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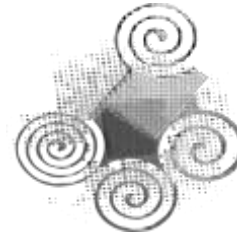
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**THE ECONOMIC IMPACT OF BRAZIL'S CULTURAL INCENTIVE POLICY****O IMPACTO ECONÔMICO DA POLÍTICA DE INCENTIVO À CULTURA DO BRASIL**

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Abstract

This study seeks to measure the economic impact of Brazil's Cultural Incentive Policy. This study uses the input-output matrix methodology for the incentives offered for projects in 2017, which is the most recent data available. A total of 1,258,740 records were extracted for this analysis. The following cultural sectors' production chains were analyzed: scenic arts, visual arts, audiovisual arts, the humanities, music, and cultural heritage. As a result, a total economic impact of 198 million dollars was recorded for projects in 2017. The results indicate how this investment fosters cultural entrepreneurship and its supply chains.

Keywords: Entrepreneurship. Cultural Economics. Public Policy.**Resumo**

Este estudo busca medir o impacto econômico da Política de Incentivo à Cultura do Brasil. Para atingir o nosso objetivo, este estudo utiliza a metodologia da matriz de insumo-produto para os incentivos oferecidos aos projetos em 2017, que é o dado mais recente disponível. Um total de 1.258.740 registros foram extraídos para esta análise. Foram analisadas as seguintes cadeias produtivas dos setores culturais: artes cênicas, artes visuais, audiovisuais, humanidades, música e patrimônio cultural. Como resultado, um impacto econômico total de 198 milhões de dólares foi registrado para projetos em 2017. Os resultados indicam como esse investimento fomenta o empreendedorismo cultural e suas cadeias de abastecimento.

Palavras-chave: Empreendedorismo. Economia da Cultura. Política Pública.

Introduction

Cultural entrepreneurship is a suggestive subject in many ways, and it is situated at the intersection of three areas: entrepreneurship, the arts, and economics. (Swedberg, 2006). The idea of linking art and economics is relatively recent, and it is a fascinating notion to some people and a blasphemous notion to others, depending on whether or not you believe artistic value has something to do with economic value. (Zorloni, 2013). Cultural entrepreneurs are a very heterogeneous group, with each one being very different from other entrepreneurs in terms of his or her activities, products, career paths, and strategies adopted to gain market share (Beltrán & Miguel, 2014). This is probably because cultural entrepreneurship is a distributed and intertemporal process. After all, this type of entrepreneurship is not a one-off achievement, but is rather a continuous process affected by how the actors, artifacts, and events involved develop over time (Gehman & Soublière, 2017). In general, the international literature defines the cultural and creative economy as all activities which are based on intellectual property rights and aimed at the commercial exploitation of artistic, aesthetic, or semiotic creation. Within this context, the definitions of the cultural and creative sectors are redesigned around their capacity to function as fully-fledged economic sectors and their positive impact on the economy and employment (Chapain et al., 2018). In Brazil, the cultural sector has a relevant impact on the creation of formal and informal employment in cities, even though they are mainly concentrated in the southeastern and southern regions (Santana Ribeiro et al., 2020).

The above-mentioned heterogeneity has distinct consequences in terms of its impact on various dimensions of human life. The expected social and economic results of the International Literary Festival of Paraty (FLIP) are distinct from those expected for a music festival such as Rock in Rio, or cultural events that result in a variety of social, economic, environmental, and artistic impacts on cities. For instance, Kulkarni, Dhanamjaya, & Balaji (2017) investigate the role of literary festivals in promoting reading and public libraries; and Pavluković & Alcántara-Pilar (2017) measure the social impacts, positive and negative, of music festivals. On the other hand, economic impact can be measured for any cultural event where the variables analyzed are stable over time: the number of temporary jobs created and the sale of tickets. Unless the methodology for their calculation changes, the dimensions do not change. There is no doubt that economic factors have an important influence on art, and therefore they deserve our attention (Zorloni, 2013). From this perspective, this study aims to develop metrics that will enable us to measure the economic impact of investments made in Brazilian culture. We will analyze the financial resources created by the Cultural Incentive Law for several projects in 2017, which is the latest date for which data is available.

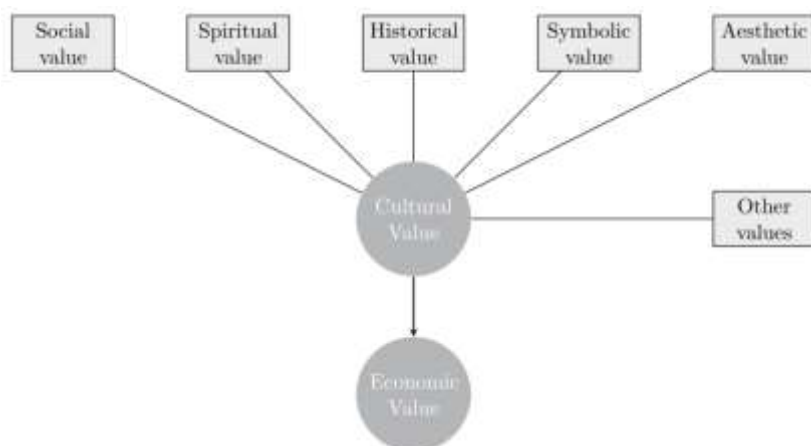
Cultural Economics

The economic impacts of event research is just one area within the Economy of Culture which has been receiving increasing institutional and academic recognition in light of several important factors: 1) cultural activities represent an essential source for the production of economic flows, income, and employment; and 2) culture is a field par excellence for government action, not only because of the public nature of many of its products, but also because of its usefulness in identifying and transforming places and, for that reason, it is a part of local or regional development strategies (Herrero et al., 2006). Similarly aligned with the inclusive perspective of going beyond traditional measures, Larry Dwyer, Leo Jago and Peter Forsyth (Dwyer et al., 2016) propose the reconciliation of economic impact analysis with cost-benefit analysis. The motivation for their reconciliation lies in the understanding that special events are a fundamental component of a strategy for developing tourist destinations and the well-being of residents; this is also mentioned by Noonan and Rizzo (Noonan & Rizzo, 2017) in a study concerned with understanding the economic effects and public policy implications of the interconnections between cultural participation and tourism. In Brazil, there was an effort to reconcile these economic impacts and local competitiveness in a study conducted in 65 cities and sponsored by the Ministry of Tourism (Barbosa et al., 2008; Barbosa & Falcao de Oliveira, 2015).

The Economy of Culture is a widely studied subject in several countries and articles about it have been published in a number of journals (Angelini & Castellani, 2019; Baumol & Bowen, 1966; Blaug, 2001; Frey, 1994, 1998; Hellmanzik & Schmitz, 2016; Herrero et al., 2006; Johnson & Thomas, 1998; Noonan & Rizzo, 2017; Srakar & Vecco, 2017; Towse, 2006, 2020; Wheatley & Bickerton, 2019; Wood, 2005). Various approaches and discussions of impact assessment methodologies, positive externalities, and feedback in cities have been thoroughly studied. Frey (1994) discusses the focus of studies which measure the impact of music festivals through calculations of the multiplier effect and positive externalities that support professional musical activity. This highlights the need to expand traditional economic analysis, since this type of analysis is not very convincing based on this perspective alone. From this author's point of view, an event such as a car race produces a greater multiplier effect for a city, and therefore should take priority over a cultural event, if we only analyze them from this angle. A discussion by Frey (1994) and other authors considers the perspective of including other stakeholders in an analysis of the Economy of Culture. This is corroborated by Hellmanzika and Schmitz (Hellmanzik & Schmitz, 2016) in their analysis of the effectiveness of trade policy measures regarding audiovisual services and related services such as film, music, radio, and artistic performances in various service sector formats (e.g. Netflix and iTunes). This conclusion has also been examined in terms of cultural policy and public spending in a region of Spain (Benito et al., 2013).

In Brazil, its institutional and academic recognition is based on the attention given to this sector by The Economic Atlas of Brazilian Culture where it is estimated that in 2010 the cultural sectors accounted for around 4% of Gross Domestic Product (GDP) (Albernaz et al., 2017). The "GDP of Culture" has already been measured in seven South American countries: Argentina, Bolivia, Chile, Colombia, Ecuador, Peru, and Uruguay. In Brazil, despite some attempts at cooperation between the Ministry of Culture and the Brazilian Institute of Geography and Statistics (IBGE) that were designed to create a Satellite Accounting of Culture (IBGE, n.d.), there has still been no systematization of this information on a national level. An evaluation of the economic impact of cultural investments is fundamental, not only to highlighting the importance of these activities in the employment and income creation process, but also to providing public and public management with information about this sector and, at the same time, ensuring transparency in promoting and offering public agency incentives as well as those offered by private sponsors. Hellmenzik (2020) and Angelini and Castellani (2019) in critical reviews of the literature have also discussed these issues within the context of the Economy of Culture, specifically in terms of the debate about the relationship between the cultural value and the economic value of a given artistic performance, work of art, exhibition, film, or other cultural product.

Figure 1 - The values of cultural goods and their relationships



Source: Angelini & Castellani (2019)

In recent decades new digital technologies have given the Economics of Culture studies a new challenge in understanding what the economic implications of these technologies are for the cultural sector (Le Gall et al., 2017; Peukert, 2019; Towse, 2020). With all of these challenges, culture economists can certainly contribute to the ongoing debate by providing tools for understanding what they call market outcomes. Cultural economics seeks to comprehend cultural phenomena using an economic toolbox to study the supply and demand of culture (Hellmanzik, 2020), which is just what this article proposes to do.

Methodological Outlines

In the process of evaluating this sector's economic impact, it is first necessary to map the value chains affected by investments and expenditures that enter directly through what are termed "front line" activities. In the case of the Brazilian Cultural Incentive Law, following the division defined by the Ministry of Culture in Norm Instruction No. 2 of July 27, 2017, the activities are grouped into the following areas: scenic arts, visual arts, audiovisual arts, the humanities, music and cultural heritage.

Some countries have used metrics to assess the impact of these cultural activities on their economies. It is important to note that most studies analyze the total impact of cultural sector spending and investment on their economies, including viewers' spending. In terms of the method presented in this article, the analysis takes place from the perspective of the economic impact on the cultural activity value chain, and it is therefore restricted to supply side impacts. In other words, it does not consider the impact of demand, tourists and residents, which have been widely studied in a number of scientific articles (Alves, María Campón Cerro, & Vanessa Ferreira Martins, 2010; Andersson, Rustad, & Solberg, 2004; Dwyer, Jago, & Forsyth, 2016; Getz & Page, 2014; Pasanen, Taskinen, & Mikkonen, 2009; Srakar & Vecco, 2017; Wheatley & Bickerton, 2019; Wood, 2005). In this work, we will break down impacts into direct and indirect impacts which are distributed throughout each area's production chain. The direct impact corresponds to the value of the investments under the Cultural Incentive Law in the scenic art, visual art, audiovisual art, humanities, music and cultural heritage sectors. The indirect impact corresponds to the income created throughout the production chain of the above-mentioned activities. From this perspective, the total impact of investments is calculated based on the multipliers of each group of activities which are affected by the various sector value chains.

Using the database of the Cultural Incentive Law Support System (SALIC), created by the Ministry of Culture, we have been able to identify each of the cultural sector areas and the composition of the product groups and expenditure items of proponents carrying out their projects. We extracted 1,258,740 records from the database, making it possible to identify the area, segment, product, and expenditure item in addition to the proven value and the service invoice's date of issue. With the identification of the expenses incurred in the project, it was possible to map the relationships between cultural activities and other sectors of the Brazilian economy. We also needed to group the product expense items into sub-products, to ensure the correspondence between the cultural activities and the activities of the Brazilian Institute of Geography and Statistics' (IBGE) input-output matrix. Next, value chains were created for each area of the cultural sector, based on the above-mentioned correspondence. Finally, the correspondence was analyzed between the expenditure categories of the Cultural Incentive Law, the activity chains (areas), and the activities of the input-output matrix. The use of the input-output model in the preparation of the metric was designed to assess whether the direct and indirect impacts of the Cultural Incentive Law are justified by the efficiency of the instrument and by its adherence to other international studies. This article does not include other impacts such as expenses due to the food and beverages, transportation, and shopping, etc. of residents and tourists participating in cultural activities, nor does it measure the increase in the flow of tourists in places where activities take place, as well as other positive externalities caused by events of this nature. Therefore, as mentioned above, the impact verified here is that which was created by the production chain in the realization of these events.

Cultural Sector Value Chain

The study of value chains has been used in several areas of knowledge, and they seek to understand the dynamics of production processes, distribution, and the consumption of products and services. Based on Kaplinsky and Morris (2001), value chains are "the whole range of activities necessary to take a product or service from conception and production to the delivery to final consumers and final disposal". In this study, the concept of the value chain is used strictly within the context of understanding production process dynamics of the cultural segments contemplated by the Cultural Incentive Law. The description of the value chains provides information on:

- The forward and backward relationships necessary to produce a particular product or service; and
- Activities and intermediate and final customers in the production process.

It is important to highlight the specific nature of value chains for cultural activities, which in many cases are born from a creative idea, which is combined with other inputs to produce a cultural work, and through a series of previously interconnected stages it reaches the end consumer. Thus, value chains of creative and cultural activities have different formats and dynamics when compared to traditional transformation industries. The focus of the culture cycle is on understanding the full range of resources needed to transform ideas into cultural goods and services that, in turn, can reach audiences.

Scenic Arts

In line with the definition of the Network of European Statistical Cultural Systems (Le Gall et al.), the performing arts are considered live art for a live audience. Content saved or displayed on one screen is classified in other domains (e.g. films). Contemporary scenic arts also include any activity in which the physical presence of the artist acts as a conduit. Thus, functions in the performing arts are related to the following activities:

- Those related to the creation of performing arts: creative activities in a broad sense including dance, theater, the circus, combined arts, and other live shows (street shows, etc.). The scope is limited only to the creation of a "performance", excluding the creation of other types of cultural works (e.g. audiovisual productions); and
- Those related to the production, dissemination, and exhibition of the performing arts - (producing a show for the stage, and distributing and selling it), live shows, as well as support activities to produce live shows, the promoting of activities, technical and administrative support, and activities involved in operating rooms for live shows.

In Brazil, cultural activities are defined by Norm Instruction No. 2 of July 27, 2017, which, in Article 7 - § 3 presents the activities that include the scenic arts. According to the IBGE's Economic Activities classification, the performing arts are in the section "Arts, Culture, Sport and Recreation" within the "Artistic, Creative and Performing Activities" division. From a macroeconomic perspective, which enables us to map the value chain, the performing arts sector is associated with two important types of expenses related to its execution and performance: expenses related to the production of a show (fixed or production costs), and expenses related only to the presentation of a performance. Once we identified the activities related to both types of expenses, it was possible to map the production chain of the performing arts segment. From this perspective, the expenses of the actions related to the performing arts segment were surveyed in the Cultural Incentive Law's database and grouped by activities. Correspondence was established between the activities of the input-output matrix and the groups of expenses associated with each activity. The structure of the production chain of scenic arts is represented in Table 4. The Input-output matrix (IOM) correspondence column shows the correspondence between each item of the cultural area value chain and the nomenclature of the input-output matrix. This enables the evaluation of the indirect impact of investment multiplier effects on cultural activity value chains.

The first column makes it possible to evaluate direct impacts, and the second permits the measurement of indirect impacts.

Visual Arts

According to UNESCO (UNESCO Institute for Statistics, 2009), "Visual arts are art forms that focus on the creation of works which are visual by nature. They are intended to appeal to the visual sense and can take many forms. Moreover, visual arts encompass all non-literary and non-musical plastic arts (paintings, drawings, engravings, watercolors, video installations, and sculptures) as well as photography. The visual arts sector has been strongly influenced by innovations in information and communication technologies. The main impact of digital change on the global art market is associated with new possibilities for the creation of works of art due to new digital tools, and online advertising and sales, among other things. According to the IBGE's classification of Economic Activities, the visual arts are in the "Arts, Culture, Sport and Recreation" section within the "Artistic, Creative and Spectacle Activities" division.

The understanding and mapping of the value chain of the visual arts sector necessarily involves the economic characterization of the products and services sold. One of the economic characteristics of artistic goods is that they are information goods (Zorloni, 2013). This implies enormous difficulties in assessing the quality of the object, especially for consumers who do not have artistic sensibility or historical-artistic skills. The mapping of the value chain for the visual arts sector is associated with the sector's production, which in turn is grouped according to the activities defined by the IBGE classification of Economic Activities. Finally, a correspondence was established between the activities of the input-output matrix and the expense groups associated with each activity. The structure of the visual arts production chain is represented in Table 4 (Appendix).

Audiovisual Arts

According to the federal government and the Brazilian Institute of Geography and Statistics' (IBGE) classification of Economic Activities, the "Audiovisual Arts" area corresponds to a set of activities that includes: short film production, film production activities, videos and television programs; post-production film activities; medium-length film production, radio production, radio activities, (non-series) television production, film production activities, and videos and television programs; donations of audiovisual collections, the training of personnel to maintain audiovisual film archives, and the teaching of art and culture not previously specified; the acquisition of equipment for the maintenance of audiovisual film archives; activities of associated organizations linked to culture and art, among other activities, such as all construction services, the maintenance and conservation of movie theaters, and the development and maintenance of information technology services. Using the same procedure adopted in the definition of the production chain of the cultural areas described above, the mapping of the audiovisual sector's value chain is based on the expenses associated with each sector's production. Subsequently, a correspondence was established between the activities of the input-output matrix and the expense groups associated with each activity. The structure of the production chain of the "Audiovisual Arts" area is represented in Table 4 (Appendix).

The Humanities

Using the Ministry of Culture's definition (which is now the Special Secretariat of Culture), "The Humanities" area is composed of the following activities: the acquisition, maintenance, preservation or restoration of bibliographic and archival collections comprising printed or electronic books or reference works of artistic, literary, or humanistic value; literary events and literary festivals; the training of personnel, workshops, and other training activities; the acquisition of equipment for the maintenance of public library collections, museums, public archives and film archives; events and educational activities designed to encourage the reading of books of artistic, literary and humanistic value; periodicals and other

publications; and training and capacity building activities in general, including management and cultural entrepreneurship; the donation of collections to public libraries, museums, public archives, and film archives to public or private institutions accessible to the general public; the construction and maintenance of theaters and cinemas, which may also function as community cultural centers in municipalities with less than one hundred thousand inhabitants, according to the IBGE census. In the IBGE classification of Economic Activities, "The Humanities" area does not correspond to any specific section, which implies the need to identify these activities by subsection. For example, we have identified library and archive activities, and the organization of fairs, congresses, exhibitions, and parties, among others. The elaboration of the production chain structure within "The Humanities" area is related to the proven expenses presented for the project accounts for the Cultural Incentive Law, and the corresponding activities of the IBGE. The production chain structure for "The Humanities" is presented in Table 4 (Appendix).

Music

The music sector consists of many actors throughout the value chain, such as musicians, authors, composers, record labels, publishers, and collecting societies that manage copyrights of works and performances. This chain depends on many distribution operators: radio and TV broadcasters, digital service providers, retailers, and public places such as restaurants, clubs, and hotels. As in the other cultural sectors analyzed here, the music industry is driven by technological change. Most of the cultural areas have been affected by new digital technologies, and the sector is undergoing profound transformations driven by the development of new business models and consumption patterns in terms of the availability of music on mobile devices and, more specifically, the rise of streaming. The structuring and understanding of the dynamics of this sector's value chain represent fundamental steps in the process of measuring the economic impacts of financing caused by the Incentive Law. Among the participants in the value chain is the music producer, who supervises and manages the recording and production of a band or performer's song that includes the recording of the music, for instance. This is usually done through record labels or small independent studio facilities. It is important to note that the value creation process encompasses the purchase of musical instruments and the rental of space for musical events, their operational infrastructure, and technical support services. From this perspective, the mapping of the music sector's value chain was prepared based on the composition of the expenses associated with its production and support, as defined by the Incentive Law's database. The structure of the music production chain is represented in Table 4 (Appendix).

Cultural Heritage

According to the European Commission (Le Gall et al., 2017), the cultural heritage sector has distinct characteristics compared to other cultural and creative sectors. Traditionally, the cultural heritage area has been divided into three categories: tangible movable cultural heritage which includes objects such as works of art, artifacts, books, archives, etc.; tangible immovable cultural heritage, which includes culturally or historically significant immovable property, historical cities, archaeological sites, monuments, etc.; and immaterial cultural heritage, which, according to UNESCO, means practices, representations, expressions, knowledge, and skills - as well as the instruments, objects, artifacts and cultural spaces associated with them - that communities, groups and, in some cases, individuals recognize as part of their heritage. It includes oral traditions and expressions, including language as a vehicle of intangible cultural heritage. The defining characteristics of cultural heritage make it very difficult to grasp it in a value chain analysis. From this perspective, the economic value is generated internally, rather than measured or calculated based on its overall economic impact. Many of the main actors involved in cultural heritage are non-profit organizations that work with objectives and types of values that differ from strictly monetary values, such as the preservation of objects for future generations, socio-cultural appreciation, active participation, and the involvement of the local community. On the other hand, although it is difficult to quantify the value generated by cultural heritage, this sector offers clear social value. As far as

the economic aspect is concerned, it contributes substantially to the performance and flourishing of several other sectors, including tourism. However, it is important to stress that the objective of this work is to map and quantify the value generated by production in the cultural heritage sector financed through the Incentive Law system. Thus, this is not intended to evaluate the value of this patrimony, but rather its capacity to generate value from money spent on these patrimonial assets. The mapping of the cultural heritage value chain was elaborated from the list of expenses associated with the conservation, maintenance, and restoration of cultural heritage, and the production, support, and realization of folklore festivals. The structure of the cultural heritage production chain is represented in Table 4 (Appendix).

Findings - Economic impact on the cultural sector

Direct Impact

The direct impact of investments stimulated by the Cultural Incentive Law can be evaluated by using two dimensions: a) supply, through the analysis of producer expenses in organizing events; and b) demand, analyzing the expenses generated by spectators and consumers of shows and services offered by these cultural areas. As indicated above, this methodology is restricted to the assessment of supply-side impacts. In any case, it should be noted that these demand-driven impacts are significant, so we recommended investigating them in future studies. The sum of the expenses presented for the project accounts affected by the Cultural Incentive Law, distributed among the six cultural areas in 2017 was \$ 163 million as shown in Table 1.

Table 1 - Direct Impact of Project Spending under the Cultural Incentive Law

Area	Brazilian Reais	US Dollars (based on an October 2017 exchange rate of 3.16)
Scenic Arts	231,404,196	73,229,176
Visual Arts	74,796,328	23,669,724
Audiovisual Arts	56,911,312	18,009,908
The Humanities	46,041,931	14,570,231
Music	152,911,100	48,389,588
Cultural Heritage	63,877,133	20,214,282
Total	625,941,999	198,082,909

Source: Prepared by the authors.

It is important to emphasize that the potential impact of the Cultural Incentive Law is even greater because we need to consider all the project resources raised from other state and municipal cultural incentive programs, as well as private sponsorships, ticket sales, etc. The economic impact calculated within the scope of this study contemplates only the supply side, which is determined by the resources allocated by the Cultural Incentive Law. Some projects supported by this Law have other sources of funding, public and private, which are not being estimated within the scope of this work.

Indirect Impact

The indirect impact of investments corresponds to the income generated by the production chain of cultural activities. From this perspective, the indirect impact of the investments generated by these incentives is calculated based on the multipliers of each group of activities affected within the various sector value chains. The multipliers were constructed from the input-output model, using the Leontief matrix for national accounts. The input-output model was created by the economist Wassily Wassilyovitch Leontief in the 1930s (1936), and developed in several articles

over the following decades (W. Leontief, 1944, 1951, 1953, 1956, 1966; W. Leontief & Strout, 1963). This model is a social accounting tool that allows one to analyze how changes in demand in a given sector may affect other sectors of the economy. Thus, Leontief's input-output matrix can be represented as follows: $B = (I - A)^{-1}$, where: I is the identity matrix; and A is the direct technical coefficient matrix. Matrix A provides the direct impact derived from the increase in final demand for cultural activities, while $(I - A)^{-1}$, evaluates not just the direct effects, but also the indirect ones. Thus, the Leontief model enables us to evaluate the total impact that a variation in the final demand for an activity will have on the production of the economy as a whole. Each technical coefficient is calculated by using the formula: $a_{ij} = c_{ij} / g_j$, where a_{ij} is the technical coefficient of sector j ; c_{ij} is the intermediate consumption of product i for sector j ; and g_j is the gross value of production in sector j . To calculate the multipliers of cultural activities, we use the matrix of the input-output model for the entire Brazilian economy, developed by Guilhoto & Sesso (2010) in addition to other studies (J. J. M. Guilhoto et al., 2010). The production matrix used in the model incorporates 68 sectors for 128 products in the Brazilian economy's national accounts system. Taking as a reference the value chains of the cultural areas contemplated by the Cultural Incentive Law, we established a correspondence with the multipliers extracted from the IBGE's input-output model (Instituto Brasileiro de Geografia e Estatística, 2008, 2016). With this, we were able to determine the total impact and, as a result, the indirect impact of the Cultural Incentive Law on the Brazilian economy. The multiplier effect is the result of the interdependence that exists between various sectors of the economy so that an increase in spending in a given sector generates an increase in demand for goods and services from other sectors. This can be measured from the income generated by the production chain of the evaluated sector, employment, taxes, and value-added production. The use of the input-output model in estimating multipliers not only ensures consistent results aligned with Brazilian economic data but also ensures alignment with the results of projects that use the same methodological tools to estimate economic impacts. The use of the input-output matrix (J. Guilhoto & Sesso Filho, 2010), in addition to addressing the needs of the economic impact assessment model proposed in this article, also facilitates the process of calculating the multipliers of the cultural sector and presents quite consistent results in regard to the Brazilian economy as a whole. After identifying the corresponding items in the input-output matrix, it was possible to identify the multipliers for each item in each cultural sector's value chain. Table 4 (Appendix) associates the value chain items of each area with the corresponding values in the input-output matrix and their respective multipliers. By applying the expenditure multipliers for cultural area activities, it was possible to estimate their indirect economic impact and then their total impact on the cultural value chains.

Table 2 - Indirect Impact on Spending under the Cultural Incentive Law

Area	Brazilian Reais	US Dollars (based on a July 2019 exchange rate of 3.84)
Scenic Arts	139,769,965	36,398,428
Visual Arts	43,389,955	11,299,467
Audiovisual Arts	34,572,897	9,003,359
The Humanities	31,581,653	8,224,389
Music	98,299,142	25,598,735
Cultural Heritage	32,850,477	8,554,812
Total	380,464,090	99,079,190

Source: Prepared by the authors.

After calculating the indirect impact, we were able to determine the total value of the economic impact generated by these projects under the Cultural Incentive Law as shown in Table 3.

Table 3 - Economic Impact of Spending under the Cultural Incentive Law

Total impact	Brazilian Reais	US Dollars (based on a July 2019 exchange rate of 3.84)
	1,006,406,089	262,084,919

Source: Prepared by the authors.

Final Considerations

The objective of this paper has been to construct a metric based on methodologies used by Brazil and other countries which would enable the measurement of the direct and indirect economic impact of expenditures under the Cultural Incentive Law. To estimate the indirect impact, we used the input-output model, which led to our need to structure the value chains for the cultural areas listed by the Ministry of Culture (which is now the Special Secretariat of Culture). After establishing a correspondence between the products and the respective cultural areas and activities covered by the input-output matrix, the multipliers that made it possible to calculate the indirect impact were defined. It is important to emphasize that the metrics elaborated in this study, in addition to enabling the evaluation of the direct and indirect impact of the project proponents' expenditures under the Incentive Law, also make it possible to systematize the information generated from the program spending system. Thus, the results can be continually monitored, which will consolidate the relevance of the proposed metrics for the resource management process under the Cultural Incentive Program. This conclusion corroborates that cultural entrepreneurship activities represent an essential source for the production of economic flows, income, and employment for a country.

Certainly, every method can be improved based on new approaches, techniques, and technologies that emerge over the years, as well as new data on the Brazilian economy. However, we expect that this proposal can contribute to other studies of the economic impact of the cultural sector, which generates employment and income in several Brazilian states. This will help public and private managers in their decision-making processes in terms of making investments in this sector.

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Appendix

Table 4 – Cultural Value Chains, the Input-Output Matrix, and Multipliers

Cultural Sector	Value Chain	Input-Output Matrix (IOM)	Multipliers
Scenic Arts	Project Management	Legal, Accounting, Consulting, and Corporate Headquarters Activities	1.442086311
	Space Management and Maintenance	Other Administrative Activities and Complementary Services	1.428391052
	Structures, Construction and Reform	Architectural, Engineering, Technical Testing/Analysis and R&D Services	1.476070101
	Academic, Technical and Business Training	Other Professional, Scientific and Technical Activities	2.033476234
	Marketing, Sound and Image Editing	Television, Radio, Cinema and Sound and Image Recording/Editing Activities	1.763122889
	Creators of Content, Choreography, Presentations/Spectacles/Festivals	Artistic, Creative and Show Activities	1.592546403
Visual Arts	Project Management	Legal, Accounting, Consulting and Corporate Headquarters Activities	1.442086311
	Space Management and Maintenance	Other Administrative Activities and Complementary Services	1.428391052
	Content Creators and Exhibitions	Artistic, Creative and Show Activities	1.592546403
	Structures, Construction and Reform	Architectural, Engineering, Technical Testing/Analysis and R&D Services	1.476070101
	Technical and Artistic Training of Professionals and the Providing of Technical Services	Other Professional, Scientific and Technical Activities	2.033476234
	Photography and Engravings	Printing and Reproduction of Recordings	1.814784577

	Marketing, Sound and Image Editing	Television, Radio, Cinema and Sound and Image Recording/Editing Activities	1.763122889
	Editing	Integrated Print Editing and Editing	1.838165432
Audiovisual Arts	Project Management	Legal, Accounting, Consulting and Corporate Headquarters Activities	1.442086311
	Film Production and Exhibition of Videos and Television Programs, Marketing and Editing of Sounds and Images	Television, Radio, Cinema and Sound and Image Recording/Editing Activities	1.763122889
	Editing and Printing	Integrated Print Editing and Editing	1.838165432
	Structures, Construction and Reform	Architectural, Engineering, Technical Testing/Analysis and R&D Services	1.476070101
	Creators of Content and Presentations/Spectacles/Festivals/Exhibitions	Artistic, Creative and Show Activities	1.592546403
	Technical and Artistic Training of Professionals and the Providing of Technical Services	Other Professional, Scientific and Technical Activities	2.033476234
The Humanities	Project Management	Legal, Accounting, Consulting and Corporate Headquarters Activities	1.442086311
	Editing and Printing	Integrated Print Editing and Editing	1.838165432
	Space Management and Maintenance	Other Administrative Activities and Complementary Services	1.428391052
	Production Activities for Audio, Video and Television Programs	Television, Radio, Cinema and Sound and Image Recording/Editing Activities	1.763122889
	Creators of Content and Presentations/Spectacles/Festivals/Exhibitions/Fairs	Artistic, Creative and Show Activities	1.592546403
	Technical and Artistic Training of Professionals and the Providing of Technical Services	Other Professional, Scientific and Technical Activities	2.033476234
Music	Project Management	Legal, Accounting, Consulting and Corporate Headquarters Activities	1.442086311
	Creators of Content and Presentations/Spectacles/Festivals/Exhibition	Artistic, Creative and Show Activities	1.592546403
	Music Instrument and Equipment Industry	Manufacture of Various Products	1.816941817
	Space Management and Maintenance	Other Administrative Activities and Complementary Services	1.428391052
	Audio, Video and Television Production Activities	Television, Radio, Cinema and Sound and Image Recording/Editing Activities	1.763122889
	Editing and Printing	Integrated Print Editing and Editing	1.838165432
	Technical and Artistic Training of Professionals and the Providing of Technical Services	Other Professional, Scientific and Technical Activities	2.033476234
Cultural Heritage / Museums	Project Management	Legal, Accounting, Consulting and Corporate Headquarters Activities	1.442086311
	Creators of Content and Presentations/Spectacles/Festivals/Exhibitions	Artistic, Creative and Show Activities	1.592546403
	Technical and Artistic Training of Professionals and the Providing of Technical Services	Other Professional, Scientific and Technical Activities	2.033476234
	Project and Graphic Design, and Catalogue Printing	Integrated Print Editing and Editing	1.838165432
	Structures, Construction, Reform and Maintenance	Architectural, Engineering, Technical Testing/Analysis and R&D Services	1.476070101
	Space Management and Maintenance	Other Administrative Activities and Complementary Services	1.428391052

Source: Prepared by the authors.