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CENTRO DE ANÁLISIS PARA LA INVESTIGACIÓN EN INNOVACIÓN

CREATIVE ECONOMY

in Mexico and its impact on the national economy.

The economic performance of copyright-based Industries: calculation from 2004 to 2019.

2022

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Motivation.

The main motive for the creation of this work was the lack of statistical information in Mexico regarding the recent state of the creative economy in the country. This information is essential to promote and justify changes that allow the country to increase investment and support for the creative and cultural industries. Simultaneously, this data allows decision-makers to know what the current situation is in order to design better-focused policies and actions. This research aims to give a voice to the creatives, entrepreneurs, businessmen, and companies in the sector, who strive every day to become development engines of Mexico.

Reaching and Limitations.

The publication contains as much information as possible gathered from specialized literature, and various sources. This is a major effort made by CAIINNO, and like any research, it is subject to revision and analysis. Nevertheless, its aim has always been to provide objective and scientific knowledge.

Government Support.

This effort seeks to help the work carried out by government entities in Mexico as well as in any other country. Part of what makes a country better is the participation of organized civil society. As in this instance CAIINNO seeks to contribute to knowledge as a mean to help within all levels of government in Mexico, the country and other beneficiaries (academics, specialists, etc.).

Political Note.

CAIINNO's work, including this research and its researchers is not related to any political party in Mexico or abroad. It was conducted because it is a topic of interest to the authors and helps improve the country's conditions. Although it is intended to be useful for decision-makers and public officials (many of whom are linked to political parties) this publication was not designed to make attacks between political parties or candidates, and its use for such purposes is prohibited.

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SUMMARY

This research aims to identify creative economy's impact on Mexico's economy, Gross Domestic Product and the number of people employed. It covers the period from 2013 to 2018, and only official sources or sources recognized by the literature were sought and used to conduct this study that covers that five-year period.

It is shown that the creative economy's contribution is greater than that of the construction sector and very close to that of oil and gas extraction. Also, the number of people working in the sector has steadily increased since 2013.

As a first contribution, an overview of the country's creative economy is presented. Using recent data, a calculation was made to compare this economy with other representative sectors in the country, such as oil and gas extraction. The result shows its potential and relevance for Mexico.

Next, the results of a literature review are presented; focused on the identification of methodologies that measure the impact of creative economy in a country. This section provides useful options for those who revise this document as some of them, could possibly be replicated in Mexico. In this research, a methodology designed by the World Intellectual Property Organization was chosen since it was developed to determine the economic contribution of industries related to copyright.

Then, methodology used is detailed, the way in which it was adapted for this research, the data sources used and consulted, and the years considered. Subsequently, the results of the economic contribution of copyright-based industries to the Mexican national GDP are presented, as well as their gross value added, and the jobs performed within this economy.

Although its contribution to the GDP decreased during the period under study; the creative economy, represented in the copyright-based industries, had a significant increase in the national gross value added, and an outstanding contribution to the generation of jobs.

The research used the World Intellectual Property Organization (2008) designed methodology to determine the economic contribution of copyright-based industries. Therefore, when talking about the impact of the creative economy on GDP, it is made with reference to the impact of copyright-based industries. This is so because it is the branch of intellectual property most closely linked to this economy. This methodological basis has already been widely tested through its implementation in at least 40 countries. In Mexico, it was used by Márquez-Mees, Ruiz Funes, & Yaber (2006).

1. THE CREATIVE ECONOMY IN MEXICO: AN ALTERNATIVE FOR THE ECONOMIC RECOVERY FROM THE CONSEQUENCES OF COVID-19.

The year 2021 was declared as the " International Year of Creative Economy for Sustainable Development" at the 74th General Assembly of the United Nations. This is no surprise if it is considered that this economy contributes with 3 percent of the world's Gross Domestic Product (UNESCO, 2021). In Mexico, its impact is not far from that percentage, so its importance in the country is significant.

It is important to start with a definition. For this publication, it is taken as a reference the one provided by Benavente & Grazzi (2017, p. 7), who consider creative economy to be "the group of activities through which ideas are transformed into cultural and creative goods and services, whose value is or could be protected by intellectual property rights (IPR)".

The definition above becomes relevant for this research since it contemplates how important intellectual property is in this economy, especially copyrights, as they are the most closely linked to the subject. While the work of some is materialized in intangible goods such as cars or houses, for creatives it is materialized in intangibles such as paintings and songs, therefore the creative economy cannot be conceived without intellectual property (Santamaria, Parra, & Wong, 2021).

So, how important is the creative economy for Mexico? A first answer was obtained from the calculation made in this research to identify its contribution to GDP. For this first exercise (see Graph 1), the Culture Satellite Account, created by the National Institute of Statistics and Geography (INEGI) was used. This account is part of Mexico's System of National Accounts, and it is a Methodological Guide for the Implementation of Culture Satellite Accounts in Ibero-America, of the Andrés Bello Convention inspired methodology. It shows the economic value of the culture sector and its participation in the national economy (INEGI, 2019).

In order to better exemplify its impact on national GDP, a comparison was made with other representative economic sectors in Mexico. For this purpose, information for the years 2013 and 2018 from the Economic Census of the National Institute of Statistics and Geography (INEGI, 2019) from 3 more sectors was collected, including: I. Automotive Sector (which includes manufacturing of cars and trucks, bodies and trailers, auto parts and other transportation equipment); II. Oil and gas extraction sector, and; III. Construction sector.

Afterwards, information on the total gross value added of each of the four economic sectors in millions of Mexican pesos was drawn, and their contribution to Mexico's national GDP was calculated, using the following formula:

$$CPS = \frac{(\text{VAB} * 100)}{\text{PIB}}$$

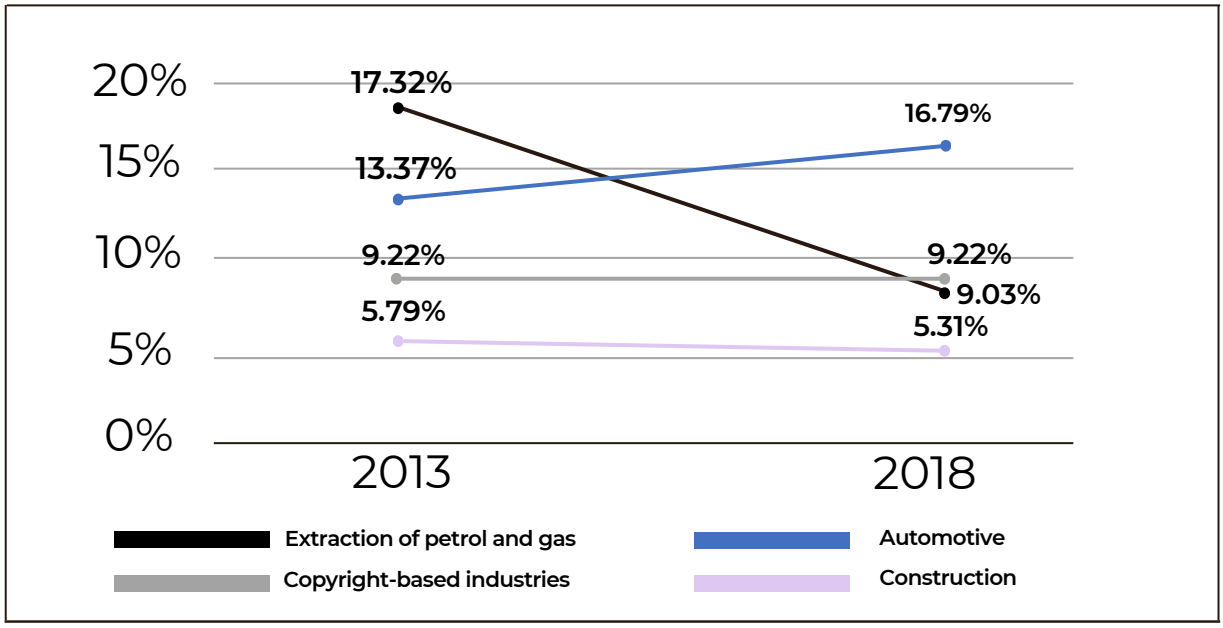
where:

CGS = Contribution to GDP of each Sector.

GVA = Total Gross Value Added of each sector.

GDP = National Gross Domestic Product.

Graph 1: Comparative contribution of various sectors to Mexico's GDP from 2013 and 2018.



Source: Own elaboration using data from the 2013 and 2018 Economic Censuses and 2013 and 2018 GDP and national accounts, conducted by the National Institute of Statistics and Geography (INEGI for its acronym in Spanish), available at: https://www.inegi.org.mx/app/saic/default.html and https://www.inegi.org.mx/temas/pib/#Informacion_general respectively.

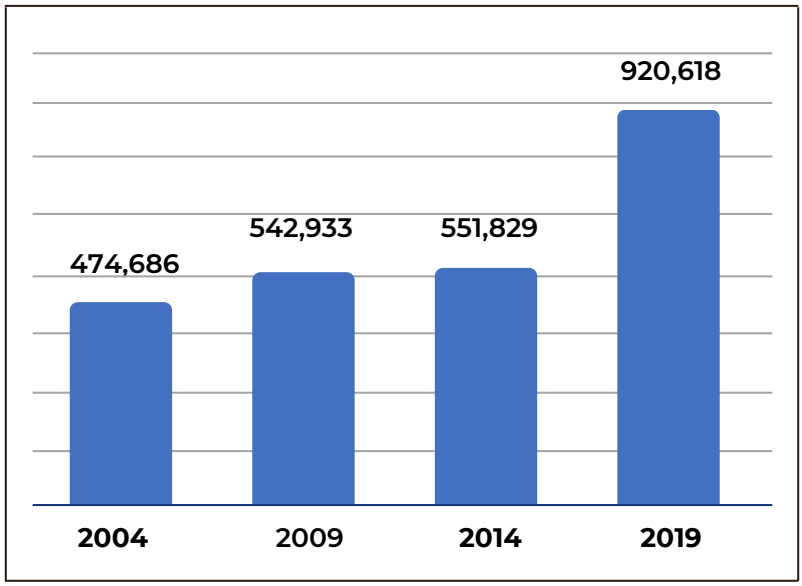
Evidently, the culture sector showed the most stable contribution within national GDP, going from a 9.22 percent contribution in 2013 to another of the same value in 2018. The automotive sector presented a higher GDP contribution, advancing from 13.3 percent in 2013 to 16.7 percent in 2018. The oil and gas extraction sector, despite having a high 17.3 percent contribution in 2013, this percentage decreased, showing a value of 9.3 percent in 2018. Finally, in terms of its contribution to national GDP the construction sector was the least significant in this comparison, showing values of 5.7 percent in 2013, and 5.3 percent in 2018.

The aforementioned demonstrates the strength of the creative economy in Mexico, however, it is not the same throughout the country. In the creative and cultural industries database, it can be corroborated that there is a huge gap at the subnational level between states, as Mexico City is far above the rest of the country in almost all indicators. This database was designed by the Center for Analysis and Research in Innovation, C.A. (CAIINNO, 2020), and works with a big data visualizer.

The taxonomy developed by the Inter-American Development Bank (IDB) was used as a reference for this database, which includes a subdivision into 10 general areas. Within each one, the industries were integrated with data of three census years (2009, 2014 and 2019), available from the Automated System of Census Information of the National Institute of Statistics and Geography (INEGI for its acronym in Spanish). Available at: https://www.caiinno.org/industrias-creativas/

Analyzing the behavior of the culture sector based on the Culture Satellite Account (INEGI, 2019), it was identified that its GVA increased within the 4 censuses, going from 474 to 920 thousand million Mexican pesos. This represents an increase of 94 percent, reflecting a high growth in the productivity of the creative economy.

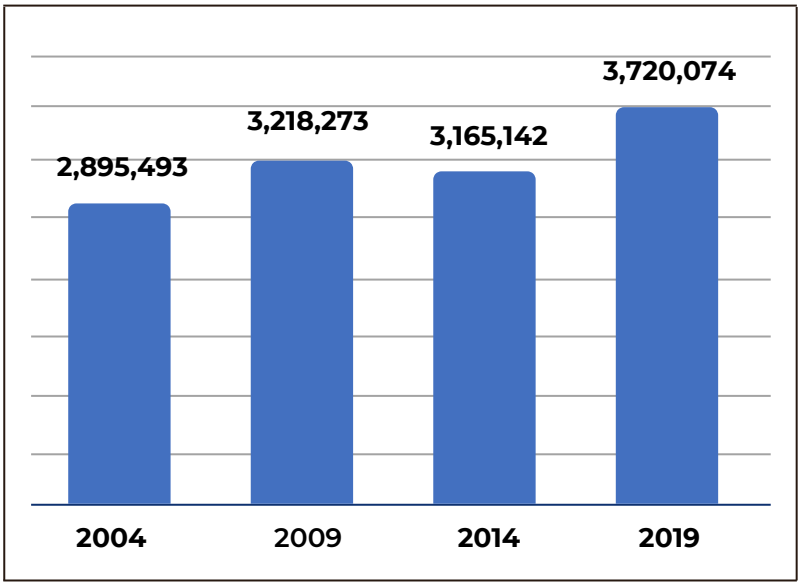
Graph 2: Gross value added of the culture sector (Values in millions of Mexican pesos at current prices).



Source: Own elaboration using data from the Culture Satellite Account for the years 2013 and 2018, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

Linked to the above, also from the Culture Satellite Account it was possible to identify the number of jobs performed within this sector. Jobs increased by 28 percent from 2004 to 2019, from 2,895,493 to 3,720,074 jobs, as seen below:

Graph 3: Jobs in the cultural and creative sector (Values in number of people).



Source: Own elaboration using data from the Culture Satellite Account for the years 2013 and 2018, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

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However, possibly the most important global effort in the creative economy are the studies made to measure the economic performance of copyright-based industries conducted by the World Intellectual Property Organization (WIPO, n.d.). These studies were conducted in order to identify their impact on national GDP for several countries. It is important to consider that copyrights are the most abundant within creative economy, hence they could be the best point of reference. The following table shows the results for Mexico and other Latin American and Caribbean (LAC) countries:

Table 1. Economic performance of copyright-based industries.

Country	Period of Evaluation (Years)	Contribution to GDP (Percentage)
Argentina	2003 - 2008	**4.7%**
Colombia	2000 - 2005	**3.3%**
Ecuador	2010 - 2014	**4.47%**
Jamaica	2001 - 2005	**4.8%**
México	1998 - 2003	**4.77%**
Panamá	2002 - 2006	**3.77%**
Perú	2002 - 2007	**2.67%**
Trinidad y Tobago	2000 - 2011	**5.5%**

Source: Own elaboration with data from the publications of "Resultados económicos de las industrias basadas en el derecho de autor", available in: http://www.wipo.int/copyright/es/performance/
Note: Some percentages include an average for the evaluation period, and in other cases they are taken as a reference, but the percentage published is for the last year of evaluation.
*In Peru, the National Added Value was considered, not the GDP.

Reports from Argentina (Massot, Prieto, & Weiry, 2013), Colombia (Castañeda Cordy, Cubillos López, Sarmiento López, & Vallecilla Gordillo, 2008), Ecuador (Cardoso, 2017), Jamaica (James, The Economic Contribution of Copyright-Based Industries in Jamaica, 2007), Mexico (Márquez-Mees, Ruiz Funes, & Yaber, 2006), Panama (Martínez, 2009), Peru (Morales Saravia, Távara, Solórzano, & Villanueva, 2009) as well as for Trinidad and Tobago (James, 2012), were prepared throughout different years and cover different periods. They all show that the impact on the national economy is significant. In all cases, the lack of data and statistical information makes this type of effort a challenge.

Despite the relevance of the creative economy for Mexico and the world, it was not exempt from suffering the negative effects caused by COVID-19. For instance, an estimate of the damage caused by the pandemic was recently made in the United Kingdom, showing a 31 percent reduction in profits, causing 409 thousand jobs to be at risk (Gambarin & Ismail, 2021). In view of this situation, the United Nations recently called on all countries to generate aid schemes for both survival and recovery (UN, 2021).

These efforts should not be made without prior analysis that helps determine the best way to intervene, especially when both public and private resources for cultural and creative industries (CCI) are as limited as in Mexico. Especially when they could be the most devastated by the pandemic (Villanueva, 2021). Hence the relevance of this document, given that it is a tool for the design of policies, as well as for public policy, legislative and administrative decision-making.

In this regard, some efforts have been made to generate knowledge focused on all parties involved in this economy, so that they may have useful alternatives and proposals to overcome the crisis. One way is by generating a link with knowledge economy in order to find ways to create or take advantage of innovations (Santamaría Hernández, 2020)[1]. The Organization for Economic Cooperation and Development (OECD, 2020) has also generated proposals on how creative people can get out of the crisis. Even the European Commission (2020) has a very complete program in response to COVID-19.

Another recent effort was made by the IDB, which called for proposals on solutions to get Latin America and the Caribbean out of the pandemic crisis, selecting 10 out of more than 200 received from around the world, one of which focuses on the creative economy. The work selected and developed by CAIINNO, which was the only Mexican organization selected, contains recent information, projections on the impact of the pandemic, and public policy recommendations with a cross-cutting approach, as it considers that only such actions and interventions can achieve a lasting positive effect (Santamaría, Worthman, Castro, & Álvarez, 2021).

In conclusion, if there is one thing that characterizes creativity, it is its resilience. In literature, it is possible to find how the creative economy makes its way in places where conditions seem totally adverse. A clear example of this is the case of Nigerian cinema, called Nollywood, where despite political, economic and security crises, the film industry came to become the second source of jobs in the country, only behind agriculture, contributing enormously to its GDP (Santamaría Hernández & Flores Trejo, El país africano que llegó a producir más películas que Hollywood, 2018). This and other examples should serve as motivators for Mexicans.

[1] More information on several solutions against the effects of COVID-19 in creative economy and other areas can be found in the following book: https://www.amazon.com/Una-Br%C3%BAjula-para-Crisis-Lecciones/dp/1633919153

2. THE CREATIVE ECONOMY IN THE GDP: OPTIONS TO MEASURE IT IN MEXICO.

The creative economy area is a hard to define sector because of its nature and diversity. However, despite it being a complicated task, in the literature, there are several efforts and methodologies to measure its impact in creative and cultural industries within a country's economy. All this with the purpose of supporting the argument that the creative economy benefits growth.

This investigation attempts to confirm the hypothesis that the creative economy generates economic growth. The study was then divided into three phases:

1. The specialized literature revision of the available options to measure the creative economy impact on the national GDP.
2. The identification of indicators required to implement each of the options according to the statistic information available in Mexico.
3. The methodology selection, which after the previous analysis can be replicated in Mexico since the statistic information grants it.

Coming back to the first bullet, the starting point was the identification of methodologies that have been applied and confirmed in several cases. The following are the methodologies identified:

a) *Creative Economy Index.*

This index was designed by "A Creative Momentum Project in the National University of Ireland (Collins & Murtach, 2018). Its purpose is to measure the development of the creative economy. In 2018, this methodology analyzed the creative sector in various European regions: northwestern Iceland, central Sweden, northern Finland, western, southwestern, and Northern Ireland.

The index is composed of 26 indicators, divided into 5 topics weighted in different percentages according to their degree of importance:

1. **First topic (40%):** *Includes data on the creative industries sector span in each studied region.*
2. **Second topic (20%):** *Addresses information regarding the business and innovation environment.*
3. ***Third topic (20%):*** *Includes measures of infrastructure and cultural consumption.*
4. **Fourth topic (10%):** *Contains measures of digital connectivity and digital cultural production.*
5. ***Fifth topic (10%):*** *Addresses measures of population diversity, which influence the creative economy development.*

b) *The Global Creativity Index.*

This index is based on the economic development´s 3T´s: talent, technology, and tolerance (Florida, Mellander, & King, 2015). In 2015, the Martin Prosperity Institute published a study where this methodology was used to classify 139 nations according to the following 3 pillars:

1. **Talent** is considered a driver on today's economy and is measured by the proportion of the workforce in the creative class and the proportion of adults with higher education.
2. **Technology** is crucial in knowledge economy, society and is estimated by the standard measure of research and development (R&D). Also, to the GDP percentage devoted to R&D and the standard innovation measure based on the patents applied for per capita.
3. **Tolerance** is important to create an enabling environment for creativity since openness to new ideas is one of the main drivers for its development. This is measured by the percentage of people who say their city or town is a safe place for ethnic and racial minorities and homosexuals.

c) Composite Index of the Creative Economy.

This index is a summary measure of an entity's (e.g., a region's) creative capacity or capability in three key dimensions: Innovation, Entrepreneurship and Openness (Bowen, Moesen, & Sleuwaegen, 2008). The hypothesis is that these dimensions together, "added-up", achieve economic growth. Their study assesses the creative capacity of nine regions: Baden-Württemberg, Catalonia, Flanders, Lombardy, Maryland, Nord-Pas-De-Calais, Quebec, Rhône-Alpes, Scotland. Their analysis showed that Baden-Württemberg ranks highest in terms of creative capacity while Nord-PasDe-Calais ranks lowest.

1) **Innovation** focuses on three aspects: human resources in science and technology, patents, and access to the Internet.
2) **Entrepreneurship** is based on the establishment of start-ups, fear of failure, and risk capital.
3) **Openness** is composed of foreign-born population, foreign students, and urban population.

d) *The CCI Creative City Index.*

This index developed by the ARC Centre of Excellence in Creative Industries and Innovation (CCI), is useful to evaluate the creative capacities and a region's potential. It has evaluated more than 20 cities so far, including Bilbao, Helsinki, Adelaide, Mannheim, Ghent, Canberra, Taipei, San Sebastian, Oulu, Cardiff, Freiburg, Seville, and Kirovograd in Ukraine. The index has 8 sub-index categories.

1) Creative Industries Scale, Scope & Employment.
2) Microproductivity.
3) Attractions & Economy of Attention.
4) Participation & Expenditure.
5) Public Support.
6) Human Capital & Research.
7) Global Integration.
8) Openness, Tolerance & Diversity.

3. THE IMPACT OF THE CREATIVE ECONOMY ON MEXICO'S GDP

As previously mentioned, three steps were followed to choose the methodology through which the calculation was made to identify the impact of the creative economy in Mexico. After performing step 2 (identification of the indicators required to implement each one, considering the statistical information available in Mexico), it was decided to opt for the one designed by WIPO (2008), since it could be replicated in Mexico, as the statistical information available allowed it.

The methodology designed by WIPO makes it possible to determine the economic contribution of copyright-based industries. Its purpose is to provide a system to measure the size of copyright-based industries, and thus make meaningful comparisons between such industries and other sectors, both nationally and internationally.

This methodology has been the most widely used in the specialized literature to measure the impact of copyright-based industries worldwide. It has been replicated in more than 40 countries since its first publication and has served as a benchmark for decision-making aimed at boosting the creative economy, due to its relationship with employment, added value, trade and production.

The methodology uses the Berne Convention for the Protection of Literary and Artistic Works definition of copyright, which determines that "the terms 'literary and artistic works: comprise all productions in the literary, scientific, and artistic fields, whatever the mode or form of expression'" (WIPO, 2016, p. 7). Therefore, when talking about the impact of the creative economy on GDP, it refers to the impact of copyright-based industries.

This methodology classifies copyright-based industries according to their activity and dependence on copyright as follows:

a) Core Copyright Industries.

b) Interdependent Copyright Industries.

c) Partial Copyright Industries .

d) Non-dedicated Support Industries.

This general classification creates a subclassification in which different industrial sectors are integrated as follows

Table 2. Classification of copyright-based industries according to their activity

Partial Copyright Industries	Non-dedicated Support Industries
"Industries in which a portion of the activities is related to works and other protected subject matter and may involve creation, production and manufacture, performance, broadcasting, communication and exhibition, and distribution and sales". It covers: • General wholesale and retail; • General transportation; and • Information and communications (including wired, wireless, satellite and Internet). • Household goods, china and glass items; • Wallcoverings and carpets; • Toys and games; • Arquitecture, engineering, surveying; • Interior design; and • Museums.	"Industries in which a portion of the activities is related to facilitating broadcast communication and the distribution or sale of works and other protected subject matter whose activities have not been included in the core copyright industries". • General wholesale and retail; • General transportation; and • Information and communication (including wired, wireless, satellite and Internet).

(Continuous) Table 2. Classification of copyright-based industries according to their activity.

Core Copyright Industries	Interdependent Copyright Industries
"Those which are wholly engaged in the creation, production and manufacture, performance, broadcasting, communication and exhibition, or distribution and sale of works and other protected subject matter". Generally includes the following: 1. Press and Publications. • authors, writers, translators; • newspapers; news and features agencies; etc. • Magazines and publications; etc. 2. Music, Teather, Operas: • Composers, lyricists, arrangers, choreographers, directors, performers and others; • Printing and publication of music; etc. 3. Motion Picture and Video • Writers, directors, actors; etc. • Motion picture and video production and distribution; etc. 4. Radio and Television • National radio and television broadcasting companies; • Other radio and television broadcasters; etc. 5. Photography: • Studios and commercial photography; • Photographic agencies and libraries (photo printing laboratories should not be included). 6. Software, Databases and Videogames: •Programming, development and design; • Database processing and publishing; etc. 7. Visual and Graphic Arts: • Artists; • Art galleries and other wholesale and retail businesses; etc. 8. Advertising services • Agencies, buying services. 9. Copyright Collecting Societies.	"Industries which are engaged in the production, manufacture and sale, and renting or leasing of equipment. Their function is wholly or primarily to facilitate the creation, production or use of works and other protected subject matter". It encompasses: manufacturing and wholesale and retail marketing (sales, rental and leasing) of: • Television equipment, radios, CD-DVD-Blu-Ray and cassette players, electronic gaming equipment; • Electronics and other similar equipment; • Computers and equipment • Tablets and smartphones; and • Musical instruments • Photographic and cinematographic instruments; • Photocopiers; • Blank Recording Material; and • Paper.

Source: Own elaboration with support from "Guía para determinar la contribución económica de las industrias relacionadas con el derecho de autor", OMPI 2015, disponible en: https://tind.wipo.int/record/28650?ln=en

This methodology is based on two groups of indicators:

1) The first, related to the size of copyright-based industries with indicators such as GDP percentage, employment, and foreign trade.
2) The second, related to **performance** within sectors and the economy as a whole, such as labor productivity, the net balance of payments position, and the contribution to the economic and employment growth.

a) Methodology Description

This methodology was useful to identify the copyright-based industries in Mexico. For this, the contribution to the gross added value of copyright-based industries to national employment was calculated. The data collected from 2013 to 2018 obtained from the National Survey of Occupation and Employment (ENOE for its acronym in Spanish) and the Satellite Account of Culture, both elaborated by INEGI.

The formulas used to estimate the contribution of copyright-based industries are as follows:

a) To calculate the contribution of copyright-based industries to each country's GDP:

$$CG = \frac{(GVA * 100)}{GDP}$$

where:

CG = Contribution to the GDP of each country.

GVA = Gross Value Added of copyright-based industries.

GDP = Gross Domestic Product.

b) To calculate the contribution of copyright-based industries to employment in each country:

$$CE = \frac{(TCU * 100)}{EP}$$

where:

CE =Contribution to employment in each country.

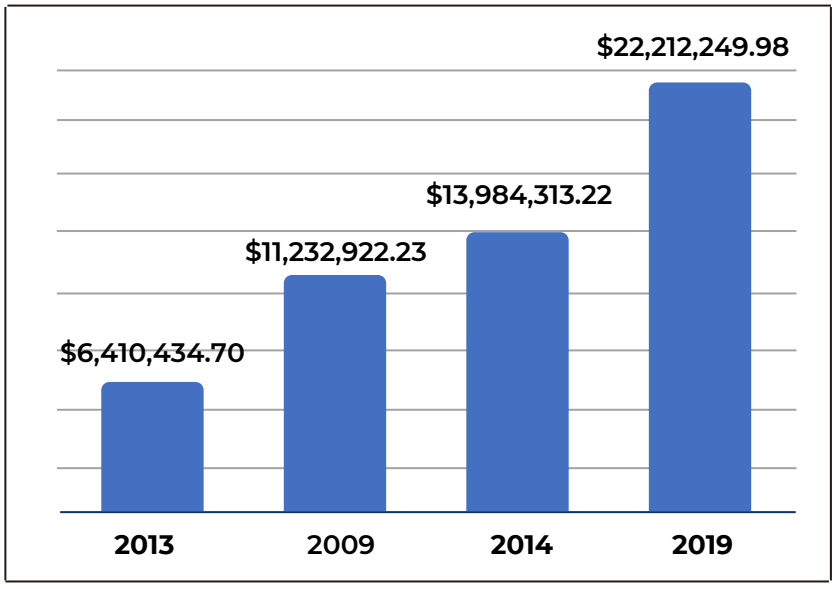
TCU = Jobs in copyright-based industries.

EP = Total employed population.

b) Mexican national economic context from 2013 to 2018: general overview.

To analyze the role of copyright-based industries in Mexico, it is necessary to define the country's yearly behavior from 2003 to 2018. Regarding the country's production, according to the information gathered from INEGI (2021), it can be noted that from 2004 to 2019, the total national GDP increased from 6,410,434 a 22,212,249 million current Mexican pesos. This shows a significant growth throughout these last years. It is important to note that economic growth is measured in current terms, which does not accurately reflect the Mexican economic situation.

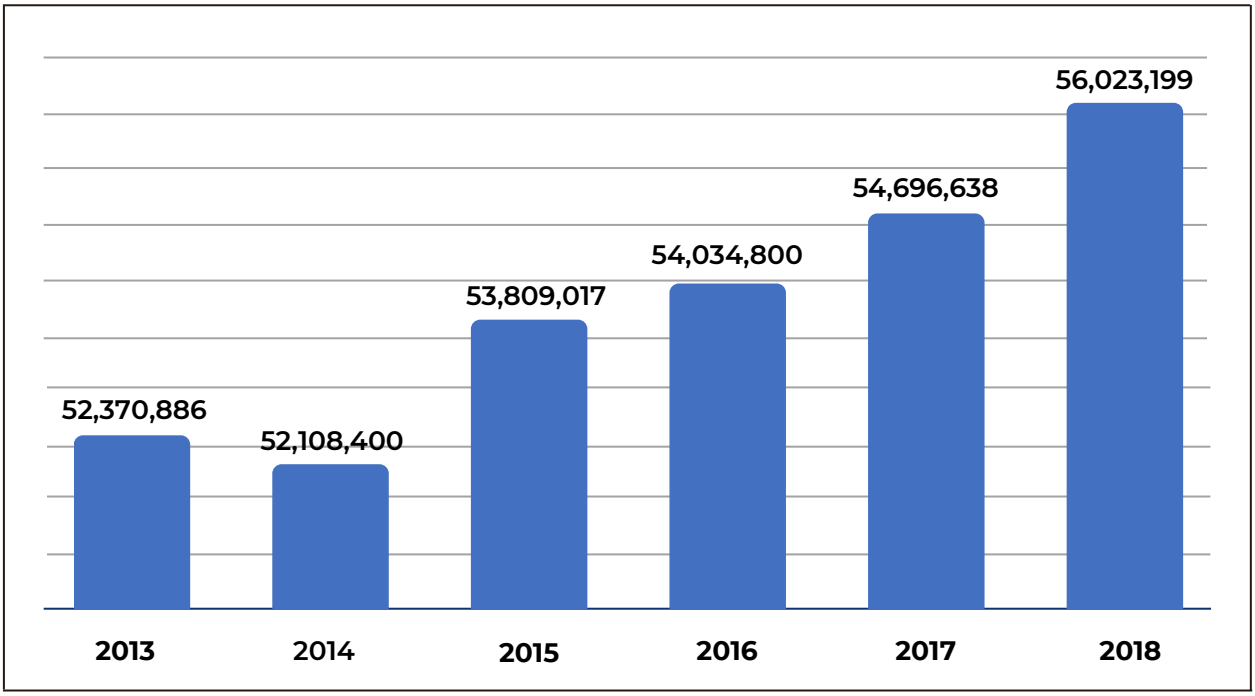
Graph 4: Total national GDP (values in millions of national pesos at current prices).



Source: Own elaboration using data from " PIB y cuentas nacionales" for the years 2013 to 2018, conducted by the Instituto Nacional de Estadística y Geografía (INEGI), available at: https://www.inegi.org.mx/temas/pib/#Informacion_general

As for the Employed Population (EP), compiled by INEGI (2021), from 2013 to 2018 it went from 52,370,886 to 56,023,199 people, showing an increase of 6.97 percent, as below.

Graph 5: Economically Active Population (4° Quarter)

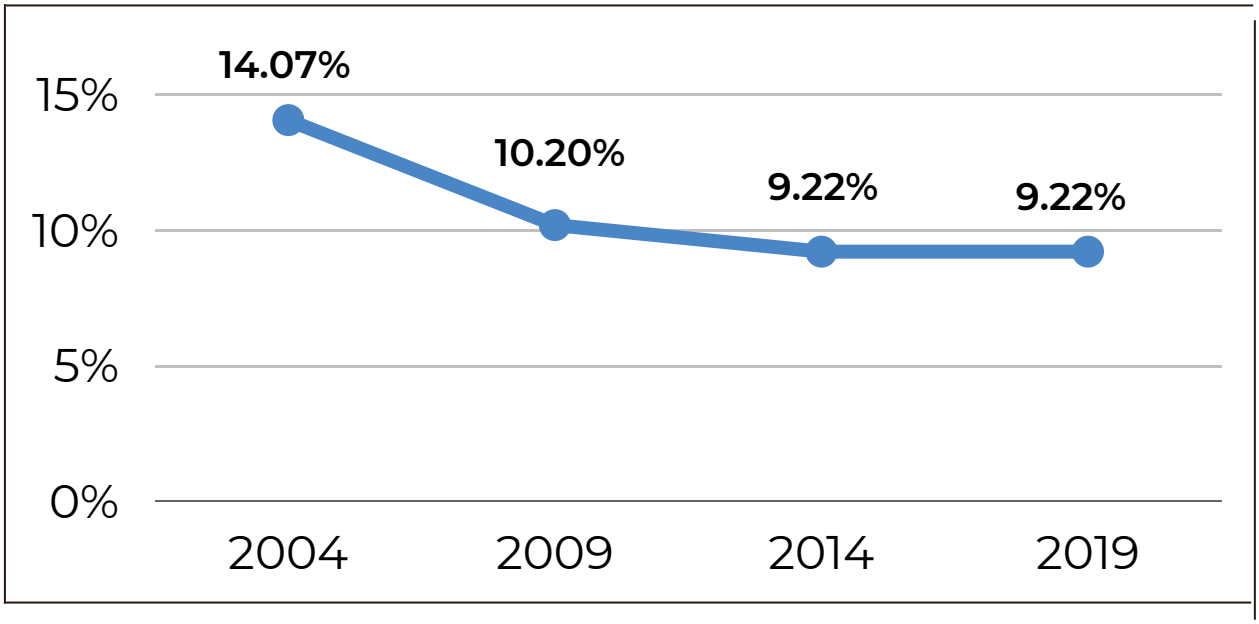


Source: Own elaboration using data from the National Survey of Occupation and Employment (ENOE for its acronym in Spanish) from 2013 to 2018, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/programas/enoe/15ymas/#Tabulados.

c) Results of the contribution of the creative economy in Mexico

Regarding the estimated economic contribution from copyright related industries in the Mexican national GDP, in 2004 it was 14.07 percent, and from there, the contribution of this sector to the national GDP has gradually decreased until reaching a contribution of 9.22 percent in 2019, as shown in the following graph.

Graph 6: Estimated contribution to national GDP of copyright-based industries (Percentage values).



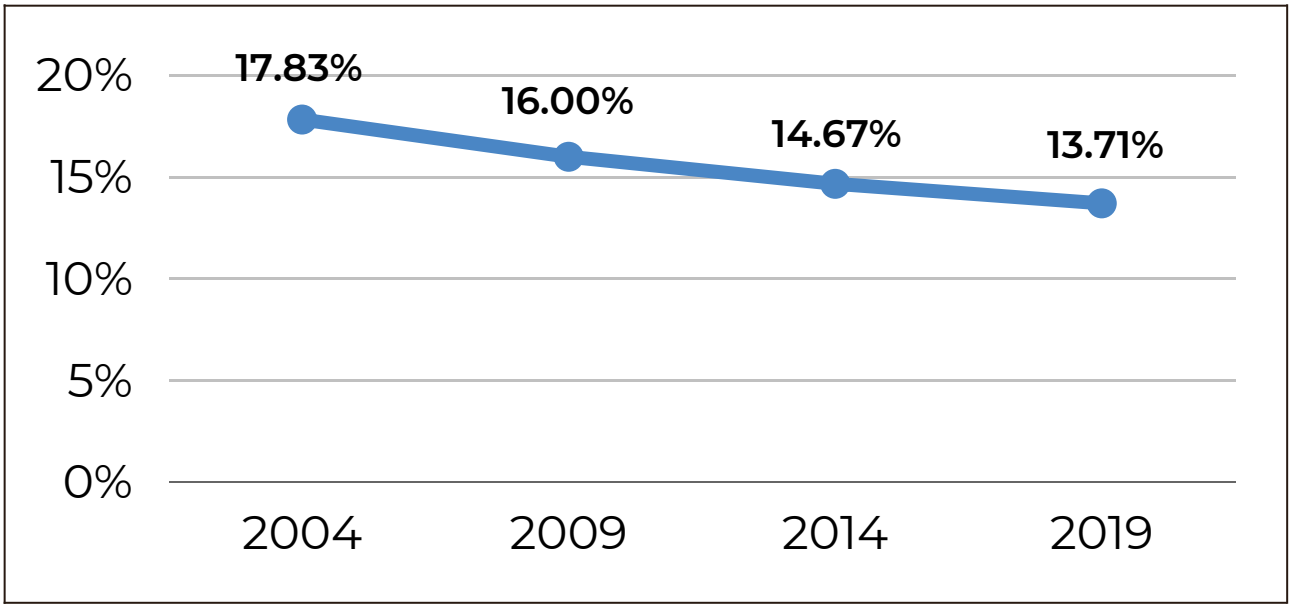
Source: Own elaboration using data from the Culture Satellite Account for the years 2013 and 2018, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

Even though it was not part of this research to identify the causes for the variation in the contribution of the creative economy to the Mexican GDP, this may be due to causes such as:

1. Increased competition around the world, especially from countries that have designed a whole scheme of attraction and support for the creative economy, attracting the investment that Mexico was unable to retain or convince.
2. Lack of legal recognition for the creative economy. Despite the fact that since 2018, an initiative was presented to integrate the creative industries to the General Law of Culture and Cultural Rights (Senado de la República, 2018). Sadly, this initiative was not approved by the LXIV legislature, and closed its administration without considering any creative industry, since no new legislation with that approach was created either.
3. Lack of *ad hoc* policy designs with a commercial and economic approach to address the various areas of the creative economy. This includes situations such as the lack of support for the growth and strengthening of value chains.
4. Other sectors received more attention from both the public and private sectors.
5. Regarding intellectual property, especially copyright, there have been insufficient efforts at the highest levels of government to promote them.

On the other hand, although the number of jobs generated in Mexico increased during the period studied, the estimated contribution of employment from copyright-based industries to national employment suffered a significant decrease from 2014 to 2018. The estimate went from 17.83 percent of contribution in 2004 to 13.71 percent in 2019. Nevertheless, even though the estimate suffered a decrease of almost 5 percent, creative economy remains a relevant sector for job creations in the country, as seen below.

Graph 7: Employment estimated contribution of copyright-based industries to national employment (Percentage values).



Source: Own elaboration using data from the Culture Satellite Account for the years 2013 and 2018, conducted by the National Institute of Statistics and Geography (INEGI), available at:https://www.inegi.org.mx/temas/cultura/

d) Contribution Results by Type of Industry

As previously mentioned, WIPO classifies copyright-based industries into 4 types: I. Core Copyright Industries; II. Interdependent Copyright Industries; III. Partial Copyright Industries; IV. Non-dedicated Support Industries. In this publication, it was identified the total contribution of each type of industry within the culture sector for 2013 and 2018.

To do so, the first thing was to homogenize the culture sector area names of the Culture Satellite Account with the names of the industries mentioned in the WIPO methodology. Next, industries were classified according to their copyright, based on Table 2 shown above. Finally, the percentage that each industry represented within the GDP and the employment within the culture sector for each year was calculated, classifying them by type of activity and by their relationship with copyright. The following formulas were used to calculate their contribution:

a) To calculate the contribution of each industry to the GDP (gross value added) from the culture sector:

$$CIG = \frac{VAI * 100}{VAS}$$

where:

CIG = Contribution of each industry to the GDP of the culture sector.

VAI = Value added of each industry.

VAS = Value added of the culture sector.

b) To calculate the contribution of each industry to employment (jobs) from the culture sector:

$$CI = \frac{JI * 100}{JS}$$

where:

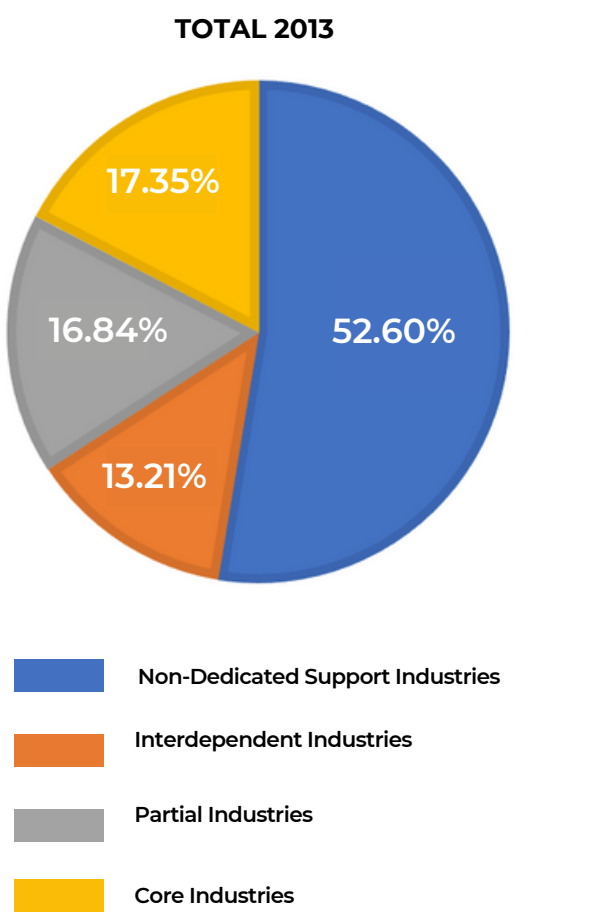
CI = Contribution of each industry to employment in the culture sector.

JI = Jobs in each industry.

JS = Jobs in the culture sector.

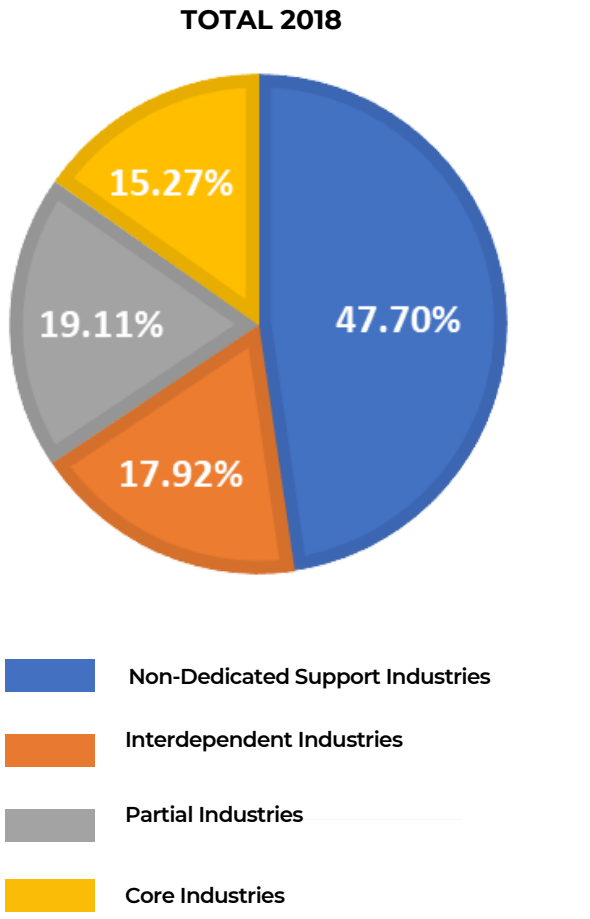
As seen in the following graphs, the industries that contributed the most to GDP were non-dedicated support industries with 52.6 percent in 2013 and 47.7 percent in 2018. Next, partial copyright industries appear with 16.8 percent in 2013. Interdependent copyright industries fall in third place, with 13.2 percent in 2013 and 17.9 percent in 2018. Finally, the industries with the lowest contribution in the sector are the core copyright industries, with 17.3 percent in 2013 and 15.2 percent in 2018

Graph 8: Contribution of each copyright-based industry to the output of copyright-based industries, 2013 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2013 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

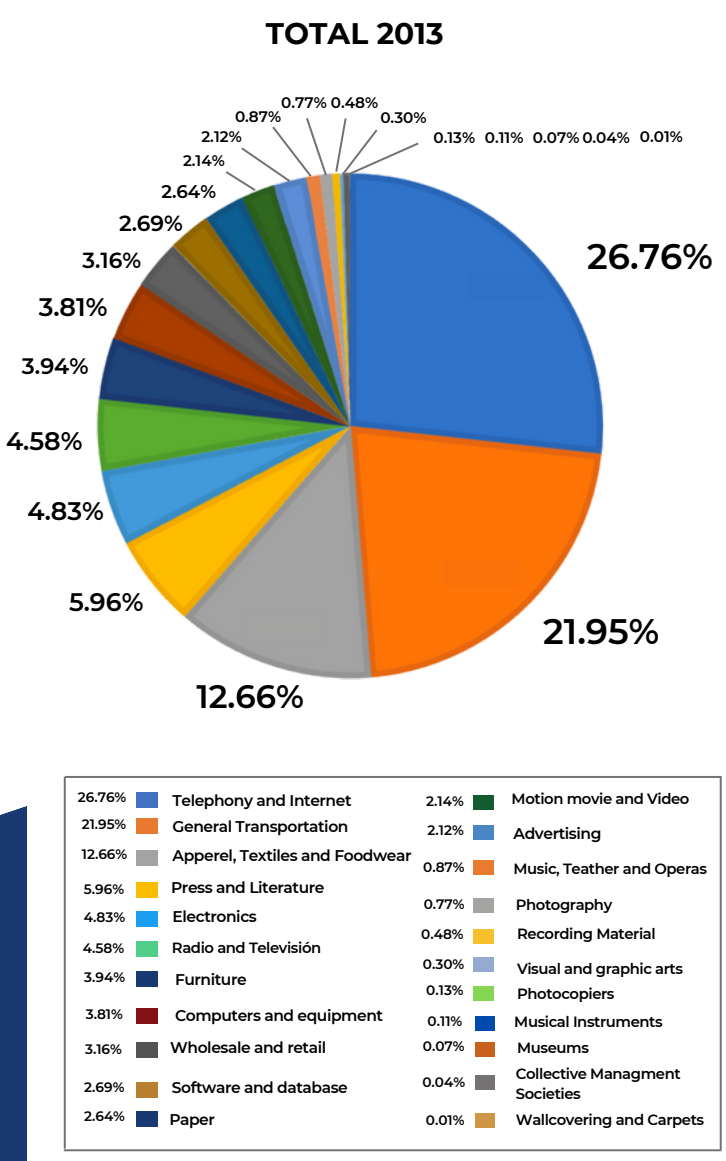
Graph 9: Contribution of each copyright-based industry to the output of copyright-based industries, 2018 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2018 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

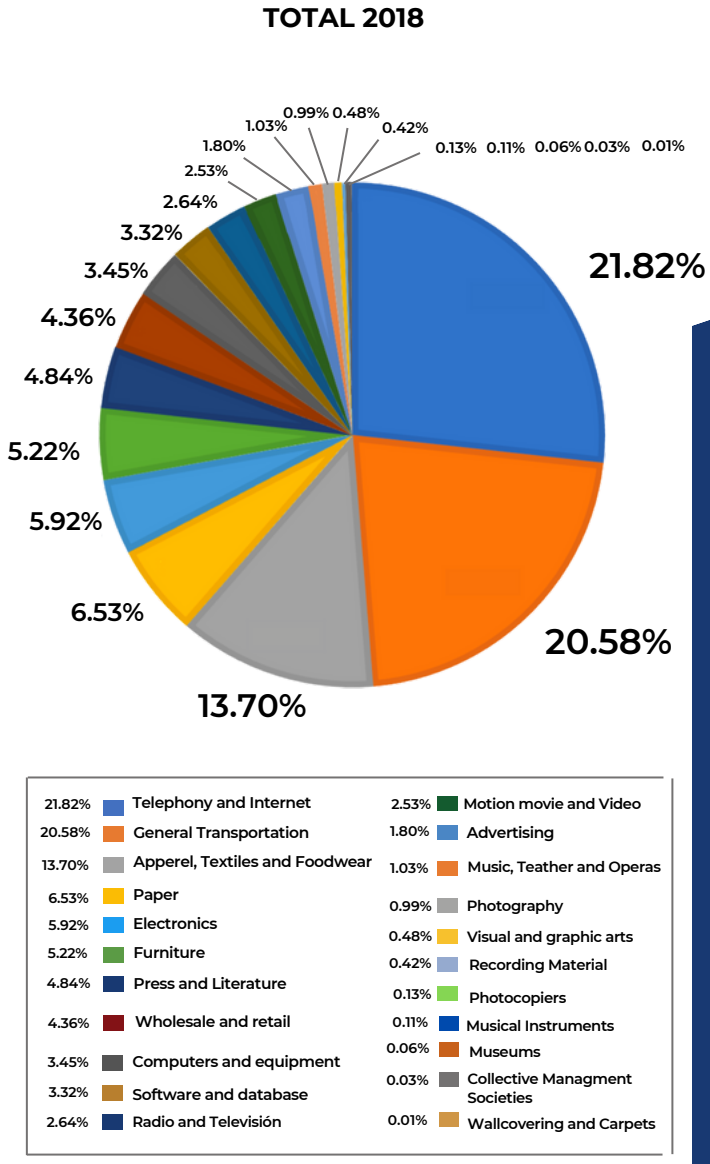
On the other hand, the contribution to GDP of each copyright-based industry according to the activities they perform was as follows. The one that contributed the most is telephony and internet, with a value of 26.7 percent in 2013 and 21.8 percent in 2018. In second place were industries engaged in transportation in general with a value of 21.9 percent in 2013 and 20.50 percent in 2018. In third place, garment, textile, and footwear manufacturing industries [1] contribute 12.6 percent in 2013 and 13.7 percent in 2018.

Graph 10: Contribution of each industry, classified according to its activity within copyright-based industries 2013 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2013 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

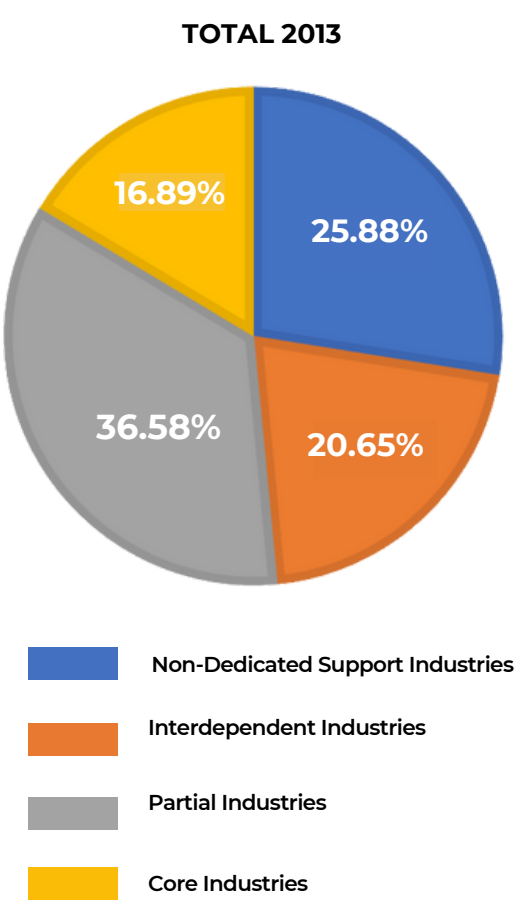
Graph 10: Contribution of each industry, classified according to its activity within copyright-based industries 2013 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2018 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

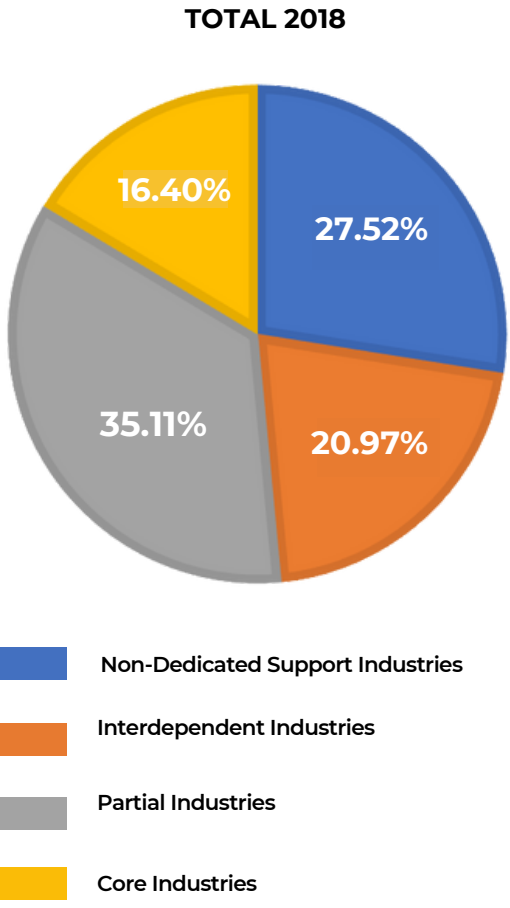
The contribution to employment of each copyright-based industry according to the activities they perform was as follows. Partial copyright industries accounted for 36.5 percent in 2013 and 35.1 percent in 2018. In second place were those that are non-dedicated support industries, with values of 25.8 percent in 2013 and 27.5 percent in 2018. Thirdly, interdependent copyright industries with a value of 20.6 percent in 2013 and 20.9 percent in 2018. Finally, core copyright industries contributed 16.8 percent in 2013 and 16.4 percent in 2018.

Graph 12: Contribution of each copyright-based industry to total employment in copyright-based industries, 2013 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2013 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

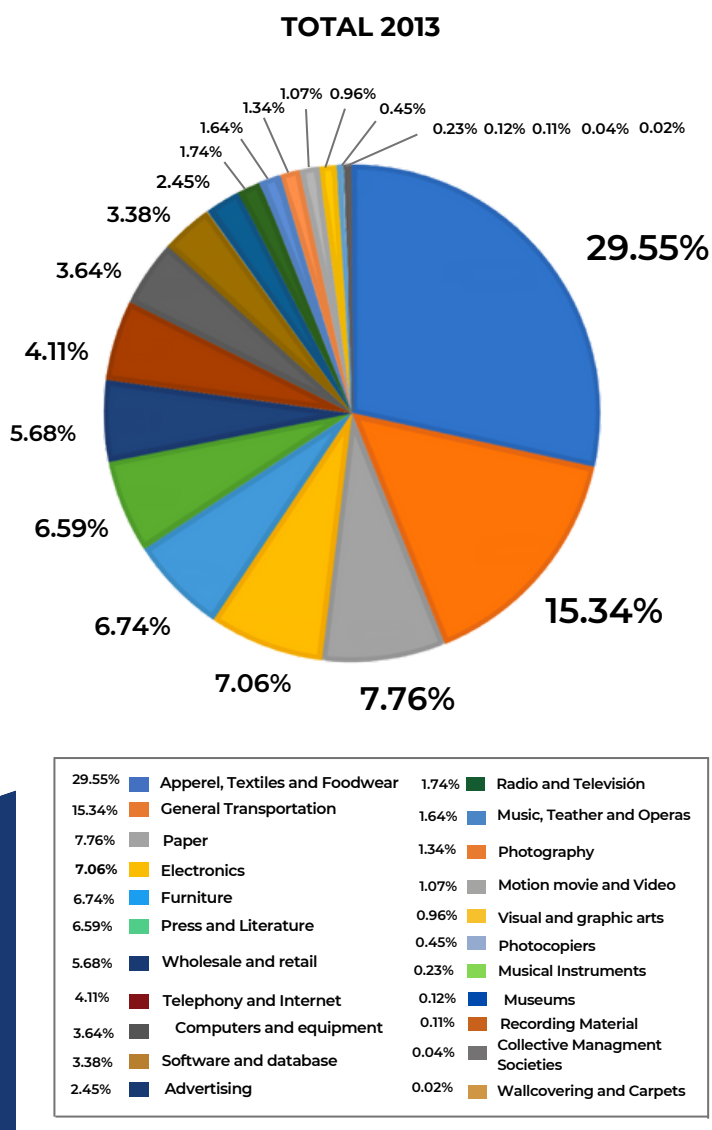
Graph 13: Contribution of each copyright-based industry to total employment in copyright-based industries, 2013 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2013 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

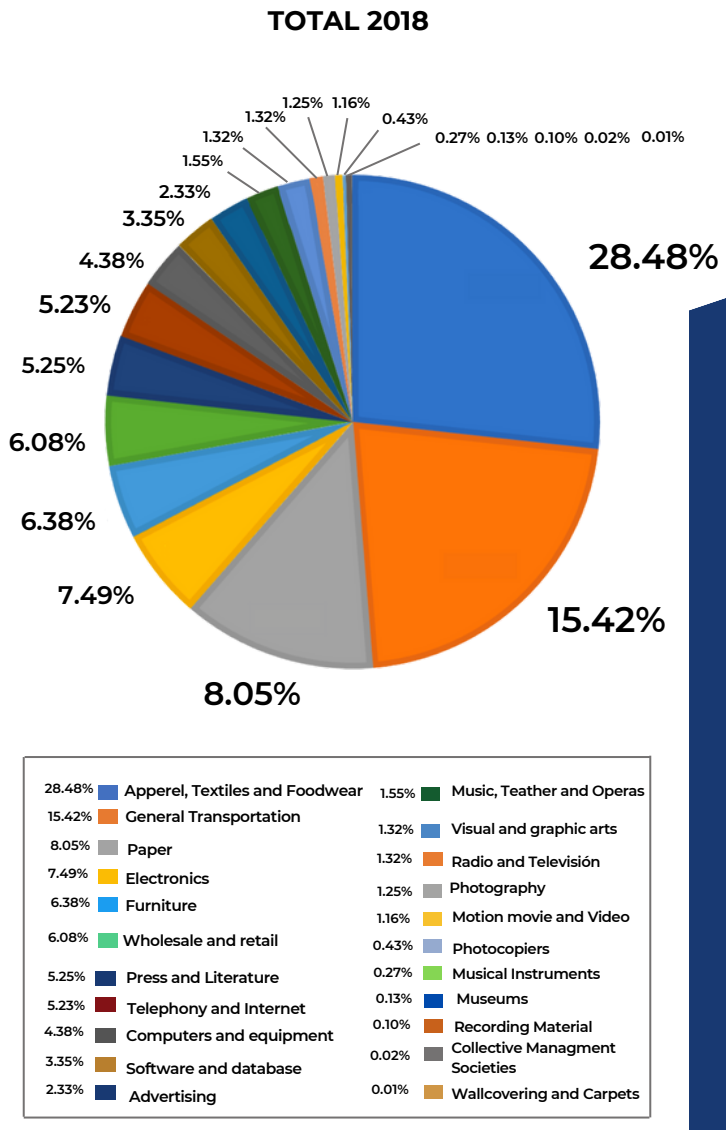
Similarly, the contribution of industries classified by activity to total employment in copyright-based industries was identified (Figure 14). Apparel, textile, and footwear manufacturing industries had the highest employment in the sector, with a value of 29.5 percent in 2013 and 28.4 percent in 2018. In second place are industries classified as general transportation with values of 15.3 percent in 2013 and 15.4 percent in 2018. In third place are the paper industries with 7.7 percent in 2013 and 8 percent in 2018.

Graph 14: Contribution of each industry, classified according to its activity to total employment in copyright-based industries, 2013 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2013 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

Graph 15: Contribution of each industry, classified according to its activity to total employment in copyright-based industries, 2018 (Percentage values).



Source: Own elaboration based on the methodology "to determine the economic contribution of copyright related industries", WIPO 2008, using data from the 2018 Culture Satellite Account, conducted by the National Institute of Statistics and Geography (INEGI), available at: https://www.inegi.org.mx/temas/cultura/

CONCLUSIONS

1. In this research, creative economy for Mexico, is shown as the economic contribution of copyright-based industries, both in their contribution to the national GDP and in the generation of jobs.

2. The contribution of the creative economy to GDP competes with other sectors to which governments usually bet on, especially with those within the oil and gas extraction sector, as well as the construction sector.

3. Although the economic contribution of copyright-based industries to Mexico's national GDP decreased from 2013 to 2018, their contribution is still very relevant. This demonstrates the importance of their existence and how important it is to support them, especially due to the negative effects generated by the pandemic.

4. It is essential, especially for governments, to identify the causes of their reduction in their contribution to GDP.

5. Specifically referring to the cultural sector in Mexico, for the period under study, the gross value added increased by 27.99 percent, which also shows its economic importance for the country.

6. The number of people working in the cultural sector increased by 6.13 percent from 2013 to 2018.

7. However, when measuring the employment contribution of the copyright-based industries to national employment, a slight decrease was identified.

PROPOSALS

1. Make the creative economy a national policy with a long-term vision and take the necessary measures to ensure that it is maintained over a trans-sexennial period.

2. The government, both at the federal and local levels, should rethink its strategy to promote and encourage the creative economy, especially considering the negative effects that the pandemic has caused and will continue to cause.

3. Greater support from INDAUTOR and IMPI to the creative economy through the design of ad hoc programs and policies. First, they must be strengthened institutionally, administratively, legally and economically.

4. Ideally, the efforts of INDAUTOR and IMPI should go hand in hand with those of other institutions at different levels of federal and local government. New entities could be created to work solely on this front.

5. Create specific legislation for the creative economy, or for the creative and cultural industries, with clear guidelines to promote their growth and development in the country. Ideally, legislation could also be created in the states.

6. Design and implement specific public policies. Ideally with a short, medium, and long-term vision.

7. Professionalize all those involved in this economy, from lawyers to creatives. This is through formal and informal courses that provide tools to creatives to protect and market their creations.

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