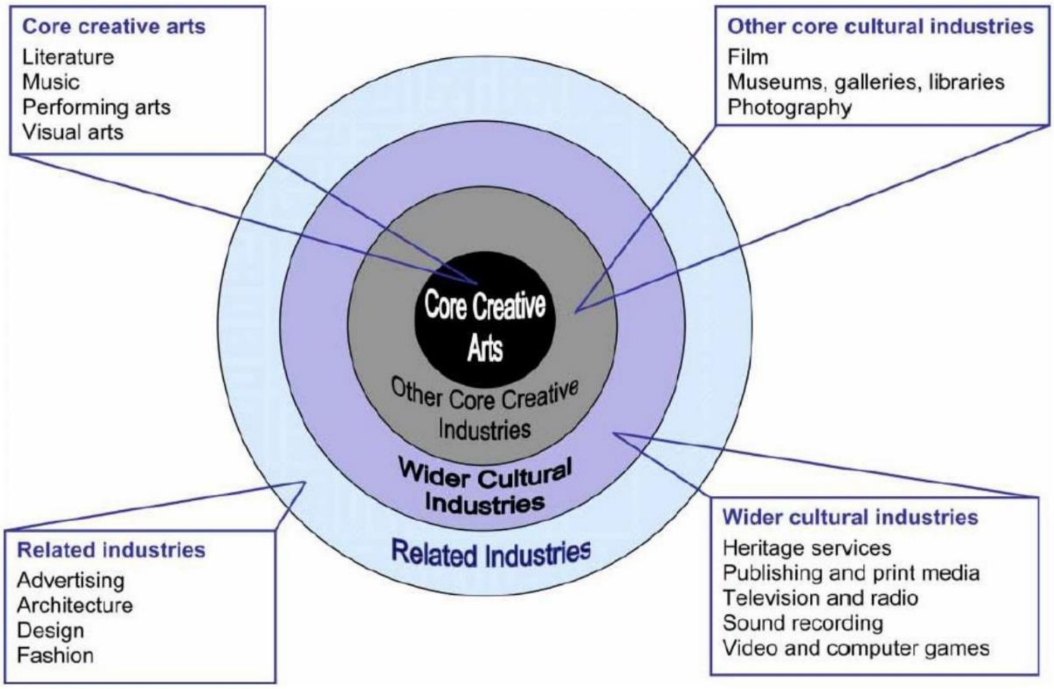

Figure 5: The concentric circles model of the cultural industries (Source: Throsby 2008)

Mapped municipalities in the Brussels Region	
Municipality	Number of mapped CCIs
Anderlecht	50
Auderghem	28
Berchem-Sainte-Agathe	9
Bruxelles-Ville	307
Etterbeek	46
Evere	21
Forest	62
Ganshoren	10
Ixelles	179
Jette	15
Koekelberg	19
Molenbeek-Saint-Jean	51
Saint-Gilles	90
Saint-Josse-ten-Noode	26

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Schaerbeek	97
Uccle	71
Watermael-Boitsfort	33
Woluwe-Saint-Lambert	24
Woluwe-Saint-Pierre	32
Total	1,170

Table 3: Mapped municipalities and number of mapped CCIs in the Brussels Region

Circle	Activity	Typology
Core cultural industries	Literature	Authors, scriptwriters, poets and illustrators, novelist, screenwriter, dramatists, and comics cartoonists, caricaturist.
	Music	Academy of Music, music house, opera houses, concert halls, associations.
	Performing arts and visual arts	Theatre/ performing companies, cirques art, art academies, artist atelier, curators, artistic research, artistic production, multidisciplinary artistic groups/programs.
	Craftsmanship	Craftsmen, academy of arts and crafts
Other core cultural industries	Film	Creation, production, postproduction and distribution houses in addition to polyvalent centers renting equipped halls and facilities
	Museums	Arts Museum and other type of Museums; Cultural and arts Centers, foreign cultural institutes, and Community centers, youth centers, cultural associations and foundations.
	Galleries	Galleries
	Libraries	Libraries and game libraries (ludothèque)
	Photography	Photography studios, foundations, exhibition, production and distribution spaces focused on creative photography.
Wider cultural industries	Heritage services	Associations for the promotion of heritage, heritage conservators/restorers, archaeological sites.
	Publishing and print media	Editing and publishing houses on comic books, visual and performing arts. Publishing houses all domains, diffusion-distribution of French, Dutch and English-language press and books, distributors and publisher of digital books,
	Television and radio	Radio stations and Television
	Sound recording	Sound recording studios

	video and computer games	Design and implementation of interactive experiences in the fields of education, culture, tourism, communication and leisure. Phygital technologies at the service of heritage/ creator of immersive experiences for heritage.
Related industries	Advertising	Advertising companies
	Architecture	Architectural studios
	Design	Design studios
	Fashion	Fashion design studios
	Fablab-citymaking	Fablabs

Table 4: Cultural and creative industries in the Brussels Region classification

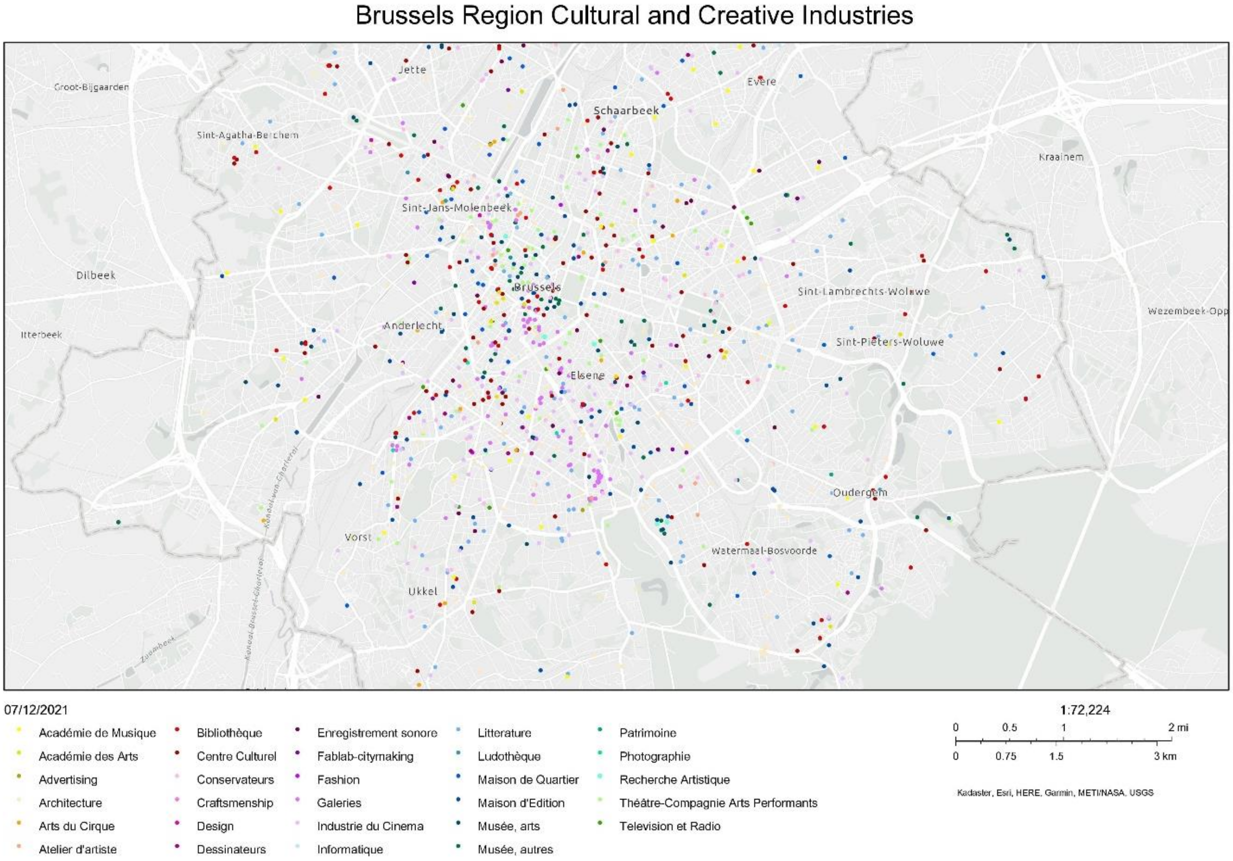

Figure 6: Brussels Region cultural and creative industries, preliminary mapping

Upskilling/reskilling needs

In order to better understand the needs, a short bilingual questionnaire (FR/ENG) was launched. It was available from 22 September until 30 November 2021. The questionnaire was disseminated via a mailing list composed of 1176 email addresses[6] collected on-line; to a list

[6] In compliance with the privacy regulation, the emails of the recipients were not visible.

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of directors of the key cultural players; and via LinkedIn. Although the English version was viewed by 435 persons and the French version by 237 persons on LinkedIn, only 29 persons completed the French questionnaire and 6 persons completed the English version, out of which 1 person was not from the Brussels Region. Therefore, for the English versions only 5 questionnaires were taken into consideration. In total 34 questionnaires were taken into consideration. Table 5 summarizes the social and institutional framework of the sample. Table 6 outlines the sector distribution. Table 7 condenses the professional representation. Finally, table 8 encapsulates the expressed training preference.

Gender	#	Age-range	#	Experience in the cultural field	#	In which type of organization do you work?	#	What is your work status	#
Female	16	20-24	3	1-5 years	8	Public sector (institution, organization, agency, etc…)	10	Full-time	16
Male	17	25-34	5	5-10 years	5	Private for profit (institution, foundation, organization, etc…)	9	Part-time	4
Other	1	35-44	10	10-15 years	4	NGO (Non-governmental Organization)	0	Free-lancer	8
		45-54	8	15-20 years	4	IGO (Intergovernmental Organization)	0	Volunteer	3
		55-64	6	More than 20 years	13	Self-employed	8	Student	3
		65+	2			Other	7		
Total	34	Total	34	Total	34	Total	34	Total	34

Table 5: Sample social/institutional framework.

Circle	Activity	Typology
Core cultural industries	Literature	0
	Music	Lyrics/concerts (1), music (1), Music teacher, concert performer (1)
	Performing arts and visual arts	Plastic arts (1), Theatre (direction, commedian), cultural education (1), visual arts (1), dance (1), performance (1), dance, performing and visual arts (1).
	Craftsmanship	Craftsmen, academy of arts and crafts
Other core cultural industries	Film	Film and cinema production (3), audiovisual production (2)
	Museums	Museum (7), cultural center (1)

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	Galleries	0
	Libraries	0
	Photography	0
Wider cultural industries	Heritage services	Built heritage (1), higher education (1), cultural service of a municipality (1), Urban development, Neighbourhood committee, History, Education (1),
	Publishing and print media	History and Literature, Editing and publishing (1)
	Television and radio	Radio (1), Journalism and audiovisual production (1).
	Sound recording	0
	video and computer games	Web design (1), Media/XR for Heritage/culture (1)
Related industries	Advertising	0
	Architecture	0
	Design	0
	Fashion	0
	Fablab-citymaking	0

Table 6: Samples sector distribution.

What is your profession?	
Independent art consultant	Producer of cultural events
Producer, editor, graphic designer, ASBL coordinator, colorist...	Concertist, music teacher
Author and lyricist/ running a theatre café &writing workshops	Dancer
Journalist	Production Coordinator
Museum administrative & Financial Officer	Actress
Cultural center director	dancer, costume designer
Comedian, theatre director	Architect
Website project support	Lecturer
Programme Coordinator	Audiovisual producer
General coordinator	Film producer
Producer/Screenwriter	Cinema producer
Editor	Museum scientific attaché
Artist	Museum communication (press service)
Head of Culture and Heritage Department	Museum head of Audiences & Activities
Retired	Museum sales manager
Trainee journalist/production assistant	Museum educator
Director	Museum curator
Total	34

Table 7: Sample profession representation.

Is Business Model innovation relevant to your career?	#	Is Technology relevant to your career?	#	Is Ecosystem and partnership building relevant to your career?	#	Is Sustainability and positive impact relevant to your career?	#	Is Internal and external governance relevant to your career?	#
5	20	5	12	5	13	5	12	5	11

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4	5	4	12	4	13	4	9	4	8
3	5	3	7	3	2	3	9	3	11
2	3	2	2	2	5	2	2	2	1
1	1	1	1	1	1	1	2	1	3
Total	34	Total	34	Total	34	Total	34	Total	34

Table 8: Sample expressed training preference

Seen the structural precarious nature of the CCIs, the sample confirmed the diversity of sector typologies and the multiplicity of jobs/activities performed by person. In terms of training needs, Business Model innovations, technology, ecosystem and partnership building, sustainability and positive impacts, and internal and external governance were considered pertinent. The relevance of these topics to CCIs was explored by recent research and publications (Polivtseva 2020; OECD 2020; KEA 2020b, VVA et al., 2021).

It appears that CCI actors want to learn how to develop sustainable business models because, by its very nature, the sector is content-driven and is eager to develop its management skills. It can be argued that such skills are now crucial for accessing funding mechanisms (Kern, 2020). In addition, there is an increasing difficulty in project management, partnership building and strategy (Ost and Saleh 2021). This is probably due to the uncertainties of the pandemic but also to the new historical issues related to: the digital environment and how to exploit it in an ethical and fair way, and how to copyright in the digital age (VVA et al., 2021).

2021 kicked-off as the International Year of Creative Economy for Sustainable Development. In this regard, the UN General Assembly highlighed that “the creative economy encourages creativity and innovation in attaining inclusive, equitable and sustainable growth and development, while facilitating life transitions and supporting women, youth, migrants and older persons, as well as empowering people in vulnerable situations” (UN 2019:3). In a post-pandemic scenario, resilience is a very critical issue, and it should be read primarily in terms of professional status and how to make work become more sustainable (Comunian and Lauren 2020), as one fourth of the respondents to the above-mentioned questionnaire are self-

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employed. The recent report of the European Network of Culture and Audiovisual Experts, which investigated the status and working conditions of artists and creative professionals, showed that a consistent number of freelancers in the sector have not been able to take advantage of any of the public rescue packages for various technical/bureaucratic reasons (EENCA, 2020: 51).

CCIs and cultural entrepreneurs upskilling/reskilling as drivers for local, inclusive and sustainable tourism development

At the beginning of this research paper, reference was made to the long-wave economic theory which constitutes the current context of the cultural and creative industries. It was mentioned that creation is a basis for innovation as bringing new products and services into the market. Tourism is no exception to such process. First, because it is one of the most emblematic industries of the postwar growth phase leading up to the Golden Sixties. This phase saw the opening of borders, the development of trade, and major innovations in transportation. The resulting growth in tourism has created not only tens of millions of jobs around the world, but also new skills and occupations, likewise in any long movement of economic growth.

The economic downturn of the 1970s, due to the recognition of the limits of growth and the extensive waste of non-exhaustible resources, made the rapid development of tourism being reconsidered. It took several decades for the tourism sector to reach diminishing marginal returns which forced players to reposition themselves in an increasingly segmented market. It will be recalled that low-cost travel is one of the examples of repositioning of players for whom wage, and cost pressures no longer made it possible to generate enough growth margins. Major players have disappeared by more sustainable tourism activities. This has been manifested with innovative formulas amongst others: agri-tourism, eco-tourism, participatory cultural tourism, smart (low and high tech) and inclusive tourism, etc.... (OECD 2020b:2021).

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CCI's own upskilling / reskilling corresponds exactly to that moment of transition when product and service innovations will be implemented through organizational innovations. The arrival of Internet and the social networks has enabled the shift from a growth of mass tourism to more sustainable, individual and local forms of tourism. The current trend is not over because economic transition has not yet affected all tourism sectors, in particular transportation (think about cruise ships) and the hospitality sector (think of large infrastructures) (OECD 2021).

According to the United Nations World Tourism Organization (UNWTO), 2019 was the 10th year of sustained growth which witnessed the arrival of 1.5 billion international tourists. Covid-19 wreaked havoc and caused the loss of 74% of international tourists registering thus, 381 million international tourists bringing tourism back again to the levels of thirty years ago[7].

This is when the pandemic highlighted the growing need to contribute to local growth and well-being while cherishing and strengthening solidarity and bonds with peers around the world. Keeping an eye on what is happening internationally goes hand in hand with the enhancement of local resources and their reinterpretation according to contemporary local needs. In fact, the pandemic completes this cultural transition by bringing a new challenge to tourism-related sectors. Obstacles to travel, social distancing measures, or travel restrictions, have sparked a resurgence of local, inclusive and sustainable activities. It is in such transitional economic context that cultural creativity must be revisited to find sustainable and local tourism development niches.

The concern for implementing upskilled capacities in the field of sustainable tourism in Brussels can be observed in some initiatives. For example, the training initiatives of the Brussels Quality Academy[8] which is capitalizing on post-Covid experience and new practices in order to offer practitioners comprehensive training on CCI's contribution to sustainable tourism. In particular, the Academy aims to help the sector provide quality work by offering training modules on ongoing activities

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[7] https://www.unwto.org/covid-19-and-tourism-2020. (accessed 21 September 2021).

[8] https://visit.brussels/en/article/brussels-quality-academy (accessed 20 February 2022).

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in Brussels. In addition to training courses to improve knowledge about the region and customer experience know-how, the academy will soon be offering additional support through brand new training courses in the following areas: crisis management, digital marketing, public relations, social networks, organization of events, eco-responsible businesses. The aim of such trainings is not just an awareness-raising concept for actors and practitioners in the field of sustainable tourism, but also to create a network of multidisciplinary (co)-creation initiatives in developing strategies, products and services through active collaboration. Moving forward together in sustainable tourism requires coordinated individual and collective insights of both supply and demand sides. Sustainable tourism cannot succeed only by bringing new digital technologies on supply-side that make tourists' experience more satisfactory. It also requires commitment from demand-side consumers, users of heritage, visitors of museums and historic places, and engaged tourism intermediaries. Similarly in 2021, ICHEC Brussels Management school launched C-SHIP (Cultural Entreprenurship), an action-learning training program aimed at enabling professionals in the Cultural and Creative Industries ensure financial viability; develop and / or strengthen their management capacities for a sustainable, flourishing and resilient activity, while maximizing their societal contribution and their positive impacts.

Recently, a growing number of CCIs are embracing the circular economy philosophy in Brussels. We will explore some of the emerging innovative added value activities and experiences. In terms of local know-how and craftmanship, les Ateliers de la rue Voot[9] is a cooperative association which offers weekly artistic workshops on ceramics, sculpture, drawing, digital creation, photography and film and original training courses focused on sustainability. It raises local awareness about cultural and creative activities environmental impacts and promotes responsible attitudes. Recovery, repair and recycling are at the heart of their repair bicycle workshop, while self-building and maintenance are at the basis of the solar techniques' workshop. The Ateliers de la rue Voot is a place where curious tourists could meet locals and learn about sustainable artistic innovations but also rent second-hand refurbished

[9] https://voot.be/ (Accessed 21 September 2021).

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bicycles. The Ateliers de la rue Voot's project "a bicycle for 10 years" is a member of circle made[10] network.

Another interesting initiative is "Fais-le-toi-même" (Do it yourself) which defines as a "network, a place, to unite, share and consolidate the sustainable creation sector"[11]. It facilitates and promotes the use of recycled materials in innovative ways in order to reduce the environmental impact of design and the creative sectors at large. This network built a collaborative ecosystem which allows each artistic project to evolve independently while being part of a supportive community sharing a common vision. It also encourages the participation of neighbours and consults with local businesses as essential components of the ecosystem's development. A yearly Christmas market of handmade sustainable artistic products is organised by the network in two municipalities of the Brussels Region.

The use of virtual technologies introduces innovations that allow mass consumption to avoid creating bottlenecks and makes accessible remote or invisible places. This is the philosophy behind establishing Mixua eco-tourism and XR4heritage. Mixua12 offers eco tours, online workshops and a webshop of zero waste, handmade ecological products. XR4heritage13 brings together cultural mediators, scriptwriters, creatives, tourism and education professionals, social innovators and professionals of emerging technologies with the objective of putting XR14 at the service of heritage. Its motto is XR for inclusion, education & preservation. XR4heritage offers three services: the lab, a B2B incubator for innovative territories; the factory, a sustainable attractions factory; and the desk, a tailor-made service to boost projects.

[10] Circlemade is Brussels Region network for circular economy pioneers. https://www.circlemade.brussels/en/ (Accessed 21 September 2021)
[11] https://faisletoimeme.be/ (Accessed 21 September 2021).
[12] https://en.mixua.be/ (Accessed 21 September 2021).
[13] https://xr4heritage.com/ (Accessed 21 September 2021).
[14] XR include: mixed reality and interactivity, virtual experience, sensorial activations, video mapping, 360° exhibition, augmented reality.

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In terms of circular design and fashion design there is a rich variety of initiatives amongst others, Isatio, Wear A story, Konligo, and Design with sense. Isatio[15], is a Belgian brand which creates 100% circular textile. All the products are handmade and produced in Brussels in collaboration with local suppliers and artisans in closed loop. It is based on a collection of unique pieces made from new coupons and samples recovered from the textile industry. Isatio thus, transforms a negative externality (waste) into a positive externality (high-value clothing) and environmentally friendly. Wear a story[16], offers unique women garments named after a woman who could have been the old owner. The upcycled old garments into modern cuts are made in Brussels. Konligo[17] offers sustainable and locally produced innovative technology for outdoor and indoor event structures. Design with sense[18] is a cooperative project for the creation of interior spaces and manufacturing in wood. It is led by architects, craftsmen and designers who are convinced that the creative process must be centered on people and materials. The reuse of materials is embraced in the entire value chain. The cooperative gives priority to rational use and extension of the life cycle of materials. Tourists have the pleasure of enjoying eco-design in shops, coffeeshops and restaurants built with local sourcing and re-used sustainable materials.

The common denominator of these innovative projects/initiatives is the critical entrepreneurial skills ignition. Thanks to the vast network of subsidized business incubators in Brussels Region, most of these projects were either incubated or followed closely for the entirety of the project or for some specific aspects/initiatives. Different entities provide diverse packages but in general the incubation boosts the business model and business plan, improves the marketing strategy, accompanies entrepreneurial initiative towards sustainability and/or enhances the

[15] https://en.isatio.com/a-propos (Accessed 21 September 2021).
[16] https://www.wearastory.be/ (Accessed 21 September 2021).
[17] https://www.konligo.com/ (Accessed 21 September 2021).
[18] http://designwithsense.be/ (Accessed 21 September 2021).

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partnership and networking capacities of the project/initiative. In 2020, Hub Brussels19, commissioned dr. Marlen Komorowski to analyse the economic impact of CCIs in Brussels-Capital Region. The study demonstrated that CCIs plays an important role in the region's economy. It was illustrated that CCIs generated around €3,213.3 million of net value added in 2018 which represents a contribution of 3.8% to the Brussels region economy. According to the study, in 2018, CCIs generated a turnover of more than 12,511.6 million euros (Komorowski 2020).

Conclusions

The preliminary mapping presented in this research paper is neither conclusive no exhaustive. It aims to open the door to fieldwork, enriching the mapped activities, and to further explore CCIs training needs in the Brussels Region. It would be ideal to combine desk-research with field research in the future and to enhance the core creative arts by mapping also individual artists/creatives.

The new qualifications and skills of CCIs must be grafted onto the innovative factors of day/proximity local, inclusive, and sustainable tourism. Similar developments can allow regions to re-appropriating local benefits of tourism, in closed loops, without the risk of resource exploitation, while enhancing local know-how and skills. This is also aligned with the New European Bauhaus which aims to make the Green Deal a cultural, human centered and positive, tangible experience. Based on its three principles: sustainability (including circularity); quality of experience (including aesthetics) and, inclusion (including accessibility and affordability).

It emerges from this research that innovative cultural projects/initiatives need critical entrepreneurial skills ignition. It is clear from both the questionnaire sample and the earmarking

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[19]Hub Brussels is Brussels Agency for Business support which offers enterprises (including CCIs) from the region a wide range of free advice, services and tools to help them be successful and sustainable. https://hub.brussels/en/ (Accessed 28 February 2022).

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Brussels based cultural entrepreneurs that business and operation model innovation is a critical training requirement. In addition, sustainability in terms of sustainable working conditions, viable projects and positive sustainable impacts is also a key training component. Finally, ethical and cooperative governance, solid partnerships and disruptive technologies are subsidiary success ingredients for a holistic upskilling training of CCIs.

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#	Cities	C3 index score	#	Cities	C3 index score	#	Cities	C3 index score
1	Paris (FR)	65,95	64	Turku (FI)	28,12	127	Zagreb (HR)	21,03
2	Zurich (CH)	49,25	65	Athens (EL)	28,11	128	Saint-Étienne (FR)	20,94
3	Bern (CH)	46,87	66	Linz (AT)	28,08	129	Salamanca (ES)	20,73
4	Copenhagen (DK)	46,78	67	Madrid (ES)	27,9	130	Genoa (IT)	20,55
5	Lisbon (PT)	46,34	68	Norwich (UK)	27,8	131	Cluj-napoca (RO)	20,52
6	Basel (CH)	44,42	69	Poznan (PL)	27,77	132	Bradford (UK)	20,48
7	Stockholm (SE)	43,78	70	Hannover (DE)	27,58	133	Leiden (NL)	20,47
8	Luxembourg (LU)	42,21	71	Mannheim (DE)	27,4	134	Szeged (HU)	20,47
9	Munich (DE)	41.22	72	Ljubljana (SI)	27,33	135	Birmingham (UK)	20,44
10	Dublin (IE)	41,03	73	Warsaw (PL)	26,99	136	Brescia (IT)	20,28
11	Geneva (CH)	40,13	74	Antwerp (BE)	26,85	137	Essen (BE)	20,09
12	Stuttgart (DE)	40,12	75	Limerick (IE)	26,69	138	Brno (CZ)	19,96
13	Amsterdam (NL)	39,21	76	Cologne (DE)	26,62	139	Seville (ES)	19,92
14	Lund (SE)	38,88	77	Montpellier (FR)	26,58	140	Namur (BE)	19,91
15	Weimar (DE)	37,66	78	Nantes (FR)	26,58	141	Győr (HU)	19,81
16	Florence (IT)	37,56	79	Granada (ES)	26,57	142	Sofia (BG)	19,7
17	Heidelberg (DE)	36,99	80	Rome (IT)	26,34	143	Maribor (SI)	19,56
18	Glasgow (UK)	36,23	81	Amersfoort (NL)	26,14	144	Matera (IT)	19,56
19	London (UK)	36,11	82	Kortrijk (BE)	25,96	145	Lecce (IT)	19,52
20	Dresden (DE)	35,47	83	Lyon (FR)	25,89	146	Bilbao (ES)	19,15
21	Milan (IT)	35,31	84	Wrocław (PL)	25,89	147	Veszprém (HU)	19,08
22	Karlsruhe (DE)	35,08	85	Aarhus (DK)	25,85	148	Osijek (HR)	19,01
23	Frankfurt (DE)	34,64	86	Tampere (FI)	25,84	149	Katowice (PO)	18,92
24	Helsinki (FI)	34,63	87	Pula (HR)	25,58	150	Nitra (SK)	18,68
25	Venice (IT)	34,48	88	s-Hertogenbosch (NL)	25,56	151	Ostend (BE)	18,61
26	Cork (IE)	34,62	89	Santiago (ES)	25,16	152	Guimarães (PT)	18,57
27	Bristol (UK)	34,19	90	Faro (PT)	24,92	153	Ravenna (IT)	18,47
28	Tallinn (EE)	34,06	91	Trieste (IT)	24,70	154	Liège (BE)	18,26
29	Berlin (DE)	33,98	92	Brussels (BE)	24,64	155	Sibiu (RO)	18,24
30	Tartu (EE)	33,76	93	Maastricht (NL)	24,34	156	Lille (FR)	18,22
31	Brighton & Hove (UK)	33,51	94	Riga (LT)	24,23	157	Liepāja (LV)	18,12
32	Vienna (AT)	33,39	95	The Hague (NL)	24,23	158	Timişoara (RO)	18,1
33	Oslo (NO)	33,25	96	Uppsala (SE)	24,12	159	Limassol (CY)	18,06
34	Eindhoven (NL)	33,19	97	Bergen (NO)	24,09	160	Pécs (HU)	17,91
35	Budapest (HU)	32,78	98	Coimbra (PT)	24,04	161	Split (HR)	17,68
36	Prague (CZ)	32,66	99	Waterford (IE)	23,93	162	Thessaloniki (EL)	17,47
37	Manchester (UK)	32,4	100	Odense (DK)	23,87	163	Marseille (FR)	17,39
38	Graz (AT)	32,27	101	Bruge (BE)	23,59	164	Lleida (ES)	17,26
39	Edinburgh (UK)	31,97	102	Liverpool (UK)	23,33	165	Naples (IT)	17,23
40	Nuremberg (DE)	31,93	103	Stavanger (NO)	22,83	166	Zaragoza (ES)	17,2
41	Bratislava (SK)	31,9	104	Umea (SE)	22,82	167	Bochum (DE)	17,12

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42	Avignon (FR)	31,7	105	Bucharest (RO)	22,81	168	Łódź (PO)	17,1
43	Galway (IE)	31,36	106	Leeuwarden (NL)	22,75	169	Terrassa (ES)	16,56
44	Malmo (SE)	31,23	107	Rotterdam (NL)	22,67	170	Karlovy vary (CZ)	16,18
45	Vilnius (LT)	31,16	108	Turin (IT)	22,58	171	Iasi (RO)	16,12
46	Barcelona (ES)	31,15	109	Bordeaux (FR)	22,5	172	Veliko Tarnovo (BG)	15,91
47	Krakow (PL)	31,1	110	Espoo (FI)	22,43	173	Rijeka (HR)	15,89
48	Mainz (DE)	30,4	111	Norrköping (SE)	22,41	174	Burgos (ES)	15,86
49	Utrecht (NL)	30,24	112	Gdansk (PO)	22,23	175	Braga (PT)	15,64
50	Porto (PT)	30,17	113	Dundee (UK)	22,23	176	Olomouc (CZ)	15,63
51	Gothenburg (SE)	29,81	114	Valletta (MT)	22,22	177	Pilsen (CZ)	15,4
52	Bologna (IT)	29,69	115	Perugia (IT)	22,12	178	Debrecen (HU)	15,18
53	Leuven (BE)	29,59	116	Cagliari (IT)	21,95	179	Las Palmas (ES)	15,14
54	York (UK)	29,59	117	Nicosia (CY)	21,95	180	Torun (PO)	14,64
55	Leipzig (DE)	29,58	118	Sintra (PT)	21,78	181	Cordova (ES)	14,64
56	Hamburg (DE)	29,12	119	Kaunas (LT)	21,72	182	Baia Mare (RO)	14,22
57	Leeds (UK)	29,03	120	Klaipeda (LT)	21,66	183	Varna (BG)	13,77
58	Toulouse (FR)	28,98	121	San sebastián-donostia (ES)	21,66	184	Košice (SK)	13,23
59	Bremen (DE)	28,76	122	Parma (IT)	21,51	185	Lublin (PO)	12,83
60	Groningen (NL)	28,59	123	Valencia (ES)	21,34	186	Presov (SK)	12,42
61	Trento (IT)	28,58	124	Mons (BE)	21,32	187	Ostrava (CZ)	12,26
62	Ghent (BE)	28,26	125	Pesaro (IT)	21,26	188	Plovdiv (BG)	12,08
63	Nottingham (UK)	28,24	126	Limoges (FR)	21,25	189	Kalamata (EL)	11,75
						190	Patras (EL)	10,05

Annex 1: Cities index ranking. Source: cultural and creative cities monitor dataset 2019.

Final data Brussels 2019		Unit 0-100			
Sub-index	Dimensions	Weight	Indicators	Brussels score 2017	Brussels score 2019
1.Cultural vibrancy	D1.1 Cultural Venues & Facilities	50%	Sights & landmarks	13,58	13,40
		50%	Museums & art galleries	24,01	26,54
		100%	Cinemas	9,42	9,25
		100%	Concert & music halls	13,60	13,42
		100%	Theatres	23,58	23,24
	D1.2 Cultural Participation & Attractiveness	50%	Tourist overnight stays	21,29	21,29
		100%	Museum visitors	22,98	22,69
		100%	Cinema attendance	26,46	26,06
		100%	Satisfaction with cultural facilities	24,29	24,29
2.Creative Economy	D2.1 Creative & Knowledge-based Jobs	100%	Jobs in arts, culture & entertainment	48,58	50,91
		100%	Jobs in media & communication	29,16	30,14
		100%	Jobs in other creative sectors	33,58	26,86
	D2.2 Intellectual Property & Innovation	100%	ICT patent applications	14,77	6,09
		100%	Community design applications	20,94	15,60

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	D2.3 New Jobs in Creative Sectors	100%	Jobs in new arts, culture & entertainment enterprises	13,78	17,22
		100%	Jobs in new media & communication enterprises	18,54	26,42
		100%	Jobs in new enterprises in other creative sectors	22,41	20,07
3.Enabling Environment	D3.1 Human Capital & Education	100%	Graduates in arts and humanities	23,46	27,66
		100%	Graduates in ICT	9,37	10,25
		100%	Average appearances in university rankings	48,39	48,39
	D3.2 Openness, Tolerance & Trust	100%	Foreign graduates	23,16	31,34
		100%	Foreign-born population	76,69	77,76
		100%	Tolerance of foreigners	20,37	20,37
		100%	Integration of foreigners	20,00	20,00
		100%	People trust	16,67	16,67
	D3.3 Local & International Connections	100%	Accessibility to passenger flights	34,74	34,74
		100%	Accessibility by road	40,98	40,98
		100%	Accessibility by rail	35,84	35,84
	D3.4 Quality of Governance	100%	Quality of governance	50,08	47,07

Annex 2: Final data Brussels 2017 and 2019. Source: cultural and creative cities monitor dataset 2019.

Cities			Sub-index ranks					
(XXL group) >1,000,000 inhabitants (21 cities)								
#	C3 index	city	1.Cultural vibrancy score	City	2.Creative economy score	City	3.Enabling environment score	City
1	64,62	Paris	56,27	Paris	81,36	Paris	56,05	London
2	42,68	Munich	41,18	Prague	55,05	Munich	47,85	Paris
3	35,88	London	39,11	Vienna	44,65	Bucharest	41,62	Barcelona
4	35,01	Prague	33,98	Milan	37,40	Hamburg	41,12	Munich
5	34,72	Milan	32,31	Berlin	39,25	London	41,02	Birmingham
6	34,46	Vienna	31,08	Munich	38,31	Budapest	40,70	Madrid
7	33,97	Berlin	27,92	Rome	37,29	Milan	39,03	Vienna
8	29,92	Hamburg	27,71	Barcelona	37,14	Warsaw	33,85	Berlin
9	29,74	Barcelona	26,66	Lyon	35,69	Berlin	32,18	Brussels

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10	28,36	Budapest	23,85	Cologne	34,71	Prague	31,05	Milan
11	27,02	Madrid	22,66	Hamburg	33,16	Sofia	29,45	Hamburg
12	27,00	Bucharest	22,44	London	27,91	Cologne	29,38	Cologne
13	26,58	Cologne	20,22	Brussels	27,52	Vienna	26,14	Lyon
14	26,56	Warsaw	20,71	Budapest	27,15	Madrid	23,78	Budapest
15	25,54	Rome	20,05	Madrid	25,83	Barcelona	23,28	Prague
16	24,84	Lyon	19,67	Warsaw	25,59	Rome	22,91	Bucharest
17	24,28	Brussels	16,01	Birmingham	24,38	Brussels	20,65	Rome
18	19,59	Birmingham	11,40	Bucharest	22,37	Lyon	19,18	Warsaw
19	18,53	Sofia	7,97	Sofia	12,45	Birmingham	10,37	Sofia

Annex 3: Index for the 19 cities with a population greater than 1 million inhabitants 2017.
Source: cultural and creative cities monitor dataset 2019.

Cities			Sub-index ranks					
(XXL group) >1,000,000 inhabitants (20 cities)								
#	C3 index	city	1.Cultural vibrancy score	City	2.Creative economy score	City	3.Enabling environment score	City
1	65,95	Paris	56,45	Paris	83,23	Paris	56,01	London
2	41,22	Munich	40,62	Prague	51,87	Munich	50,42	Paris
3	36,11	London	39,18	Vienna	47,32	Budapest	41,61	Munich
4	35,31	Milan	33,17	Milan	40,07	London	41,45	Birmingham
5	33,98	Berlin	31,58	Berlin	39,91	Milan	40,61	Barcelona
6	33,39	Vienna	30,38	Munich	37,46	Warsaw	39,88	Madrid
7	32,78	Budapest	29,48	Rome	36,59	Berlin	37,46	Vienna
8	32,66	Prague	28,19	Barcelona	35,90	Sofia	33,56	Berlin
9	31,15	Barcelona	26,55	Lyon	35,86	Hamburg	32,73	Brussels
10	29,12	Hamburg	23,24	Cologne	34,13	Bucharest	31,35	Rotterdam
11	27,90	Madrid	22,44	Hamburg	29,38	Barcelona	30,50	Cologne
12	26,99	Warsaw	22,20	Rotterdam	29,33	Madrid	30,40	Milan
13	26,62	Cologne	22,19	London	28,06	Prague	30,13	Lyon
14	26,34	Rome	22,13	Budapest	28,06	Cologne	29,02	Hamburg
15	25,89	Lyon	20,49	Madrid	25,82	Rome	25,96	Prague
16	24,64	Brussels	20,19	Brussels	25,56	Vienna	25,01	Budapest
17	22,81	Bucharest	19,85	Warsaw	25,05	Brussels	21,96	Bucharest
18	22,67	Rotterdam	16,73	Birmingham	23,11	Lyon	21,09	Rome
19	20,44	Birmingham	11,91	Bucharest	18,79	Rotterdam	20,36	Warsaw
20	19,79	Sofia	8,14	Sofia	13,66	Birmingham	10,87	Sofia

Annex 4: Index for the 20 cities with a population greater than 1 million inhabitants 2019.
Source: cultural and creative cities monitor dataset 2019.

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