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ICT in Culture

SURVEY ON THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN BRAZILIAN CULTURAL FACILITIES

2024

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Brazilian Network Information Center

ICT in Culture

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2024

Brazilian Internet Steering Committee
www.cgi.br

São Paulo
2025

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Foreword

A successor to Arpanet, the Internet was maintained in its first decades by research funds, such as the National Science Foundation (NSF) in the United States, and by the institutions connected to it. Throughout this period—which lasted until the mid-1990s—the Internet was used mainly for the communication of supercomputing centers and universities, without aiming for self-sustainability. With its widespread dissemination more than three decades later, we can say that the Internet has become mature, and is made up of a very complex ecosystem structured on layers of physical infrastructure, connection protocols, and a wide range of applications.

This maturation process, in addition to the search for Internet sustainability, has involved technical challenges of scalability and security, in addition to interaction with political and regulatory bodies. It has gone through many stages and an extensive multisectoral and international effort to define Internet governance arrangements that are capable of balancing diverse interests and guaranteeing stability, interoperability, and expansion. In the Brazilian case, the establishment of multisectoral, democratic, and collaborative governance was solidified with the creation of the Brazilian Internet Steering Committee (CGI.br) and the institutionalization of the Brazilian Network Information Center (NIC.br), which includes Registro.br, responsible since 1989 for registering domain names with the "last name" .br. In this way, it was possible to guarantee not only the Internet governance framework, already defined by Standard 4 of 1995, but also self-sufficiency in the technical management of names and numbers, making it possible to reinvest in the expansion and improvement of the Internet infrastructure in Brazil.

In addition to managing the registration and publication of .br domain names, and allocating autonomous system numbers (ASN) and Internet protocol (IP) addresses in versions 4 and 6, it carries out a number of other actions, all linked to the promotion of fundamental values for the Internet, such as integrity, interoperability, and accessibility.[1] These actions include supporting research centers with funds from Registro.br, holding national and international events, and promoting actions aimed at expanding the infrastructure and protecting users on the Internet, always with the goal of making the Internet increasingly accessible and safe. Another fundamental aspect is CGI.br's role in fostering constant and careful dialogue about the use of the Internet by individuals, enterprises, and the government.

[1] More information at https://principios.cgi.br/sobre

While technological advances bring countless possibilities, it is also true that new challenges need to be faced collectively if the Internet's guiding principles are to be preserved. In recent years, for example, the growing adoption of mobile devices and Artificial Intelligence (AI) technologies by individuals and organizations has brought to the fore issues such as privacy and data protection, the proliferation of false or misleading content, and the potentially harmful excessive use of digital devices by children. Several events promoted by NIC.br in 2024 addressed these issues, enabling multisectoral reflections anchored in data. Some examples are the 15th edition of the Seminar on Privacy and Personal Data Protection,[2] the 9th Symposium on Children and Adolescents on the Internet,[3] and the seminar launching the Brazilian Artificial Intelligence Observatory (OBIA),[4] which operates under NIC.br.[5]

It is also worth highlighting the participation of CGI.br and the collaboration of NIC.br in various G20 initiatives during Brazil's presidency in 2024. To contribute to the debate on the digital economy, the Regional Center for Studies on the Development of the Information Society (Cetic.br)—a department of NIC.br dedicated to the production of indicators and analyses—has been active in the production of three reports on topics considered to be priorities by the G20 that are fundamental to the dialogue on technology and society. These publications had important international organizations as partners: the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Telecommunication Union (ITU), and the Ministries of Science, Technology and Innovation (MCTI) and Communication (MCom). The first summarizes indicators on the state of AI development in the G20 countries,[6] while the second focuses on the adoption of AI in public services.[7] The third proposes a framework for the international measurement of meaningful connectivity.[8]

Cetic.br|NIC.br is also responsible for a series of other publications that provide a detailed overview of the use of information and communication technologies (ICT) by individuals and organizations in Brazil. In addition to publishing research on ICT adoption in different segments, such as households, enterprises, governments, education, and health, the Center conducts sectoral and cross-cutting studies with a national scope on topics such as meaningful connectivity, AI in health, privacy and data protection, and electronic waste.

In 2025, Cetic.br|NIC.br celebrates two decades of work dedicated to producing reliable indicators and analysis on the use of ICT in Brazil. Over these 20 years, it has established itself as a national and international benchmark in the generation of comparable data, which provides important input for policymaking, the development of academic research,

[2] More information at https://seminarioprivacidade.cgi.br/

[3] More information at https://criancaseadolescentesnainternet.nic.br/

[4] More information at https://seminarioobia.nic.br/

[5] More information at https://obia.nic.br/

[6] More information at https://cetic.br/pt/publicacao/toolkit-para-avaliacao-da-prontidao-e-da-capacidade-em-inteligencia-artificial/

[7] More information at https://cetic.br/pt/publicacao/mapeando-o-desenvolvimento-a-implantacao-e-a-adocao-de-ia-para-aprimorar-servicos-publicos-entre-os-membros-do-g20/

[8] More information at https://cetic.br/pt/publicacao/conectividade-universal-e-significativa-um-marco-referencial-para-indicadores-e-metricas/

and strengthening the multisector debate on digital transformation. Its commitment to methodological rigor and excellence in the production of knowledge has strengthened its position with international organizations, governments, and civil society, making it an important pillar in building a more inclusive and sustainable digital environment.

The publication you have before you is part of this trajectory and reflects the conceptual and methodological knowledge of Cetic.br|NIC.br. In it, you will find essential data and evidence to understand how Brazilian society has been appropriating these technologies over the last two decades, a period marked by significant advances and complex challenges emerging from the digital age. This celebration is not only an institutional milestone, but also an invitation to reflect together on the future of ICT research and the role of data in building policies and strategies for a connected and informed society.

Enjoy your reading!

Demi Getschko
Brazilian Network Information Center - NIC.br

Presentation

Throughout 2024, the Brazilian Internet Steering Committee (CGI.br), in conjunction with the Brazilian Network Information Center (NIC.br), actively participated in national and international debates on the challenges for the governance of the digital environment, reaffirming its commitment to an inclusive and sustainable future for Brazil and the world. In particular, it is worth highlighting the NetMundial+10 Conference,[1] held in April 2024 by CGI.br. The Conference has established itself as a multisectoral platform for dialog on the challenges of Internet governance in a scenario in which digital technologies profoundly transform social, economic, cultural, informational, and political relations. The meeting culminated in the document *NetMundial+10 Multistakeholder Statement: Strengthening Internet governance and digital policy processes*,[2] which has become a reference on global agendas.

Also in 2024, during its presidency of the G20, Brazil took on a leading role in promoting sustainable development, social inclusion, and the reform of global governance. With a focus on reducing inequalities and fighting hunger and poverty, the country promoted debates on the energy transition, climate change, and key issues related to the digital economy. Brazil's chosen priorities in the G20 Digital Economy Working Group (DEWG) also reflect its commitment to a more inclusive and sustainable digital economy, including topics such as meaningful universal connectivity, advancing digital government and digital public infrastructures, promoting information integrity and a more secure digital environment, and Artificial Intelligence (AI) for sustainable development and reducing inequalities.

With the prominent and collaborative work of the Ministries of Science, Technology and Innovation (MCTI), Communications (MCom), Management and Innovation in Public Services (MGI), and the Secretariat for Social Communication (Secom), these priorities were considered strategically, in line with the challenges of the digital economy. NIC.br and CGI.br played an important role in several of these activities, contributing their technical expertise and commitment to multisectoral Internet governance, such as the leadership of the Regional Center for Studies on the Development of the Information Society (Cetic.br), a department of NIC.br, in three publications related to the priority themes.[3]

[1] More information at https://netmundial.br/

[2] The Statement can be accessed at https://netmundial.br/pdf/NETmundial10-MultistakeholderStatement-2024.pdf

[3] *Toolkit for Artificial Intelligence Readiness and Capacity Assessment*; *AI for enhanced public services in the G20 members: Artificial Intelligence for inclusive sustainable development and inequalities reduction*; and *Universal and meaningful connectivity: A framework for indicators and metrics.*

At the same time as the international meetings, the 5th National Conference on Science, Technology and Innovation (CNCTI) was held in Brasilia. The meeting, which was open and participatory, was attended by more than 2,500 representatives from civil society, academia, the technical community, international organizations, and the Brazilian government, representing a space for social dialogue and proposing public policies. On that occasion, the Brazilian Artificial Intelligence Plan (PBIA) was launched,[4] which, under the coordination of the MCTI, aims to realize the Brazilian project of technological autonomy, increasing the competitiveness of the national economy, and stimulating the responsible use of AI. As one of their contributions to the issue, NIC.br and CGI.br organized the 1st Seminar of the Brazilian Artificial Intelligence Observatory (OBIA),[5] an integral part of the PBIA, which plays an essential role in producing and disseminating data and studies on the adoption and use of AI-based systems in the country.

To support these debates and monitor the achievement of the commitments made, the availability of data and indicators is essential to map the socioeconomic implications of the adoption of digital technologies by different sectors of society. With two decades of regular production of reliable and internationally comparable statistical data, as well as dissemination of studies and analyses on the impacts of digital technologies on society, Cetic.br|NIC.br has many reasons to celebrate. Its commitment to excellence and methodological rigor in the production of quality data has ensured recognition and influence among public policymakers and international organizations linked to the ecosystem of indicators and statistics. In addition, Cetic.br|NIC.br maintains ongoing cooperation with civil society, the academic community, national statistical offices, and important international organizations such as the Organisation for Economic Co-operation and Development (OECD), the International Telecommunication Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Conference on Trade and Development (UNCTAD), the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), and the United Nations Statistics Division (UNSD).

In this context, and in celebration of the 20th anniversary of Cetic.br|NIC.br, this publication offers valuable inputs for building accessible, relevant, and qualified knowledge, which is essential for informing debates and decisions on the country's digital transformation. Through the production of data and evidence as fundamental pillars, we seek not only to understand the challenges of the present, but also to pave the way for a more equitable and secure future for the next generations.

Renata Vicentini Mielli
Brazilian Internet Steering Committee – CGI.br

[4] More information about PBIA is available at https://www.gov.br/lncc/pt-br/assuntos/noticias/ultimas-noticias-1/plano-brasileiro-de-inteligencia-artificial-pbia-2024-2028

[5] OBIA can be accessed at https://obia.nic.br/

Executive Summary

ICT IN CULTURE
SURVEY 2024

Executive Summary ICT in Culture 2024

The 2024 edition of ICT in Culture highlights new data on the use of Artificial Intelligence (AI), technological infrastructure, the use of information and communication technologies (ICT) in cultural facilities, and the digital skills of their teams.

Especially after the social isolation due to the COVID-19 pandemic, cultural facilities not only began to provide physical access to digital content, but also internalized their potential to act as mediators of the information to be retrieved. Part of the financial support provided by the Aldir Blanc's policy (Law No. 14.017/2020 and Law No. 14.399/2022) and Paulo Gustavo (Complementary Law No. 195/2022) emergency policies also ensured survival at a critical time. In addition, conditions arose for modernizing the technological infrastructure and adopting digital technologies to strengthen the facilities' resilience.

AMONG ARCHIVES, THE AVAILABILITY OF COLLECTIONS ON THE INTERNET GREW FROM 64% IN 2022 TO 83% IN 2024

Inequalities in access to ICT are directly reflected in the technological infrastructure of cultural facilities. Both the presence and the scarcity—or even the absence—of devices such as mobile phones and computers reveal the influence of institutional and territorial contexts on the conditions available for the development of cultural activities. It should be noted that, currently, the growing informational demands of Internet users pose ever-greater challenges to the facilities in multiple spheres, from the improvement of access infrastructure to the development of digital skills among teams and audiences.

In this context, the adoption of digital technologies by cultural facilities is more than just a trend—ICT is both a tool for democratizing access to culture and a means of reinforcing the importance of the cultural sector in the country's socioeconomic development.

Artificial Intelligence

The use of AI in Brazilian cultural facilities is still in its early stages, with adoption rates above 10% only in archives (20%) and cinemas (16%). In other facilities, the proportions were 9% in culture points, 4% in heritage sites, museums, and theaters, and 2% in libraries (Chart 1). On the other hand, the survey also reveals a scenario of progress in the digitization of cultural facilities, with virtually universal Internet access among those investigated and the strengthening of the technological infrastructure of organizations in the sector.

ICT infrastructure

The 2024 edition of ICT in Culture showed that Internet access is practically universal among the facilities surveyed, such as archives and cinemas (100%) and culture points (96%). It also points to significant growth in network connectivity among heritage sites, which increased from 74% in 2022 to 92% in 2024. However, lower proportions of Internet access persist among museums (87%) and libraries (83%).

The strengthening of digital infrastructure identified by the survey is also reflected in the increased presence of electronic devices owned

by cultural facilities, such as tablets in archives (which rose from 14% in 2022 to 32% in 2024) and theaters (from 17% to 27%), notebooks in heritage sites (from 36% to 65%), and mobile phones in culture points (from 28% to 39%).

The proportion of facilities offering free Wi-Fi access to the public also increased compared to the indicators in the 2022 edition of the survey, with libraries (from 54% to 65%), culture points (from 53% to 64%), and museums (from 40% to 51%) standing out. The availability of computers for the public remained stable, being more prevalent in archives (55%) and libraries (41%).

65% OF LIBRARIES PROVIDED WI-FI TO THE PUBLIC, WHEREAS 41% OFFERED COMPUTERS

Online presence

Chart 2 shows that presence on online platforms and social networks such as Instagram, TikTok, and Flickr grew during the period, reaching 87% of culture points (compared to 73% in 2022) and 78% of heritage sites (compared to 50% in 2022). The use of messaging apps such as WhatsApp or Telegram also increased at culture points (from 62% to 72%), museums (from 24% to 37%), theaters (from 24% to 35%), and libraries (from 12% to 25%).

On the other hand, after advancing during the COVID-19 pandemic, the presence of live video streaming tools on websites decreased among theaters and cinemas, returning to levels observed before the health crisis. In the case of theaters, the percentage fell from 25% in 2022 to 16% in 2024; in cinemas, it went from 20% to 12% in the same period.

Digital collections

While possession of collections is high in all types of cultural facilities, digital access to them and information about these collections are limited. The ICT in Culture 2024 survey indicated that collections were widespread among heritage sites—whose proportion grew from 91% in 2022 to 100% in 2024—museums, archives, and culture points (99%, 98%, and 95%, respectively). There was a lower proportion of cinemas (75%) and theaters (74%) with collections, which is due to their specific characteristics.

In 2024, archives (83%) and culture points (65%) were among the types of facilities that most frequently offered digital materials to the public. To a lesser extent, museums (47%), heritage sites (39%), and cinemas (38%) also offered such materials. There was a significant increase in the availability of digitized collections disseminated on the Internet, regardless of the means, by archives, with a variation of 19 percentage points between 2022 (64%) and 2024 (83%). Specifically, there was greater dissemination in two forms of collection availability: in digital repositories by archives (from 31% to 51%) and at the institution's location by culture points (from 38% to 49%).

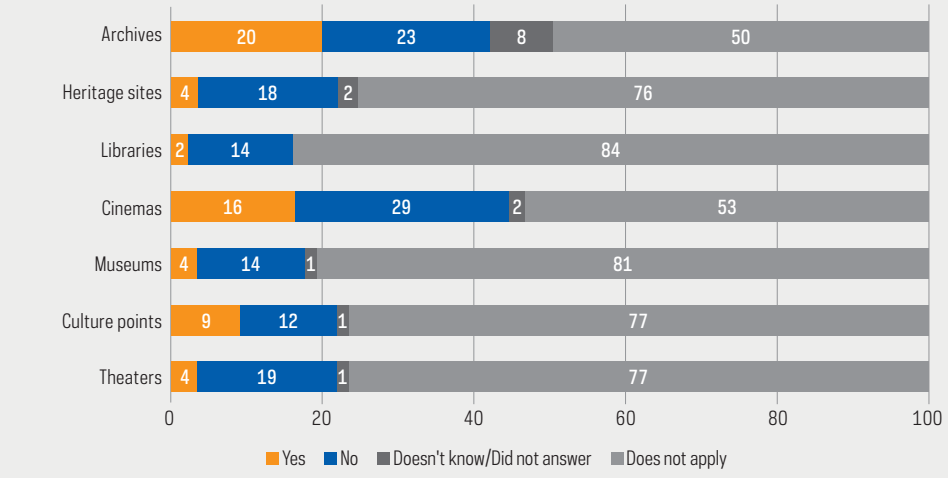
The main difficulties encountered by cultural facilities were investigated in order to identify the main gaps and challenges in digital object management. Chart 3 shows that lack of funding was the challenge most frequently mentioned by all facilities: 87% of culture points, 76% of archives and libraries, 74% of heritage sites and museums, 41% of theaters, and 32% of cinemas. The difficulty of establishing partnerships and cooperation agreements for technology transfer, an item collected for the first time, is also relevant. Among culture points and libraries, 3 out of 4 (75%) reported experiencing this difficulty. This was also the case for heritage sites (67%), museums (64%), and archives (53%). The lack of qualified teams remained one of the main difficulties in all facilities, and the lack of knowledge about copyrights and other legal issues—previously unreported data—was identified as a difficulty, especially in culture points (50%) and libraries (48%).

CHART 1

—

Cultural facilities by use of AI technologies (2024)

Total number of cultural facilities (%)



33%
of libraries are present on Instagram, TikTok, or Flickr

76%
of culture points use YouTube or Vimeo

57%
of cinemas use WhatsApp or Telegram

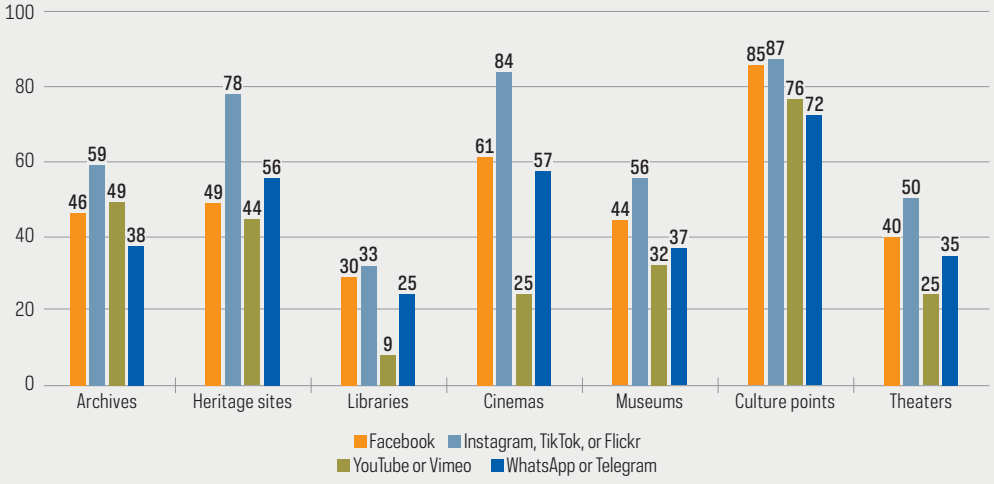
35%
of theaters are on WhatsApp or Telegram

CHART 2

—

Cultural facilities by presence on social networks or platforms and type (2024)

Total number of cultural facilities (%)



Skills for ICT use

The results for 2024 indicated that cultural facilities prioritized offering internal training related to digital technologies and privacy, compared to paid external courses. There were many institutions that did not offer any ICT courses or training. This is the case for more than half of museums (56%) and half of libraries (50%). There were also significant proportions among theaters (43%), heritage sites (42%), cinemas (39%), culture points (37%), and archives (32%), which means there are opportunities to expand skills training. Archives invested the most in internal training, for both digital technologies (50%) and privacy and data protection (51%). The offer of external courses was more limited: only 24% of archives paid for digital technology training for their teams, and 23% for privacy training (Chart 4).

Survey methodology and access to data

The aim of the ICT in Culture survey is to map ICT infrastructure, use, and appropriation in Brazilian cultural facilities. In 2024, the survey interviewed 1,818 managers responsible for archives, heritage sites, libraries, cinemas, museums, culture points, and theaters, who were randomly selected based on existing official registries. Data collection was carried out between October 2024 and April 2025 using computer-assisted telephone interviews (CATI). The results of the ICT in Culture survey, including tables of estimates, totals, and margins of error, are available on the Cetic.br|NIC.br website (https://cetic.br). The methodological and data collection reports can be accessed in the printed publication and the website.

BOX 1

—

TRAINING OF CULTURAL MANAGERS AND DIGITAL SKILLS

Despite growing connectivity in cultural facilities, qualified Internet access and training for cultural managers in digital technologies remain a challenge. While the ownership of collections is practically universal in all types of cultural facilities, digital access to them and information about the collections are limited. The digitization of collections, although desired, faces difficulties such as the lack of partnerships and cooperation agreements for technology transfer—a problem faced by 75% of libraries. Only 4% of libraries, 6% of museums, and 12% of culture points offered courses to their staff on information technology, computers, and/or the Internet. Thus, data from the ICT in Culture 2024 survey indicated that Brazilian cultural facilities have the potential to invest strategically in skills training, expanding the reach and diversity of activities and content available, especially for populations far from large urban centers.

CHART 3

—

Cultural facilities by difficulties with digitizing collections (2024)

Total number of cultural facilities (%)

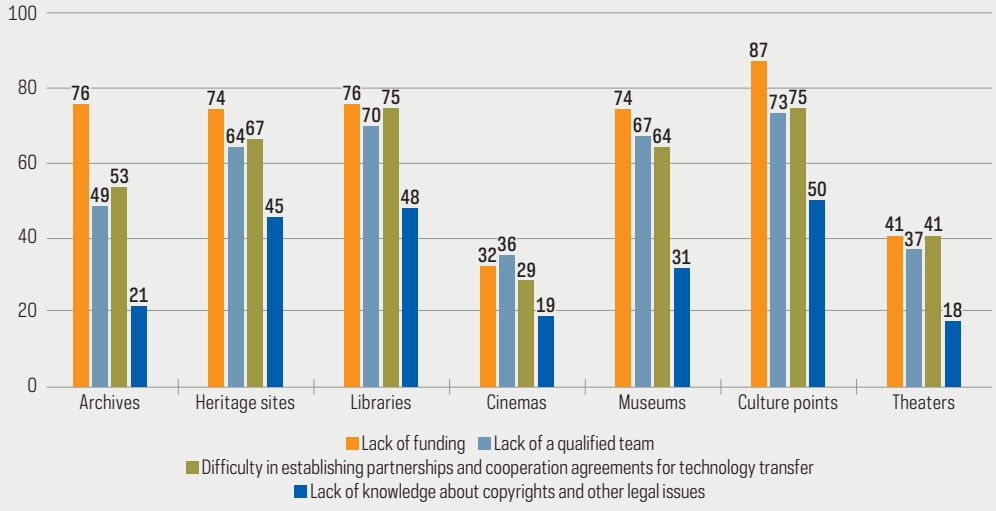


CHART 4

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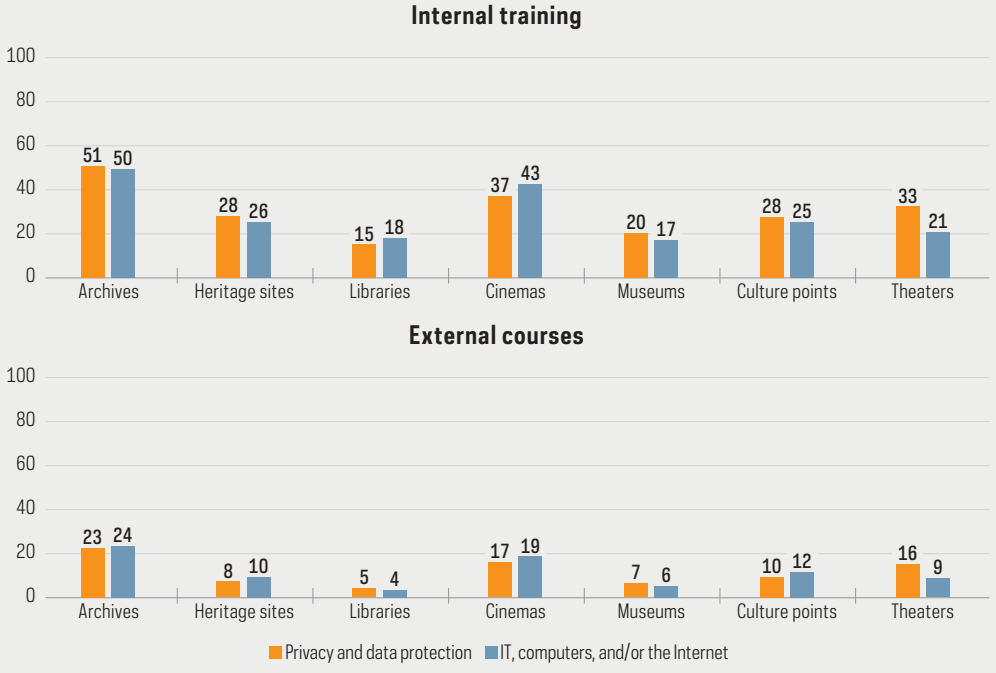
Cultural facilities by team training in IT, computers and/or the Internet, and privacy and personal data protection (2024)

Total number of cultural facilities (%)



Access the full survey data!

In addition to the results presented in this publication, the tables of indicators, questionnaires, information on how to access the microdata, and the presentation of the results of the launch event are available on the Cetic.br|NIC.br website, as well as other publications on the subject of the survey.

The tables of results (https://cetic.br/en/pesquisa/cultura/indicadores/), available for download in Portuguese, English, and Spanish, present the statistics produced, including information on the data collected and cross-checks for the variables investigated in the study. The information available in the tables follows the example below:

Code and indicator name

Population to which the results refer

C1 - CULTURAL FACILITIES BY TYPE OF ACTIVITY CARRIED OUT ON THE INTERNET IN THE LAST 12 MONTHS

Total number of cultural facilities

PERCENTAGE (%)		SENDING OR RECEIVING E-MAILS	USING INSTANT MESSAGING	MAKING VOICE OR VIDEO CALLS	RECRUITING INTERNAL OR EXTERNAL STAFF	TRAINING AND QUALIFYING PEOPLE WORKING AT THE INSTITUTION	OFFERING SERVICES, INFORMATION, OR ASSISTANCE TO THE PUBLIC
TYPE OF CULTURAL FACILITY	Archives	99	74	69	57	80	90
	Heritage sites	82	70	53	35	47	77
	Libraries	72	47	30	15	45	65
	Cinemas	98	76	59	70	68	80
	Museums	81	61	48	35	49	65
	Culture points	95	86	67	67	65	83
	Theaters	82	63	56	42	58	69

Indicator responses

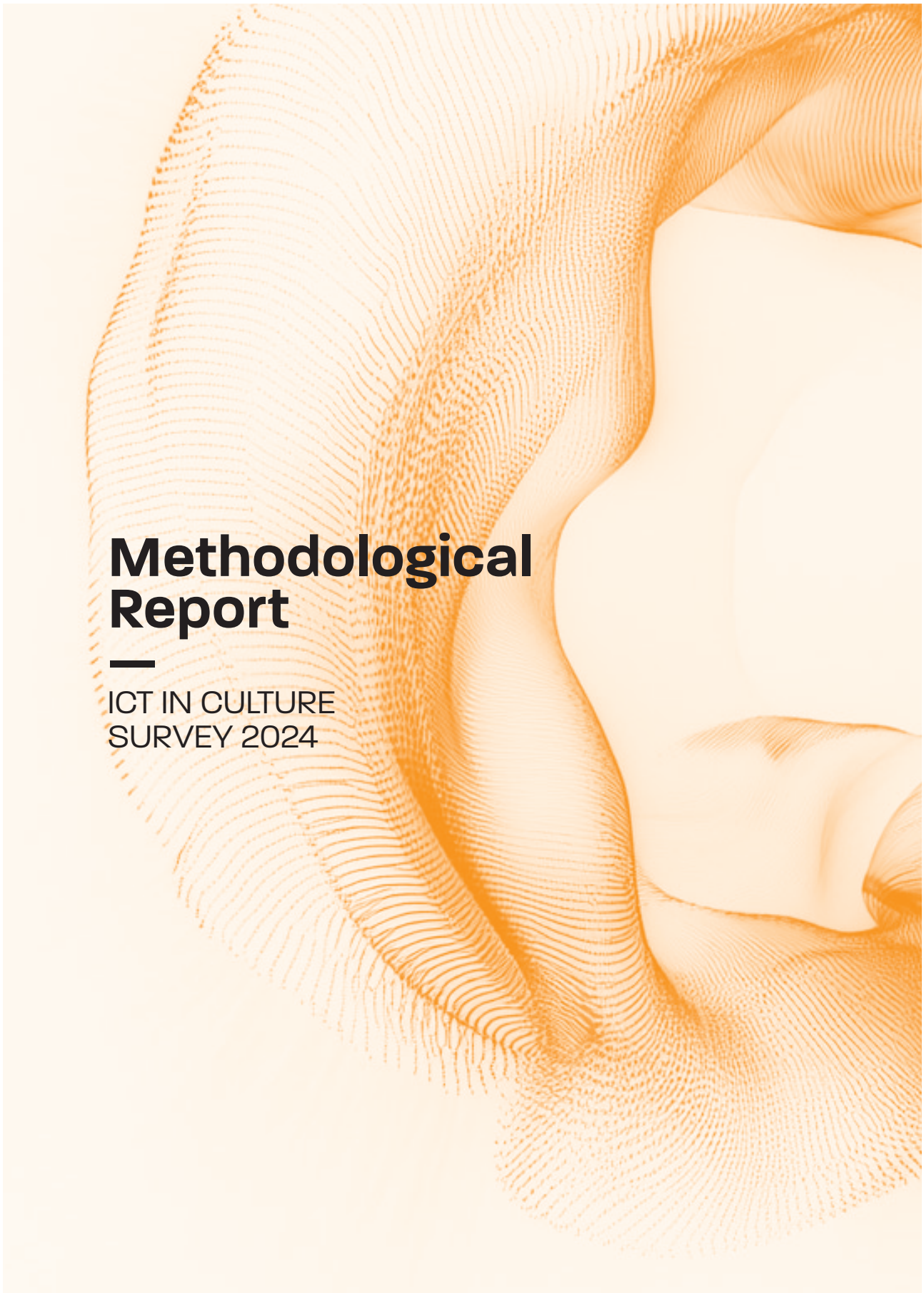
Results: can be in % or totals

Results tabulation cut-outs: type of cultural facility

Source: Brazilian Network Information Center. (2025). *Survey on the use of information and communication technologies in Brazilian cultural facilities: ICT in Culture 2024* [Tables].

How to reference the tables of indicators

This publication is also available in Portuguese on the Cetic.br|NIC.br website.



Methodological Report

ICT IN CULTURE
SURVEY 2024

Methodological Report
ICT in Culture 2024

The Brazilian Internet Steering Committee (CGI.br), through the Regional Center for Studies on the Development of the Information Society (Cetic.br), a department of the Brazilian Network Information Center (NIC.br), presents the methodology of the ICT in Culture survey.

The survey was conducted nationwide based on the following thematic modules:

- **Module A:** Profile of institutions;
- **Module B:** Information and communication technology (ICT) infrastructure;
- **Module C:** ICT use;
- **Module D:** Collections and digitization; and
- **Module E:** ICT skills.

Survey objectives

The main goal of the ICT in Culture survey is to understand the presence and adoption of ICT in cultural facilities in Brazil as part of their internal operational routines and relationships with their audiences.

The specific goals of the survey are:

- to map the available ICT infrastructure in Brazilian cultural facilities;
- to investigate activities carried out with the use of ICT in Brazilian cultural facilities;
- to analyze the institutional presence of cultural facilities on websites, online platforms and social media, and how these tools are used to interact with the audiences of the services provided;
- to understand how the use of ICT contributes to the preservation, digitization, and dissemination of collections;

- to investigate the ICT skills present in the institutions and among their professionals;
- to understand the reasons for adopting ICT and the barriers to computer and Internet use in Brazilian cultural facilities.

Concepts and definitions

In order to promote international comparability of its results, the conceptual framework of the ICT in Culture survey is based on the UNESCO *Framework for Cultural Statistics* (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2009). Considering the various cultural domains, the survey addresses institutions that carry out creation, production, dissemination and exhibition activities of cultural goods that, according to the same framework, define the cultural cycle.

Cultural facilities are understood as venues that provide access to cultural goods and services, acting to preserve and give access to collections and develop activities open to the public for cultural enjoyment, production, and dissemination. Based on the categories of cultural facilities from the *Survey of Basic Municipal Information* (Brazilian Institute of Geography and Statistics [IBGE], 2015), the ICT in Culture survey considers a representative sample of public and private institutions that are present in official registries at the national level. The following types of cultural facilities are investigated in the survey, defined according to official sources and current legislation:

ARCHIVES

Institutions that aim to keep, preserve, and give access to "sets of documents produced and received by public organizations, institutions of a public nature, and private entities, as a result of the exercise of specific activities, [...] regardless of the vehicles for the information or the nature of the documents" (Law No. 8.159/1991).

HERITAGE SITES

Material assets that are recognized and protected as part of the cultural heritage through legal instruments enacted by federal, state and municipal governments. They can include movable and immovable assets of various types whose conservation is in the public interest, due to their historical or artistic value (Decree-law No. 25/1937; National Institute of Historic and Artistic Heritage [Iphan], n.d.).

LIBRARIES

Cultural facilities that, through their collections and services, meet the various reading and informational needs of the communities in which they are located, collaborating to expand free access to information, reading and books (Brazilian Ministry of Culture [MinC], n.d.).

CINEMAS

Exhibition complexes that organize a coordinated series of services to screen cinematographic work, with a structure of one or more screening rooms, adjacent or not, grouped under the same name and whose schedule is publicized in a unified way (Brazilian Film Agency [Ancine], 2015).

MUSEUMS

Institutions "in the service of society and its development, open to the public, that conserve, research, communicate, interpret, and exhibit sets and collections of historical, artistic, scientific, technical value, or of any other value of a cultural nature, for purposes of preservation, study, research, education, contemplation, and tourism" (Law No. 11.904/2009, Article 1).

CULTURE POINTS

Groups, collectives, and private nonprofit legal entities, of a cultural nature or purpose, that develop and coordinate cultural activities in their communities and networks, recognized and certified by MinC through the instruments of the National Policy for Cultura Viva ([PNCV], Law No. 13.018/2014).

THEATERS

Scenic spaces for the production and presentation of projects and performances. They can have various formats (Italian, arena, etc.) and can be public or private.[1]

TARGET POPULATION

The survey's target population is composed of all Brazilian cultural facilities listed on official registries available through government organizations, as specified below:

- **Archives:** all archives registered with the National Registry of Custodial Entities for Archive Collections kept by the National Archives Council (Conarq).[2]
- **Heritage sites:** only sites with open visitation and classified as "buildings" and "buildings and collections," at the federal level, by the National Institute of Historic and Artistic Heritage (Iphan).[3]

[1] More information on the website of the Scenic Arts of the National Arts Foundation (Funarte). https://www.gov.br/funarte/pt-br

[2] More information on the website of the National Archives Council (Conarq). https://www.gov.br/conarq/pt-br/servicos-1/consulta-as-entidades-custodiadoras-de-acervos-arquivisticos-cadastradas

[3] Details regarding the protection instrument referred to as "heritage listing" can be found on Iphan's website. The ICT in Culture survey only covers buildings, but there are other types of listed heritage assets.

- **Libraries:** only public libraries registered with the National Public Library System (SNBP).[4]
- **Cinemas:** all exhibition complexes in operation as listed by the Ancine.[5]
- **Museums:** all institutions belonging to the National Registry of Museums, organized by the Brazilian Institute of Museums (Ibram).[6]
- **Culture points:** all culture points listed in the National Registry of Culture Points of the federal government.[7]
- **Theaters:** all theaters registered with the Funarte.

REFERENCE AND ANALYSIS UNIT

The survey's reference and analysis units consist of cultural facilities listed in the available official registries. Indicators are established for each type of cultural facility.

Data collection instruments

INFORMATION ON DATA COLLECTION INSTRUMENTS

Data is collected through structured questionnaires with closed and open questions (when necessary). More information about the questionnaire is available in the "Data Collection Instruments" section of the "Data Collection Report."

Sampling plan

The survey adopts two different approaches, depending on the cultural facility interviewed: census or sampling, according to the number of existing cultural facilities by type and location.

[4] More information on libraries is available on SNBP's website. https://www.gov.br/cultura/pt-br/assuntos/sistema-nacional-de-bibliotecas-publicas-snbp. For the conduction of the ICT in Culture 2024 survey, there was an updated of the contact information and the exclusion of libraries that were closed or out of operation by the SNBP.

[5] Ancine provides databases on cinemas and screening rooms on the Culture Data Portal at the following link: http://dados.cultura.gov.br/dataset/salas-de-exibicao-e-complexos-credenciados-ancine

[6] More information on museums is available at the MuseusBr platform, considering only the verified results. https://cadastro.museus.gov.br/

[7] More information related to the culture points is available on the Mapas Culturais website, on MinC'S "Mapa da Rede Cultura Viva" page. https://culturaviva.cultura.gov.br/mapa/#map

SURVEY FRAME AND SOURCES OF INFORMATION

Registry data is sent to Cetic.br|NIC.br by government organizations associated with the cultural sector and responsible for each of the types of facilities considered. In general, the registries consist of identification variables of the institutions, such as the names and locations and their contact information, such as telephone numbers and email addresses.

Registries are treated as per the following processes, performed separately in each database:

- standardization of text fields: removal of special characters and changing of all the content to capital letters;
- removal of records without identification;
- removal of records with no contact possibility;
- removal of duplicates: comparison of all fields in the database and verification case by case;
- exclusion of cases out of the reference population.

Since some registries do not include contact information for all the facilities, a step is included to construct and confirm telephone listings, in order to make most of the registry useful for the survey. A table showing the distribution of the target population by cultural facility, based on the listings obtained from the registries, is available in the survey's "Data Collection Report."

SAMPLE SIZE DETERMINATION

Sample size determination considers the optimization of the resources and the quality required for disseminating the results. The following sections present the sample design criteria established to carry out the field data collection process. More information about sample size determination and data collection can be found in the survey's "Data Collection Report."

SAMPLE DESIGN CRITERIA

The survey is based on two different approaches: census and sampling. The study sample is designed using the stratified sampling technique, which aims to improve the accuracy of estimates and ensure the inclusion of subpopulations of interest. Stratification variables are the type of cultural facility and the region in which they are located.

SAMPLE ALLOCATION

The sample of cultural facilities is obtained by simple random sampling without replacement in each stratum. Thus, within each stratum, selection probabilities are equal. As mentioned above, in some strata, due to the small number of institutions in the registry, all of the institutions are selected, which defines the census method.

The strata allow for all regions and types of cultural facilities to be represented in the sample. However, this design does not allow conclusions about the categories resulting from correlations between pairs of variables. The table containing the sample allocation by type of cultural facility is also available in the survey's "Data Collection Report."

SAMPLE SELECTION

Within each stratum, institutions are selected using simple random selection. Thus, for the sampling part of the survey, the selection process is given by Formula 1.

FORMULA 1

$$n_h = n \times \frac{N_h}{N}$$

N is the total number of cultural facilities
N_h is the total number of cultural facilities in stratum h
n is the sample size
n_h is the sample size of cultural facilities within each stratum h

Thus, the possibilities of including sampling units i for each stratum h are given by Formula 2.

FORMULA 2

$$\pi_{ih} = \frac{n_h}{N_h}$$

Since the census part of the survey includes all the cultural facilities, the probability of including each facility is equal to 1, i.e., $\pi_{ih} = 1$.

Field data collection

DATA COLLECTION METHOD

Institutions are contacted using computer-assisted telephone interviewing (CATI). In all facilities surveyed, the aim is to interview the main administrators, such as coordinators, presidents, directors, or other managers who are familiar with the institution as a whole, including its administrative aspects. Qualified respondents are considered those who are most familiar with the institution.

Data processing

WEIGHTING PROCEDURES

Each cultural facility that makes up the sample is assigned a base sampling weight, calculated as the ratio between the size of the population and the size of the sample in the final corresponding stratum as given by Formula 3.

FORMULA 3

$$w_{ih} = \begin{cases} \dfrac{N_h}{n_h}, & \text{if a cultural facility is in the sample stratum} \\ 1, & \text{if a cultural facility is in the census stratum} \end{cases}$$

w_{ih} is the base weight, equal to the inverse probability of selection of the respondent, from cultural facility i in stratum h associated with each cultural facility selected

n_h is the sample size of cultural facilities in stratum h

N_h is the total number of cultural facilities in stratum h

To adjust for nonresponse from a facility, a nonresponse correction is conducted. The nonresponse correction is given by Formula 4.

FORMULA 4

$$w^*_{ih} = \begin{cases} w_{ih} \times \dfrac{N_h}{n^r_h}, & \text{if a cultural facility is in the sample stratum} \\ \dfrac{C_h}{c^r_h}, & \text{if a cultural facility is in the census stratum} \end{cases}$$

w^*_{ih} is the weight adjusted for nonresponse of cultural facility i in stratum h

N_h is the total number of cultural facilities in stratum h

n^r_h is the total number of responding cultural facilities in stratum h

C_h is the total number of cultural facilities in the census in stratum h

c^r_h is the total number of responding cultural facilities in the census in stratum h

SAMPLING ERROR

Sampling error measurements or estimates of indicators in the ICT in Culture survey are calculated taking into account the sampling plan set for the survey according to strata. The finite population correction factor is considered when calculating variance, considering the small size of the population in each type of cultural facility.

Using the estimated variances, sampling errors are expressed by the margin of error. For dissemination purposes, the margins of error are calculated for a 95% confidence level. This means that, if the survey is repeated multiple times, in 19 out of every 20 cases, the interval would contain the true population value. Other measurements derived from this variance estimate are usually presented, such as standard deviation, coefficient of variation and confidence interval.

Calculation of margin of error is the product of standard error (square root of variance) by 1.96 (value of the normal sample distribution corresponding to the chosen significance level of 95%). These calculations are made for each variable in the indicator tables, which ensured that all tables have margins of error associated with each estimate presented in each table cell.

Data dissemination

The results of this survey are presented for each type of cultural facility. In some results, rounding caused the sum of partial categories to be different from 100% in single-answer questions. The sum of frequencies in multiple-answer questions usually exceeds 100%. It is worth mentioning that, in the tables of results, a hyphen (-) is used to represent nonresponse. Furthermore, since the results are presented without decimal places, cells with zero value mean that the answer to the item is explicitly greater than zero and less than one.

The results of this survey are published online and made available on the Cetic.br|NIC.br website (www.cetic.br). The tables of proportions, estimates and margins of error for each indicator are available for download in Portuguese, English and Spanish. More information on the documentation, metadata and microdata databases of the survey are available on the survey's "Methodology" webpage (https://cetic.br/en/pesquisa/cultura/microdados/).

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Data Collection Report

ICT IN CULTURE
SURVEY 2024

Data Collection Report
ICT in Culture 2024

The Brazilian Internet Steering Committee (CGI.br), through the Regional Center for Studies on the Development of the Information Society (Cetic.br), a department of the Brazilian Network Information Center (NIC.br), presents the "Data Collection Report" of the ICT in Culture 2024 survey. The objective of this report is to provide information about specific features of this survey's edition, including changes made to the data collection instruments, sample allocation, and response rates.

The complete survey methodology, including the objectives, main concepts and definitions, and characteristics of the sampling plan, are described in the "Methodological Report."

Sample allocation

Table 1 presents the number of records obtained from the registries and sources of information in the cultural sector for each type of facility, which was the target population considered in the 2024 survey.

TABLE 1
–
Target population by type of cultural facility, by region

Region	Cinemas	Archives	Libraries	Theaters	Museums	Culture points	Heritage sites
North	50	42	335	58	156	307	19
Northeast	135	115	1 529	230	772	1 671	271
Southeast	423	268	1 441	581	1 377	2 240	355
South	151	139	1 304	201	967	552	95

CONTINUES ▶

Region	Cinemas	Archives	Libraries	Theaters	Museums	Culture points	Heritage sites
Center-West	65	65	452	119	255	374	40
Total	**824**	**629**	**5 061**	**1 189**	**3 527**	**5 144**	**780**

A census approach was used to collect data from archives, heritage sites, cinemas, and theaters in the North region, heritage sites in the Center-West and South, and cinemas in the Center-West. The other types of facilities, in their respective regions, were investigated using a sampling approach. The final size of the planned sample by type of cultural facility, already considering possible nonresponse rates throughout the data collection process, is shown in Table 2.

TABLE 2
—
Planned sample by type of cultural facility, by region

Region	Cinemas	Archives	Libraries	Theaters	Museums	Culture points	Heritage sites
North	50	42	280	58	146	248	19
Northeast	93	58	261	229	276	503	139
Southeast	262	187	261	500	323	483	169
South	91	79	255	156	264	308	95
Center-West	65	45	255	85	218	220	40
Total	**561**	**411**	**1 312**	**1 028**	**1 227**	**1 762**	**462**

Data collection instruments

INFORMATION ABOUT THE DATA COLLECTION INSTRUMENTS

The data was collected through interviews using a structured questionnaire. It was answered by those responsible for the cultural facilities (preferably someone familiar with the institution's operation, both its administrative aspects and computer and Internet infrastructure). The questionnaire was the same for all types of cultural facilities and consisted of the modules described below.

Module A investigated the profiles of the institutions, with information of an organizational and administrative nature, such as type of cultural facility that best describes the institution, year of establishment, legal nature, human resources (paid workers and volunteers), the number of people who attended activities in-person and remotely in the year of reference (2023), sources and methods of fundraising, and estimated revenue. The profiles of the respondents were also investigated regarding their level of education and specific training in cultural management and the use of technologies.

Module B examined information and communication technology (ICT) infrastructure, collecting information about ownership (if personal or owned by the institution) and use of computers and mobile phones, as well as the difficulties related to not using these devices. Similarly, access to and use of the Internet were investigated, and in cases where the Internet was not used, the reasons for this were explored. It also contained questions about types of Internet connection, maximum download speeds contracted, presence of a Wi-Fi network, the availability of computers and Wi-Fi for free public access, and types of software used and purposes for using it.

Use of ICT was addressed in Module C, which included activities carried out on the Internet and the presence of institutions on online platforms, such as websites and social media. It also presented extensive questions about resources offered on the website and the use of social media and electronic government services. Furthermore, the module investigated more general activities carried out by cultural facilities, in-person, remote, or both. Additionally, it examined online ticket sales and booking for in-person or remote activities.

Module D presented issues related to the ownership, digitization, and dissemination of institutional collections, including questions about the types of collections, forms of public availability, barriers to digitization, processes for organizing collections, copyright protection conditions, and the availability of collection catalogs for online consultation.

Module E, relative to ICT skills, asked questions about information technology (IT) management in the institution and practices of privacy and protection of personal data, including the presence of IT or informatics areas or departments and a person responsible for the compliance with the Brazilian General Data Protection Law (LGPD), hiring of related services, the use of Artificial Intelligence (AI) applications, those responsible for managing the institution's website and profiles or accounts on social media, team training, and barriers to computer and Internet use.

When respondents were unable to or refused to answer a specific question on the questionnaire, two options were provided: "Does not know" and "Did not answer." "Does not apply" was indicated as a result in the case of questions that did not apply to a specific group of facilities, which reflected the filters present throughout the questionnaire.

PRETESTS

The questionnaires were pretested between September 25 and 30, 2024, with interviews with 14 cultural facilities, including one archive, two heritage sites, three libraries, four museums, two culture points, and two theaters. Regional diversity was taken into account, with the inclusion of three institutions in the Center-West, five in the Northeast, three in the Southeast, and three in the South. The questionnaire was administered in electronic format, and the application lasted an average of 37 minutes.

CHANGES TO THE DATA COLLECTION INSTRUMENT

To improve the data collection instrument in relation to the previous edition of the survey, various revisions and adjustments were made to the questionnaire. To enhance respondent understanding, the headings of certain questions and answer options were standardized and simplified. Furthermore, new questions were included or excluded to capture emerging phenomena in the field of culture and shorten the questionnaire administration process. All revisions were conducted to maximize the comparability of the survey's main indicators throughout its historical series.

The changes covered in this section refer to thematic and semantic updates, additions, and deletions of answer options, as well as the notable inclusion of a question about AI. In general, the data collected in previous editions were maintained, preserving comparability. The significant changes in the questionnaire's content are concentrated in modules C (ICT use), D (digital collections), and E (ICT skills).

Module C, entitled "ICT use," contains specific adjustments for updating purposes. In the question about presence on online social platforms or networks by type, the answer option "Facebook or Yahoo Profile" was changed to simply "Facebook." This same question also had its "Twitter" item updated to "X (formerly Twitter)."

In Module D, when asked about the types of collections they had, respondents were given two new options. The inclusion of the item "Art installations or performances" was intended to include contemporary art and aligns the question with current debates on digitizing collections in non-static formats on multiple media (e.g., audiovisual, textual, iconographic, and/or phonographic), as is the case with recording artistic performances. In addition to format, this item was designed to capture the presence of born-digital collections, such as ephemeral art on social media, to quantify the capacity of cultural facilities to preserve this type of collection digitally.

Module D also incorporated changes to the question about difficulties in digitizing collections. The new item "Difficulty in establishing partnerships and cooperation agreements for technology transfer" was included to capture information related to the strategies developed by the cultural sector to build institutional capacity and skills in digitizing collections, despite funding limitations. The second item included in the questionnaire was "Lack of knowledge about copyrights and other legal issues within the team", which provides a thematic analysis of the main difficulties faced by facilities for digitizing cultural collections, taking into account that team qualification on these topics is one of the main challenges to the digitization of cultural collections.

A change was also made to the item "Digitization of materials is prohibited by law and/or contract." By rewording the item to "Digitization and/or dissemination of materials is prohibited by law and/or contract", the facilities that exclusively or primarily carry out digital collection sharing activities were included. In Module E, on ICT skills, for the first time, the ICT in Culture 2024 survey collected data on the use of AI technologies by the seven types of facilities investigated.

INTERVIEWER TRAINING

The interviews were conducted by a team of trained and supervised interviewers. They underwent basic research training, organizational training, ongoing improvement training, and refresher training. They also underwent specific training for the ICT in Culture 2024 survey, which included instruction on how to approach the responding audience and information about the application of the data collection instrument, field procedures, and situations.

In addition to the training, the entire project team also had access to the research instruction manual, which described all the procedures needed to carry out data collection and detailed the study's objectives and methodology, ensuring the standardization and quality of the work.

A total of 55 interviewers and two field supervisors were involved in the data collection.

Data collection procedures

DATA COLLECTION METHOD

The institutions were contacted using the computer-assisted telephone interviewing (CATI) technique. Interviews to apply the questionnaire lasted 44 minutes on average.

DATA COLLECTION PERIOD

Data for the ICT in Culture 2024 survey was collected between October 2024 and April 2025. The interviews were conducted from Mondays to Fridays, between 9 AM and 6 PM Brasilia time (UTC-3).

PROCEDURES AND CONTROLS

Several actions were implemented to ensure the greatest possible standardization in data collection. The situations and standard procedures that took place during the field work are described in Table 3.

TABLE 3

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Final field situations by percentage of recorded cases

Situation	Description	%
Interview completed	Interview fully completed by respondent	30%
Number valid, but interview not completed	Contact was made with the institution, but it was not possible to carry out the interview	32%
Number valid, but institution outside the scope of the survey	There was contact with the institution, but it was not visitable or had not been in operation in the last 12 months	1%
All missed calls	It was not possible to contact the institution using the numbers available	21%
Wrong number or number does not exist	Numbers available did not belong to the institution	16%

Every time interviewers called a number on the registry of cultural facilities, the situation regarding that call was recorded according to the procedures explained in Table 3, and could be tracked through a detailed call history. The situations were monitored through weekly controls, which included a summary of the number of facilities by the last situation in each stratum. Other weekly controls presented information about the number of completed and missing interviews per stratum, in addition to the number of contacts available, completed, and those that did not result in any form of contact.

To reduce the number of lost interviews, when situations were "wrong number or number does not exist," the interviewers searched for alternative phone numbers on the Internet, social networks (such as Facebook and Instagram), and blogs, using the institution's company name as the keyword. Additionally, searches for alternative phone numbers with other organizations located near the institutions were conducted. The same procedure was carried out with the institutions selected for the sample that did not have a telephone number on record, to facilitate conducting the telephone interview.

DATA COLLECTION RESULTS

The ICT in Culture 2024 survey approached 6,084 institutions, reaching a final sample of 1,818 cultural facilities. The response rates for each type of cultural facility investigated are shown in Table 4.

TABLE 4

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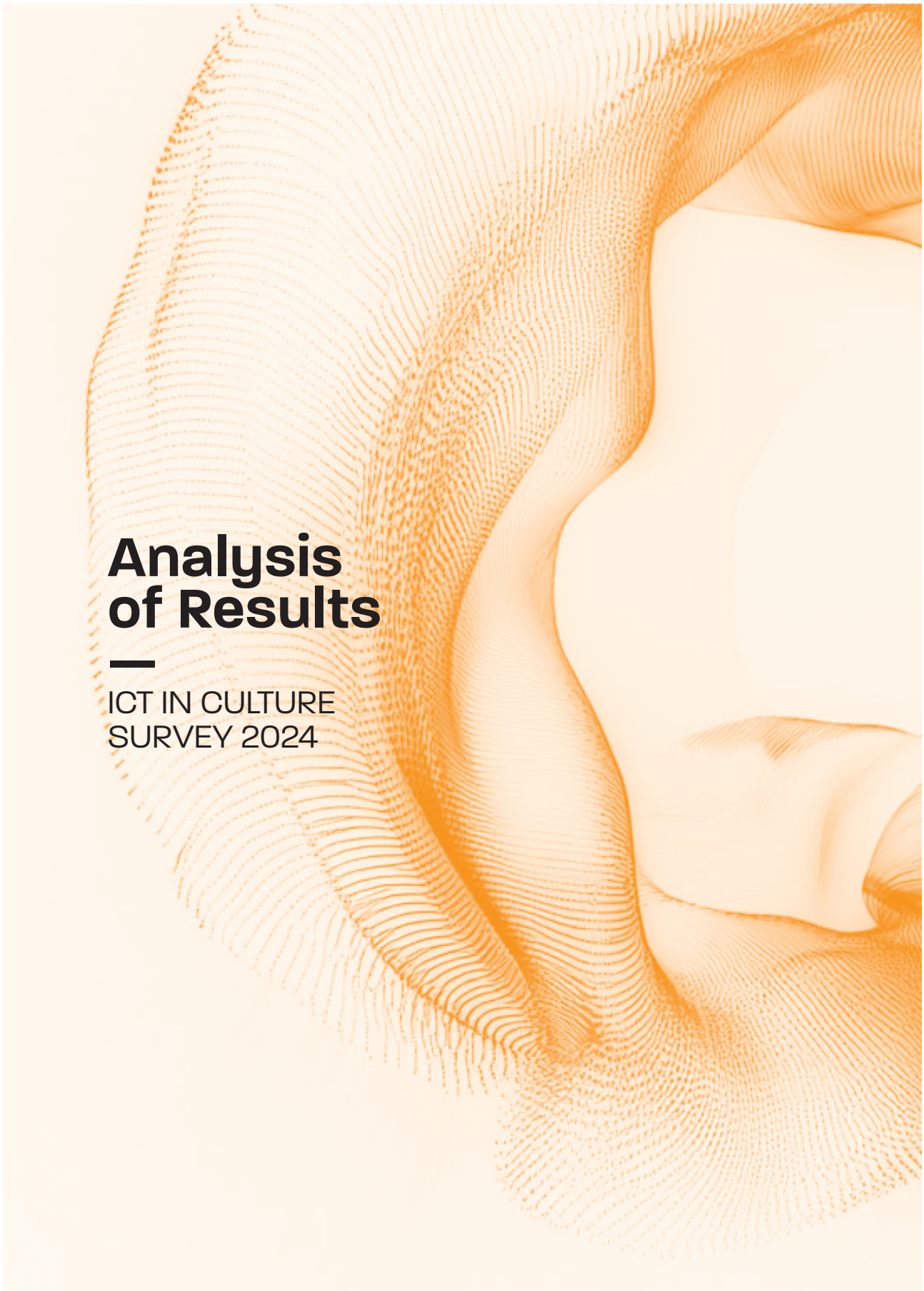
Response rate by type of cultural facility

Facilities	Response rate
Collections	41%
Heritage sites	14%
Libraries	32%
Cinemas	15%
Museums	37%
Culture points	20%
Theaters	26%



Analysis of Results

ICT IN CULTURE
SURVEY 2024

Analysis of Results
ICT in Culture 2024

The fifth edition of the ICT in Culture survey, conducted in 2024 and published in 2025, coincides with the celebration of important milestones for the field of culture, specially in the field of cultural policies. In 2025, Brazil celebrates the 50th anniversary of the National Arts Foundation (Funarte)[1] and the 40th anniversary of the Ministry of Culture (MinC).[2] The year 2024 marked the 20th anniversary of the Cultura Viva Program, now the National Policy for Cultura Viva (PNCV, in the Portuguese acronym), Law no. 13.018/2014. These dates are in addition to international milestones, such as the 20th anniversary of the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, of the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2005), as well as the 10th anniversary of the IberCultura Viva Community-Based International Cooperation Program (Ministry of Foreign Affairs [MRE], 2012).

These milestones reflect a trajectory of consolidating cultural policies that, in the current context, are increasingly intertwined with the context of digital transformation. Therefore, information and communication technologies (ICT) not only broaden access to and visibility of cultural expressions, but also strengthen the community and educational dimension of cultural spaces, reinforcing their strategic role in building an inclusive and plural digital culture. Connectivity to the Internet and digital services, especially after the pandemic, is perceived as a prerequisite for guaranteeing fundamental rights from the perspective of both cultural production and enjoyment (UNESCO, 2017, 2022a, 2022b; van Dijck et al., 2018). Understanding this new context requires an analysis of the ubiquity of technologies in the daily lives of the population and, by extension, within cultural spaces.

[1] More information available at https://www.gov.br/cultura/pt-br/assuntos/noticias/funarte-lanca-selo-comemorativo-de-seus-50-anos

[2] More information available at https://www.gov.br/cultura/pt-br/assuntos/noticias/minc-completa-40-anos-entre-avancos-desafios-e-uma-nova-fase-de-fortalecimento-das-politicas-culturais-no-brasil

These social transformations cannot be understood without first considering the effects of the COVID-19 pandemic in the cultural field. The social isolation measures caused by the health crisis imposed unprecedented challenges and exacerbated already known difficulties, especially regarding budgetary and qualified personnel shortages. At the same time, these measures also generated a demand for greater diversification of income sources and expansion of the sector's institutionalization (UNESCO, 2022a, 2022b). Worsening of the public calamity situation resulting from the pandemic further highlighted historical structural weaknesses of cultural facilities, propelling the creation of emergency laws to enable the subsistence of agents and institutions in the cultural sector. The health emergency brought to the forefront the importance of systematized information as strategic input for actions and resilience measures in the face of crises and instabilities. Furthermore, the production of data regarding the sector is increasingly seen as a fundamental step not only for accessing resources, but also, on a broader scale, for institutional legitimacy and long-term planning by organizations in the field. The resilience of the cultural field depends on strengthening information systems and digital skills to enable the collection and systematization of robust and up-to-date data (Rocha, 2023).

As a way to contribute to the qualification of the debate, and the formulation and implementation of cultural policies, the ICT in Culture 2024 survey presents unpublished data on the presence and adoption of ICT in the internal routines and interactions of cultural facilities with their publics. The results of this edition of the survey will be analyzed through the following sections:

- Profile of institutions
- ICT infrastructure
- Online presence
- ICT usage
- Digital collections
- ICT skills
- Final considerations: Agenda for public policies

Profile of institutions

To characterize the profile of Brazilian cultural facilities represented by the ICT in Culture survey, this section investigated their organizational arrangements through indicators on regional distribution, legal nature, staff, audience size, and funding sources, among others.

The regional distribution of cultural facilities showed stability in relation to previous editions of the survey, with a predominance of institutions located in the Southeast and Northeast regions (Chart 1). When equitably distributed across the territory, facilities have a greater potential to adequately represent cultural diversity (Barros & Rattes, 2021).

Making up 42% of the Brazilian population, according to data from the Brazilian Institute of Geography and Statistics (IBGE), the Southeast accounted for 51% of cinemas, 49% of theaters, 46% of heritage sites, 44% of culture points, and 43% of archives. Although the South represents only 15% of the Brazilian population, 22% of archives were located there, as well as 18% of cinemas and 17% of theaters. The North region (which accounts for 9% of the Brazilian population) had 7% of archives, 2% of heritage sites, 7% of libraries, 6% of cinemas, 4% of museums, 6% of culture points, and 5% of theaters (IBGE, 2025). The Northeast (which accounts for 27% of the Brazilian population) had 19% of theaters, 35% of heritage sites, and 32% of culture points (IBGE, 2025). Libraries showed a more balanced distribution among the regions: 30% were located in the Northeast, 28% in the Southeast, and 26% in the South. Similarly, 39% of museums were in the Southeast, 27% in the South, and 22% in the Northeast. Therefore, the data showed a relatively greater presence of cultural facilities, per capita, in the Southeast, Northeast, and South regions.

CHART 1

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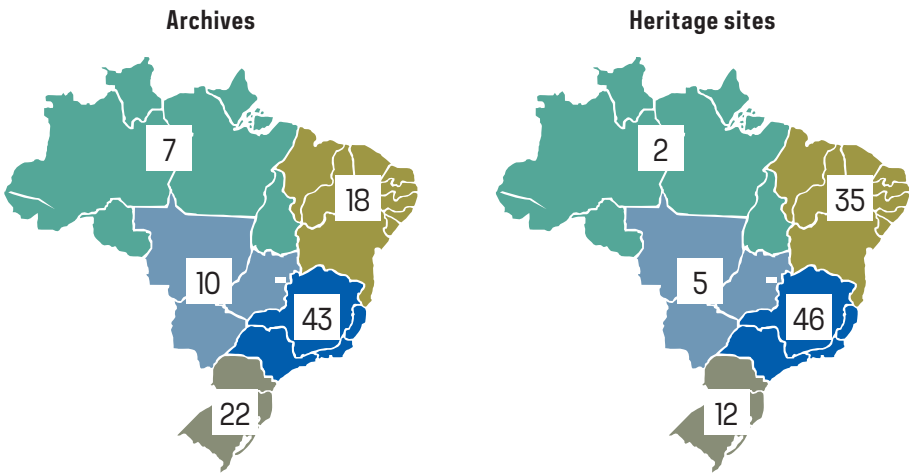
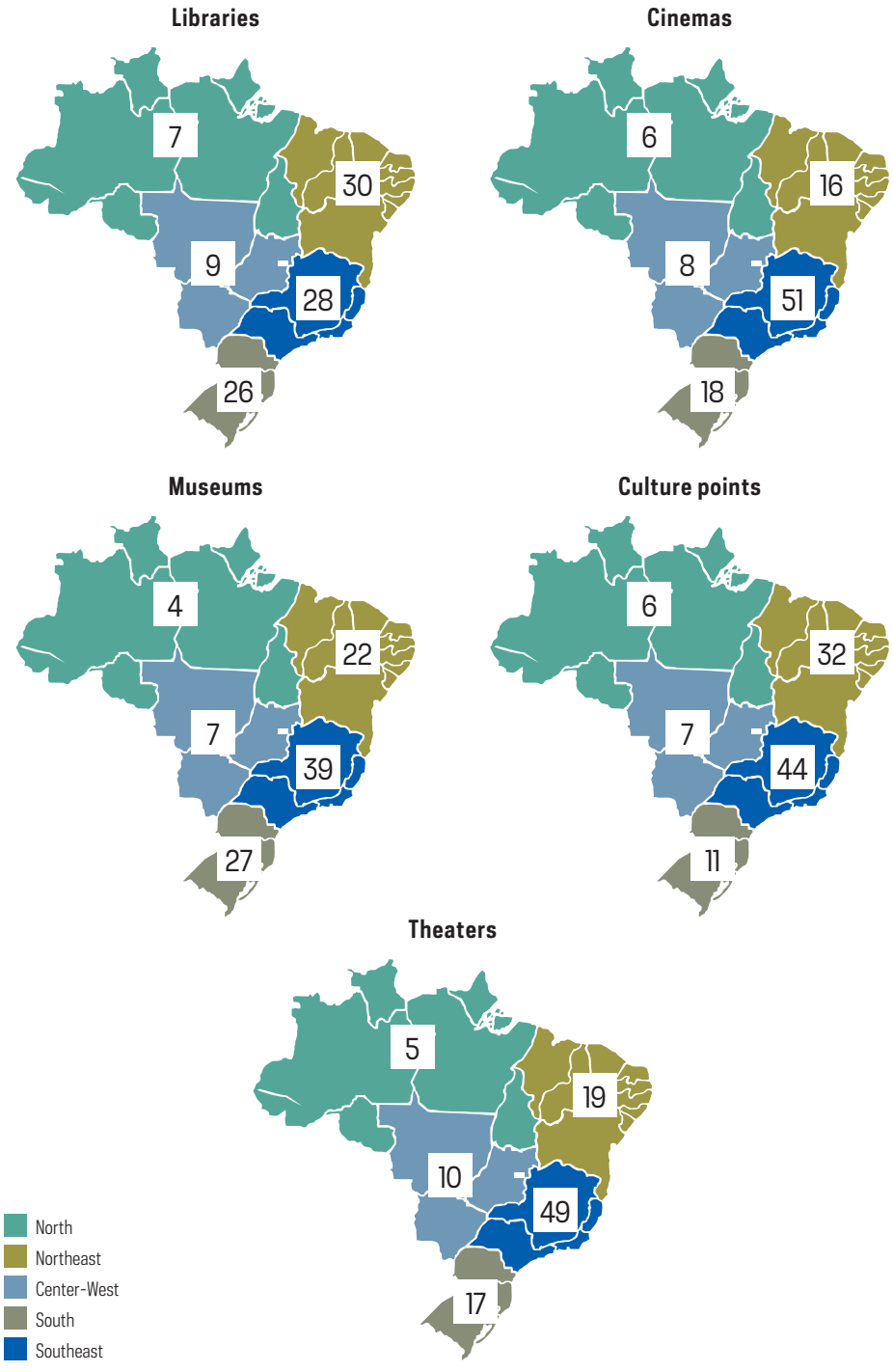
Cultural facilities by regional distribution (2024)

Total number of cultural facilities (%)




Libraries
7
30
9
28
26
Cinemas
6
16
8
51
18
Museums
4
22
7
39
27
Culture points
6
32
7
44
11
Theaters
5
19
10
49
17
North
Northeast
Center-West
South
Southeast

The size of cultural facilities can be analyzed using two indicators. The first is by the number of people working in the institution, whether paid or volunteering. The survey revealed that facilities with 1 to 9 paid workers were prevalent among libraries (84%), museums (63%), and heritage sites (55%), and also represented about two out of five archives (42%). The range of 10 to 50 paid workers was the most common among cinemas (49%) and theaters (39%).

Largely due to their characteristics as community-based, non-profit cultural spaces, 91% of culture points relied on volunteer work: 34% with 1 to 9 volunteers; 47% with 10 to 50 volunteers; and 10% with more than 50 volunteers. Despite this, the percentage of culture points with more than 50 paid workers increased by 6 percentage points, rising from 2% in 2022 to 8% in 2024.

As a second approach, the ICT in Culture 2024 survey also allows for the classification of facilities by audience segment, making it possible to distinguish between audiences involved in in-person activities and those who engaged in remote or online activities offered by the facilities. Considering the audiences that attended in-person activities in 2023, the year prior to the survey, 23% of cinemas received more than 76,001 people, while 22% of theaters received between 11,001 and 76,000 people. With smaller audiences, 30% of archives, 28% of culture points, and 24% of libraries received up to 240 people in person. In the case of heritage sites, 14% received between 1,701 and 4,000 people and another 14% received between 11,001 and 76,000 people.

The survey also revealed a significant degree of difficulty in measuring the number of people who followed activities offered remotely: using 2023 as a reference, managers were unable to provide an approximate number or chose not to answer in 52% of heritage sites, 50% of archives, 42% of museums, 39% of theaters, 32% of cinemas, 28% of libraries, and 21% of culture points. Furthermore, in general, the audiences that followed remote activities were at lower levels compared to in-person activities. In 56% of libraries, 45% of cinemas, 39% of theaters, 38% of culture points, 34% of museums, 30% of archives, and 21% of heritage sites, managers reported that up to 240 people followed their activities remotely in 2023.

Given that art and culture promotion facilities are more prevalent in large urban centers, to the detriment of less densely populated regions (Alexandrino & Holanda, 2023; IBGE, 2023; Menezes et al., 2022), diagnosing the profile of these facilities provides input for policies that promote greater decentralization in the sector, including the promotion of cultural policies in rural areas, small municipalities, and peripheral regions of Brazilian cities. Guaranteeing access to secure telecommunications infrastructure is a means to strengthen and improve the technical capacities of spaces for the creation, production, distribution, dissemination, consumption, and enjoyment of cultural expressions, as outlined in the Operational Guidelines on the Implementation of the Convention of Cultural Diversity in the Digital Environment (UNESCO, 2005, 2017).

In short, data on the regional distribution of cultural facilities not only reveal structural inequalities, but also underpin the formulation of funding strategies and the implementation of public policies aimed at reducing these asymmetries. At the same time, studying the profile of these facilities provides an understanding of the potential of ICT to broaden the reach of cultural activities, strengthen collaborative networks, and optimize the use of public resources allocated to the sector.

FUNDING AND EMERGENCY LAWS

In response to the effects of social isolation during the COVID-19 pandemic, the emergency laws Aldir Blanc 1 (Law No. 14.017/2020) and 2 (Law No. 14.399/2022)[3] and the Paulo Gustavo Law (Complementary Law No. 195/2022) were enacted with the objective of assisting individuals and institutions participating in the production chains of art and culture. Sections of these laws were specifically formulated for the maintenance and improvement of cultural spaces. In total, Law No. 14.399/2022 provides for the allocation of R$ 15 billion through direct funding until 2028, while Complementary Law No. 195/2022 allocates R$ 3.8 billion mainly to the audiovisual sector (Complementary Law No. 195/2022; Law No. 14.017/2020; Law No. 14.399/2022).[4] Indirect funding mechanisms, such as the National Program for Cultural Incentives (Pronac, known as the "Rouanet Law"), also contribute a considerable amount of resources. Since its inception in 1992, investment in projects has totaled R$32.4 billion.[5]

In this context, the analysis of the main source of funding revealed distinct funding patterns among Brazilian cultural facilities. Libraries, archives, museums, and theaters were those that most frequently mentioned government resources as the main source of their budget. Libraries were mostly supported by local resources (65%), as were museums (36%) and theaters (31%), while archives had a balanced revenue distribution among the federal (30%), state (25%), and local (24%) levels. On the other hand, more than half of cinemas (60%) were financed by the sale of products or services. Heritage sites showed the highest proportion of donations from individuals (26%) as their main source of funding. Finally, culture points presented the most diverse scenario, combining public sources—state (19%), local (18%), and federal (14%)—and private sources, such as donations (13%) and monthly fees (11%). It is important to emphasize that the ICT in Culture index measures the origin, not the volume, of the resources. Chart 2 shows all the funding sources most frequently used by the surveyed facilities.

[3] Later consolidated as a permanent policy as the Aldir Blanc Law 2 or the Aldir Blanc National Policy for the Promotion of Culture (PNAB, in Portuguese).

[4] More information is available at https://www.gov.br/iphan/pt-br/acesso-a-informacao/acoes-e-programas/programas/programa-nacional-de-apoio-a-cultura-pronac

[5] Data and information regarding the fundraising and execution of projects and proposals linked to the Rouanet Law are available on the Salic Comparar platform. The data used in this analysis were collected in September 2025 and are available at https://www.gov.br/cultura/pt-br/assuntos/lei-rouanet/textos/pesquise-projetos-e-dados

CHART 2

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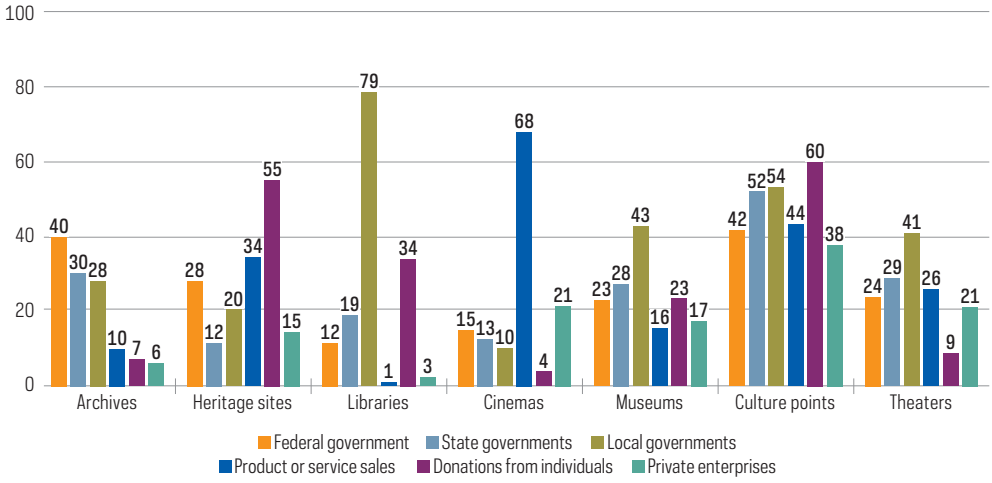
Cultural facilities by sources of funding (2024)[6]

Total number of cultural facilities (%)



The challenge of enabling the application of public resources on a national scale in the field of culture also involves integration among local governments, state governments, the Federal District, and the federal government, through the National Culture System (SNC, in Portuguese), and in favor of improving the infrastructure of these facilities (Barbalho et al., 2023; Cunha Filho, 2010; Feghali, 2025; Rocha, 2023). It is worth remembering that local governments were a source of revenue for most libraries (79%), for just over half of culture points (54%), and for around 40% of museums (43%) and theaters (41%).

Regarding the financial resources obtained by cultural facilities in 2023, Chart 3 shows that culture points (61%) and theaters (31%) were the institutions that most sought funding through public calls for proposals—the main means of fundraising also for about one in five archives (23%) and museums (22%). To a lesser extent, public calls were the main means of fundraising for heritage sites (14%) and libraries (12%).

[6] In addition to the types of funding sources shown in Chart 2, ICT in Culture 2024 collected data on the following sources: public or mixed enterprises, non-profit organizations, churches or religious organizations, monthly and annual fees paid by members, international organizations, governments of other countries, and others. A selection of items was made for analysis in this study. The remaining items can be found at https://cetic.br/pt/tics/cultura/2024/geral/A10/

CHART 3

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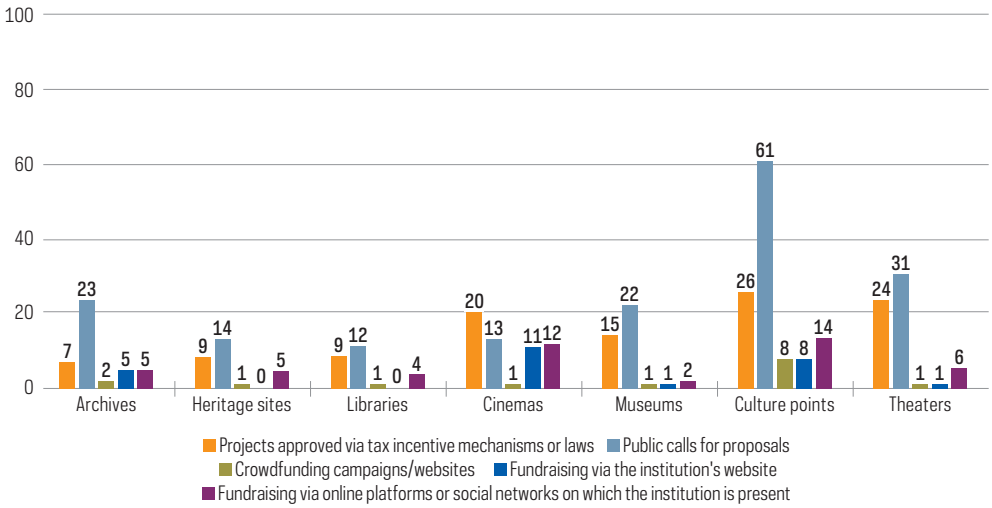
Cultural facilities by fundraising methods (2024)

Total number of cultural facilities (%)



In the 2024 edition, relevant changes were also observed in libraries and theaters, highlighting the diversification in access to different funding models by these facilities. The proportion of libraries that participated in public calls for proposals increased by seven percentage points compared to 2022, rising from 5% to 12%. Regarding facilities with projects approved via tax incentive mechanisms or laws, theaters stood out, with a nine-point variation between 2022 and 2024, increasing from 15% to 24%. During the same period, libraries increased the frequency of their approval, according to the same mechanism, with a six-percentage-point variation, such that 9% of these facilities raised funds through this means (3% in 2022).

As demonstrated by the data above, cultural facilities have increased their search for funding through direct or indirect support mechanisms. Discussions surrounding changes in the cultural funding system in Brazil have been ongoing, aiming to adapt it to the complexities presented by the broadening of the concept of culture and in a context of the intense digital transformation of society. The results of these studies and coordination in favor of structured cultural policies converge on a concept of culture that goes beyond fine arts, adopting a meaning of culture that encompasses ways of life, daily life, and community cultural practices (Rubim, 2022; UNESCO, 1982). This finding reinforces the importance of understanding, in the next section, the conditions that enable (or limit) the use of ICT by cultural facilities, especially regarding the available technological infrastructure, connectivity, and access to digital devices.

ICT infrastructure

Studies on the trajectory of cultural policies in Brazil have highlighted the need to improve institutional capacities to overcome the instabilities that have become characteristic of the sector (Rubim, 2007). Within the scope of the physical structure of cultural spaces, the creation of the structuring axis "Infrastructure, Facilities, and Cultural Spaces" in the new National Culture Plan (PNC) stands out[7] (Calabre, 2019; MinC, 2025; Rocha, 2023; Rubim, 2022).

Regarding technological infrastructure, a report from the 4th National Culture Conference (Institute for Applied Economic Research [IPEA], 2024) highlighted the provision of better Internet access as a determining factor for the realization of the cultural rights of all people, particularly those who suffer most from inequalities in access to and use of ICT (National Council for Cultural Policy [CNPC] et al., 2024). The necessary promotion of meaningful connectivity[8] (Brazilian Network Information Center [NIC.br], 2024) reinforces the need for integration of digital technologies and the Brazilian cultural field (CNPC et al., 2024; Kauark et al., 2019).

CONNECTIVITY IN CULTURAL FACILITIES

Due to the increasing presence of ICT in the daily lives of these facilities, the availability and quality of Internet connectivity can affect the ability of these institutions to offer cultural services, communicate with their audiences, and improve internal work routines.

The ICT in Culture 2024 survey indicated that Internet use was universal among archives and cinemas, as well as being highly utilized among culture points (96%). Among heritage sites, the results showed an 18 percentage point increase in facilities that used the Internet in the 12 months prior to the survey (from 74% in 2022 to 92% in 2024). Approximately nine out of ten Brazilian theaters (91%) used the Internet during that period, as did 87% of museums and 83% of libraries. The proportion of Brazilian cultural facilities with Wi-Fi remained stable compared to the 2022 edition, being present in 95% of cinemas, 85% of culture points, 83% of archives, 81% of theaters, 78% of heritage sites, 74% of museums, and 73% of libraries.

For carrying out cultural activities, such as the production and dissemination of audiovisual content, fiber optic connections are considered the gold standard, compared to other connection methods such as cable, mobile networks, radio, satellite, or telephone lines, and DSL (Milanez et al. , 2020; NIC.br, 2024; Oki & Lawrence, 2022).

[7] The PNC (National Culture Plan) is valid for ten years, starting from its approval. This period facilitates the fulfillment of guidelines and the achievement of long-term goals through ongoing cultural policies.

[8] See more about the concept of "meaningful connectivity" and the diagnosis of the quality of Internet access for the Brazilian population in the Sectoral Study *Meaningful connectivity: Measurement proposals and the portrait of the population in Brazil*, available at https://cetic.br/en/publicacao/conectividade-significativa-propostas-para-medicao-e-o-retrato-da-populacao-no-brasil/

In 2024, fiber optic connection was the main form of Internet access among all types of cultural facilities. This type of connection has been growing continuously in most facilities, with a particularly significant increase among museums, cultural facility in which the proportion went from 38% in 2022 to 49% in 2024, as shown in Chart 4.

CHART 4

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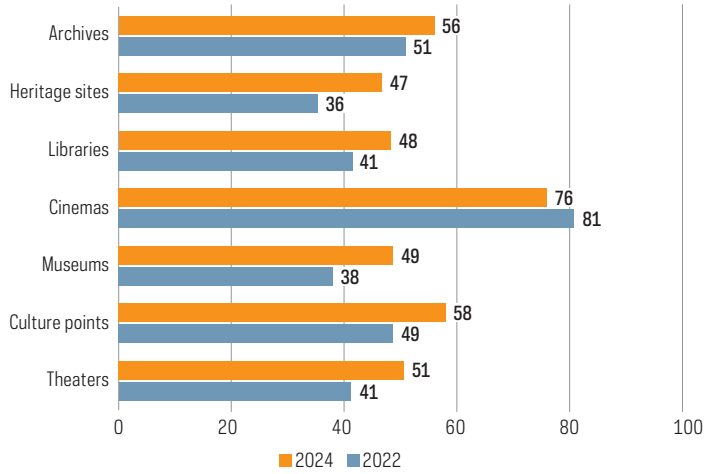
Cultural facilities by main type of Internet connection – fiber optics (2022–2024)

Total number of cultural facilities (%)



In the context of cultural facilities, due to frequent budgetary constraints in the sector, it is common for activities to be carried out using resources owned by the institution's own members. In the last two years, coinciding with the implementation of the aforementioned emergency laws, there have been significant changes regarding the ownership of digital devices by cultural facilities themselves. Organizational ownership of devices represents, on the one hand, the results of a process of institutional maturation and, on the other hand, opportunities for the development of more diverse and high-quality cultural activities, based on pluralistic frameworks and broad access to online information, with the potential to form and expand networks of interaction with audiences, artists, and other cultural spaces.

Regarding the origin of the devices present in archives, tablets owned by the organizations stand out, which showed significant growth compared to the 2022 edition (14% versus 32%). The same situation was observed among theaters, whose proportion of tablets owned by the organizations grew in 2024 (27%) compared to 2022 (17%). For heritage sites, organization-owned laptops also showed significant growth compared to 2022, increasing from 36% in 2022 to 65% in 2024. Among culture points, organization-owned mobile phones stood out, with a significant increase in their

proportion in 2024 compared to 2022 (from 28% to 39%). In libraries, the presence of organization-owned desktop computers (73%) and personal mobile phones (50%) was prominent; and in cinemas, desktop computers (96%) and organization-owned mobile phones (68%) were also prominent. In museums, organization-owned desktop computers (77%) and laptops (51%) were more prevalent (Chart 5).

CHART 5

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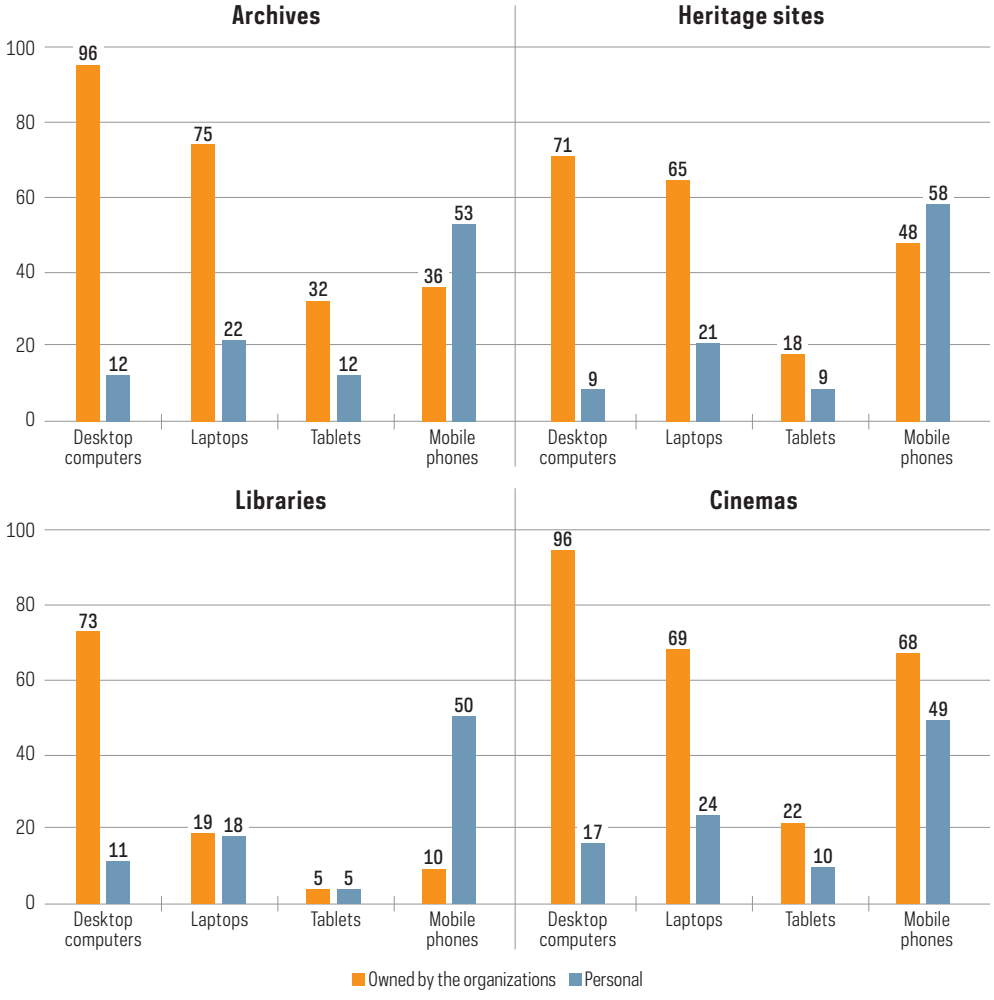
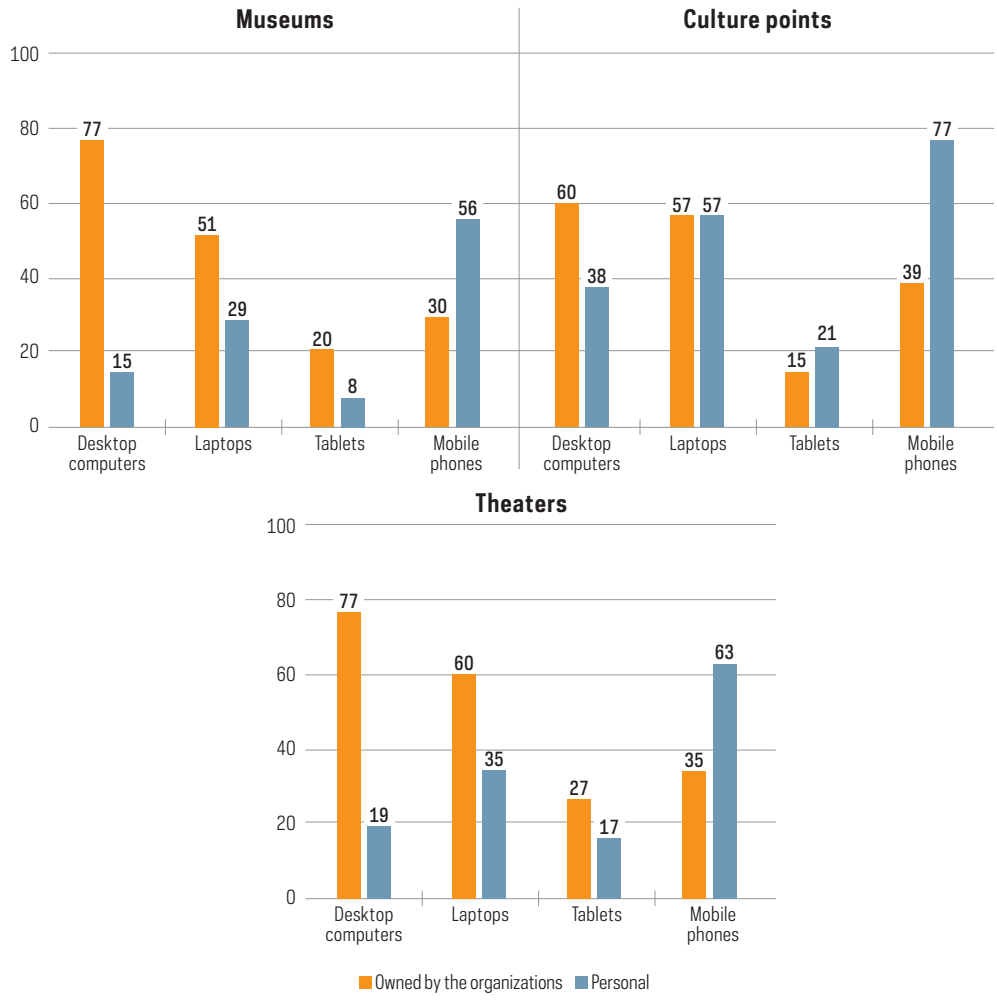
Cultural facilities by devices used: institutional and personal (2024)

Total number of cultural facilities (%)





AVAILABILITY OF WI-FI AND COMPUTERS TO THE PUBLIC

The availability of devices and Internet access enables vulnerable populations to access essential public services, develop skills, expand their livelihood opportunities, and enjoy cultural and leisure activities, promoting inclusion and quality of life. For older adults, those with low levels of education, and those living in rural or remote areas, for example, libraries—especially small ones—may represent the only spaces with free and safe access to information technologies. Therefore, perspectives on digital inclusion encompass both the provision of devices such as computers and the availability of Internet access so that the population can access basic services, develop digital skills, and provide economic support to their families and communities (Belluzzo, 2023; International Federation of Library Associations and Institutions [IFLA], 2023c; NIC.br, 2022).

Institutions recognized as specializing in the preservation of memory and access to information, such as libraries, play a primary role as providers of access to ICT. By providing relevant content for their public, literacy courses and reading sessions, and digital skills training, among others, these spaces represent points of promotion of digital inclusion for the population as a whole. In the context of the social isolation measures caused by the pandemic, the mobilization for the recognition of libraries as components of digital government strategies intensified. The International Federation of Library Associations and Institutions (IFLA), for example, formed a coalition and issued the "Library Pledge for Digital Inclusion", based on the premise that connectivity is a fundamental human right (IFLA, 2020, 2023a, 2023b, 2023c; IFLA & Electronic Information for Libraries [EIFL], 2022; Reed & Thompson, 2021).

The ICT in Culture 2024 survey revealed that approximately half of archives (55%) and 41% of libraries made computers available to visitors for use during their visit. The availability of computers in other types of cultural facilities remained at the same levels observed throughout the historical series of the survey, made available to users by 36% of cinemas, 34% of culture points, 14% of theaters and museums, and 10% of heritage sites (Chart 6).

The proportion of cultural facilities offering free Internet and Wi-Fi access to the public increased compared to 2022 among libraries (from 54% to 65%), culture points (from 53% to 64%), and museums (from 40% to 51%).

CHART 6

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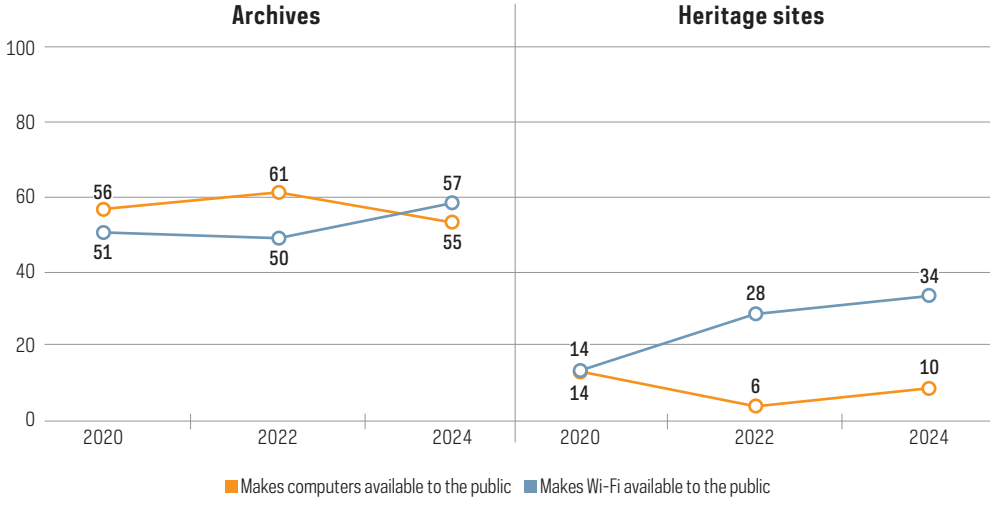
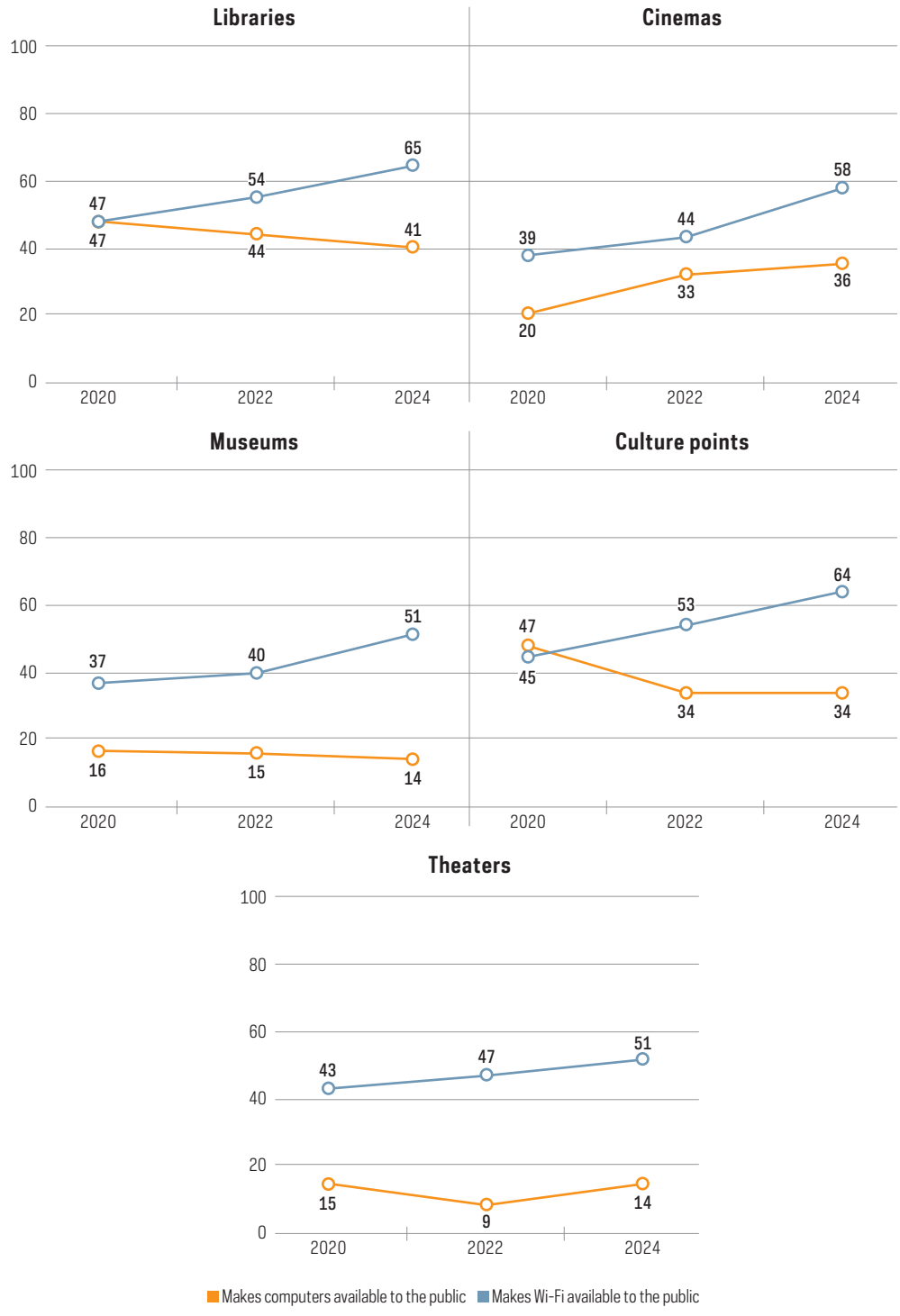
Cultural facilities by availability of Wi-Fi networks and computers to the public (2020–2024)

Total number of cultural facilities (%)




Libraries
Cinemas
Museums
Culture points
Theaters
100
80
60
40
20
0
2020
2022
2024
47
54
65
47
44
41
39
44
58
20
33
36
37
40
51
16
15
14
47
53
64
45
34
34
43
47
51
15
9
14
Makes computers available to the public
Makes Wi-Fi available to the public

Despite the increase observed between 2020 and 2024 in Internet access provisioning, the availability of computers in Brazilian cultural facilities did not advance at the same pace. In the Brazilian context, the reestablishment of the MinC since 2023 and the strengthening of the SNC offer opportunities for institutional coordination, favoring the role of cultural facilities as centers for access to information and training spaces on digital culture topics. The new PNC established the axis called "Digital Culture and Cultural Rights," making it appropriate to observe this scenario in the coming years through the use of indicators that combine ICT and culture (Belluzzo, 2023; IFLA, 2023c; NIC.br, 2022).

Among the difficulties pointed out by managers regarding the use of computers and the Internet, the most prominent issue for culture points was lack of technical support (51%); for theaters, an insufficient number of computers (38%); and for archives, the fact that the equipment was outdated (36%). The difficulty most cited by library managers, indicated by half of them (50%), was the insufficient number of computers connected to the Internet. For cinema managers, the most reported difficulty was low speed Internet connections (24%), while more than half of museum managers (54%) stated that it was a lack of financial resources for investment in technology. Each barrier was linked to the context and specific needs of each type of facility. Culture points, theaters, archives, and libraries experienced difficulties associated with the availability of connected devices. The case of cinemas, however, highlights a limitation in the quality of the connection, a step subsequent to the presence of basic digital infrastructure, indicating the need for better connectivity conditions and space for improvement in the provision of their cultural dissemination activities.

The main obstacle to the use of computers and the Internet by different types of cultural facilities was lack of financial resources for investment in technology, mentioned by 64% of managers of culture points, 39% of managers of archives and heritage sites, 35% of managers of libraries and museums, 26% of managers of theaters, and 19% of managers of cinemas.

Online presence

The presence of cultural facilities in the digital environment can serve various purposes, such as communication, access to information, networking and mobilization, education and training activities, and management of digital collections.

In this context, the presence of websites belonging to cultural facilities showed proportions similar to those recorded in 2022—except for libraries, which, although registering a low presence on the Internet through their own website (7%), showed an increase of four percentage points compared to 2022. Maintaining a website was common in 72% of cinemas, 62% of archives, and 50% of culture points, but less frequent among heritage sites (43%), museums (37%), and theaters (31%). Of those that did not have their own websites, presence on the Internet through a third-party website or page was frequent, as was the case for 30% of theaters, 22% of museums, 21% of archives, 19% of libraries, 16% of heritage sites, 13% of cinemas, and 12% of culture points. In the case

of cultural spaces linked to public organizations, it is possible for an online presence to occur primarily through the incorporation of the content from these facilities into websites managed by municipal or state secretariats of culture and related areas.

Archives and cinemas were the institutions that most readily provided the resources investigated by the survey (Chart 7). Considering the cultural facilities that most frequently provided each type of resource, institutional information such as addresses, contacts, and opening hours were offered by 82% of cinemas and 78% of archives; while the institution's programming was available on the websites of 79% of cinemas and 62% of archives; this type of information was disseminated by 19% of libraries, with 12% in 2022. Libraries expanded the availability of institutional information such as addresses, contacts, and opening hours (from 15% in 2022 to 22% in 2024) on their websites.

CHART 7

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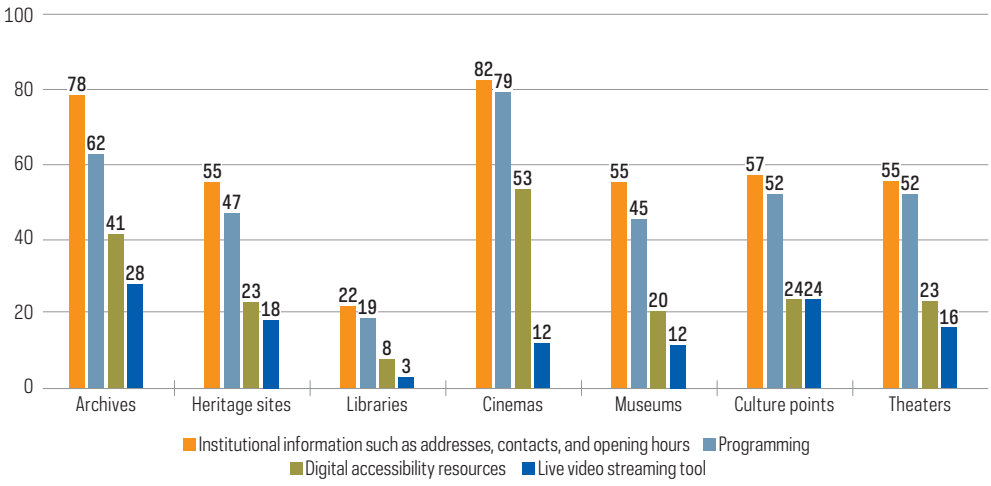
Cultural facilities by resources offered on websites (2024)[9]

Total number of cultural facilities (%)



[9] In addition to the resources presented in Chart 7, the ICT in Culture survey collected data on: posting news about the institutions; offering subscriptions for users to receive newsletters; publications and studies; lists of products or services sold or offered free of charge by the institution; information and statements on the rendering of accounts of institutions; information on open job positions in institutions; subscription forms for courses and formative programs; virtual tours; videos, audios or podcasts; content search tools; and a link to the organization's social network profile. A selection of items was made for analysis in this study. The other components of this indicator can be found at https://cetic.br/pt/tics/cultura/2024/geral/C5/

It was also observed that there was an increase in the provision of digital accessibility resources on the websites of culture points, a proportion that was 14% in 2022 and rose to 24% in two years. The emphasis given to this type of facility may be related to the requirement—in the calls for proposals for emergency laws—to allocate at least 10% of project resources to accessibility features.[10] (MinC, 2023).

Despite the potential generated or accelerated during the context of the COVID-19 pandemic, such as the diversification of funding sources and the pursuit of greater visibility for actions promoted by cultural facilities, some types of facilities were more affected by the restriction on in-person events than others. This was especially true for performing arts (also known as "arts of presence"), in which direct contact between the public and artists is an essential element (Almeida, 2025; Silva & Domenici, 2025).

In this regard, live streaming tools have been increasingly used by theater venues on their websites in recent years, as indicated by the ICT in Culture survey: 14% used them in 2018 and 18% in 2020, reaching 25% in 2022. However, there was a decrease in availability in 2024 to 16%, returning to the level prior to the emergence of the COVID-19 pandemic. The same occurred with cinemas, when specifically considering the category "Availability of videos, audios or podcasts" (51% in 2022 to 29% in 2024). Therefore, it is possible to conclude that live streaming tools for cultural goods and services in the performing arts sphere hosted by theaters were more widely used in the context of the pandemic.[11] Future editions of ICT in Culture may confirm whether this resource will be consolidated in performance spaces, or its use will be more contingent.

The ICT in Culture 2024 survey also revealed a significant presence of cultural facilities with profiles on online platforms or social networks—this occurred in 94% of culture points, 88% of cinemas, 80% of heritage sites, 71% of archives, 67% of museums, 59% of theaters, and 49% of libraries. With the exception of archives, cultural facilities continue to have a greater presence on the Internet through social networks than through websites. Instagram, TikTok, or Flickr were the social networks where Brazilian cultural facilities were most present (Chart 8), reaching a proportion of 87% for culture points (73% in 2022) and 33% for libraries (23% in 2022). The presence on Facebook reached a proportion similar to that recorded in 2022 among archives (46%). In cinemas, the use of this network decreased from 85% in 2022 to 61% in 2024.

[10] More information available at https://www.gov.br/cultura/pt-br/assuntos/lei-paulo-gustavo/central-de-conteudo/acoes-afirmativas-e-acessibilidade.pdf

[11] During the pandemic, theaters adapted and experimented with various models for disseminating plays and shows in the virtual environment, where cultural creation is mediated not only by people but also by algorithms. In an effort to maintain connection with audiences, they presented archived performances (with and without remuneration or ticket sales), streamed live on social media platforms like YouTube from the homes of one or more artists simultaneously to interact directly with audiences, and made archives and plays available on streaming platforms or as video-on-demand (VOD), meaning that access requires payment (Almeida, 2025).

CHART 8

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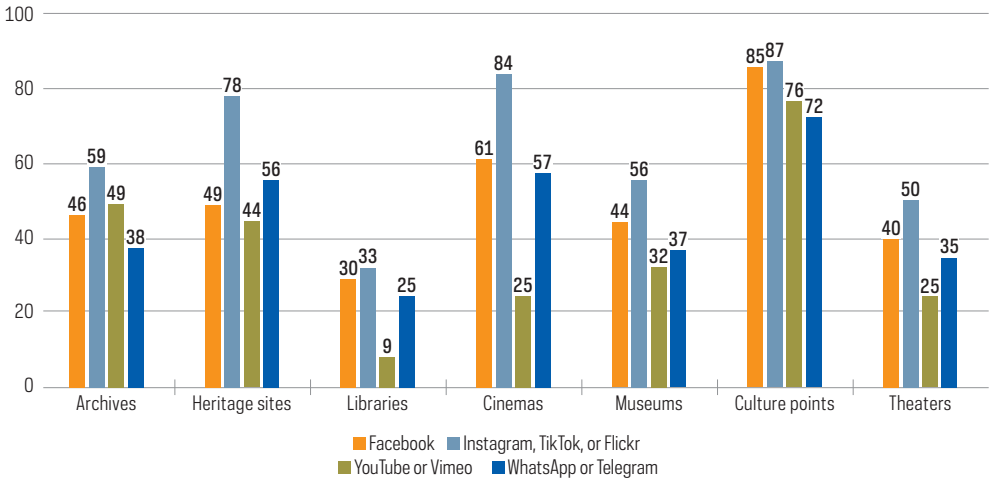
Cultural facilities by type of online platform or social network on which they are present (2024)[12]

Total number of cultural facilities (%)



There were also spontaneous mentions of platforms or social networks directly associated with the field of culture, such as Google Arts & Culture, Spotify, Fediverso[13] Biblivre, and Soundcloud, ICA-AtoM. Although less frequently mentioned, the adoption of this type of platform directly relates to axis 8, "Digital Culture and Digital Rights," of the new PNC, which promotes the adoption of free and accessible technologies and collaborative networks.

The results of the ICT in Culture survey indicated that 21% of culture points, 9% of archives and cinemas, 8% of museums and theaters, 6% of heritage sites, and 4% of libraries used WordPress, Blogspot, or Medium. WordPress, specifically, is an open-source content management system that has been adopted as a basis for managing digital collections using interoperable databases. The free software Tainacan is one such example,[14] which is a WordPress-based platform focused on managing and publishing digital collections.

[12] In addition to the social networks mentioned in Chart 8, the ICT in Culture survey collected data on the presence of cultural facilities on the following platforms or networks: LinkedIn, X (formerly Twitter), WordPress, Blogspot, and Medium, among others. A selection of items was made for analysis in this study. The remaining data can be found at https://cetic.br/pt/tics/cultura/2024/geral/C6A/

[13] Fediverso is an ecosystem of digital interactions carried out through free technologies. In the survey mapping points of digital culture and free media, the following social networks were listed as components of this system: Threads, Bluesky, Mastodon, Friendica, Hubzilla, PeerTube, Matrix, Pixelfed, WordPress site with ActivityPub and Diaspora plugins. More information about the mapping, including its data collection instrument, is available at https://colaborativas.net/mapeamento/

[14] More information is available at https://tainacan.org/

WordPress can be used as a platform for depositing information in blog format, but it also has resources and functionalities that enable its adoption as a social network. Content published on platforms based on WordPress technology can be linked to the ecosystem of decentralized and non-proprietary social networks, allowing the creation of networks or programs focused on solutions to local cultural problems or contexts (Santos et al., 2010).

The 2024 edition of the survey also pointed to an increase in the percentage of cultural facilities using messaging applications, such as WhatsApp and Telegram, which are social networks with lower data consumption—i.e., lower cost—that facilitates Internet access for a larger portion of the population and cultural facilities. The 2024 ICT Households survey revealed that 92% of the population who were Internet users (144 million people) sent instant messages through networks such as WhatsApp and similar platforms.[15] According to the ICT in Culture survey, growth was observed in the use of this resource among culture points (from 62% in 2022 to 72% in 2024), museums (from 24% to 37%), theaters (from 24% to 35%), and libraries (from 12% to 25%). Furthermore, approximately three out of four culture points (76%) were present on video sharing platforms such as YouTube or Vimeo—a higher proportion than that recorded in 2022 (64%).

ICT usage

Information and communication technologies have become a fundamental tool for disseminating cultural programs and activities, making digital collections available, and creating customized training content based on the processing of large databases. An example is the educational tool *Midiateca em Cores* (Media Library in Colors), which uses Python scripts to automate data collection from the Midiateca Capixaba platform's collection,[16] download content, identify patterns in digital objects, and organize data in an innovative and pedagogical way.

In this context, a relationship is expected between the areas of activity of cultural facilities and the activities offered, such as film screenings (98%) among cinemas; the production or presentation of plays or performances (90%) and the production or exhibition of musical concerts (87%) in theaters; the production or holding of exhibits (84%) by museums; activities for reading promotion (87%) among libraries; and the provision of workshops or formative programs (93%) in culture points.

The activities most frequently carried out in all types of facilities—regardless of whether the delivery method was distance learning, in-person, or both—were educational. Seminars, lectures, discussions or meetings were widely offered by these facilities, as 93% of culture points (85% in 2022), 88% of theaters, 77% of archives, 75% of museums, 71% of heritage sites, 56% of cinemas, and 54% of libraries implemented this type of activity. The survey also indicated that workshops and/or formative activities were carried out by almost all culture points (93%), the majority of theaters (77%), museums (68%), archives (60%), and heritage sites (54%), and by almost half of libraries (49%) and cinemas (41%).

[15] The complete indicator can be found at https://www.cetic.br/pt/tics/domicilios/2024/individuos/C5/

[16] More information available at https://midiateca.es.gov.br/site/midiateca-em-cores/

The production of parties, festivals, or public events, as well as the holding of exhibitions, also represented significant proportions. The facilities with the highest proportion of implemented activities were culture points, theaters, and museums.

These activities were made available to the public primarily in person and, to a lesser extent, in a hybrid format (simultaneously in person and remotely), as shown in Chart 9. Activities conducted exclusively remotely were less frequently mentioned. Some facilities stood out for implementing actions in a hybrid format, with seminars, lectures, debates, or meetings in this modality being held by approximately half of the archives (53%) and culture points (45%).

CHART 9

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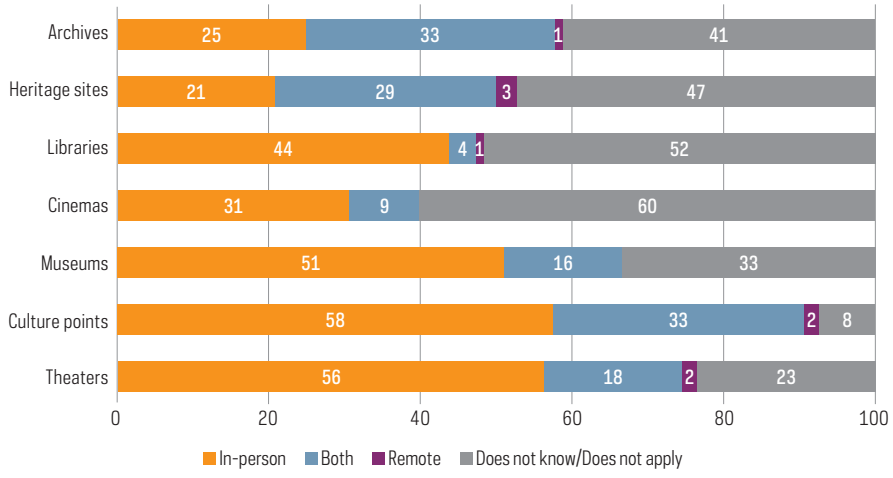
Cultural facilities by remote and in-person activities carried out (2024)

Total number of cultural facilities (%)



There was a significant change among facilities focused on performing arts and cultural enjoyment, notably cinemas, culture points, and theaters, in a phenomenon similar to that pointed out in the "Online Presence" section of this analysis (Almeida, 2025; Silva & Domenici, 2025). While in 2022, almost half of culture points (43%), a third of theaters (36%), and 1 in 5 cinemas (21%) held parties, festivals, or hybrid public events, this offer was reduced two years later. In 2024, almost 1 in 3 culture points (29%), less than a fifth of theaters (18%), and 5% of cinemas reported having held them. Furthermore, almost half of culture points (43%) and theaters (45%) produced or exhibited musical concerts in 2022, proportions that decreased in 2024 to 27% and 19%, respectively (Table 1).

TABLE 1

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Selected cultural facilities by remote and in-person activities carried out (2022–2024)[17]

Total number of cultural facilities (%)

		Production or presentation of plays or performances	Production or presentation of musical concerts	Holding parties, festivals or public events
2024	Cinemas	6	7	5
	Culture points	25	27	29
	Theaters	20	19	18
2022	Cinemas	10	10	21
	Culture points	35	43	43
	Theaters	44	45	36

Without showing significant change compared to 2022, the 2024 ICT in Culture survey indicated that the requirement to purchase or collect tickets to access services at Brazilian cultural facilities stood out among cinemas (81%) and theaters (62%). Similarly, the availability of online ticket subscription, sale, or reservation services was also concentrated among cinemas and theaters, for both in-person activities (49% and 44%, respectively) and online activities (15% and 16%, respectively).

PUBLIC SERVICES

Corroborating the data historically collected by the ICT in Culture survey, a scenario of broad, yet unequal, interaction between cultural facilities and public authorities through digital means was observed—largely due to differences in the nature of the activities they carry out.

Culture points implemented virtually all the investigated services to a greater extent, possibly because they are facilities whose origin is directly related to a federal public policy. Due to the conception of the PNCV, through which the networks of culture points and big culture points are managed, they tend to be more integrated into information systems (86%), as can be seen in Chart 10. Their engagement may also be linked to a history

[17] In addition to the activities mentioned in Table 1, the ICT in Culture survey collected data on film screenings; the production of audiovisual content; production or organization of exhibitions; activities for reading promotion; art, craft, or antique fairs; seminars, lectures, discussions, or meetings; and workshops or training activities. A selection of items was made for analysis in this study. The remaining items can be found at https://cetic.br/pt/tics/cultura/2024/geral/C11/

of social participation in decision-making on federal cultural policies, being the types of facilities that most frequently registered online for conferences and public hearings (61%).

Regarding the historical series, there was growth in the inclusion of some facilities in cultural mapping or information systems compared to 2022, going from 17% to 43% among heritage sites and from 29% to 42% among libraries—a proportion that reached 86% for culture points. From the point of view of public cultural management, knowledge about the circumstances of action implementation favors the effectiveness and efficiency of policies. According to the perceptions from managers of the facilities, information systems enable them to obtain certifications, participate in calls for proposals, access funding, and participate in networks.

CHART 10

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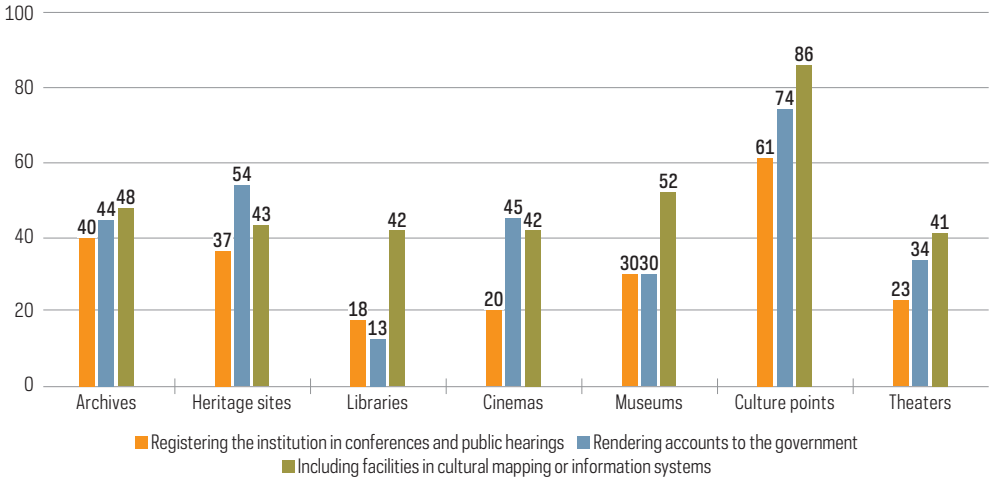
Cultural facilities by types of government services used – transactional services (2024)[18]

Total number of cultural facilities (%)



E-government services to render accounts to the government were also widely used by culture points (74%), followed, at a lower level, by cinemas (45%) and archives (44%). Among heritage sites, the use of the Internet to render accounts to the government increased from 21% in 2022 to 54% in 2024.

[18] In addition to the types of services mentioned in Chart 10, the ICT in Culture 2024 survey collected data to investigate whether the facilities used services for the following: searching for information about and participating in calls for proposals to collect government resources; searching for information on conferences and public hearings; searching for information or obtaining licenses and permit; searching for information on taxes; making online payments of taxes and fees; and issuing tax clearance certificates. A selection of items was made for analysis in this study. The others can be found at https://cetic.br/pt/tics/cultura/2024/geral/C2/

USE OF ARTIFICIAL INTELLIGENCE (AI)

For the first time in the ICT in Culture survey, cultural facilities were questioned about their use of AI. This investigation took place within a context where discussions about the adoption of digital platforms and data-driven decision-making are increasingly incorporated into the vocabulary of cultural policy formulation and implementation. Modes of production, creation, distribution, access, consumption, participation, and cultural preservation are undergoing significant changes across diverse segments of the cultural field (Almeida, 2025; Oliveira, 2023; Poell et al., 2019; van Dijck et al., 2018). For example, AI can be present in administrative functions and interactions with the public, such as through the use of machine learning in content editing, the dissemination of works via virtual mediation assistants, and the management of digital collections (NIC.br, 2022).

It is noteworthy that the largest conference on cultural policies in the world, the World Conference on Cultural Policies and Sustainable Development (MONDIACULT), which brings together the 194 UNESCO Member States, has included AI as one of its two areas of focus since its meeting in Mexico[19] in 2022 (UNESCO, 2022c). Furthermore, "digital technologies in the cultural sector" was one of the six priorities in the forum for 2025 edition, indicating a significant presence of the topic in discussions about the future of the cultural field. Also within the sphere of international cooperation, AI became one of the priorities of the G20 Working Group on Culture, chaired by the Brazilian Ministry of Culture throughout 2024. The Working Group meetings resulted in the Salvador Declaration, which addresses the growth of cultural and creative industries through AI, as well as promoting ethics in AI at all stages of cultural production arrangements, including with regard to copyrights (G20 Ministers of Culture, 2024).

The cultural field is also present in the Brazilian Artificial Intelligence Plan (PBIA),[20] launched in 2024 under the coordination of the Ministry of Science, Technology, and Innovation (MCTI). It aims to promote the development, availability, and use of AI in Brazil, geared towards solving major national challenges. The Plan proposes to advance towards "AI for the good of all," through a vision in which AI should be human-centered and guided by values such as accessibility and cultural, regional, and people diversity, as well as valuing work and workers, and preventing inequality and discrimination.

Chart 11 presents the results regarding the use of AI by the seven types of facilities investigated by the survey. The question sought to identify whether, in the 12 months prior to the survey, the facilities used AI technologies such as chatbots or virtual assistants, facial or image recognition systems, or data prediction and analysis tools based on machine learning.

[19] More information is available at https://www.unesco.org/en/mondiacult

[20] More information is available at https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/noticias/2024/07/plano-brasileiro-de-ia-tera-supercomputador-e-investimento-de-r-23-bilhoes-em-quatro-anos/ia_para_o_bem_de_todos.pdf/view

CHART 11

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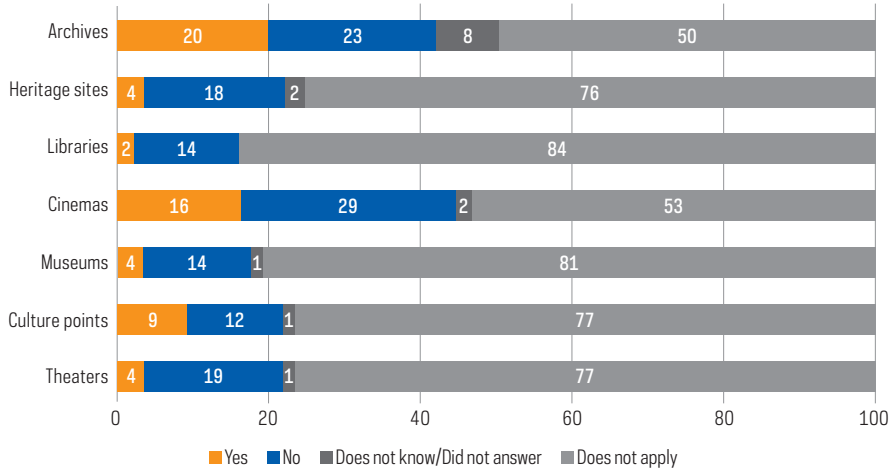
Cultural facilities that used AI technologies in the last 12 months (2024)

Total number of cultural facilities (%)



The results revealed a still incipient appropriation of this technology, with usage percentages higher than 10% only among archives (20%) and cinemas (16%). Below 10% were culture points (9%), museums, theaters and heritage sites (each with 4%), and libraries (2%).

In the case of archives, the type of facility whose managers most frequently reported using AI (20%), one hypothesis for this result was the large volume of data and information to be processed, given a lack of qualified teams or funding for handling processing tools (as per data presented in the "Digital Collections" section). For example, the use of AI in collections can support specific purposes, as is the case with the "Fragments of Memory" project of the Public Archive of the State of Bahia (Apeb, in Portuguese), which uses AI to reconstruct the faces of enslaved and freed people.[21]

[21] More information is available at https://www.ba.gov.br/comunicacao/noticias/2025-07/371412/projeto-do-arquivo-publico-da-bahia-usa-ia-para-reconstruir-rostos-de

Another survey that sought to understand the purposes of AI use in cultural facilities was the National Mapping of Digital Culture, Communication and Free Media Points, conducted by the big digital culture points Instituto Intercidadania and Coletivo Digital in 2024 and 2025. In this survey, the question regarding AI investigates the purpose of its use for the culture points interviewed throughout the national territory.[22]

Therefore, AI emerges as a strategic tool to broaden access, facilitate automated curation, and contribute to the preservation of cultural diversity in the digital environment. In the next section, we will address this topic through the presentation and analysis of the results of ICT in Culture 2024 from the perspective of digital collections.

Digital collections

With the digitization of the cultural sector, the potential for access to information and the forms of interaction between collections and the public have become broader and more diverse. What, until a few decades ago, was perceived as a topic restricted to informational spaces—archives, libraries, and museums—has become increasingly widespread and has entered different types of cultural facilities (Oliveira, 2023; UNESCO, 2022a, 2022b; Vargas, 2025).

In this regard, the ICT in Culture 2024 survey indicated that the presence of collections was widespread among heritage sites—the proportions grew from 91% in 2022 to 100% in 2024—museums, archives, and culture points (99%, 98%, and 95%, respectively). A lower proportion of cinemas (75%) and theaters (74%) with collections reflect their specific characteristics.

The types of materials held in the collections of Brazilian cultural facilities were investigated, reflecting the diversity of their profiles. For example, the results indicated that most archives held collections of official historic documents or archive records (96%), while slightly less than a quarter of cinemas had them (23%).

The 2024 ICT in Culture survey also showed stability in the results regarding the digitization of collections, compared to what was observed in 2022. Archives (88%) continued to be the type of institution that was digitizing or had already digitized its collections the most, as well as 76% of culture points, 74% of museums, 57% of heritage sites, 46% of cinemas, 39% of theaters, and 37% of libraries (Chart 12).

[22] In this case, the topic of AI was addressed through questions regarding the purpose of using AI, containing the following answer options: A) translation, B) text production, C) project development, D) slide creation, E) voice-over, F) image generation, G) code generation, H) video generation, I) news search, J) others – which ones? (open-ended question). The study was conducted in partnership with the Brazilian Ministry of Culture, aiming to articulate, map, mobilize, and empower networks of culture points, whether based on territory or the theme of each facility's activities. As of the publication date of this book, the results were still being processed, which explains their non-incorporation into this analysis. More information about the mapping can be found at: https://colaborativas.net/rede-das-produtoras-colaborativas-inicia-mapeamento-dos-pontos-de-cultura-digital-e-midia-livre-do-brasil/. The data collection instrument is available at https://colaborativas.net/mapeamento/

CHART 12

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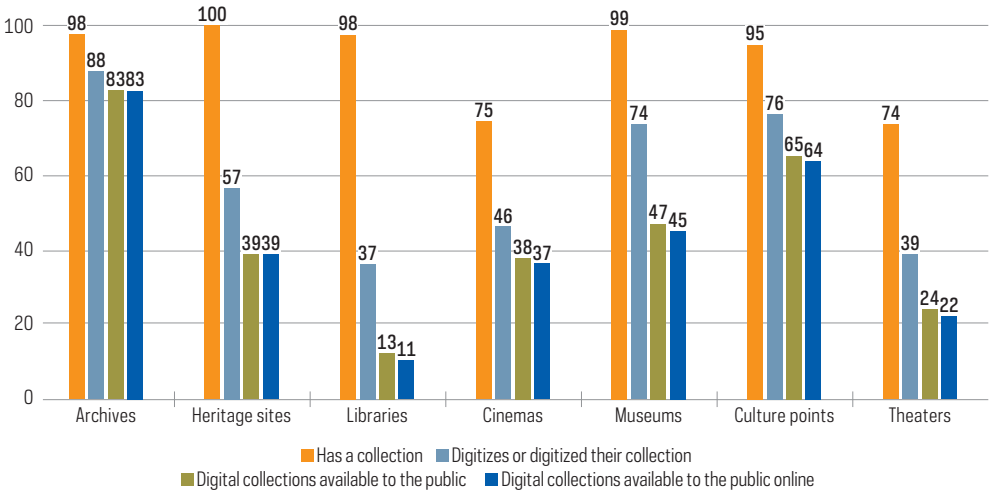
Cultural facilities by presence, digitization, and availability of collections (2024)

Total number of cultural facilities (%)



In addition to the existence of digitized collections in Brazilian cultural facilities, the ICT in Culture survey tracks the availability of these materials to the public. In the 2024 edition, archives (83%) and culture points (65%) were the types of facilities that offered the most materials in digital format to the public. The proportions were smaller for museums (47%), heritage sites (39%), and cinemas (38%).

The availability of digital materials from cultural facilities' collections to the public allows a greater number of people, in different ways, to access digitized works. The 2024 results demonstrated stability in the differences between the presence of collections in Brazilian cultural facilities and their effective availability for online consultation.

Compared to the previous edition, one of the highlights concerned archives, as 51% of them made materials available to the public in digital format in repositories of digital collections, a proportion that has grown by 20 percentage points since 2022. Among heritage sites, there was also an increase compared to 2022 in the availability of digital collections on the online platforms or social networks in which they were present (from 8% to 29%), as well as an expansion in the proportion of culture points that offered materials from their collections in digital format to the public at the places where the institutions operate (from 38% to 49%). Among libraries (9%), theaters (16%), cinemas (29%) and museums (35%), the 2024 results revealed that the availability of their digital collections to the public generally occurred at the places where the institutions operate (Chart 13).

CHART 13

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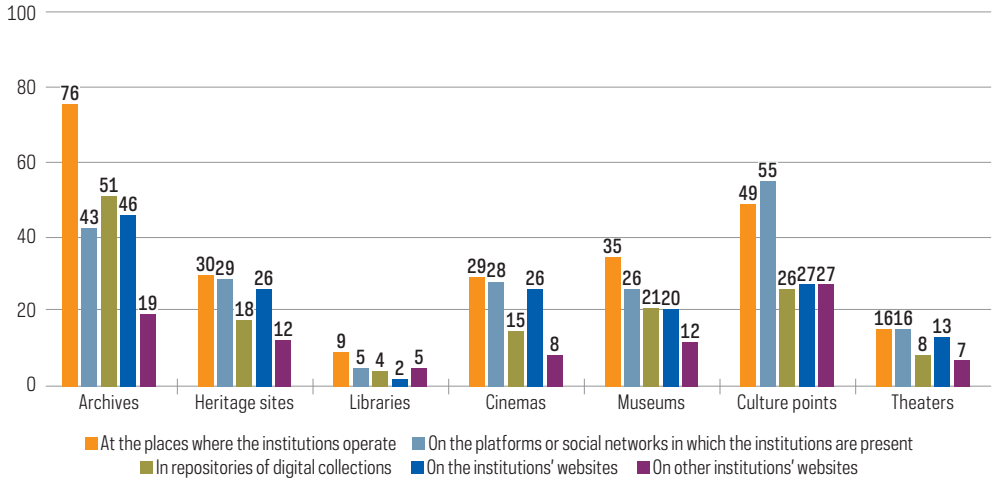
Cultural facilities by how digital collections are made available on the Internet (2024)[23]

Total number of cultural facilities (%)



The survey results showed that there were gaps in the digitization of collections, especially regarding their availability in digital media. In this sense, the main difficulties encountered by cultural facilities in the management of digital objects were investigated. Chart 14 shows that lack of funding was the difficulty most mentioned by culture points (53%), archives (47%), heritage sites (46%), museums (40%), libraries (35%) and theaters (22%). The proportion of libraries that mentioned lack of hosting or storage capacity for digitized materials decreased as the main difficulty in digitizing collections (from 11% in 2022 to 5% in 2024).

[23] In addition to the items presented in Chart 13, the ICT in Culture 2024 survey collected data on the availability of collections on the institutions' applications A selection of items was made for analysis in this study. The others can be found at https://cetic.br/pt/tics/cultura/2024/geral/D5A/

CHART 14

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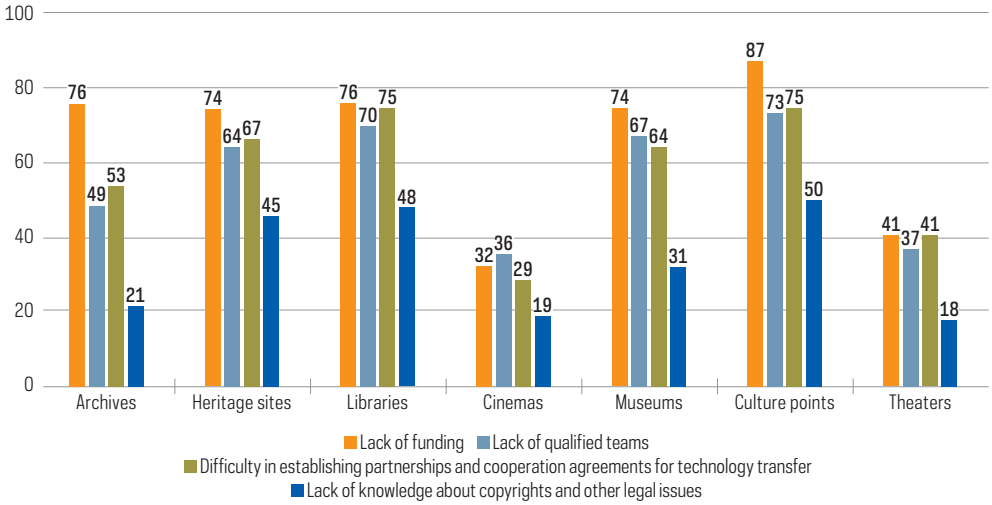
Cultural facilities by main difficulty in digitizing collections (2024)[24]

Total number of cultural facilities (%)



It is also worth mentioning that 74% of archives contained collections of materials already created in digital format, which was also the case in 57% of culture points, 42% of museums, 38% of heritage sites, 33% of cinemas, 26% of theaters, and only 13% of libraries. Born-digital and ephemeral collections are generally linked to the storage of digital objects, essentially on online platforms or social networks. This is an area with opportunities for further study, especially considering how important it is to observe the security of the information that is stored and made available, mainly on proprietary platforms (Oliveira, 2023).

The survey also investigated the copyright protection status of the collection items. Most archives (66%), libraries (53%), and museums (51%) had collections in the public domain. Among other cultural facilities, 45% of heritage sites, 33% of cinemas, and 30% of theaters had their collection items protected by copyright managed by the institutions. About a third of culture points had their collection items in the public domain, a proportion that has decreased, going from 47% in 2022 to 35% in 2024.

[24] In addition to the items mentioned in Chart 14, the ICT in Culture 2024 survey collected data on the main digitization difficulties reported for each type of facility, namely: low demand for the digitization of collections; difficulty ensuring the preservation of digitized material; other institutions that hold copies of the same materials handle the digitization process; copyrights restrict the digitization of the material; digitization and/or dissemination of materials is prohibited by law and/or contract; lack of hosting or storage capacity for digitized materials. A selection of items was made for analysis in this study. The others can be found at https://cetic.br/pt/tics/cultura/2024/geral/D7/

Items in collections protected by copyright and controlled by third parties were a reality in 21% of libraries and 20% of cinemas, while 33% of archives and 31% of museums had collections of orphan works or those that had not yet been identified. The survey also revealed that 24% of archives, 23% of heritage sites, 23% of libraries, 23% of museums, 21% of culture points, 20% of cinemas, and 14% of theaters had items in their collections with unknown copyright protection status.

The management of digital collections, which involves a constant process of incorporating new technologies and methodologies, constitutes a strategic axis that structures the preservation and access to cultural heritage. Its effectiveness, however, is intrinsically linked to the conditions of intersectoral and interinstitutional coordination, as well as the budgetary capacities and qualification of the staff in cultural facilities. In this context, the next section will analyze the development of digital skills in the cultural sector.

ICT skills

The ICT in Culture survey investigates the provision of internal and external training by Brazilian cultural facilities in the twelve months prior to the study. The 2024 results indicated that most institutions offered more internal training to their teams but still had potential to expand the reach of training (Chart 15).

CHART 15

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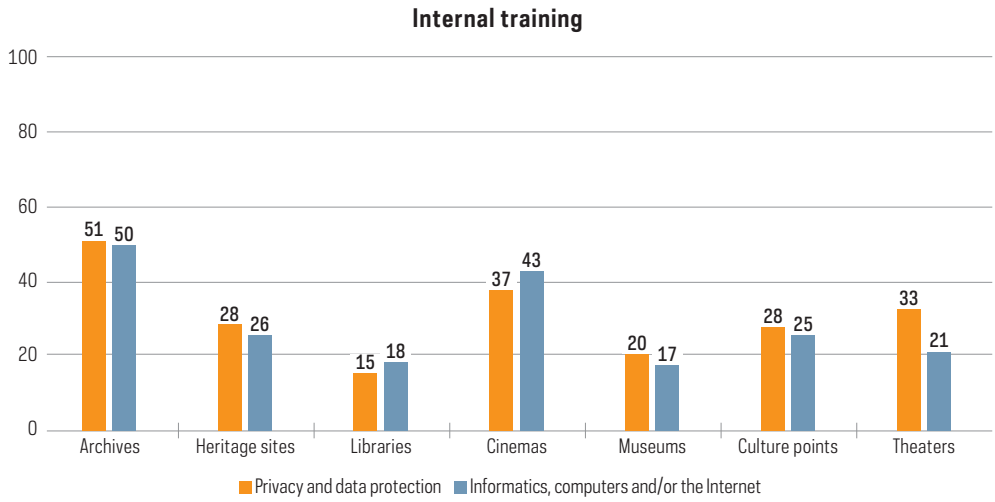
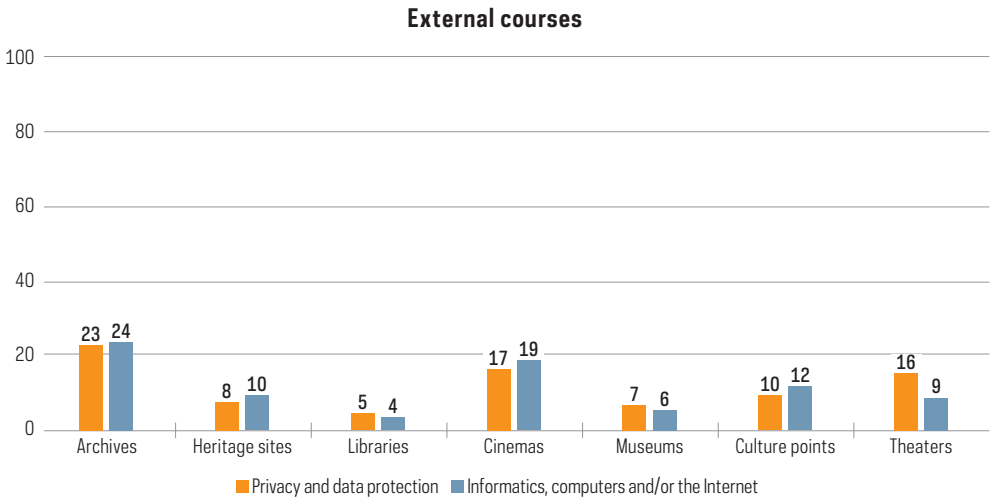
Cultural facilities by team training in informatics, computers and/or the Internet, and privacy and protection of personal data (2024)

Total number of cultural facilities (%)





It is worth highlighting that archives were the facilities that most offered internal training for their staff on informatics, computers and/or the Internet (50%) and on privacy and data protection (51%). In the case of cinemas, about 1 in 4 facilities (43%) offer internal training—43% on digital technologies and 37% on privacy and data protection. Regarding external courses paid for by the facilities for their teams, a similar dynamic occurred, with archives and cinemas standing out. The offer of internal or external training was reduced mainly among libraries.

The ICT in Culture 2024 survey indicated a high level of education (completed graduate studies) among managers of archives (68%), museums (52%), and libraries (45%). Furthermore, 44% of heritage sites, 40% of theaters, 39% of culture points, and 28% of cinemas had managers with completed higher education. Regarding the qualifications of managers of cultural facilities, the proportion of institutions where they had training in cultural management reached 58% among culture points, 49% in theaters, 48% for museums, 40% in libraries, 35% in archives, 29% for heritage sites, and 22% for cinemas. The proportion of institutions whose managers had training in the use of technologies in cultural management was relatively lower: 36% among theaters, 34% in culture points, 33% in archives, 32% in libraries, 32% in museums, 29% in cinemas, and 14% in heritage sites.

BRAZILIAN GENERAL DATA PROTECTION LAW (LGPD)

Since 2022, the ICT in Culture survey has been investigating the presence of areas or persons responsible for the implementation of the LGPD in Brazilian cultural facilities, with this presence being a majority only in archives (60%). Areas or persons responsible for procedures and policies for the collection, storage, and use of personal data were present in 44% of cinemas, 37% of culture points, 36% of heritage sites, 29% of theaters, 26% of museums, and 20% of libraries.

Among cultural facilities that did not have areas or persons responsible for implementing the LGPD, the survey tracked the use of third-party services (Chart 16). In 2024, the proportion of those that contracted third parties that were responsible for procedures and policies for the collection, storage, and use of personal data or for the implementation of the LGPD guidelines remained stable compared to 2022, with 10% of cinemas, 7% of heritage sites, 4% of archives, 4% of museums and culture points, and 2% of libraries and theaters. The results indicated, therefore, that actions related to the LGPD among cultural facilities were still concentrated in more structured segments, such as archives and cinemas, while remaining incipient among other types of institutions. This scenario reinforces the need to strengthen internal capacities and promote greater dissemination of team qualification practices and data protection in the cultural sector.

CHART 16

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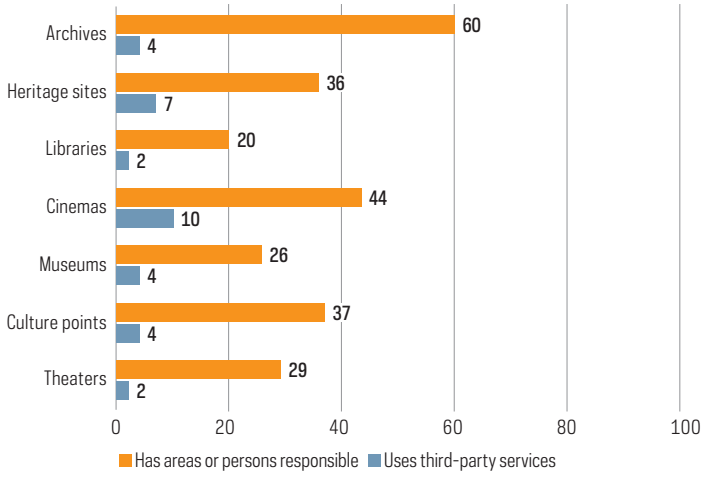
Cultural facilities by whether they have areas or persons responsible for the implementation of the LGPD, or use third-party services (2024)

Total number of cultural facilities (%)



Final Considerations: Agenda for Public Policies

The 2024 edition of the ICT in Culture survey highlighted significant transformations in the appropriation of ICT by Brazilian cultural facilities, especially in the post-pandemic period. Despite some concrete advances—such as the substantial increase in the use of organization-owned devices—in many cases, there has been stability in the use of ICT for management, communication, cultural mediation, and education among these institutions. At the same time, the need for coordinated public policies to support and expand this trajectory persists, with investments in both infrastructure and professional

training. The lack of financial resources continues to be the main barrier to technological modernization, which reinforces the importance of structured funding lines that allow for the acquisition of devices, improved connectivity, and the reduction of digital inequalities in the sector.

In the field of digitizing collections, the survey indicated progress, but also highlighted historical limitations related to funding, copyrights, and institutional coordination capacity. In this context, public policies that promote metadata standards, encourage the consolidation of open access repositories, and support large-scale projects can favor greater preservation, access, and visibility of the cultural heritage. The predominance of social networks as a means of online presence highlights the need to encourage the creation of their own institutional websites that allow for the expansion of functions such as making collections, educational resources, and ticket sales available, strengthening institutional identity, and interaction with the public.

The ICT in Culture 2024 survey also emphasized the role of cultural facilities as instruments for democratizing Internet access and digital mediation for their communities, with potential to be explored in promoting access to information and digital goods and services. The increased availability of free Wi-Fi, combined with digital skills training, points to opportunities for expanding digital literacy and inclusion. The still-incipient adoption of AI applications may indicate the need for expanded debates and collaborations around this topic in the cultural sector.

Given this scenario, cultural policy agendas can be examined from different perspectives. One of the central aspects is strengthening Internet access infrastructure, especially considering connection quality, the use of appropriate institutional devices, and the availability of computers to the public in cultural spaces.

Furthermore, it is worth mentioning the support for the use of digital technologies, including AI, and for a secure digital presence. Enabling the audiences of these facilities to creatively appropriate technologies involves choosing the most relevant platforms, resources, and functionalities to address local challenges. Another important element is the promotion of technically mature digital collections, overcoming historical difficulties in digitization to enable their wide dissemination on the Internet. Better connectivity conditions expand the possibilities for enjoying and preserving historical, artistic, and cultural heritage.

Finally, it is essential to intensify and systematically implement programs aimed at training and updating the skills of the teams working in cultural facilities, ensuring that they keep up with technological transformations and can explore the full potential of digital tools.

These measures can be guided and strengthened based on the results of the ICT in Culture survey indicators, contributing to the consolidation of a rich, diverse, and pluralistic cultural ecosystem. In this context, it is imperative that governments, the private sector, academia, and civil society organizations act in a coordinated manner, ensuring that technological innovation expands opportunities for participation, visibility, and access to culture for all people.

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Articles

The strategic role of the ICT in Culture survey in the construction of the National Culture Plan

Lia Calabre[1]

In March 2024, the regulations for the National Culture System (SNC, as per its acronym in Portuguese) were approved by the plenary of the Chamber of Deputies (Law No. 14.835/2024), at the same time as the IV National Culture Conference (IV CNC) was taking place and proposals for guidelines for the construction of the new National Culture Plan (PNC, as per its acronym in Portuguese) were being discussed. One of the structuring management elements of the SNC is the PNC, which, as provided for in the Constitution, must be multi-annual, present a diagnosis of the field of culture, and contain principles, guidelines, and goals to guide the public culture policies that will be implemented throughout its duration.

The Brazilian Ministry of Culture (MinC) had committed to drafting and approving the new PNC by the end of 2024,[2] which will guide the development of cultural policies to be implemented over the next decade. One of the biggest challenges at stake is the systematic lack of information and analysis on various elements of the broad spectrum of actions that make up the universe of cultural policies. Even in cases where it is possible to identify the existence of registries and the production of quantitative data, there is still a lack of work with such data, so that it is possible to effectively produce information and sectoral indicators on culture.

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[2] The drafting of the PNC has experienced some delays in the process. The new plan went through the public consultation phase at the beginning of 2025 and will move on to the final approval process.

This article proposes a reflection on the challenges involved in drawing up the PNC, especially with regard to digital culture. This approach includes making collections that are in the custody of public institutions available in digital form, access to cultural production generated or transmitted (whether digitally or not), incentives for digital cultural production, and the problem of providing equipment and means of access to the digital universe in general. In this context, the presences and absences reported in the ICT in Culture survey are fundamental both for assessing the challenges related to effectively expanding the digitization of collections deposited in public institutions—considering regional and sectoral inequalities—and for supporting the formulation of public policies aimed at artistic languages. These policies could make it possible to expand the availability of national content on social media and to create projects aimed at protecting the memory of traditional communities.

The cross-cutting nature of digital technologies in Brazilian cultural policies

Among the future scenarios that are being projected for our societies is the predominance of the use of information and communication technologies (ICT) in everyday life.[3] This presence also stands out in the case of the arts and culture. Maximizing digital use in the field of culture has been presented as a path of no return. An example is the continuous growth of the digital arts. Therefore, the construction, maintenance, monitoring, improvement, and evaluation of cultural policies for the digital field are priorities for the MinC.

We live in a country where rates of access to digital technologies are still very unequal, both in terms of the types of devices used for access (computers, mobile phones, etc.) and in terms of technological quality (speed and types of connection). There is also the issue of content on social networks being controlled by large corporations, whether it is freely accessible or restricted. The country's challenge is to build digital citizenship that involves access, rights, literacy, and security, among other elements. Digital inclusion is a basic condition for digital citizenship. According to Cavalcanti et al. (2021):

> Digital inclusion is the democratization of information and communication technologies (ICT), enabling everyone to have the same opportunities to use and access these technologies. Digital inclusion facilitates communication, shopping, obtaining public services, and even active social participation in issues related to digital governance. Information and communication technologies are increasingly being used to exercise rights and duties as citizens. (p. 12)

Strategic actions and policies must be developed to ensure the presence of the country's cultural wealth and diversity on social media, both as users and producers. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2005):

[3] The so-called ubiquitous computing or omnipresent computing, a paradigm that envisions the extension and integration of digital technologies into all spheres of everyday life.

> The processes of globalization, facilitated by the rapid evolution of communication and information technologies, while providing unprecedented conditions for intensified interaction between cultures, also constitute a challenge for cultural diversity, especially regarding the risks of imbalances between rich and poor countries. (p. 2)

At the IV CNC, civil society demanded actions and policies for digital literacy and the preservation of the memory of traditional communities' knowledge and traditions, as well as actions aimed at encouraging digital production and the creation of production and research platforms and hubs through which this content can circulate.

In this context, the data collected, processed, and disseminated by the ICT in Culture survey in its historical series that began in 2016 can support evaluation and demand projection activities, in addition to supporting the formulation of cultural policies aimed at fields and areas that do not yet exist within the scope of the MinC. This data can also serve as the basis for further digital qualification and diversification of the public facilities available throughout the national territory.

In order to respond to the demands of the IV CNC, it is also necessary for the MinC to create strategies for expanding, implementing, mapping, and registering other types of facilities. It is interesting to note that a considerable amount of the information on the existence of facilities comes from official registries made available by government organizations (Brazilian Internet Steering Committee [CGI.br], 2023) such as the National Archives Council (Conarq), the National Institute of Historic and Artistic Heritage (Iphan), the National Public Library System (SNBP), the Brazilian Film Agency (Ancine), the National Registry of Museums of the Brazilian Institute of Museums (Ibram), the National Registry of Culture Points and Big Points[4] of the MinC, and the registries of scenic spaces provided by the National Arts Foundation (Funarte). There are other facilities that are not included in any official registry, such as cultural centers, which could enrich the research. José Carlos Vaz warned us that the "mere existence of a technological resource does not determine its adoption by governments or society" (Vaz, 2017, p. 85). Surveys on the use of ICT in various sectors such as education, culture, health, and enterprises, among others, provide us with information that can enable the government to draw up strategic policies for the field of culture.

By working with the official registries available and dispersed in different institutions, the ICT in Culture survey allows for a more integrated look at a significant set of different facilities, managed by different organizations and institutions, including the MinC. The area of information technology (IT) cuts across all cultural facilities. The data on the use of technology, the availability of Internet access, the use and ownership of Wi-Fi systems, and the digitization and availability of digital collections, among others, not only informs us about the use of digital technologies in the facilities in the narrow sense, but also contributes considerably to assessments of the levels of inequality in cultural and digital citizenship present in our society.

[4] Big culture points are *pontões de cultura* in Portuguese.

Contributions of the ICT in Culture survey: Data and indicators

Observing the proportion of cultural facilities by region in ICT in Culture 2022 (CGI.br, 2023), cutting out the region with the highest concentration of facilities (in most cases) and the region with the lowest concentration in terms of national percentages, we have in Table 1:

TABLE 1

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ICT in Culture 2022 – Concentration of Brazilian cultural facilities by regions with greater or lesser concentration

Region	Archives	Heritage sites	Cinemas	Museums	Culture points	Theaters
Southeast	46.1%	45.7%	58.2%	46.1%	46.9%	48.9%
North	4.8%	2.5%	7.1%	4.6%	5.8%	4.9%

Source: CGI.br (2023).

Note: Libraries are an exceptional case, and their regional distribution will be discussed below.

The only category of cultural facilities in which the Southeast does not lead in numbers is libraries, which have the most balanced regional distribution: The Northeast has 34.1% of the total, followed by the South with 24%, then the Southeast with 24%, the Center-West with 9.4%, and finally the North with 8.1%.[5] The systematization of this registration data by region already shows the extent of the challenge to be faced by the MinC with regard to the regional distribution of facilities.[6] Drawing up the PNC requires a ten-year projection exercise that results in the creation of projects, actions, or policies based on contemporary scenarios, including those identified by ICT in Culture 2022. It is equally important for the development and monitoring of policies to consider the historical trends already revealed by the 2016, 2018, and 2020 editions of the ICT in Culture survey.

Although we can see some problems in the MinC's own databases, the systematization of the data carried out by the ICT in Culture survey allows us to make some inferences, as we can see in the exercise below in the Table 2, carried out with the data from the universes of each type of cultural facility.

[5] It is worth noting that the policy of building a public library per municipality dates back to the 1930s, with the creation of the National Book Institute (INL), and has been implemented, with varying degrees of intensity and effectiveness, for almost 100 years now.

[6] Data on facilities is also collected by the Brazilian Institute of Geography and Statistics (IBGE) in its Survey of Basic Municipal Information (Munic), but in this case the data published is that declared by the municipalities, which answer whether or not the facility exists. In the case of the ICT in Culture survey, the data from library registries, for example, may contain several units in the same municipality.

TABLE 2

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Total population of Brazilian cultural facilities (2016–2022)

Year	Archives	Heritage sites	Libraries	Cinemas	Museums	Culture points	Theaters
2016	275	838	5 972	879	3 285	2 412	1 249
2018	310	794	6 211	898	3 247	2 875	1 189
2020	437	778	5 654	948	3 299	3 152	1 189
2022	509	757	5 430	507	3 483	3 044	1 189

Source: adapted by the author based on CGI.br (2017, 2019, 2021, 2023).

The data comes specifically from the registries managed by MinC government organizations and, in the case of archives, by Conarq, a collegial body linked to the Ministry of Management and Innovation in Public Services (MGI). This data shows, for example, that since the Michel Temer government (2016–2018), with the retraction of public culture policies, there has been a reduction in the number of libraries in the same way that there has been a reduction in the number of heritage sites, although the latter should be questioned, as the federal government does not usually promote actions to de-list heritage sites.

The survey shows a significant decrease in the number of cinemas. This drop can be attributed, on the one hand, to the period of the pandemic and/or the growth in Internet use, but also, on the other hand, to the blocking of resources from the Audiovisual Sector Fund (FSA) promoted by the Jair Bolsonaro government (2019–2022), which discontinued the policy aimed at the construction of new cinemas. Another possibly important factor in the reduction in the number of cinemas may be the disinvestment of state-owned enterprises in the field of culture, as determined by the federal government, causing sponsored cinemas to be shut down, as was the case with the Cine Odeon in Cinelândia (Rio de Janeiro), which was sponsored by Petrobrás.[7] Other questions could be raised, but it is not the aim of this article to exhaust these possibilities, only to demonstrate the potential of the data for visualizing trends and producing studies that will allow adjustments to be made to the sectoral policies to be implemented by the new PNC.

There has been a rapid advance in digital technologies in the contemporary world, marked by an increase in the number of Internet users and the migration of business models to the digital environment. However, the updating and expansion of the presence of technological infrastructure in the territories and the provision of Internet access in public facilities are growing at a slow pace. This applies to both the digitization of their own collections and the provision of Internet and Wi-Fi for users of these spaces.

[7] Petrobrás is a Brazilian state-controlled mixed-capital company primarily involved in the oil and gas industry.

The first ICT in Culture survey was published in 2017, and, in 2023, the fourth in the series was published. The Chart 1 is a comparative exercise on the growth of Internet use, the presence of Wi-Fi, and the availability of Wi-Fi access to the public in archives, libraries, and museums[8]. The aim was to work with places which, by their very nature, have a high frequency of public information-seeking and research activities. We used information from ICT in Culture 2016 and ICT in Culture 2022. It is important to note that the aim of this exercise was to identify the availability of Wi-Fi access.

CHART 1

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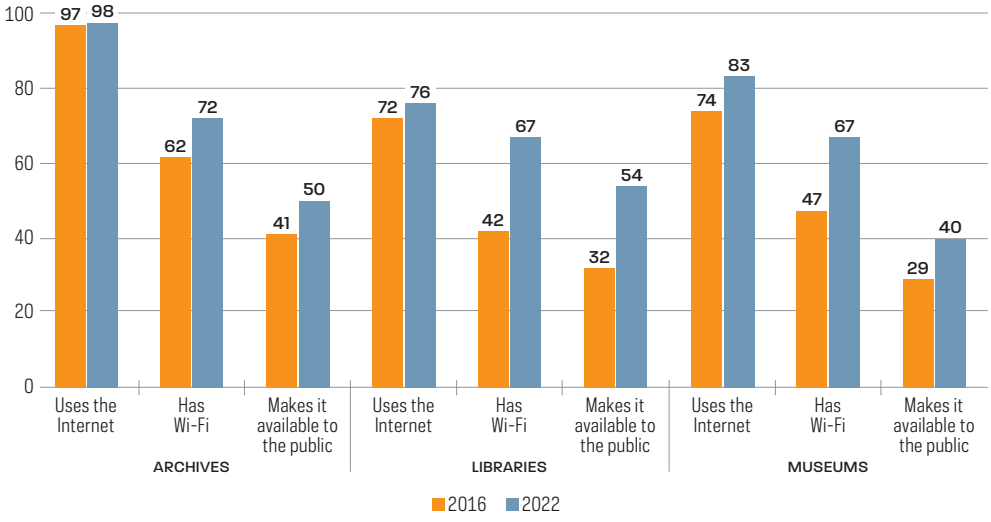
Archives, libraries, and museums by Internet use, Wi-Fi ownership, and Wi-Fi availability to the public (2016 and 2022)



Source: CGI.br (2017, 2023).

In the field of libraries, in 2016 Internet use reached 72%, and eight years later this figure had only risen four percentage points, to 76%. In 2016, the availability of Internet access to the public (via Wi-Fi) ranged from 29% in museums to a maximum of 41% in archives. In 2022, this reality also changed slightly, reaching 40% in museums and a maximum of 54% in libraries, whereas archives had a rate of 50%.

[8] Data from ICT in Culture 2024 show an improvement in the availability of Wi-Fi in libraries, museums, and cultural points. More information is available in the "Analysis of Results" section.

Paths to the new PNC

In the first PNC (2010–2020),[9] Goal 40 stated that 100% of the following content in the public domain or licensed should be digitized and made available on the Internet:

- audiovisual works from the Audiovisual Technical Center (CTAv) and the Cinemateca Brasileira (in English, Brazilian Cinematheque);
- the FCRB collection;
- inventories and recognition actions carried out by Iphan;
- works by Brazilian authors from the collection of the National Library Foundation (FBN);
- the iconographic, sound, and audiovisual collection of Funarte's Documentation and Research Center (Cedoc).

The publication *Balanço das Metas do PNC – 2010–2024* (*Balance of the PNC Goals – 2010–2024)* (MinC, 2024) reported that, in the audiovisual sector, 18% of CTAv's works and 3% of Brazilian Cinematheque's were available. Regarding the works of Brazilian authors in the public domain or licensed, the FBN did not have this information separately, so there was no data. Funarte's Cedoc made 57% of its collection available, and the FCRB made 30% available. The execution of the goal was much lower than planned. New strategies need to be devised to improve these rates.

The ICT in Culture survey provides information on the facilities that hold and digitize collections and make them available to the public. In 2016, 98% of archives had collections, 74% had digitized them, and 61% had made them available to the public. In 2022, 98% of archives had collections, 84% had digitized them, and 78% had made them available to the public in person. The ICT in Culture 2022 survey included a question about the percentage of these collections that were available online, which reached 64%. Thus, it was possible to see that 16% of the archives surveyed had not yet adopted the practice of digitizing their collections. As for other types of facilities, the survey reported that, in the same year, 68% of the libraries surveyed, 32% of museums, 62% of cinemas, 70% of theaters, 56% of heritage sites, and 26% of culture points had not digitized their collections. In the case of culture points, a significant proportion (52%) of the collections were already created in digital format, a fact that should occur with the collections of cinemas in the case of more contemporary production of digital films.

These figures demonstrate the need to intensify the implementation of cultural policies regarding the digitization of collections, which increases the process of preserving the originals. In the case of museums, the rates of digitization of objects are even lower. These are issues to be addressed in the next PNC.

[9] It was extended by the previous government up to 2024.

Another major challenge for the government is how to make the collections available. Availability via the Internet ensures the greatest degree of access. In asking about the location of availability, the ICT in Culture 2022 survey (CGI.br, 2023) included the following options: the place where the institution operates, the institution's website, a digital collection repository, the platforms or social networks on which the institution is present, the websites of other institutions, and the institution's application.

Also based on the 2022 survey, the rates of availability on social networks and platforms were high. For culture points, they reached 45%, even higher than the figure for availability on the institutions' premises (38%). In archives, this rate reached 31% on platforms, hitting 66% in the case of on-site consultation. For cinemas and museums, the percentage was 25% for each. All of these rates represent a risk of information loss if the social network or platform is deactivated or becomes obsolete—as was the case with Orkut, which was deactivated in 2014.

Therefore, cultural policies that ensure the existence of safe and permanent spaces and platforms need to be implemented. They ensure the right to preserve the memory of the most diverse social segments and ethnic groups by recording their cultural practices, especially through culture points or audiovisual recordings. The country's memory policies are fragile and jeopardize the effort and work that has been going on for decades to remedy the lack of historical records of some of Brazil's traditional groups.

Generally speaking, this article has sought to shed light on some of the many aspects present in the historical series of the ICT in Culture survey, which has enormous potential to contribute to both the analysis of the combination of circumstances necessary for the construction of public culture policies, and to the data already collected by the existing series, which will soon complete a decade. Surveys like this can support the process of monitoring and evaluating long-term policies that will be required by the new PNC.

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Challenges of regulatory cultural public policies for the Brazilian audiovisual sector in the face of the expansion of streaming services

Alex Braga Muniz[1] *and Luana Maíra Rufino Alves da Silva*[2]

The audiovisual industry comprises the production, distribution, exhibition, circulation, and subsequent consumption of various audiovisual works. In this sector, different agents carry out specific activities and are responsible for the content that is produced and shown on different channels (cinemas and festivals, broadcast on free-to-air or pay TV and smartphones, sale and rental on physical media or online content on streaming services, etc.) until it reaches end consumers.

In recent years, successful experiences of cultural policies aimed at the audiovisual sector worldwide, especially in South Korea, have demonstrated the potential of actions for this productive sphere due to the great possibility of generating employment and income and the expectation of socioeconomic development that this industry carries. This article investigates how cultural public policies for the Brazilian audiovisual sector can be influenced by the data guiding their monitoring and the subsequent challenges to regulatory activity, particularly the need to establish a new regulatory framework for video on demand (VoD) in Brazil.

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Background: Contemporary trends

Investing in audiovisual content as a soft power strategy[3] has shown the strength of its business compared to the usual "heavy industry," as its rate of expansion has outstripped all traditional sectors of the economy, even in the midst of the pandemic (Fingar, 2024). In fact, the following factors point to this sector as a unique opportunity for expansion for each country, on a scale of average global expansion of 31% per year by 2029 (Databrigde, 2023): (i) acceleration of intergenerational audiovisual consumption; (ii) emergence of new video viewing platforms; (iii) changes in habits with the expansion of remote work and online services; (iv) expansion of mobile video users; and (v) increasingly fast video transmission speeds following the evolution of 5G technology, with a significant expansion in the consumption of audiovisual works. In Brazil, these phenomena were corroborated by data from the ICT Households 2024 survey (Brazilian Network Information Center [NIC.br], 2024).

In this context, public policies for the audiovisual sector have gained visibility in global markets, academic debates, and national states, especially in an increasingly connected, digitalized, and virtual world. The audiovisual sector has become strategic and, besides not being as aggressive to the environment as conventional heavy industries, it also represents an opportunity for the new growth cycle of the Brazilian economy (sustainable development). Furthermore, as in the European Union (EU) and other countries around the world, the Cultural Exception Clause (CEC) of the World Trade Organization (WTO) allows government policies to finance and develop the production of local audiovisual content. In Brazil, Ancine is not only an agency for promoting and financing national audiovisual productions, but also a regulatory agency.

Therefore, the agency is also the government body responsible for regulating and supervising the audiovisual sector in Brazil. In its role of "regulation through information," it relies on the publication of information as a means of directing behavior. This is the least interventionist form of regulation and, through it, the public communication of information seeks to persuade and educate members of a given community to act in line with the specific regulatory objective.

Ancine regulates behavior to the extent that it increases the information available to the target audience, allowing them to make better choices. Therefore, making information accessible to the public generates a type of indirect pressure that influences the choices of audiovisual companies (producers, distributors, or exhibitors) and leads to a change in behavior toward the public interest. This prevents agents from making their choices "in the dark," without adequate information to decide and exercise their preferences, which would jeopardize the efficient functioning of the market and even allow for self-regulation (Muniz & Silva, 2021).

[3] This type of strategy refers to the ability of a country or institution to influence others through persuasion, culture, values, and ideas, rather than military force or economic coercion.

This type of regulation can take place in three traditional ways: (a) by mandatory publication of information by the regulated parties; (b) by voluntary publication of information through incentives; and (c) by publication of information by the regulatory body itself. Whatever the form of regulation, it substantially reduces the asymmetry of information between Ancine and the regulated parties, improving information problems such as adverse selection (*ex ante*) and moral hazard (*ex post*). The main reason for this policy is to correct market failures in the least arbitrary way. To do so, the information must be consistent, respecting historical series and comparative logic.

In this direction, a more accurate data policy, with cross-referencing of surveys, can boost the efficiency of regulatory policy, since the phenomena and trends in the audiovisual sector are more widely understood. For example, analyzing the order and flow between the windows of Brazilian works over the last 10 years shows that there has been an intensification of their flow (Chart 1) among streaming platforms (VoD).

CHART 1

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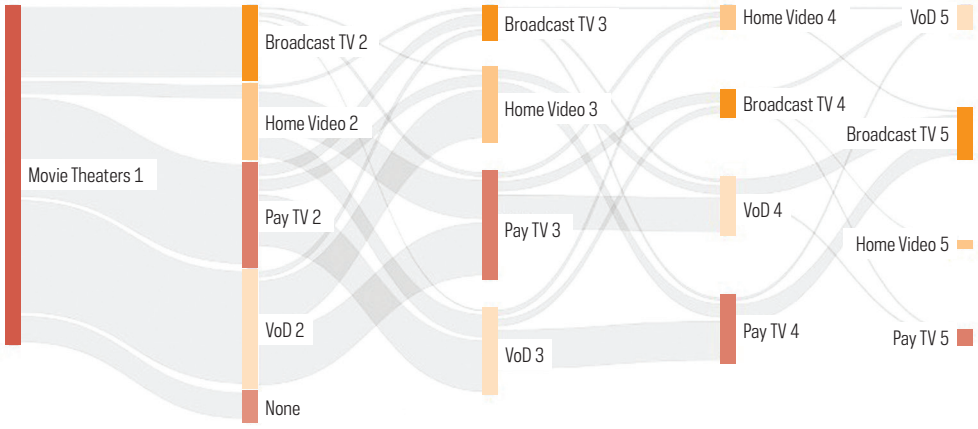
Flow between release windows for Brazilian movies released between 2013 and 2023



Source: Ancine (n.d.).

This effect was confirmed by the ICT Households 2023 survey, which pointed to an increase in the percentage of the population watching videos, shows, movies, or series online, from 56% in 2019 to 64% in 2023. Furthermore, considering the origin of the content accessed, the survey showed that 44% of the movies watched on the Internet in 2023 were of Brazilian origin, while for serialized works this percentage was 34% (Brazilian Internet Steering Committee [CGI.br], 2024). Therefore, it is possible to build more consistent data and information to guide the monitoring of audiovisual cultural regulatory activity more effectively by cross-referencing and increasing analysis in this field of research.

The VoD regulatory debate in Brazil

Audiovisual regulatory public policy in Brazil is currently heavily influenced by the European Audiovisual Media Services Directive (AVMSD),[4] a reference for the regulatory framework that has made significant progress in the European Parliament in recent years. The EU has had a regulatory guideline for VoD services since the publication of the first AVMSD in March 2010. This directive assumes that all Member States must adopt measures in their regulations to promote European audiovisual works in the catalogs of VoD services and suggests three ways to induce this promotion: (i) quotas for local content (national works) in the catalog of streaming operators (VoD); (ii) highlighting European audiovisual works on platforms; and (iii) the obligation to tax and finance local audiovisual content. Each Member State is therefore free to institute the measures it deems appropriate within its national borders.

In 2016, in the second round of the AVMSD, it was observed that most European countries already applied these three rules of the directive. This was also the case in Brazil, which influenced by the directive, introduced this issue on the government's agenda with the three rules at once. Although there were important issues defining the agenda, it was only when the European audiovisual directive published the results of this regulation that the process of defining the agenda in Brazil began. In other words, it was only after the actions and repercussions of these international institutions that the Brazilian government understood the viability of this policy, and then the issue was recognized as a problem (VoD regulation) that required greater government attention. This marked the beginning of the problem-attention dynamic of the policy on the Regulatory Agenda in Brazil.

While VoD regulation was being established in the EU, in Brazil, the first demands for government action were emerging. Although relevant as a starting point for the regulatory debate, the AVMSD's general guidelines did not take into account Brazil's characteristics, the asymmetries between the different segments of the national audiovisual market, or advances in domestic technologies. In March 2017, Ancine submitted for consultation a Regulatory Notice on the VoD sector, making it public through the instrument of the Regulatory Agenda (which is updated every two years). The formalization of the three issues that are the same as those pursued by the European audiovisual directive prevailed on the Brazilian public agenda. So, the agenda-setting mode can be characterized as "contested" within a competitive subsystem with many old actors and ideas that have been imported by the European audiovisual directive. Finally, the specific way in which these problems were defined and framed dictated how the issues were dealt with in subsequent phases of the political cycle. As VoD regulation was recognized as a priority, the policy formulation phase began with the creation of the first VoD working group in the Higher Cinema Council (CSC) of the Ministry of Culture (MinC) in 2017. This formalized group included representatives of local cultural associations from civil society, producers, telecommunications companies, and officials from the Civil House of the Presidency of the Republic, the Audiovisual Secretariat (SAv), Ancine, and MinC.

[4] See more information at https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1464618463840&uri=COM:2016:287:FIN

However, there were important players outside this working group: distributors, VoD companies, television programmers, aggregators, non-governmental institutions, the artistic class, and the Ministry of Finance. This posed a major problem for legitimacy and participation in policymaking, as many actors started parallel efforts when they were left out of the newly formed committee. As a result, various affected groups that were not directly involved in the regulation tried to interfere later, seeking to reshape the discussion. After this first VoD working group, three others were created in subsequent years, but none were successful.

One of the reasons given for the failure to implement the VoD regulatory policy became evident in the evaluation phase. This was because data and evidence of VoD regulation around the world was collected (mostly from European countries) and presented to all members of the working group. The lack of internal data and qualified information on the subject in Brazil further hindered the progress of regulatory policy in the country, since it was impossible to measure its scope and whether it was in fact necessary. Regulation based on information is less interventionist and makes public communication effective because it is more elucidating and, in addition to disseminating knowledge by guiding Congress, it increases the capacity to legitimize regulatory policy in the public interest. In this sense, we can see how the trends and phenomena indicated by the ICT Households 2023 data (CGI.br, 2024) reinforced the urgent need for VoD regulation in Brazil.

The influence of innovation on regulatory dynamics

The current global debate about social development reinforces the creative industry as a strategic sector and a new driver of economic growth. In fact, given the limited reach of the so-called heavy (traditional) industries, the soft power strategy shows the potency of the cultural industry in an increasingly digital world. As a result, public policies tailored to national specificities, which take into account all the players involved in creative activities, are capable of strengthening countries' production chains. In Brazil, within cultural policies, public policies aimed at the audiovisual sector are highly affected by the influence of innovation on regulatory dynamics.

Innovation affects the regulation of the audiovisual sector more intensely because of the very nature of audiovisual products, due to their characteristics of non-scarcity and non-fungibility. This is because audiovisual content does not end with consumption. No matter how many times a work is viewed, depreciation is restricted to the product's support, i.e., it does not wear out with use. Furthermore, audiovisual products deal with information and, because they can be transformed easily, they are extremely plastic. In other words, they can be reformatted quickly, giving rise to different works. This not only facilitates reproduction within the same market segment (non-fungible good) but also means low operating costs for distribution in other release windows (Zubelli, 2017).

In this regard, in order to ensure access to and production of local content while preserving the identity and sovereignty of each country, audiovisual cultural public policies around the world tax the audiovisual sector in different windows, guaranteeing a specific fund to promote the sector. With digital evolution, and in the midst of constant technological advances, cultural policies become weaker when regulation does not keep

pace with innovation. In the specific case of the growth of streaming in Brazil, based on ICT Households (CGI.br, 2024), we can see how the advance of VoD consumption has changed the regulatory balance focused on cinema and television in the country. The lack of regulation of VoD, therefore, reflects an emptying of the policy for incentives for the development of Brazilian audiovisual products, since a large part of audiovisual consumption has taken place on streaming platforms.

In fact, in recent years, the percentage of the population accessing audiovisual content on video platform websites or apps increased from 46% in 2019 to 54% in 2023, while the same consumption on pay TV services (regulated by Ancine) in 2023 was only 45% (Chart 2). This shows that most video consumption in 2023 took place on unregulated video platforms and, furthermore, that this audiovisual consumption surpassed pay TV services, which are regulated by Ancine, by 11%. Therefore, the verification of this change in Brazilian consumption patterns once again makes it essential to regulate VoD in the country.

CHART 2

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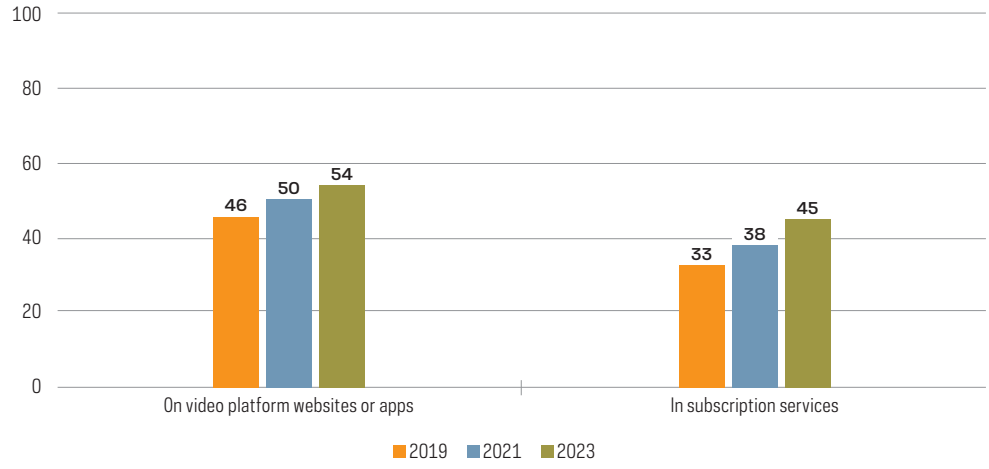
Percentage of the population by type of platform used to access videos watched on the Internet (2019–2023)



Source: CGI.br (2024).

The phenomenon presented in the above data is in line with the global trend, since, according to Nielsen (2024), the time spent accessing videos/audiovisual works via streaming increased to more than 40% in 2024. In addition, according to the same survey, the average weekly time spent using smartphones and TVs, by age group, showed that for the younger age groups (18–24 years old and 25–35 years old), video consumption took place much more on mobile phones and apps than on traditional TV (cable or broadcast), while for the older age groups (35–49 and 50–64), the pattern was reversed. This shows a regulatory gap that Brazil will have to face in the coming years due to the lack of audiovisual regulation of cultural content on these platforms.[5]

Associated with these changes in the consumption pattern (demand) of the current audiovisual sector, we also see, on the supply side, the technological evolution of the next generations of mobile data networks. Over the years, 2G technology only supported voice transmission; with the change to 3G, data transmission was also possible. In the latter case, there has been substantial improvement with 4G technology, which enabled not only simple data transmission, but also intense flows such as video and music streaming. Finally, the 5G revolution has enabled huge amounts of data and, above all, the possibility of connecting streaming applications/devices simultaneously.

In this context, the Internet of Things (IoT) is expected to grow exponentially over the next ten years through a network capable of supporting billions of connected devices. By way of example, according to research by Huawei (2022), 5G technology will allow an 8 GB HD movie to be downloaded in just six seconds, while the same procedure on a 4G network takes around seven minutes, and over an hour on a 3G network. These accelerations on the supply side, coupled with changes in consumption patterns both historically and generationally, clearly indicate the need for regulation in the sector.

As explained above, this trend is confirmed by the ICT Households surveys from 2008 to 2023. Table 1 shows how the pattern of households with information and communication technology (ICT) devices has changed substantially in Brazil over the last 15 years. Mobile phones had consolidated their position as the devices most used in Brazilian households for accessing content (ICT equipment) by 2023, reaching 95%. With this, they surpassed television, which stood at 94% (Table 1).

[5] It is worth noting here that the intended regulation is that of "qualified space" i.e., basically "movies and series." Ancine's regulatory scope excludes journalistic, entertainment, and religious content, etc. The regulation in which Ancine exercises its supervisory and promotion powers relates to the creative industry (cultural or entertainment industry).

TABLE 1

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Percentage of households with ICT devices (2008–2023)

Year	Televisions	Mobile phones	Radios
2023	94	95	46
2022	95	93	52
2021	95	95	53
2020*	95	N.D.#	56
2019	95	93	61
2018	96	93	62
2017	96	92	64
2016	97	93	66
2015	97	93	70
2014	98	92	75
2013	98	90	78
2012	98	88	79
2011	97	85	78
2010	98	84	86
2009	98	78	86
2008	97	72	86

Source: NIC.br (2008–2023).
Note: (*) Comparisons with 2020 should be made with caution, given that, due to the pandemic, the margins of error were greater and there was a change in the collection method; (#) Data not available.

In addition, the results of the ICT Households survey (2023) also showed that, among cultural activities carried out on the Internet (2019–2023), there has been an increase in recent years from 56% to 64% of the population watching videos, programs, movies, or series (Chart 3).

CHART 3

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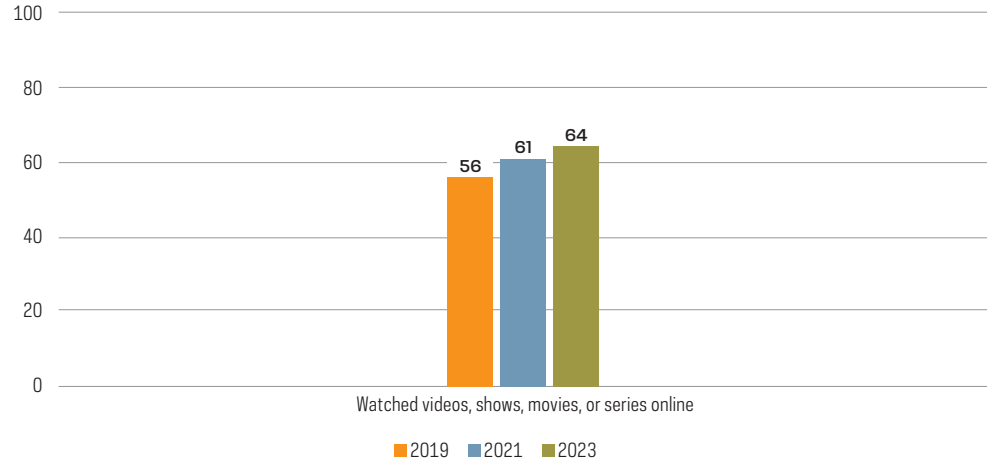
Percentage of the Brazilian population by cultural activities carried out online (2019–2023)



Source: CGI.br (2024).

Finally, with regard to the origin of the content accessed, the ICT Households survey reveals a significant presence of national productions. In 2023, 44% of the content consumed in the "movies" category and 34% in the "series" category was of Brazilian origin (Chart 4).

CHART 4

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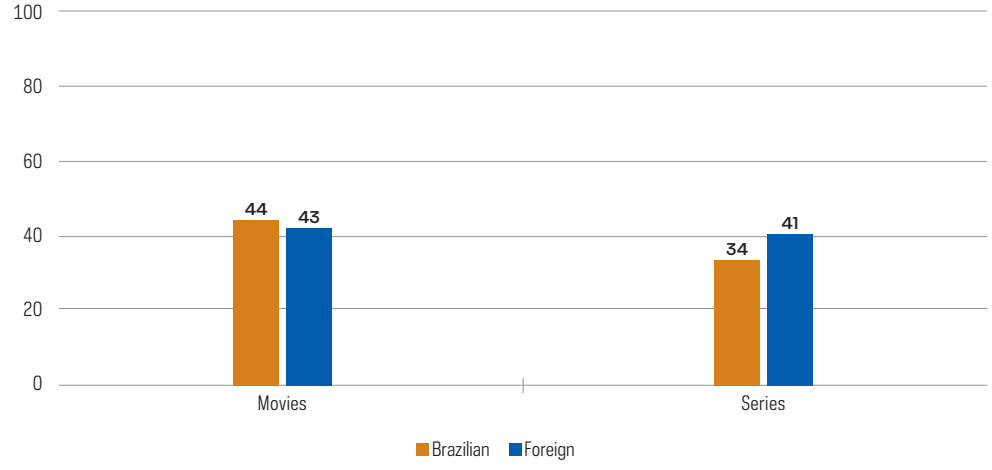
Percentage of the population by origin of content accessed (2023)



Source: CGI.br (2024).

These results show the power of national audiovisual production in the streaming/OTT (over-the-top) market. Given that Ancine's mission is to develop and regulate the audiovisual sector for the benefit of society and Brazilian production, the establishment of a new regulatory framework for VoD on the different streaming media and platforms is once again a matter of urgency.

Conclusions

This article discusses how cultural public policies for the Brazilian audiovisual sector can be influenced by the data guiding their monitoring and the subsequent challenges to regulatory activity, particularly the need for a new regulatory framework for VoD in Brazil. To this end, we first analyzed the traditional forms in force in the European Video on Demand Regulation Directive (streaming) and assessed how a more refined data policy with cross-referencing of research can enhance the efficiency of regulatory policy in Brazil. Secondly, we looked at the effects of the obstacles to the regulatory debate in this sector in the country and how data from the ICT Households survey is already able to elucidate recent phenomena and indicate guidelines for the new regulatory dynamic.

The accelerations on the supply side, coupled with changes in consumption patterns both historically and generationally, make the need for regulation in the sector unmistakable. In the light of this research, we conclude that the change in the pattern of Brazilian audiovisual consumption once again makes it essential to regulate VoD in the country.

Finally, the analysis of technological supply trends, combined with the changes observed in the ICT Households analysis, shows a regulatory gap that Brazil will have to face in the coming years due to the lack of audiovisual regulation of cultural content on these platforms. It also shows how, within the scope of Ancine, establishing a new regulatory framework for VoD will enable regulation of the audiovisual sector in Brazil.

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Cultural occupation, formal and informal, according to Household CNAE segments (2014–2023)

Leonardo Athias[1] *and Paulo Dick*[2, 3]

There are many challenges when it comes to studying the cultural labor market, such as the definition of culture or the cultural sector, the informality that affects many people's employment, the limitations of data sources, etc. That said, there is already a history of efforts in Brazil to measure cultural occupation (IBGE, 2004, 2019, 2021a, 2023b), and it is even the basis for making estimates of the economic importance of culture, for example, based on the salaries paid (Federation of Industries of the State of Rio de Janeiro [Firjan], 2022).

There are currently two prominent data sources for the study of cultural occupation in the country: the Ministry of Labor and Employment (MTE)'s administrative records system—the Annual List of Social Information (Rais)/eSocial,[4] which has been collecting information on (formal) workers since 1976—and the Continuous National Household Sample Survey (Continuous Pnad), which has been collecting information on formal and informal occupations since 2012.

There is more than one way to define informal and formal employment, and here we follow the IBGE's definition in the publication *Síntese de Indicadores Sociais* (*Synthesis of Social Indicators* [IBGE, 2023a]), according to the guidelines of the International Labour Organization (ILO). Adapted to the Brazilian case, informal occupations include the following: employees and domestic workers without labor contract; self-employed workers and employers who do not contribute to social security; and

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[3] IBGE is not responsible for the opinions, information, data, and concepts contained in this text, which are the sole responsibility of the authors. All the information used comes from IBGE and strictly respects the statistical confidentiality to which the institution is subject. The authors are solely responsible for any errors and omissions. We would like to thank Denise Guichard Freire, Antony Teixeira Firmino, and Thiego Gonçalves Ferreira for their comments and suggestions.

[4] More information available at http://www.rais.gov.br/sitio/index.jsf

auxiliary family workers. Formal occupations include: employees with a formal labor contract; domestic workers with a formal labor contract; statutory civil servants; military personnel; and self-employed workers and employers who contribute to social security.

In the cultural sector, IBGE divides the labor market into formal and informal, based on the SIIC that was implemented in the early 2000s. The first edition was published with the reference year 2003 (IBGE, 2004). The most recent edition dates from 2023, with reference to the years 2011–2022 (IBGE, 2023b). Because it uses a variety of sources, such as public and private spending, and household and enterprise surveys, its title reflects the range of years covered. As for data on the formal and informal labor market based on the Continuous Pnad, the SIIC uses data from 2014 onwards. Although the Continuous Pnad began in 2012, between 2012 and 2015, this survey was in the field concurrently with the Pnad collected annually (which began in 1967 and ended in 2015), and in the beginning there were inconsistencies in the collection for some occupations relevant to culture, at a time when there was a transition between coding systems.[5] Data from 2014 onwards proved to be consistent, which supported the decision.

The present contribution is a methodological approach that aims to qualify cultural occupation according to the definition of the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2014), with people working in cultural occupations and/or cultural activities (Table 1), using segments of the Household CNAE.[6]

TABLE 1
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Examples of occupations, by type of occupation, according to type of activity

Type of activity	Type of occupation	
	Cultural	Non-cultural
Cultural	Radio journalist TV actor Theater musician	Amusement park electrician Stationery store security Newspaper secretary
Non-cultural	Construction photographer Car manufacturer designer Restaurant chef	Army soldier Bus company driver Hospital physician

Cultural sector Non-cultural sector

Source: IBGE (2019, p. 124).

[5] More details are available in the "Technical Notes" in IBGE (2019).

[6] The Household CNAE is an adaptation of the National Classification of Economic Activities (CNAE) 2.0 for use in household surveys and demographic censuses. The context of household surveys requires adaptations and simplifications to allow for better data collection when interacting with informants.

The configuration of cultural occupations and activities is defined by the SIIC, through a broad definition that includes activities directly and indirectly linked to culture, such as telecommunications. In this context, there are heterogeneous occupations and activities with varying levels of formalization, and these were even affected in different ways during the COVID-19 pandemic, which mainly led to the unemployment of people in informal occupations (IBGE, 2021a, 2023b). According to this figure, there were around 5.8 million employed people in the cultural segment, which represented 5.6% of the total employed people in 2023.

One limitation of analyzing household surveys is the reliability of the estimates, because depending on the cut-off point and the level of granularity aimed for, you can have sparse data that loses reliability. It is therefore important to evaluate certain metrics, such as the coefficient of variation of the estimates, to ensure that these estimates are sufficiently precise. In some cases, aggregations and/or exclusions should be made so as not to use data with high expected variability (which can lead to erroneous conclusions and is defined as misuse of data) (IBGE, 2013).

There have been significant changes over time (2014–2023) in the cultural sector that has been studied using the Continuous Pnad. These changes have included the role played by new technologies, the emergence of enterprises linked to the Internet, increases in advertising and design, and the loss of importance of some areas related to trade and traditional manufacturing. These highlights have become relevant for studying the cultural sector and guiding the creation of specific policies. The approach based on the segments of the Household CNAE is an innovative perspective when it comes to underpinning decisions related to the field of culture.

Some aspects of the methodology used here and the results of this application are presented below, as well as some conclusions.

Methodology

The analytical approach is based on evaluating the number of employed persons in the cultural sector according to the Household CNAE, which categorizes those employed in different segments, at both ends of the available data series (2014 to 2023), paying attention to the accuracy of the estimates to properly qualify this sector and provide a basis for studying the level of formalization of the occupation. The tabulations made here, with absolute numbers, proportions, rates of variation, and precision estimators (coefficient of variation [CV]), seek to describe how the sector has evolved in ten years and how it dialogues with possible strategies ("practical rules" based on the team's methodological decisions) to ensure effective and reliable approaches.

Estimates using sample surveys in the SIIC are referenced in the tabular plans[7] published by the IBGE with precision/quality indicators, i.e., indicators A to E. As a rule, it is recommended that estimates with CV between 15% and 30% be used with caution, and the use of estimates with D and E classifications, i.e., above 30%, should be avoided (Table 2). Thus, the exercise with the segments avoided using estimates with a CV above 30% for the cultural sector (which represented between 5% and 6% of employed persons in the measurements with the Continuous Pnad between 2014 and 2023).

TABLE 2
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Classification of estimates in terms of accuracy

Indicator	CV interval (%)
A	0 to 5
B	greater than 5 up to 15
C	greater than 15 up to 30
D	greater than 30 up to 50
E	greater than 50

Source: IBGE (2019, p. 41).

As the Continuous Pnad has a complex tabular plan, it is necessary to take this into account in the calculations, which were made with SAS Enterprise Guide 8.4 software (SAS Institute Inc., Cary, NC, United States) and R Project 4.4.0 (R Foundation for Statistical Computing, Vienna, Austria).[8]

The 22 activity segments in the Household CNAE are as follows: A - Agriculture, forestry, and fishing; B - Mining and quarrying; C - Manufacturing; D - Electricity, gas, steam and air conditioning supplies; E - Water supply, sewerage, waste management and remediation activities; F - Construction; G - Wholesale and retail trade; repair of motor vehicles and motorcycles; H - Transportation and storage; I - Accommodation and food service activities; J - Information and communication; K - Financial and insurance activities; L - Real estate activities; M - Professional, scientific and technical activities; N - Administrative and support service activities; O - Public administration and defense; compulsory social security; P - Education; Q - Human health and social work services;

[7] The SIIC, like other IBGE thematic publications, such as *Estatísticas de gênero: indicadores sociais das mulheres no Brasil (Gender statistics: Social indicators of women in Brazil* [IBGE, 2024]), is made up of an analytical and illustrated text, a text with technical notes, and other dissemination elements (videos, presentations, releases, etc.). In addition, a set of tables (in .xls and .ods format – tabular plan) is published on the IBGE website, containing additional cross-sections, regional, by specific groups, etc., for users who want to delve deeper into the topics covered.

[8] A relevant reference for the use of Continuous Pnad microdata with the free R software Project 4.4.0 in the construction of precision estimators can be found at https://rpubs.com/BragaDouglas/335574. Since 2021, the IBGE has made an improvement with the provision of replicated weights. Methodological details are described in IBGE (2021b).

R - Arts, entertainment and recreation; S - Other service activities; T - Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use; U - Activities of extraterritorial organizations and bodies; V - Poorly-defined activities.[9]

The criteria for grouping segments follow, in part, the usual approach adopted in economic surveys produced by the IBGE. These were defined after discussion with IBGE staff with experience in the study of the Central Business Register (Cempre), which applies the CNAE classification to Rais/eSocial data. Another source was the experience gained in the analysis of the publication *Gender statistics: Social indicators of women in Brazil* (IBGE, 2024, available in Portuguese), which explored gender inequalities in managerial positions, this being a relatively small section of the employed, with around 2.5 million people in 2022.[10] In the study on gender, segments B, C, and D were merged. The same was made for segments I, R, and S. In the case of culture, it would not make sense to combine activity R (Arts, entertainment, and recreation) with others, due to its size and specificity.

The next section looks at some of the efforts made to qualify the cultural sector, taking into account the statistical precision of the estimates obtained, assessed on the basis of the coefficient of variation.

Results

A first approximation by the segments of the Household CNAE (Table 3) shows that between 2014 and 2023, the number of employed persons in the cultural sector grew (11.1%) more than the total number of employed persons (9.2%). Among the activities with relatively high numbers of people employed, in segment M (Professional, scientific and technical activities), the cultural sector grew by 65.2% between 2014 and 2023, compared to 26.8% for the total number of employed persons. Activity J (Information and communication), on the other hand, saw lower growth in the cultural sector (12.1%), compared to the increase in the total (41.3%). Recent studies of SIIC occupations show the growth of enterprises linked to advertising, design, and the Internet, and the loss of importance of the publishing segment and the traditional telecommunications segment (IBGE, 2021a, 2023b) throughout the available data series. At the same time, the cultural sector showed evolution opposite to that of the total in segment G (Wholesale and retail trade; repair of motor vehicles and motorcycles), with a decrease of 12.0%, while the segment increased by 8.5%. Trade activities related to information and communication technology (ICT) equipment, office supplies, stationery, books, and the press, which show little dynamism in the ten-year comparison, are considered part of the cultural sector.

[9] The full list of activity codes (down to class level) included in each segment of the Household CNAE 2.0 can be found at https://www.ibge.gov.br/estatisticas/downloads-estatisticas.html?caminho=Trabalho_e_Rendimento/Pesquisa_Nacional_por_Amostra_de_Domicilios_continua/Trimestral/Microdados/Documentacao

[10] See tables under "Public life and decision-making" (*Vida pública e tomada de decisão*) at https://www.ibge.gov.br/estatisticas/multidominio/genero/20163-estatisticas-de-genero-indicadores-sociais-das-mulheres-no-brasil.html

The next step was to evaluate the segments in terms of the accuracy of the estimates for the cultural sector. Those that represented up to around 1% of those employed in culture (two of them did not provide data for 2014) were 12 of the 22 segments, and coefficients of variation above 30% were found (categories D and E) for the estimates of employed persons in culture in 2014 and 2023. These are segments that become candidates for exclusion from analysis/conclusions or would have to be merged with similar segments. Sections such as Poorly-defined activities, Activities of households, or Activities of extraterritorial organizations and bodies, for example, usually show a small number of employed people in sectoral studies and have little or no analytical value. It is then possible to exclude them (by adding a note to charts and tables for transparency) or aggregate them into "others," so that totals and parts are coherent, which tends to avoid possible confusion on the part of readers or users.

TABLE 3

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Total number of employed persons and employed persons in the cultural sector according to segments of the Household CNAE – Brazil – 2014/2023

CNAE Household Segments (ranked in descending order of employed persons in the cultural sector in 2023)	Total number of employed persons			Total number of employed persons in the cultural sector			CV for employed persons in the cultural sector (%)			
	2014	2023	var. 2014-23	2014	2023	var. 2014-23	2014		2023	
Total	**92 248 325**	**100 690 273**	**9.2%**	**5 243 550**	**5 827 805**	**11.1%**	**1.6**	**A**	**1.9**	**A**
C - MANUFACTURING	12 071 938	11 630 987	-3.7%	2 162 360	2 160 288	-0.1%	2.7	A	2.9	A
M - PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES	3 228 259	4 094 680	26.8%	572 155	945 418	65.2%	5.1	B	4.5	A
J - INFORMATION AND COMMUNICATION	1 294 563	1 828 911	41.3%	785 081	879 684	12.1%	3.3	A	4.8	A
G - WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTROCYCLES	17 537 674	19 034 287	8.5%	626 121	551 251	-12.0%	5.1	B	5.3	B

CONTINUES ▸

CNAE Household Segments (ranked in descending order of employed persons in the cultural sector in 2023)	Total number of employed persons			Total number of employed persons in the cultural sector			CV for employed persons in the cultural sector (%)			
	2014	2023	var. 2014-23	2014	2023	var. 2014-23	2014		2023	
R - ARTS, ENTERTAINMENT AND RECREATION	835 739	1 150 918	37.7%	450 001	465 015	3.3%	4.5	B	5.8	B
P - EDUCATION	5 457 420	6 812 211	24.8%	176 478	219 241	24.2%	7.4	B	7.6	B
N - ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	3 928 880	4 419 873	12.5%	171 790	178 583	4.0%	7.6	B	9.9	B
S - OTHER SERVICE ACTIVITIES	3 244 412	4 261 959	31.4%	60 709	93 582	54.1%	10.9	B	11.5	B
I - ACCOMMODATION AND FOOD SERVICE ACTIVITIES	4 255 230	5 567 145	30.8%	72 852	81 664	12.1%	12.3	B	11.8	B
O - PUBLIC ADMINISTRATION AND DEFENSE, COMPULSORY SOCIAL SECURITY	5 687 338	5 151 778	-9.4%	66 404	77 761	17.1%	10.9	B	11.5	B
F - CONSTRUCTION	7 905 917	7 431 348	-6.0%	42 055	59 291	41.0%	**16.8**	C	**16.5**	C
Q - HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	3 694 022	5 963 943	61.4%	23 475	55 469	136.3%	**21.1**	C	**17.2**	C
K - FINANCIAL AND INSURANCE ACTIVITIES	1 331 714	1 588 618	19.3%	4 210	21 801	417.9%	**36.9**	D	**28.6**	C
H - TRANSPORTATION AND STORAGE	4 378 142	5 503 384	25.7%	12 861	20 091	56.2%	**35.3**	D	**29.7**	C
L - REAL ESTATE ACTIVITIES	572 791	681 861	19.0%	1 130	7 340	549.2%	**55.1**	E	**32.4**	D
A - AGRICULTURE, FORESTRY AND FISHING	9 516 495	8 145 663	-14.4%	3 666	3 744	2.1%	**56.0**	E	**48.4**	D

CONTINUES ▶

▶ CONCLUSION

CNAE Household Segments (ranked in descending order of employed persons in the cultural sector in 2023)	Total number of employed persons			Total number of employed persons in the cultural sector			CV for employed persons in the cultural sector (%)			
	2014	2023	var. 2014-23	2014	2023	var. 2014-23	2014		2023	
T - ACTIVITIES OF HOUSEHOLDS AS EMPLOYERS, UNDIFFERENTIATED GOODS- AND SERVICES-PRODUCING ACTIVITIES OF HOUSEHOLDS FOR OWN USE	5 873 182	6 103 593	3.9%	0	2 193	-			**67.9**	E
B - MINING AND QUARRYING	475 365	540 754	13.8%	5 570	2 142	-61.5%	**29.9**	C	**62.9**	E
D - ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY	214 913	242 243	12.7%	2 273	1 259	-44.6%	**43.9**	D	**73.7**	E
E - WATER SUPPLY, SEWERAGE, WASTE MANAGEMENT AND REMEDIATION ACTIVITIES	717 595	489 844	-31.7%	2 164	832	-61.6%	**52.7**	E	**82.2**	E
V - POORLY-DEFINED ACTIVITIES	23 021	41 562	80.5%	2 193	704	-67.9%	**79.0**	E	**103.6**	E
U - ACTIVITIES OF EXTRATERRITORIAL ORGANIZATIONS AND BODIES	3 715	4 711	26.8%	0	453	-			**99.5**	E

Source: Continuous Pnad 2014/2023 (IBGE, n.d.).
Note: As seen in Table 2, the highlighted data refer to estimates whose coefficient of variation ranges are between indicators "C" (CV greater than 15 to 30, highlighted in blue) and indicators "D" and "E" combined (CV greater than 30, highlighted in red).

Based on the results shown in Table 3 and the knowledge of sectoral proximities built up through the IBGE's study of economic activities (also tested in IBGE, 2024), an effort was then made to aggregate, creating three groupings:

- A + H + T + U + V = Other (A - Agriculture, forestry and fishing; H - Transportation and storage; T - Activities of households; U - Activities of extraterritorial organizations and bodies; V - Poorly-defined activities)

- B + C + D + E = Manufacturing, Electricity, Gas, Water supply and sewerage
- K + L + M = Financial activities, Real estate, Professional activities

In this aggregation, the data shows three sets of activities (F - Construction; Q - Human health and social work services; and A + H + T + U + V - Others) that have a CV of between 15% and 30% (category C, which indicates "use with caution"). These are activities that represent up to 1% of employed persons in culture, while the conclusions on the evolution between 2014 and 2023 address the most substantial activities—with increased relevance observed for the K + L + M grouping (Financial and insurance activities, Real estate, Professional activities) and the J activity section (Information and communication).

CHART 1

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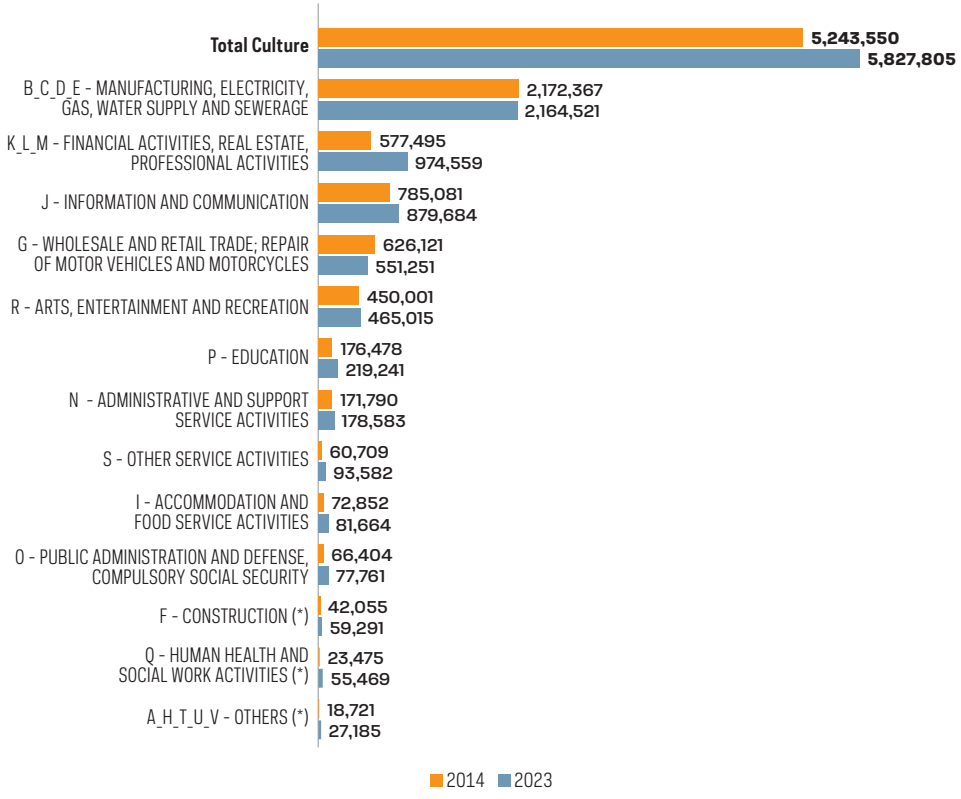
Total number of employed persons and employed persons in the cultural sector according to segments of the Household CNAE – Brazil – 2014/2023



Source: Continuous Pnad 2014/2023 (IBGE, n.d.).
Note: (*) CV between 15% and 30%.

As mentioned above, a relevant issue for professional integration is formality, which comes with rights and protections, such as retirement and unemployment insurance. In 2023, the cultural sector had a higher proportion of informally employed persons (44.4%) than the total number of employed persons (40.7%), with a different structure in many of the activity segments. Unlike the total number of employed persons in the labor market in general, in culture, 53.5% of those employed in the Manufacturing, Electricity, Gas, Water supply and sewerage grouping (B + C + D + E) were in the informal sector, compared to 24.9% for the total. There was also a marked difference in the group of sectors that included Financial activities, Real estate, Professional activities (K + L + M), with 45.9% of informal workers in culture, compared to 30.9% for the total. Professionals in segment P - Education were also employed informally to a greater extent in the cultural sector—42.5%, compared to 27.7% in the total.[11] In terms of precision, only the Others segment (A + H + T + U + V) had a CV above 30% (category D), with some others falling into category C. The largest activity segment in this precision category (N - Administrative and support service activities) accounted for around 3% of those employed in culture.

TABLE 4

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Total and proportion of employed persons and working in the cultural sector, by type of occupation, formal or informal, according to segments of the CNAE Household – Brazil – 2023

CNAE Household Segments (ranked in descending order of employed persons in the cultural sector)	Total number of employed persons			Total number of employed persons in the cultural sector			CV for employed persons in the cultural sector (%)			
	Formal	Informal	Info. (%)	Formal	Informal	Info. (%)	Formal		Informal	
Total	**59 675 039**	**41 015 234**	**40.7%**	**3 241 879**	**2 585 926**	**44.4%**	**2.4**	**A**	**2.5**	**A**
B_C_D_E - MANUFACTURING, ELECTRICITY, GAS, WATER SUPPLY AND SEWERAGE	9 693 256	3 210 572	24.9%	1 006 374	1 158 147	53.5%	4.1	A	3.7	A

CONTINUES ▶

[11] Data from 2014, in general, did not show marked differences in structure before 2023 and, due to space limitations, were not explored here. As for totals, in 2014, informality in culture was slightly lower than in the total (37.8% for culture and 38.8% for the total), with the cultural sector having grown between 2014 and 2023, mainly with professionals in the informal sector. Data for the total number of informal workers is available in SIIC Table 6.4, accessible at https://www.ibge.gov.br/estatisticas/multidominio/cultura-recreacao-e-esporte/9388-indicadores-culturais.html. Data by segment can be requested from the authors.

► CONCLUSION

CNAE Household Segments (ranked in descending order of employed persons in the cultural sector)	Total number of employed persons			Total number of employed persons in the cultural sector			CV for employed persons in the cultural sector (%)			
	Formal	Informal	Info. (%)	Formal	Informal	Info. (%)	Formal		Informal	
J - INFORMATION AND COMMUNICATION	1 443 714	385 197	21.1%	686 840	192 844	21.9%	5.7	B	9.2	B
K_L_M - FINANCIAL ACTIVITIES, REAL ESTATE, PROFESSIONAL ACTIVITIES	4 395 352	1 969 807	30.9%	527 075	447 484	45.9%	5.9	B	6.1	B
G - WHOLESALE AND RETAIL TRADE, REPAIR OF MOTOR VEHICLES AND MOTORCYCLES	12 161 770	6 872 516	36.1%	397 356	153 895	27.9%	6.6	B	8.6	B
R - ARTS, ENTERTAINMENT AND RECREATION	552 284	598 634	52.0%	212 416	252 599	54.3%	8.4	B	7.7	B
P - EDUCATION	4 922 443	1 889 767	27.7%	126 072	93 168	42.5%	11.2	B	11.0	B
N - ADMINISTRATIVE AND SUPPORT SERVICE ACTIVITIES	3 566 268	853 605	19.3%	98 295	80 289	45.0%	**15.1**	C	11.8	B
I - ACCOMMODATION AND FOOD SERVICE ACTIVITIES	2 680 101	2 887 044	51.9%	48 202	33 463	41.0%	14.8	B	**19.7**	C
O - PUBLIC ADMINISTRATION AND DEFENSE, COMPULSORY SOCIAL SECURITY	3 842 561	1 309 216	25.4%	39 398	38 363	49.3%	14.0	B	**19.3**	C
F - CONSTRUCTION	2 828 212	4 603 137	61.9%	31 318	27 973	47.2%	**20.9**	C	**24.8**	C
S - OTHER SERVICE ACTIVITIES	1 654 358	2 607 601	61.2%	28 502	65 079	69.5%	**20.1**	C	13.2	B
Q - HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	4 500 102	1 463 842	24.5%	23 334	32 135	57.9%	**25.3**	C	**21.5**	C
A_H_T_U_V - OTHERS	7 434 618	12 364 295	62.4%	16 697	10 488	38.6%	**34.6**	D	**33.6**	D

Source: Continuous Pnad 2023 (IBGE, n.d.).
Note: Info. (%) = Informal (%). As seen in Table 2, the highlighted data refer to estimates whose coefficient of variation ranges are between indicators "C" (CV greater than 15 to 30, highlighted in blue) and indicators "D" and "E" combined (CV greater than 30, highlighted in red).

Conclusion

Exploring the specific characteristics of an occupation sector is relevant to understanding its weaknesses and how it works, and serves as an instrument for planning public policies, decision-making by private actors, and the preparation of academic/sectoral studies. The effort or commitment to use reliable estimates can help in these endeavors. In some cases, when data are scarce or unreliable, a dilemma emerges: whether to use some data or none at all. Therefore, the present article sought to present methodological options for the construction of estimates with the Continuous Pnad, showing inequalities between activity segments. An effort was made to aggregate the sections of the Household CNAE to get reliable estimates for the number of employed persons with formal or informal employment in 2014 and 2023. The methodological decisions were based on "practical rules" based on the IBGE's experience with labor market indicators in general and in the cultural sector specifically. These decisions were based on the principles for official statistics (IBGE, 2013) and serve to prevent the misuse of information, for example, drawing erroneous conclusions from data with poor statistical reliability.

The data showed that in 2023, culture had a higher proportion of informal workers than the total number of employed persons. Some segments of activity were affected by informality in different ways, also in comparison with the total number of employed persons, showing the specificity of the sector and the opportunities for interventions through specific sectoral policies.

The possibility of seeking to define profiles of professionals most affected by informality within segments, using activity codes or even occupations, stands out as a prospect for further studies, which will require paying attention to the use of data relating to small population groups.

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The virtual worlds of culture points

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The National Policy for Cultura Viva (PNCV), which originated from the former Cultura Viva Program (2004) of the Brazilian Ministry of Culture (MinC), is known for hosting culture points. Considered a community-based policy, the PNCV brings together civil society associations, promoting these organizations' access to public resources and strengthening the production, dissemination, and recognition of local cultural expressions. Among the various segments, initiatives, and artistic and cultural languages, the PNCV has focused on digital culture as one of its structural actions.

This article describes the cultural policy integrated into the digital world, especially in the PNCV, before and after the pandemic, a period in which many cultural facilities had to accelerate their investment in digital technologies to continue their activities. We analyze this trajectory through two points in time covered by the ICT in Culture 2018 and 2022 surveys. We examine whether there have been significant changes in the behavior of culture points in relation to the use of information and communication technologies (ICT). With the pandemic, which imposed restrictions on face-to-face operations, it is possible that these technologies have altered the *modus operandi* of culture points.

Before describing the data, it is important to highlight various cultural policy frameworks linked to culture points: aesthetic, anthropological (Yúdice & Miller, 2002), and economic. These frameworks relate to the meanings attributed to culture points, on the one hand, emphasizing public action as power or process (Turino, 2009) and, on the other, highlighting the collective (Law No. 13.018/2014) or cultural facility (Brazilian Internet Steering Committee [CGI.br], 2023). Finally, we will establish a connection between these concepts and the themes of digital inclusion and culture.

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The proposal is to distinguish digital inclusion (referring to facilities) from digital culture, which is conceived as critical mobilization against the inequalities promoted by capitalism. The facilities are the operational tools of the PNCV, which include processes for collecting, communicating, and offering cultural experiences and social interactions through digital means. To this end, the starting point for analysis is these two interconnected but distinct concepts, which need to be analyzed synthetically.

Cultural facilities: What we are "missing"

Yúdice and Miller (2002) argued that culture has both aesthetic and anthropological meanings. In the aesthetic sense, culture is linked to artistic production and creativity, working as a marker of social distinctions that reveal differences and similarities in the preferences, sensitivity, and status of different groups. In the anthropological sense, culture refers to the way individuals live and build their lives within their communities, reflecting different collective lifestyles. Cultural policy, in this context, seeks to connect these two dimensions, promoting integration between forms of artistic expression and everyday cultural practices. In addition to the aesthetic and anthropological meanings mentioned by the authors, culture is also linked to economic interests.

Culture points have existed as part of the Cultura Viva Program since 2004 and can be considered as facility buildings, facility spaces, or facility collectives or groups. The program was conceived in critical dialogue with the idea of cultural facilities as an alternative to the Culture Support Bases (*Bases de Apoio à Cultura*, or BAC), which proposed a public policy aimed at building cultural infrastructure and facilities in large cities and their suburbs. Culture points, by contrast, should recognize cultural organizations in society, strengthening their performance through partnerships with the State and promoting the dominant discourse related to the process and collective power of people and groups to act and develop their culture autonomously and as protagonists (Turino, 2009). The PNCV defines culture points as "groups, collectives, and private nonprofit legal entities, of cultural nature or purpose, that develop and coordinate cultural activities in their communities" (Law No. 13.018/2014, Article 4, item I). The Regional Center for Studies on the Development of the Information Society (Cetic.br), in turn, adopts the same concept proposed by the PNCV, but formally and normatively specifies culture points in the list of cultural facilities, alongside archives, libraries, cinemas, museums, and theaters (CGI.br, 2023).

As can be seen, the meanings and criteria used to define culture points vary depending on who is defining them. Cultural policy clearly requires a regulatory framework and operational tools that provide clear boundaries. This raises the question: What is the need for and role of cultural facilities?

The terminology used by MinC for the main categories of the program is:

> Culture Point: cultural entity or collective certified as such by the Ministry of Culture; Big culture points: entity certified as such by the Ministry of Culture, of a cultural or educational nature or purpose that develops, monitors, and coordinates cultural activities in partnership with regional, identity, and thematic networks of culture points and other thematic networks aimed at mobilizing, exchanging experiences, developing joint actions with local governments, and coordination between different culture points that may group together at the state or regional level or by thematic areas of common interest, with a view to training, mapping, and joint actions. (MinC Normative Ruling No. 8/2016, Article 3, items III and IV)

At different times in its history, the program has engaged with the idea of digital culture or free culture. This dimension of the program challenged the concept of facility precisely because it carries the idea of virtuality in digital networking, both in the sense of the technological instrument of mobilization and coordination used and in the virtual worlds or spaces in which the facilities operate. Similarly, the program challenges the idea of community territory due to the possibility of its virtual existence on a global scale.

In our understanding, digital inclusion refers to access to technological means, such as computers and the Internet, while digital culture addresses the social uses of the Internet and its ability to culturally and socially interconnect a significant number of people, groups, and communities (Barbosa da Silva, 2011).

From this perspective, we develop two lines of argument. On the one hand, digital inclusion is essential to ensure that all individuals have equal access to technological tools. However, the mere presence of technology is not enough to ensure true digital participation. It is in digital culture that we see how people use these resources to engage, create, share, and influence society.

Thus, when addressing inequalities in Internet access and contrasting them with normative discourses of inclusion, it is essential to consider not only the presence of technological infrastructure, but also the way this infrastructure is used to promote social cohesion and cultural diversity. This allows us to expand the analysis and understand both the socioeconomic barriers that limit access and the cultural practices that emerge from digital connectivity.

Digital culture

In the beginning, when the PNCV was still called Cultura Viva Program, the common structure of the culture points was based on two main elements: the agreement with the State and the availability of the "multimedia kit." This initial configuration fostered shared management between the government and communities and supported the Digital Culture initiative by providing access to free software media equipment, audio and image editing resources, computers, camcorders, and cameras (Costa, 2011). Digital Culture began at the MinC and was decentralized to the Digital Big Culture Points through public notices. Its goal was to promote digital inclusion by connecting the points to digital technologies and principles of free culture, such as collective production and freedom of

sharing. To this end, mini-studios were made available to enable the production of digital content in various artistic and cultural formats. In addition to delivering the "multimedia kits," the program also organized meetings and training workshops.

Evaluation surveys on the Cultura Viva Program[3] were conducted by Ipea, which revealed discrepancies in the use of the kit by culture points. Although the public policy was designed to promote digital inclusion, connecting points to technologies and fostering cultural production based on the principles of free and collaborative culture, the reality observed in the field was diverse. Many points did not use the kit for reasons such as lack of technical knowledge, lack of interest, or because their priorities were not focused on the use of digital technologies. Other points, because they were already part of local or municipal networks that offered digital support, did not see the need to use the equipment provided by the program.

From 2018 to 2022, the cultural sector faced a specific historical context, marked by the impacts of social isolation measures during the COVID-19 pandemic and by the State's retraction in the field. These years were characterized by the extinction of MinC, a reduction in the sector's budget, and presidential vetoes of emergency laws aimed at culture, among other challenges. The need to adapt cultural practices to the context of social distancing drove the use of digital platforms toward the creation, distribution, and consumption of culture, making the virtual environment a relevant space for cultural production and dissemination during this period (CGI.br, 2019, 2023; Brazilian Institute of Geography and Statistics [IBGE], 2022; Noehrer et al., 2021; United Nations Educational, Scientific and Cultural Organization [UNESCO] et al., 2021).

In addition to health and political-institutional events, there have been changes in ICT itself. The multimedia kit, an essential tool in its day, can now be considered outdated, as most audio, video, and recording editing can be done directly on smartphones with accessible and easy-to-use applications. Technological advances have led to mobile devices replacing much of the equipment in the kit, offering low cost and sufficient convenience to meet the simpler demands of contemporary digital production.

The data

Based on the results of the ICT in Culture survey, the analysis of comparative data between 2018 and 2022 on ICT infrastructure and use in culture points revealed both areas of growth and areas of stagnation or slight decline. The proportions were calculated without the "Does not apply" (DNA) category to consider only culture points that had their own computers, ensuring that the results reflected only cases where the response was applicable. In the case of infrastructure, the two activities in which culture points used software the most were creating and editing of audiovisual content and storage of digital archives, with notable growth between 2018 and 2022. There was an increase in the use of software for creating and editing audiovisual content, from 55.6% in 2018 to 63.9% in 2022, which is consistent with the popularization of video platforms, social

[3] See Barbosa da Silva and Araújo (2010); Barbosa da Silva and Calabre (2011); and Barbosa da Silva and Ziviani (2014).

media, and live broadcasts. Digital file storage also grew from 52.3% in 2018 to 57% in 2022. This increase reflects the growing need to preserve and organize digital content—documents, images, videos, or audio—which facilitates access to and dissemination of content. However, in contrast to storage, the use of software for collection cataloging fell from 35.1% to 32.9%.

Event production, the third activity in which the culture points made the most use of software, showed growth from 42% to 45.2% in the period. These data show that culture points have incorporated software for organizing, promoting, and carrying out events, which became more relevant after the pandemic, when many events migrated to digital or hybrid formats, requiring new technological competencies. The pandemic intensified the urgency of developing new digital strategies, leading institutions, regardless of their level of prior preparation, to reevaluate and adapt their operating models (Noehrer et al., 2021).

CHART 1

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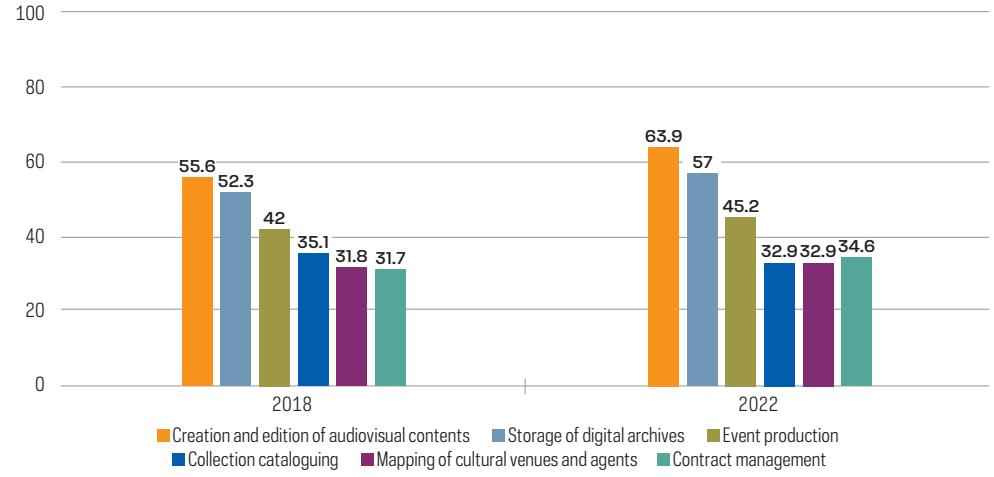
Culture points by purpose of software use (2018–2022)

Total number of culture points (%)



Source: CGI.br (2019, 2023).

The analysis of data on activities carried out by culture points between 2018 and 2022 revealed changes in some areas, while others remained relatively stable. According to the data collected, the most common activity carried out by culture points was workshops or formative programs, which remained stable with 92.7% in 2018 and 93% in 2022, revealing their continued importance. Even during the pandemic, the demand for training and education remained high.

The variations were relatively small in virtually all activities, with some notable exceptions. The following activities showed a reduction in percentage points from 2018 to 2022: movie screenings (7.7 points), exhibit production or exhibitions (2.4 points), seminars, lectures, discussions, or meetings (1.7 point), activities for reading promotion (2 points), and parties, festivals, or public events (0.9 points).

The number of arts, crafts, and antique fairs increased, albeit slightly, by around 1.4 percentage points. On the other hand, the activities that stood out with the most significant increases were the production or presentation of musical concerts (6 points), the production or presentation of plays or performances (6.5 points), and audiovisual content production (12 points).

In the case of audiovisual content production, growth from 64.3% to 76.3% highlighted the increasing centrality of audiovisual media as a means of cultural expression and distribution. This increase reflects the adaptation to new digital technologies and video platforms, such as YouTube, social networks, and streaming services, which have established themselves as essential channels for the dissemination of cultural production during and after the pandemic.

CHART 2

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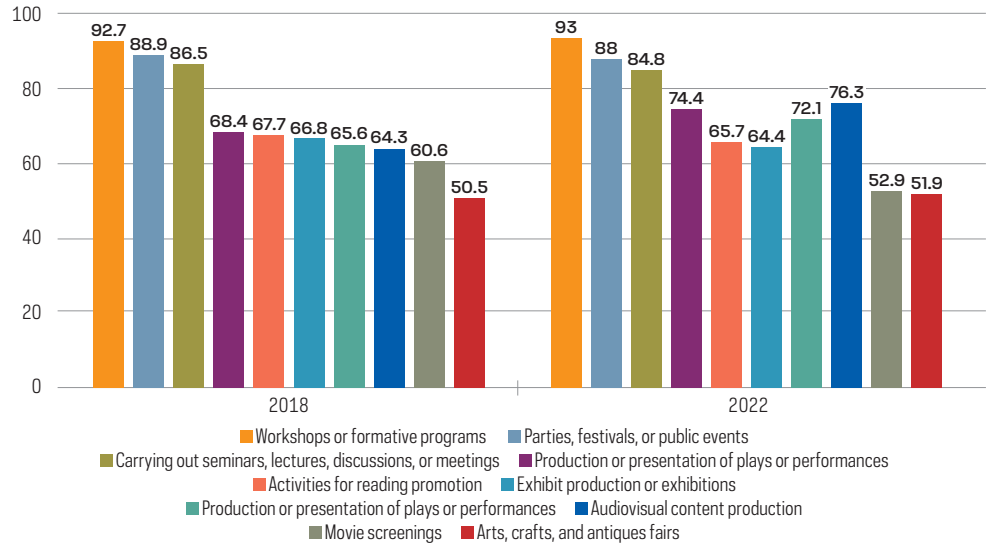
Culture points by activities carried out by the institution (2018–2022)

Total number of culture points (%)



Source: CGI.br (2019, 2023).

Conclusion

Public policy largely involves establishing and mediating relationships between different groups. Political entrepreneurs, stakeholders, and beneficiaries have diverse beliefs and interests. While promising, the vision of the transformative potential of digital culture and a network of technology-connected stakeholders has proven to be misaligned with the practical realities of culture points.

The discrepancy between the concept of digital culture and its implementation has always been apparent. From the beginning, acquiring and using equipment has been a sensitive issue. Many culture points acquired the "multimedia kits" but did not use them due to a lack of interest, technical inability, uncertainty regarding public administration guidelines, or because their activities were not digital-focused. In other cases, the culture points already had access to digital technologies through municipal initiatives or other support networks, rendering these kits unnecessary. Some criticized the inadequacy of the distributed equipment for their practices.

This article describes data from ICT in Culture 2018 and 2022, whose proposed measurements assumed that all stakeholders should have and use ICT in their daily lives for the purposes of inclusion and universalization of cultural policies. We remind readers that many did not intend to, did not know how to, or did not want to carry out the actions as indicated by policy entrepreneurs. The empirical inequalities pointed out by the different editions of the ICT in Culture survey reflect the different uses of and expectations about ICT among culture points and not just the shortcomings.

Finally, it should be noted that the intentions and objectives of the program and the culture points have changed. The idea of digital culture became less important as part of induced policy. The "multimedia kit" either disappeared or became secondary. The initial proposal for digital inclusion and strengthening of cultural production networks weakened as priorities and resources were redirected, which reduced the scope and meaning of this policy in the long term. Without a more active approach to platforming and digital connection, the concept of culture points remained mainly as a project and public notice, without significant political or conceptual innovations.

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Policies and technologies for democratizing digital collections

Roosewelt Lins Silva[1]

Since the dawn of time, the history of recording knowledge has shown how humanity has created technical devices to preserve its memory. This is necessary to keep a people's culture alive so that it can be passed on to future generations. The accelerated development of digital technologies has led society to incorporate information as the main productive force. With it, access to culture and art takes on an innovative and interactive dimension. Therefore, preserving and democratizing information are highly complex challenges, since they involve costs, trained personnel, and a material base that allows cultural institutions to develop their information resources autonomously.

Archives, libraries, and museums are institutions that accumulate documents and develop collections for study and research in a wide variety of fields. To do this, they need infrastructure for storing, processing, organizing, and disseminating their informational materials. With the improvement of technologies and the increased demand for the circulation of intangible goods, the need to develop digital collections has arisen, causing the reconfiguration of practices for safeguarding documents. In this sense, forming a knowledge communication network to strengthen the community, culture producers, and professionals working in memory institutions poses a challenge.

In this context, the development of cultural collections must be on the agenda of debates about public funding for projects that aim to identify, process, and disseminate archival, bibliographical, and museum records. It should be noted that the process of designing and implementing digital collection projects includes technical and political aspects, since it involves variables such as converting analog and electronic materials into digital format, rules for describing the metadata of items in the collections, and issues related to copyright, terms of use, and security, preservation, and sustainability

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policies. Based on this scenario, cultural institutions need material resources and qualified personnel to organize these informational materials, given the complexity of describing documents, the multiplicity of media, and the diversity of subjects involved in research in the field of culture.

From this perspective, public policies function as a fundamental strategy for the constitution of a democratic and inclusive society, in which the right to information and cultural goods is a central element for the exercise of citizenship. This article aims to theoretically discuss public policies that deal with the insertion of technologies in cultural institutions in the country and computer tools for implementing collaborative platforms for managing digital collections. A review of the literature showed that some theoretical productions problematize the policies that deal with the digitization of physical collections and the treatment of born-digital documents in archives, libraries, and museums.

The following section discusses some concepts about public policy in the context of digital collections. Next, the main technologies for implementing collaborative platforms for content management are presented. Finally, some considerations are presented about the possibilities and challenges of creating and sharing cultural content in order to consolidate a social policy aimed at democratizing the textual, graphic, sound, and three-dimensional records safeguarded in various memory institutions in Brazil.

Public policies, information, and digital collections

Contemporary society has been systematically confronted with the various implications of what has come to be called the information age, in which information and knowledge are the driving forces behind production relations. This notion of society is historically linked to the reconfigurations of the world of work in the post-industrial society of an economy centered on intangible goods. Even with all the techno-scientific advances, the rights to culture and information, guaranteed by the Brazilian Federal Constitution, remain a central challenge for developing countries, where inequality persists and reproduces itself. Thus, denying access to culture and information is a form of exclusion in today's societies.

In this context, public policies are effective actions that express agendas of interest to populations, derived from social demands. A public policy is a constituent element of a process of coordination between collective demands and effective actions by the State, with the goal of guaranteeing rights. Ferreira (2006) mentioned that the "role of the State is to guarantee the population fundamental rights that allow them to live with dignity, overcoming the darkness of ignorance" (p. 114). The author emphasizes that "unfortunately, what the population has been dealing with is a State that denies these basic rights" (p. 114). In recent decades, the various social movements of the country face struggles related to enforcing acquired constitutional rights, with a view to reducing social inequalities. Ferreira (2006) also stated that these various movements "have been confronting the State, proposing new dialogue strategies and public policies with the aim of reducing social distances in this country that is so full of contrasts" (pp. 114–115).

Public policies as strategies for the exercise of social rights, in the author's view, serve to promote social change based on the principle of social equality. Public policies aimed at libraries, archives, and museums involve discussions about the subjects of information, education, and culture. In Brazil, these policies have been dismantled in recent years, as Martins (2017) pointed out when he highlighted the historical problems that Brazil still faces. The author stated that "it is necessary to understand the determinants and, consequently, the real motivations and interests that make it so that information policies occupy a prominent role, or not, in political conflicts, and that historically deficient demands in this area are met" (p. 164).

Currently, there are still many challenges to consolidating policies that enable the democratization of knowledge in cultural institutions. On this point, Martins (2017) stated that:

> The mere existence of a plan is not enough for it to achieve its objectives, given that the country's educational, cultural, and social situation is the result of deep-rooted historical cultural processes that hinder real progress. The actions do not take into account the cultural diversity that exists in the country, or its dynamics, productive structures, and culture, subjecting them to a policy that does not respect the characteristics of each region, and the policies end up becoming ineffective in achieving their objectives. (p. 160)

A plan needs to define goals and objectives that are able to meet the demands of the social context and cultural diversity and that can also directly impact communities' daily lives. In this way, the appropriation of digital technologies as instruments for the production and circulation of cultural goods encourages the formation of networks that connect knowledge, activities, and forms of expression in a virtual environment. For this to be possible, the dissemination of digital culture in the country requires investment in specialized personnel, material resources, and the application of technical standards and evaluation tools.

According to Dias and Martins (2020), the initiative to digitize the collection of the University of São Paulo (USP) with the Brasiliana Digital project was a representative milestone in the field of digitization of collections and the understanding of the need and importance of a policy that could guide new projects in the area. In partnership with Casa da Cultura Digital and the Ministry of Culture (MinC), the International Symposium on Public Policies for Digital Collections was organized in 2010. According to Taddei (2010), the event mobilized the creation of a Committee for Digitization and Access to Culture and Knowledge in Brazil (Codac-BR) and the implementation of a National Plan for Digitization and Access to Culture and Knowledge in the country, an initiative that emerged from the debates held during the symposium. Codac-BR has been a forum for private and public institutions to discuss Brazilian digital culture. According to Taddei (2010), the proposition of a National Plan for Digitization and Access to Culture and Knowledge had as its central axis to guide:

> The efforts and work by the federal government, public organizations, and civil society to identify the main public and private collections that should be digitized and to make the subsequent access to these collections by the public a reality. (p. 17)

The plan was divided into three axes: access to digital collections; policies for digitization; and sustainability of digitization projects. The report presented by Taddei (2010) is considered an important document that provides elements for the MinC to draw up public policy proposals aimed at meeting the needs of all sectors involved in the preservation and circulation of the cultural and historical heritage.

Dias and Martins (2020) emphasized that the "stagnation in the process of developing a public policy for digital collections on the part of the federal government provoked a collective movement among memorial institutions" (p. 24). This led to the creation of a collective called the National Network of Institutions Committed to Policies for the Digitization of Brazil's Memorial Collections (Rede Memorial), which took the organizational structure of the Pernambuco Memorial Network as an example. The Rede Memorial was created to boost cooperation between institutions and digital collection projects.

Another relevant source on the subject is *Memórias digitais: o estado da digitalização de acervos no Brasil* (*Digital memories: The state of collection digitization in Brazil*), a collection organized by Freitas and Valente (2017), which addressed the technical, legal, and political aspects of the challenges faced in democratizing access to knowledge in memory institutions. In one of the chapters, Valente (2017) highlighted the work of the Memorial Network and the experiences of the National Education and Research Network (RNP), and mentioned the research project entitled Digital Archives, by the Center for Technology and Society (CTS) of the Getulio Vargas Foundation (FGV), which held two workshops on the subject, identifying four problem areas. The first was storage and preservation technologies, such as tools, standards, and metadata; the second was law, which involves legal mechanisms to guarantee access and protect copyrights; the third covers institutional policies; and the fourth deals with financing projects in the digital collection segment. The book also pointed out existing challenges in the implementation of strategies for safeguarding digital documents and in the formation of technological cooperation networks and inter-institutional policies. The authors emphasized the importance of funding via tax incentive laws, support from private enterprises, and public calls for proposals. Based on these observations, there is an urgent need for public investment to maintain effective policies in the context of cultural institutions.

In this way, it is possible to think of a policy that is not conditioned by the logic of large technology corporations, because public interests need to be above private interests. It is therefore necessary for the federal government, through the MinC, to develop a national policy that follows the demands that emerge from the grassroots of society. Mobilization of all representatives of civil society, academia, and the creative chain enables connections to be made for the design of a participatory cultural policy model. It is not enough just to include targets for digitizing collections; there also needs to be a budget so that the actions in the National Sector Plans can really be carried out according to the territorial differences that exist in the country.

From this perspective, the contribution of the Regional Center for Studies on the Development of the Information Society (Cetic.br) in producing data on the use of information and communication technologies (ICT) through the ICT in Culture survey serves as a benchmark for identifying regional inequalities, analyzing indicators for debates, and defining proposals for public policies. Next, we highlight the most widely used technologies for creating a collaborative platform that is aimed at managing digital resources and is based on open software and standards.

Technologies for digital collections

Over the last 20 years, policies for access to information and culture have undergone profound changes. Professionals have been confronted with new theoretical issues and their repercussions for information management practices in memory institutions. These changes are giving way to a search for methodological guidelines that focus on the reality of the collections, theoretical integration for the development of institutional diagnostic tools, and verification of the degree of applicability of computer technology.

A policy of technological insertion aimed at cultural collections can be conceived in two dimensions: the social-historical and the technical-normative. From the point of view of its social-historical dimension, a digital collection is a set of records that has a shared interpretation. This dimension is expressed in the development of a cultural production that is part of a group and has recognized specificity and symbolic value, given that a digital collection considers the historical contingencies of its production. The technical-normative dimension is made up of theoretical and practical constructs that make it possible to organize media using languages that represent descriptive and semantic aspects, as well as communication protocols and metadata standards. Regulatory provisions are also taken into account, as there is a need to create technical procedures and debate legal aspects such as the assignment of copyrights.

Considering the technological aspects, institutions need specific information systems to publish their digital documents in a systematized way and with different ways of accessing the content. Dias and Martins (2020) listed the principles for a public digitization policy and highlighted the use of open software and linked open data technologies. Regarding the technical aspects, we identified advances in the functionalities of various content management systems and the growth of collections using open software and open communication standards and protocols. Tools such as Tainacan, Omeka, Omeka S, AtoM, and DSpace are the main technologies based on free and open-source code that make it possible to flexibly implement platforms for managing and sharing digital objects on the Web. Valente (2017) stated that the advantage of developing platforms using open software is that they can be adapted and promote interoperability between museums, libraries, and archive collections.

Tainacan is a plugin for the WordPress content management system that enables the implementation of a platform for digital collections. It was developed as part of a Brazilian public policy in partnership with federal institutions of higher education, via collaboration among the Federal University of Goiás (UFG), the University of Brasília (UnB), the Federal University of Espírito Santo (Ufes), the Federal University of Santa Catarina (UFSC), and the Federal University of Rio Grande do Norte (UFRN). Tainacan's activities are linked to the Brazilian Institute of Museums (Ibram) and the Brazilian Institute of Information on Science and Technology (Ibict) (Tainacan, n.d.). Tainacan is a powerful platform for creating collections with personalized metadata, faceted searches, and taxonomies. It has an application programming interface that enables interoperability with support for the main communication protocols. In Brazil, it has been widely used in museums and other institutions that need a flexible, customizable, and robust solution, as well as having an active community and easily accessible technical documentation.

Omeka, created in 2008 by the Roy Rosenzweig Center for History and New Media (RRCHNM), is an open software that allows digital collections to be managed collaboratively. It is a system used in libraries, archives, and museums, with support for the metadata standard and functionalities such as creating virtual exhibitions, managing collections, and disseminating digital objects with an easy-to-access interface. Omeka S is a version of Omeka for the implementation of digital collections with linked open data technologies that allows the import of vocabularies for describing digital resources, with support for the main metadata standards and Semantic Web technologies.

Designed exclusively for archival institutions, AtoM is the leading archival document management tool with support for archival description standards and interoperability protocols. It was developed by the International Council on Archives (ICA), it is recommended by the National Council on Archives (Conarq), and several custodians are adopting the system, such as some public archives in the country, which will make it possible to promote exchanges between institutions at a global level.

DSpace was developed by the MIT Libraries and the Hewlett-Packard Company and is a system used mainly to implement digital repositories for educational and research institutions. It is a powerful tool for building up digital collections in art and culture and allows federated integration with other platforms and technologies that enable the preservation of digital objects.

In order for institutions to adopt a specific tool, it is recommended that they: 1) carry out a preliminary study to draw up a conceptual model; 2) map out the main functional requirements according to the types of documents and the standards and guidelines for describing the materials in the collection; and 3) install and configure the management platform. Social media and streaming platforms are also important allies in the dissemination of digital content, as is their necessary integration with discovery tools to enable different forms of information retrieval and filtering and to carry out advanced searches through various access points.

In a project to implement a digital collection, the issue of server storage should also be highlighted, since information generally requires a lot of disk space. More specifically, it requires cloud space to implement virtual machines, install content management systems, and store digital objects according to the characteristics of each collection.

In this way, we hope that the points presented in this article can support initiatives for the democratization and preservation of digital collections based on the open and collaborative technologies available today.

Conclusion

Considering the aspects discussed above, it is possible to see the importance of the digital collections of memory institutions in preserving knowledge. These dimensions allow us to approve and recognize that cultural institutions take on socially important tasks and that they depend on a material base and a body of scientific knowledge and specialized training programs.

For this reason, the sustainability of projects involving the digitization, maintenance, preservation, and interoperability of collections is urgent, as institutions need to provide technological resources (such as specific equipment for digitization) and to cover the costs of hosting and storing them on web-based platforms. On this point, an effective public policy aimed at access to information and digital technologies in cultural facilities needs legal instruments and specific public calls to promote digital collection projects.

Therefore, information policies need to provide public infrastructure for hosting distributed applications. Technologies based on free and open-source code are strategic tools for the development of digital collections connected to a network for sharing resources and information services in art and culture. In view of the discussions presented, it is believed that social transformation will only be possible with the development of a national project based on an open and collaborative infrastructure aimed at democratizing cultural diversity.

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List of Abbreviations

AI — Artificial Intelligence

Ancine — Brazilian Film Agency

Apeb — Public Archive of the State of Bahia

ASN — Autonomous System Numbers

AVMSD — Audiovisual Media Services Directive

BAC — Culture Support Bases

CEC — Cultural Exception Clause

Cedoc — Funarte's Documentation and Research Center

Cempre — Central Register of Enterprises

Cetic.br — Regional Center for Studies on the Development of the Information Society

CGI.br — Brazilian Internet Steering Committee

CNAE — National Classification of Economic Activities

Household CNAE — National Classification of Household Economic Activities

CNC — National Culture Conference

CNCTI — National Conference on Science, Technology and Innovation

CNPC — National Council for Cultural Policy

Codac-BR — Committee for Digitization and Access to Culture and Knowledge in Brazil

Conarq — National Archives Council

CSC — Higher Cinema Council

CTAv — Audiovisual Technical Center

CTS — Center for Technology and Society

CV — coefficient of variation

DEWG — Digital Economy Working Group

EIFL — Electronic Information for Libraries

FBN — National Library Foundation

FCRB — Casa de Rui Barbosa Foundation

FGV — Getulio Vargas Foundation

Firjan — Federation of Industries of the State of Rio de Janeiro

FSA — Audiovisual Sector Fund

Funarte — National Arts Foundation

IBGE — Brazilian Institute of Geography and Statistics

Ibict — Brazilian Institute of Information in Science and Technology

Ibram — Brazilian Institute of Museums

ICA — International Council on Archives

ICT — information and communication technologies

IFLA — International Federation of Library Associations and Institutions

ILO — International Labour Organization

INL — National Book Institute

IoT — Internet of Things

IP — Internet Protocol

Ipea — Institute for Applied Economic Research

Iphan — National Institute of Historic and Artistic Heritage

IT — information technology

ITU — International Telecommunication Union

LGPD — Brazilian General Data Protection Law

MCom — Ministry of Communication

MCTI — Ministry of Science, Technology, and Innovation

MGI — Ministry of Management and Innovation in Public Services

MinC — Ministry of Culture

MRE — Ministry of Foreign Affairs

MTE — Ministry of Labor and Employment

Munic — Survey of Basic Municipal Information

NIC.br — Brazilian Network Information Center

NSF — National Science Foundation

OBIA — Brazilian Artificial Intelligence Observatory

OECD — Organisation for Economic Co-operation and Development

OTT — over the top

PBIA — Brazilian Artificial Intelligence Plan

PNAB — Aldir Blanc National Policy for the Promotion of Culture

Pnad Continuous — Continuous National Household Sample Survey

PNC — National Culture Plan

PNCV — National Policy for Cultura Viva

PNPD — Research Program for National Development

Rais — Annual List of Social Information

RNP — National Education and Research Network

RRCHNM — Roy Rosenzweig Center for History and New Media

SAv — Audiovisual Secretariat

Secom — Secretariat for Social Communication

SIIC — System of Cultural Information and Indicators

SNBP — National Public Library System

SNC — National Culture System

Ufes — Federal University of Espírito Santo

UFG — University of Goiás

UFRN — Federal University of Rio Grande do Norte

UFSC — Federal University of Santa Catarina

UnB — University of Brasília

UNCTAD — United Nations Conference on Trade and Development

UNESCO — United Nations Educational, Scientific and Cultural Organization

WHO — World Health Organization

WTO — World Trade Organization

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