The impact of culture on sustainable development

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Abstract
Culture plays an essential role in the sustainable and economic development of cities. There are currently more and more cities that recognize their importance and include it in their development plans, thus demonstrating its transversality. However, the prevailing question is how to measure its impact. In this sense, an alternative proposal to the UNESCO Culture for Development Indicators (CDIS) for evaluation is presented, consisting of 27 indicators organized in seven categories. The model is applied in the cities of Stockholm, Bilbao, and the Guadalajara metropolitan area (ZMG, consisting of the municipalities of Guadalajara, San Pedro Tlaquepaque, Zapopan, Tlajomulco de Zuñiga, Tonalá and El Salto). These cities have been chosen for their public policies and the cultural and creative projects that have been carried out there in recent decades. Lastly, the results show that cities that position culture in a cross-cutting manner achieve greater sustainable development.

Key words
Culture, creative economy, cultural and creative industries, sustainable development and creative cities.

How to cite this article
1. Introduction

Over the last two decades, much has been said about the importance of the creative economy for cities. An increasing number of economists, internationalists, sociologists, political scientists, cultural managers, local governments and international institutions have shown interest in the relationship between sustainable development and culture. In this sense, it would be thought that the questioning of the relationship between culture and economy considered during the 60s has been relegated to the past (Baumol & Bowen, 1966). Two decades ago, in his book “Economics and culture” (2001), David Throsby pondered the type of relationship that exists between culture and economy, and if there is one, what type it would be. In conjunction with this questioning, theorists such as Adorno and Horkheimer (1994) and Yüdice (2002) reflect on the commercialization of culture and how this has incorporated other manifestations (creativity and technology), becoming the so-called “cultural and creative industry.”

And more than two decades later, the question raised by academia and cultural managers in international forums is still how to measure culture in terms of development, and at the same time, convince local governments that it is not just any other industry with the capacity to revive an economy.

2. Culture, a concept in constant evolution

One of the main difficulties that people involved in the cultural economy and Creative and Cultural Industries (CCIs) face is defining what is understood by culture. As William (1958, p. 87) points out, “The word culture is exceptionally complex, the second or third most complex word in the English language.” Meanwhile, the United Nations Educational, Scientific and Cultural Organization (UNESCO), in the Mexico Declaration on Cultural Policies, Mondiacult (1982), states:

“...Culture might be considered at present as the combination of distinctive features, spiritual and material, intellectual and affective, that characterize a society or a social group. It encompasses, in addition to humanities and the arts, ways of life, fundamental rights of human beings, value systems, traditions and beliefs... And that culture bestows humans with the capacity for reflection on himself/herself. It makes us as beings, specifically humans, rational, critical and ethically committed. Through it, we discern values and make options. Through it, humans express, become aware of themselves and recognize themselves as an unfinished project, questioning their own fulfillment, looking tirelessly for new meanings and creating works which transcend them...”

UNESCO (1982).

The definition proposed by UNESCO has been adopted by different cities, which also shows the amplitude that it encompasses, and as it is related to people’s manifestations, it will be in constant evolution. Nevertheless, establishing a unique definition is not the main obstacle; related to this is the determination of the value of culture. Authors like Frey (2000, pp. 15-16) and Throsby (2001, pp. 43-44) indicate the following 12 values: authenticity, existence, prestige, education, legacy, option or choice, economic, spiritual, aesthetic, historical, symbolic and social. Of the 12 values identified, the economic value is the easiest to quantify; however, it is not possible to reduce the contribution of culture to development by considering this value alone. Another question then arises: does culture coincide with the logic of economics? Pollak
Traditionally, the cultural sector has attempted to keep the distance between it and politics (1970, pp. 745-763) speaks about the formation of the cultural habit, while Heilbrun and Gray (2004, p. 75) mention that in the case of arts, it is different, due to the fact that art is an acquired taste, “in the sense that, one must expose himself/herself to art to develop taste, and perhaps be exposed to the right circumstances and for a longer period of time.” Thus, to boost cultural consumption and production, people must be helped through different public strategies and policies.

3. Culture and public cultural policies

The expansion of the entire industry surrounding the field of culture and creativity has promoted an approximation to both the world of politics and decision-makers in cultural management. As for Miralles (2005), he points out two aspects, the first of which is the increasing importance of culture and the risk of leaving it in the hands of cultural policies; the second is that culture generates wealth, but wealth does not generate culture. Along this same line, Fernández (1991, p. 15) indicates two risks: the first one is the politicization of culture and second one is the evocation of a cultured policy. Traditionally, the cultural sector has sought to maintain the distance from politics, arguing the risk of censure and the fact that it might be used only as a political resource to generate wealth and soft power.

There is no point of agreement about the origin of public cultural policies, but in an attempt to present a starting point, we can indicate the situation at the end of World War II, as this period is characterized by fragmentation in the structures of the states, the need to reactivate economies that were damaged by the war, rebuild the devastated (mainly European) cities and lay the foundations for a solid welfare state. For Fernández (1991, p.33), there are five factors that modified the relationship between the government and the cultural realm, which are mentioned in Table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Factors of change in the relationship between the government and the cultural realm</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Factors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Decolonization processes.</td>
<td>With the recognition of the independence of the States that had the status of colonies begins a period of self-reappraisal.</td>
</tr>
<tr>
<td>2 The crisis produced in the artistic market by new means of dissemination and reproduction of cultural creations.</td>
<td>The incursion of new media forced us to rethink the market system and its structures.</td>
</tr>
<tr>
<td>3 The welfare demands of the middle classes.</td>
<td>The postwar crisis increased the number of middle and lower class people, who demanded greater access to culture, which implied an increase in funding and patronage.</td>
</tr>
<tr>
<td>4 The dominant presence of positive political attitudes towards a greater role of the welfare state for citizens.</td>
<td>Derived from the crisis, the need to restore the welfare state became imperative, with the aim of offering people better living conditions.</td>
</tr>
<tr>
<td>5 The need to provide a response to the lack of social cohesion revealed the manipulation of public opinion during the war.</td>
<td>Both States and individuals required the presence of social cohesion, which favored coexistence.</td>
</tr>
</tbody>
</table>

Source: Author’s own work; Fernández (1991, p. 33).
Culture and politics are two realms that constantly interact, leading to a coexistence that demands cooperation from both.

Having observed the five factors of change between the government and the cultural realm, it is inferred that culture was not considered an element that helps to consolidate sustainable development, but rather as just another element; and that in a postwar situation, culture was not seen as a priority, and it was far from being seen as a large industry with the capacity to regenerate cities.

Miller and Yúdice (2004, p. 12) offer a reflection on the relationship between culture and politics, specifying that this occurs in two aspects, the first of which is the aesthetic, which arises from people's creativity and it is valued from a critical and historical-cultural approach; culture is thus considered a differentiating indicator of tastes and status. Meanwhile, the second is the anthropological, which situates culture as an indicator that reflects the way in which one lives. Along the same lines, Sanz (1991) establishes the following definition:

“A cultural policy is a coordinated action oriented towards multiple objectives that allows the fulfillment of strategic social functions, has as its horizon the expressiveness and creativity of multiple persons and groups, and is an important instrument of social and political growth.”

(Sanz, 1991, p. 33).

Both Miller and Yúdice (2004) focus on the characteristics and objectives of cultural policies, acknowledging their importance for social and political growth. Nevertheless, this approach remains at the level of growth and not sustainable development. Another definition mentioned is that proposed by Fernández (1991), noting that although it is not an official UNESCO definition, it is the one used in the framework of meetings:

“The representatives of the round table on cultural policies have decided by common agreement not to commit themselves to the search for a definition of culture; the representative of the managing director had deemed it necessary to issue the reminder that it was not up to UNESCO to replace the States in the definition of their cultural policy. It has been judged preferable to a) understand “cultural policy” as a set of conscious and deliberate social practices, of interventions or the absence of interventions aimed at satisfying certain cultural needs through the optimal use of all the material and human resources available to a society at that time; b) specify certain criteria of cultural development and link culture to personality enrichment and to economic and social development.”

(Fernández, 1991, pp. 18-19).

The previous theoreticians maintain a critical posture towards the relationship between the cultural and the political realms, since the latter can permeate and condition the freedom of artistic expression and creativity or be at the service of the State. However, the current international situation, the growth of the CCIs and the high economic flows that it generates have accelerated this rapprochement. Despite the reluctance of previous theoreticians, it is recognized that culture and politics are two realms that constantly interact, giving way to a coexistence that demands cooperation between both of them. This is a fundamental factor to establish public policies outlined in a model of sustained development, based on culture.
Each state has adopted and developed a unique model of cultural policy under which protection, subsidies and support have been provided to manifestations considered as priorities, and therefore these decisions directly affect cultural production and development. It should be noted that cities wishing to adopt a sustainable development model, positioning culture as a cross-cutting element, must focus their development plans on favoring culture and development. Otherwise it will simply constitute support for an industry, just like any other.

4. Culture as an element of sustainable development

The first studies on sustainable development emerged in the 1980s and were conducted by economists, focusing on economic growth, social inclusion and the environmental balance.

In the report Our Common Future (UN, 1987), known as the Brundtland Report, it was stated that, in order to achieve sustainable development, States must base their actions on economics, social inclusion and governance. This concept of development is based on that established by the Organization for Economic Cooperation and Development (OECD). Thus, States must not compromise their environmental resources. By 1992, at the Earth Summit, the three pillars of sustainable development were discussed: economics, social inclusion and governance.

In the early conceptions, culture was not regarded as a pillar of sustainable development. The perception that people had of culture was limited, and remained that way until 2001, when the article 3 of the UNESCO Universal Declaration on Cultural Diversity stated:

“Cultural diversity broadens the choice provided to everyone: it is one of the sources of development, understood not only in terms of economic growth, but also as a means of access to a satisfactory intellectual, affective, moral and spiritual existence.”

Despite academic efforts to demonstrate the importance of culture in sustainable development, it is not until 2005 that UNESCO officially speaks of re-evaluating development policies and including culture in them. Likewise, Article 13 of the Convention on the Protection and Promotion of the Diversity of Expressions states:

“Parties shall endeavor to integrate culture in their development policies at all levels for the creation of conditions conducive to sustainable development and, within this framework, foster aspects relating to the protection and promotion of the diversity of cultural expressions.”

(UNESCO, 2005, p. 8).

Currently, the discourse on the contribution and importance of culture appears frequently in the documents by the UN and UNESCO. The UN General Assembly at the Millennium Development Goals Follow-up Summit entitled “Keeping up the Promise: United to Achieve the Millennium Development Goals” held in 2010 mentions in section 66 that “We consider the cultural dimension to be important for development. We encourage international cooperation in the field of culture, aimed at achieving developmental goals.”
And even though the role performed by culture in the sustainable development of society is recognized, there are two challenges: the first is to establish indicators that verify the level of impact and, the second, it must be ensured that these indicators can be used in every State.

Like the concept of culture, the concept of development has also evolved, reconsidering its foundations and bringing about changes in government actions. Hawkes (2001), in turn, proposes that culture constitutes the fourth pillar of sustainable development, and it is since then that work has been done to include culture in government actions. However, it is observed that there is still a Europeanist vision of development, which continues to be measured with the same indicators.

There are criticisms of the model proposed by Hawkes (2001); authors such as Miralles (2005) and Throsby and Withers (1979) do not contemplate culture as simply another element, but rather as a cross-cutting element, linked to and influencing the economy, social inclusion and governance. Thus, as culture has a polymorphic characteristic, it cannot be seen as an associated element, but rather as an integral element, directly linked to sustainable development.

Political actions function as a geared system, in which each piece is fundamental to consolidate sustainable development, and culture is an inherent factor in each element. Therefore, it is necessary to conceive of sustainable development with a holistic vision, which implies rethinking its conception.

There has thus been a constant evolution since the 1930s, in which the concept of culture has evolved, opening up to more and new manifestations, public spaces, taking the art of museums and private collections to the streets. Two decades later, the first studies in Sweden appear with Andersson (1985a, 1985b, 1985c), who relates culture and creativity to development.

In the 1990s, cities began to stand out on an international level; it is then that terms such as creative, intelligent or sustainable cities arise (Martine & Marshall, 2007; Landry, 2012), leaving behind the so-called global cities (Sassen, 2001). Culture and creativity, as argued by Hawkes (2001) and Nurse (2006), form the fourth pillar of development, while Throsby (2001) affirms that it is not just another pillar, but rather a cross-cutting element.

5. Innovative industries: the Cultural and Creative Industries. What they are, and why they attract cities

Since the 1980s, an increase has been observed in the role of culture in the sustainable development of cities through the so-called CCIs, a sector that has unique characteristics that do not follow traditional economic logic. This has created a new economy, representing a new model of sustainable development.

CCIs emerge from people’s imagination and ideas. They are thus what creates and modifies traditional forms of industry and also reconsiders the concept of sustainable development (Gray, 2007). As Hartley (2005, p.4) argues, “Creativity can have decisive social and economic effects.” Thus, creativity has become an industry with the capacity to regenerate cities and create clusters (Scott, 2000 and 2010).
CCIs are changing the way the industries, dynamics of local governments and their paradiplomacy are understood, and are creating new actors in cultural diplomacy, new jobs and new models of city projection. As UNESCO notes:

“Creative industries are an increasingly important component of knowledge-based post-industrial economies. Not only do they contribute to economic growth and job creation, but they also act as vehicular elements for the transmission of cultural identity, which is an essential aspect for the diffusion and promotion of cultural diversity.”

(UNESCO, 2006).

In this context, CCIs seem to integrate an amorphous figure in which there is room for any innovative and creative cultural manifestation or production, and thus it is changing and represents a challenge for the classic structures of the cultural public policies. The growth of CCIs over the last two decades has generated important economic flows worldwide. According to the world map of CCIs, revenues of 2.25 trillion USD and 29.5 million jobs were recorded in 2015 (EY, 2015, p. 8).

The CCIs might be a catalyst for urban development since projects such as museums, performance centers, creative complexes and urban art, among other manifestations, help to create both a new image and the brand of a city. However, it should be noted that owning a franchise museum recognized worldwide is no guarantee of success; that is to say, a museum by itself does not generate development. For example, the Guggenheim Museum in Bilbao is not the engine of development and economy of the city, although it is a strong attraction for tourists and foreign students. The success in Bilbao was based on the commitment to an articulated development plan, which had the CCIs as a cross-cutting theme, and in which different actors have participated, as shown in the document *Culture as an economic and society-transforming engine in Bilbao* (Bengoetxea, 2014, pp. 4-5), as part of the BCreative program. As Bengoetxea states:

“The policies of the 1990s focused on establishing the necessary conditions to turn Bilbao into the city of service it is today (67% of economic activity corresponds to the services sector and 24% to the industrial sector). To this end, the strategy materialized through significant investments in infrastructure and cultural equipment to take advantage of the urban opportunities generated for the dismantling of industry and the reform of the port and railway infrastructures.”

Bengoetxea (2014, p.2).

One indicator associated with the impact of industry is the generation of jobs; however, one of the characteristics of the CCIs is that the bulk of them are micro and medium-sized companies, so it would either require a significant number of companies to generate a large number of jobs or establishing a cross-cutting action plan linking companies and different sectors together, generating a network of beneficial actions for local development. There are industries within the CCIs, such as the cinema industry, which alone generate large revenue streams, but it is different with other industries, such as museums, libraries, literature, painting or photography.
CCIs are changing how we understand industries, the dynamics of local governments and their paradiplomacy

So far, culture, its position in sustainable development and the relationship with public policies have been discussed. The following section will show the proposed model to measure its impact on sustainable development.

6. Cultural indicators

The characteristics of CCIs make it hard to quantify the non-economic aspects, and thus measure its impact on sustainable development. Faced with this challenge, different indicators and monitors have been developed, based on the different classifications of the CCIs. Social indicators originated in the 1960s in the United States in order to determine the social consequences of the American Space Agency’s space program. At that point there was no theoretical framework or methodology that would permit a detailed quantitative analysis; it is then that the work *Social Indicators* by R. Bauer (1966) established the first social indicators (García, 2000).

For Fukuda (2001, p. 82), the indicators “are a tool of political dialog, which must contain information that serves to evaluate certain matters of current interest.” It is easy to understand why different cultural indicators are presented if we start from the principle that there is no one definition of CCIs, and that the industry is in constant evolution, and therefore so are the indicators. One of the first observations by Fukuda regarding the development policies was the absence of the cultural factor and, after two decades of debates, finally there is talk of culture as a fourth pillar of sustainable development, which requires a reconsideration of the concept of development and the factors that have an impact on it.

A little over five decades later, the difficulties in establishing cultural indicators still continue. Attempts by UNESCO to establish them began in 1972 at the Intergovernmental Conference of Cultural Policies in Europe, held in Helsinki. Here cultural policies and the contributions of culture to development were discussed. Point 20 indicates: “The conference unanimously recognized that cultural development was an integral part of overall development and that cultural policy was an essential factor in each nation’s social and economic development” and adds in Point 22 “[…] The relationships between culture, work and the use of free time that were also the subject of numerous considerations, demand new reflections in the perspective of the cultural dimension of social life.” Later, the Conference on Science and Technology for Development held in Vienna (1979) on cultural indicators and their characteristics said in Section 9:

- “They must be capable of offering the global characteristics of the cultural development of society as a whole and identifying its inequalities.”
- “They must help in the classification of the cultural sectors and must indicate comparable traits.”
- “They must identify the causes of cultural development, thus making it easier to decide which variables have an influence on development to achieve the proposed objectives.

However, it is not until 1982 at the World Conference on Cultural Policies when the Mondiacult Declaration on Cultural Policies emerged, which included cultural statistics. In 1986 the *Framework for Cultural Statistics* was published, which proposed an early framework for the construction of cultural statistics that considered nine categories, corresponding to a situation in which CCIs were not mentioned yet. It therefore only contemplated categories related to culture, leaving aside factors such as tolerance, democratic access, etc. UNESCO, along with the Spanish government, presented the *UNESCO Indicators of Culture for Development (UICD)*
CCIs can be a catalyst for urban development (2014), which reflected a broader amplitude of categories considered within the CCIs, as well as the environment that must exist.

In spite of the different attempts to create cultural indicators and their impact on the economy and sustainable development, in 1996 the European Union created the Eurostat initiative; however, deficiencies still exist in these indicators. As mentioned by Cardona (1995) “the statistical indicators are plagued by problems related to social issues, definitions, methodologies and frequencies.” Unlike the demographic or economic indicators, which have a more developed theoretical basis, the CCIs are lacking in this regard, as they are still seen from an economic - or even at times political - perspective, which makes it difficult to see them from a purely cultural and creative perspective. Thus, CCI statistics have yet to be recognized that are based on cultural and creative theories. An economic focus prevails in those that have been proposed, leaving aside the six cultural values indicated by Throsby (2001, pp. 43-44).

7. Proposal of an alternative model to measure the impact of culture on development

The UICD represent an early attempt to measure the impact of culture on development. They are currently in an early pilot phase in the countries of Bosnia and Herzegovina, Burkina Faso, Colombia, Cambodia, Ecuador, Namibia, Peru, Swaziland, Uruguay and Vietnam, and it should be noted that no country in North America, Western Europe or Australia has been selected, nor has any developing country. Two observations that come from an analysis of the UNESCO UICD are the prevalence of a focus on developed western countries and that there is no grouping based on factors like GDP, population level or infrastructure. The UICD do not consider factors like urban planning, registered patents or political climate, or even the percent of subsidies, which are factors that impact the development of the CCIs.

The creation of an indicator is thus proposed that provides a cross-cutting vision of culture and that coincides with the current concept of sustainable development. For this purpose, several indicators and theoretical proposals have been reviewed, such as the reviews by De Beukelaer (2015), who maintains that the UICD model established by UNESCO was designed to rebalance world trade relations, given the importance that the CCIs have come to have. This favors those sectors that contribute a larger economic percentage over those that contribute a greater spiritual, social, historic or symbolic value or greater authenticity (Throsby, 2001). It would thus be worthwhile to reconsider what is meant by sustainable development and how it is being measured.

Following the line proposed by De Beukelaer (2015), it can be stated that the characteristics of the CCIs do not permit a single focus of intervention to achieve them more quickly. This depends on the creativity of people, the political decisions regarding which sector to support, previously existing equipment and infrastructure, and the financial support of international and private organizations.

The aim of the model is not the trade rebalancing of the CCIs, or the identification of the main industries for the economic revival of a city, rather to evaluate the elements that have an impact on sustainable development, such as infrastructure, academic training focused on the CCIs, professional training, a prior cultural environment, security, tolerance, freedom of expression, protection of cultural heritage, openness to foreigners and communications networks. While the previous factors do not determine the success of a development model based on CCIs, they do favor, promote and support the development of creativity in people.
The main difference between the UICD model and the extended model is that in order to measure the impact of the CCIs on sustainable development, they must be grouped according to three factors: the GDP, level of population and infrastructure, since this makes it possible to establish subgroups and monitor the behavior of cities that share similar characteristics. The second difference lies in the number of indicators and categories that they consist of: the UICD are made up of 22 indicators (see Table 2), divided into seven categories.

Table 2
**UICD indicators***

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy</td>
<td>Contribution of cultural activities to the GDP</td>
</tr>
<tr>
<td></td>
<td>Cultural employment</td>
</tr>
<tr>
<td></td>
<td>Household expenditure on culture</td>
</tr>
<tr>
<td>Education</td>
<td>Inclusive education</td>
</tr>
<tr>
<td></td>
<td>Multilingual education</td>
</tr>
<tr>
<td></td>
<td>Arts education</td>
</tr>
<tr>
<td></td>
<td>Training of professionals in the cultural sector</td>
</tr>
<tr>
<td>Governance</td>
<td>Regulatory framework in culture</td>
</tr>
<tr>
<td></td>
<td>Political and institutional framework in culture</td>
</tr>
<tr>
<td></td>
<td>Distribution of the cultural infrastructures</td>
</tr>
<tr>
<td></td>
<td>Participation of civil society in cultural governance</td>
</tr>
<tr>
<td>Social participation</td>
<td>Participation in cultural activities outside the home</td>
</tr>
<tr>
<td></td>
<td>Participation in cultural activities strengthening one's identity</td>
</tr>
<tr>
<td></td>
<td>Tolerance of other cultures</td>
</tr>
<tr>
<td></td>
<td>Interpersonal trust</td>
</tr>
<tr>
<td></td>
<td>Free will</td>
</tr>
<tr>
<td>Gender equality</td>
<td>Inequality between men and women</td>
</tr>
<tr>
<td></td>
<td>Perception of gender equality</td>
</tr>
<tr>
<td>Communication</td>
<td>Freedom of expression</td>
</tr>
<tr>
<td></td>
<td>Internet access and use</td>
</tr>
<tr>
<td></td>
<td>Diversity of fiction contents on public television</td>
</tr>
<tr>
<td>Heritage</td>
<td>Sustainability of heritage</td>
</tr>
</tbody>
</table>

Source: Author's own work (UNESCO, 2014).
*For more information on methodology, please consult the UICD methodology manual (2014).

Furthermore, the extended model (see Table 3) includes 27 indicators grouped into seven categories. The differences between each category are summarized below:

With regard to the Economy category (E), the percent of the subsidy to each sector of the CCIs is also considered, since there are cities in which the different CCIs depend on subsidies.
### Table 3
Extended model

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economy (E)</strong></td>
<td></td>
</tr>
<tr>
<td>E1. Contribution of CCI-related activities to the GDP</td>
<td>Percentage of activities from the CCIs in the GDP</td>
</tr>
<tr>
<td>E2. Employment generated from the CCIs</td>
<td>Percentage of employment from the CCIs as compared to the rest of the employed population</td>
</tr>
<tr>
<td>E3. Household expenditures on Culture</td>
<td>Percentage of household income destined to CCI activities, goods and services, as compared to total consumer spending</td>
</tr>
<tr>
<td>E4. Subsidy to each sector of the CCIs</td>
<td>Percentage of the subsidy in each of the sectors of the CCIs</td>
</tr>
<tr>
<td><strong>Education (Ed)</strong></td>
<td></td>
</tr>
<tr>
<td>Ed1. Multilingual education</td>
<td>Percentage of hours dedicated to promoting multilingualism</td>
</tr>
<tr>
<td>Ed2. Arts education</td>
<td>Percentage of instructional hours dedicated to artistic training as compared to the total hours of instruction</td>
</tr>
<tr>
<td>Ed3. Training of professionals in the ICT/CCI sector</td>
<td>Training index for professionals in the sector related to ICT/CCIs</td>
</tr>
<tr>
<td>Ed4. Patents related to ICT/CCIs</td>
<td>Number of annual patents related to ICT/CCIs</td>
</tr>
<tr>
<td>Ed5. Graduates in ICT/CCIs</td>
<td>Annual number of students earning a degree in an area related to ICT/CCIs</td>
</tr>
<tr>
<td>Ed6. Foreigners graduating in ICT/CCIs</td>
<td>Annual number of foreign students earning a degree in an area related to ICT/CCIs</td>
</tr>
<tr>
<td>Ed7. Exchange students related to ICT/CCIs</td>
<td>Annual number of exchange students in an area related to ICT/CCIs</td>
</tr>
<tr>
<td>Ed8. Average ranking of the universities</td>
<td>Position of the universities in the ranking</td>
</tr>
<tr>
<td><strong>Governance (G)</strong></td>
<td></td>
</tr>
<tr>
<td>G1. Regulatory framework in culture</td>
<td>Development index of the regulatory framework for the protection and promotion of culture, cultural rights and cultural diversity</td>
</tr>
<tr>
<td>G2. Political and institutional framework in CCIs</td>
<td>Development index of the political and institutional framework for the protection and promotion of CCIs</td>
</tr>
<tr>
<td>G3. Participation of civil society in the governance of CCIs</td>
<td>Participation index of the representatives of CCIs in the formulation and execution of public policies</td>
</tr>
<tr>
<td>G4. Security</td>
<td>Security index</td>
</tr>
<tr>
<td><strong>Social participation (SP)</strong></td>
<td></td>
</tr>
<tr>
<td>SP1. Participation in cultural activities outside the home</td>
<td>Percentage of the population that has participated at least once in a cultural activity outside the home in the last year</td>
</tr>
<tr>
<td>SP2. Participation in activities related to the CCIs</td>
<td>Percentage of the population that has participated at least once in an activity related to the CCIs, strengthening their identity, in the last year</td>
</tr>
<tr>
<td>SP3. Tolerance of other cultures and/or religions</td>
<td>Degree of tolerance that exists in a society with regard to persons of different cultural and religious origins</td>
</tr>
<tr>
<td>SP4. Tolerance of the LGTBI collective</td>
<td>Degree of tolerance that exists in a society with regard to people belonging to the LGTBI collective</td>
</tr>
<tr>
<td><strong>Gender Equity (GE)</strong></td>
<td></td>
</tr>
<tr>
<td>GE1. Equality between men and women</td>
<td>Index of the disparity between men and women in educational, political, labor and legislative realms</td>
</tr>
<tr>
<td>GE2. Perception of gender equality</td>
<td>Degree of positive evaluation of gender equality</td>
</tr>
<tr>
<td><strong>Communication (C)</strong></td>
<td></td>
</tr>
<tr>
<td>C1. Freedom of expression</td>
<td>Index of the freedom of the press in all areas</td>
</tr>
<tr>
<td>C2. Internet access and use</td>
<td>Percentage of people who have access to and use the Internet</td>
</tr>
<tr>
<td><strong>Heritage (H)</strong></td>
<td></td>
</tr>
<tr>
<td>H1. Sustainability of the heritage</td>
<td>Degree of protection and promotion for the sustainability of heritage</td>
</tr>
<tr>
<td>H2. Infrastructure</td>
<td>Number of museums, theaters, art galleries, forums, public spaces, workshops, libraries, spaces for the production of software, television, cinema, audio, radio, music, video games and fashion</td>
</tr>
<tr>
<td>H3. Local and international connections</td>
<td>Existing local and international connections</td>
</tr>
</tbody>
</table>

Source: Author’s own work.
The characteristics of the CCIs make it difficult to quantify non-economic aspects

The following differences are considered in the Education category (Ed): the training of professionals in the ICT/CCI sector, the number of patents related to ICT/CCIs, the number of graduates in ICT/CCIs, the number of foreign graduates in ICT/CCIs, the number of exchange students related to ICT/CCIs and the university ranking.

In the Governance category (G), security is considered as a crucial indicator so that people can create and participate in manifestations related to CCIs, since insecurity negatively affects the quality of life of people, cultural activities in public and private places, and the capacity to attract exchange students, artists and tourism.

In terms of Social Participation (SP), tolerance of the LGTBI collective is considered a factor for coexistence, but also human rights and civil guarantees. However, it must not be seen merely as an area for attracting the pink economy, but rather as an area in which all people enjoy the same rights and civil guarantees.

There are no differences in the categories of Gender equality (GE) and Communication (C), in which the same indicators are considered. Meanwhile, in the category Heritage (H) the sustainability of the heritage, infrastructure and local and international connections are considered, since these three indicators make it possible to measure the effort of local governments to safeguard and maintain the local heritage in good condition, integrating communications and transportation connections.

For the development of the extended model, elements have been considered in relation to the economy, education, governance, social participation, gender equality, communication and heritage, which promote an environment conducive to the development of different manifestations included in the CCIs.

The theoretical review of the works of different authors has made it possible to reflect on the behavior of cities and CCIs. In turn, an analysis of the different development models made it possible to identify the positioning of culture and creativity, thus elucidating aspects with a direct and indirect impact.

Culture is not only causing the meaning of sustainable development to be reconsidered, it is also calling into question how it should be measured. The extended model does not intend to measure the impact of an industry on the economy or on development, rather it contemplates the multifaceted and cross-cutting nature of culture, which is precisely how this model breaks away from the traditional vision of culture. Local governments and the cultural agents involved are recommended to maintain a cross-cutting vision that takes into account aspects of the economy, education, governance, social participation, gender equity, communication and heritage.

8. Bilbao

Bilbao is the capital of Vizcaya, and forms part of the Autonomous Community of the Basque Country (Euskadi) in northern Spain. It has an area of 4,059 km2 and a population of 342,481, according to 2016 figures provided by the Basque Institute of Statistics. Bilbao is the largest city in a metropolitan area consisting of 26 municipalities situated along the Bilbao estuary.

The founding of the Town of Bilbao dates back to around the year 1300, and its history has been linked to an industrial past based on mining, metal working and shipbuilding that prevailed during the 19th and 20th centuries (Bilbao Tourism (n.d.) and Bilbao Ría, 2000). With the decline of the industrial model and faced with the need for an economic revival and urban...
Culture is not only reconsidering the meaning of sustainable development, but also the way in which it should be measured.

Bilbao not only needed to reinvent itself, it also had to overcome problems derived from an eroded industry, a polluted estuary, the lack of urban planning, the instability generated by the terrorist attacks by Euskadi Ta Askatasuna (ETA), the interventions by the Anti-Terrorist Liberation Groups (GAL), the degradation of the social fabric caused by the high level of heroin consumption, unemployment and marginalization. Rodriguez (2002, p. 76) mentions that “Bilbao seemed hopelessly trapped in a process of unstoppable socioeconomic, demographic, environmental and functional collapse.” A change was needed and for this to occur, the participation of the Provincial Government, the Basque Government and society was essential. There was an express need for a transformation; as Azkuna says:

“A Bilbao has had no choice but to transform itself, just like the metalworking industry and its port have had to do. Its revitalization strategy, which has opted for daring alternatives like the Guggenheim Museum, has been based on innovative elements such as urban marketing. To free itself of its image, pessimism and decline, the “new city” had to awaken its residents, instill hope and confidence, create focuses of attraction and “sell” its emerging reality.”


Areso (2001, pp. 35-36), in turn, talks about an economic mutation and an ambitious urban renovation based on four pillars: 1) accessibility to the outside world and internal mobility within the metropolitan area, 2) environmental and urban regeneration, 3) investment in human resources and in values like knowledge, creativity, education and the capacity for initiative and 4) cultural centrality as an essential element of dynamism for the city and its external image.

Bilbao is working to consolidate its position on an international level, to be a reference in terms of CCI, to strengthen and attract the local and foreign creative class. The attractiveness of Bilbao is more than just a titanium building; it lies in its very essence, in its rapid reinvention, its streets, its gastronomy, its creativity, its innovation and its traditions.

9. Stockholm

Stockholm was founded in 1252 and is made up of 14 islands along Lake Mälaren, connected by 57 bridges. It had a population of 1,372,565 people in 2012 and was named an

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The adoption of this development model means that cities must formulate public policies that consider culture from a cross-cutting perspective. Alpha class global city by the GaWC in 2008. Cultural politics in Sweden since the 1960s have been based on the freedom of expression, participation and democracy, culture for everyone in all creative and cultural expressions. For Sweden, “societies need a strong cultural life. Through its potential to move and inspire, culture contributes to both the strengthening of individuals and the developing of society as a whole” (Swedish Arts Council, n.d.).

The trend in Swedish cultural politics of conceiving the artistic and creative sector as entrepreneurs has been strengthened with the support of microloans (Stallabrass, 2004). The development of Swedish cultural policies is linked to the Nordic model, and Nielsen (2008, pp. 15-16) maintains that the current model of CCIs in Sweden is based on the experience industry.

From the 1980s on, the CCIs have opened up to the private sector and since then, cultural politics have had the following objectives: to promote opportunities for everyone to experience culture, to participate in educational programs and to develop their creative skills, to promote artistic quality and renewal, to promote a dynamic cultural heritage that is preserved, used and developed, to promote accessibility, to promote international and intercultural exchanges and cooperation in the area of culture and to strengthen the right to culture of children and young people (Swedish Art Council, n.d.).

Stockholm is currently portrayed as a city that bases its cultural and creative development on sustainability, equity, tolerance and freedom. Observing the historic evolution of cultural policies in Stockholm since the 1930s, they have been focused on guaranteeing access by all persons to culture, establishing cultural consumption as a daily practice with which the society feels identified, so that it demands more cultural and creative activities, consolidating the image of Stockholm as a creative city.

10. The ZMG

Guadalajara is the capital of the state of Jalisco, located in western Mexico. The increasing urban sprawl has promoted the merging of neighboring municipalities to form the ZMG, which had a population of 4,796,603 people in 2015 (INEGI, 2015).

Cultural activities in the ZMG depend mainly on the state and municipal governments, the University of Guadalajara, private institutions like the Guadalajara Chamber of Commerce and Civil Society Organizations.

The ZMG has been consolidated in terms of cultural offerings, hosting cultural events on an international level, such as the Guadalajara International Book Fair (FIL), the Mariachi and Charrería Festival, The Guadalajara International Film Festival (FICG) and the May Cultural Festival, among others that may yet need consolidation on an international level, but still strengthen the ZMG as a city of cultural relevance that is beginning to focus on the development of the CCI.

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2 Concept established by the University of Loughborough.
3 The Swedish model of CCIs is made up by architecture, art, design, gastronomy, learning based on the fashion industry, cinematography, literature, music, photography, the media, tourism and video games (Nielsen, 2008, p. 17).
4 Event organized by the University of Guadalajara.
5 Event organized by the Guadalajara Chamber of Commerce.
6 Event organized by the University of Guadalajara.
7 Event organized by the Jalisco State Government.
Another initiative of the University of Guadalajara is the creation of the University Cultural Center project, which began in 2001 and was joined by the municipal government of Zapopan in 2003. The project includes the creation of an urban district for learning, leisure and creativity, in order to “offer opportunities to coexist with culture in a different, closer way, as an essential part of our lives, that provides creativity, generates ideas and stimulates education”. One of the main objectives is to attract cultural tourism to the ZMG (University Cultural Center, n.d.).

11. Application of the extended model to the cities of Bilbao, Stockholm and the ZMG

Below are the overall results by category for the application of the extended model to these three cities (see Figure 1).

Figure 1
Overall results

Figure 2 shows the discrepancies in each indicator, permitting a more in-depth analysis of the evaluation of these three cities. Tolerance of other religions is the indicator showing the least dispersion, while the training of professionals is the indicator with the greatest dispersion among Stockholm, Bilbao and the ZMG.

It can also be observed that the evaluation of the indicators for Stockholm trend towards the radial extremes, with the lowest level corresponding to the number of exchange students in ICT/CCI.

Figure 2
Detailed results
In the case of Bilbao, a radial asymmetry is observed, with the best values on the indicators corresponding to social participation, gender equity, communication and heritage, while asymmetrical variations are present in the indicators corresponding to the economy and education.

In the case of the ZMG, it is observed that the indicators corresponding to security, exchange students in ICT/CCI and foreigners graduating in ICT/CCI are the ones that have the lowest scores, followed by household expenditure on culture and access and use of the Internet in homes and public spaces.

12. Conclusions

The role of culture is changing the understanding of sustainable development. The current situation situates both culture and creativity in a strategic position in cities, making it a new model of development that is being adopted by different cities around the world. However, culture and creativity are not isolated elements; they are linked to dynamics and structures of a social, economic, environmental, educational and political nature in cities, which is to say that they are cross-cutting elements that have aesthetic, spiritual, social, historic and symbolic values, as well as those related to authenticity, existence, prestige, options, education and legacy. Thus, in order to adopt this model of development we must first assume that culture and creativity are a means in themselves to ensure sustainable development.

The adoption of this development model means that the cities must formulate public policies that incorporate culture in a cross-cutting manner, with clear objectives focused on strengthening institutions, urban planning, connectivity, social participation, gender equality and internationalization.

Stockholm is then observed to be a pioneering city that adopted this model decades ago, prioritizing culture, designing their development plans with a cross-cutting vision, fostering its democratization and guaranteeing that everyone can participate in them, thus strengthening social cohesion and cultural habits.

In the case of Bilbao, the change in the development model has been recent and rapid; it is a city that has not only transformed itself in the sense of urban planning, by rehabilitating spaces along the estuary, with projects such as the Bilbao Guggenheim Museum and the island of Zorrotzaurre, it has focused its acclaim with a cross-cutting vision of culture and creativity, which distances itself from the vision that conceives them as a simple industry.

Meanwhile, the case of the ZMG is unique, first because it is detected that the main cultural and creative development agent is the University of Guadalajara. As a result, not only are the cities positioning themselves as agents on an international level, we are also talking about new agents. A lesson yet to be learned by the ZMG is that the sustainable development model which contemplates culture as a cross-cutting element implies the cooperative work of local governments, universities and agents from the cultural and creative sectors.

The three cases analyzed show that local governments and universities are the new international agents, but the people are the ones who are determining the type of city they want, the dynamics that are established in it and the relationship with nature, as well as the desired life and lifestyle.
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15. References


The impact of culture on sustainable development


