EXECUTIVE SUMMARY

ICT ENTERPRISES SURVEY

2023

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This publication is also available in digital format at www.cetic.br

Executive Summary ICT Enterprises 2023

In its 15th edition, the ICT Enterprises survey offers a broad overview of the use of information and communication technologies (ICT) among Brazilian enterprises, highlighting changes in their performance due to the challenges posed by the COVID-19 pandemic. The survey was carried out between March and December 2023, and collected data from Brazilian enterprises with more than ten employees. This edition also deepened the investigation into the digital economy in Brazil, including aspects of enterprises' connectivity, online presence, and electronic commerce. In addition, the survey provides indicators on the use of advanced technologies, such as the Internet of Things (IoT) and Artificial Intelligence (AI), taking as a reference the standard developed by the Statistical Office of the European Union (Eurostat), which makes it possible to compare Brazil to economies with varying degrees of complexity.

Connectivity

The ICT Enterprises 2023 survey indicated an increase of four percentage points in the proportion of enterprises with Internet access via fiber optic connection compared to the 2021 edition, following an increase of 20 percentage points between 2021 and 2019. While other access technologies showed stability, access via this type of connection among enterprises rose from 67% in 2019, to 87% in 2021, and then to 91% in 2023. The presence of fiber optics was disseminated in all sizes of enterprises, with 90% of small enterprises using this technology and no major differences in regional terms. Other Internet access technologies showed little variation, indicating that fiber optics is consolidating its position as the main form of access among Brazilian enterprises – a basic infrastructure attribute for enterprises to qualify their operations through the use of digital technologies (Chart 1).

AMONG ENTERPRISES THAT USED IOT, MOST OF THEM USED FACILITY SECURITY DEVICES

Electronic commerce

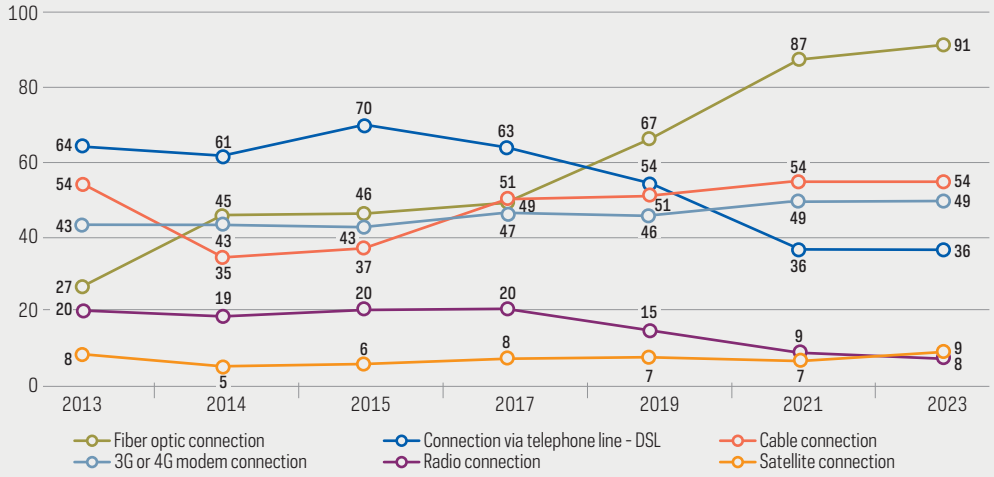
One of the most striking aspects of the digitalization of enterprises driven by the COVID-19 pandemic has been the rise of electronic commerce. As a result of the mobility restrictions resulting from social distancing actions, enterprises have intensified their use of the Internet to display and sell their products and services. According to data from ICT Enterprises 2023, 70% of enterprises sold online, setting a level similar to 2021 and a higher level compared to 2019 (Chart 2). It is therefore possible to state that electronic commerce has established itself in the routines of enterprises, consolidating practices that appeared within the emergency context of the pandemic.

The online channels used by enterprises to sell their products and services is one indicator that highlights the changes caused by the pandemic. To a large extent, the increase in electronic commerce has been due to sales via messaging apps: In 2019, 42% of enterprises used this medium, a proportion that rose to 78% in 2021 and settled at the same level in 2023. There has been growth in sales across all online channels, with the use of emails, social networks, and websites standing out. However, it is worth noting that there were differences in the form of online sales according to size: Small

CHART 1

ENTERPRISES WITH INTERNET ACCESS, BY TYPE OF CONNECTION (2013-2023)

Total number of enterprises with Internet access (%)



An estimated total of approximately

68,700 enterprises

in Brazil used smart devices or IoT

An estimated total of approximately

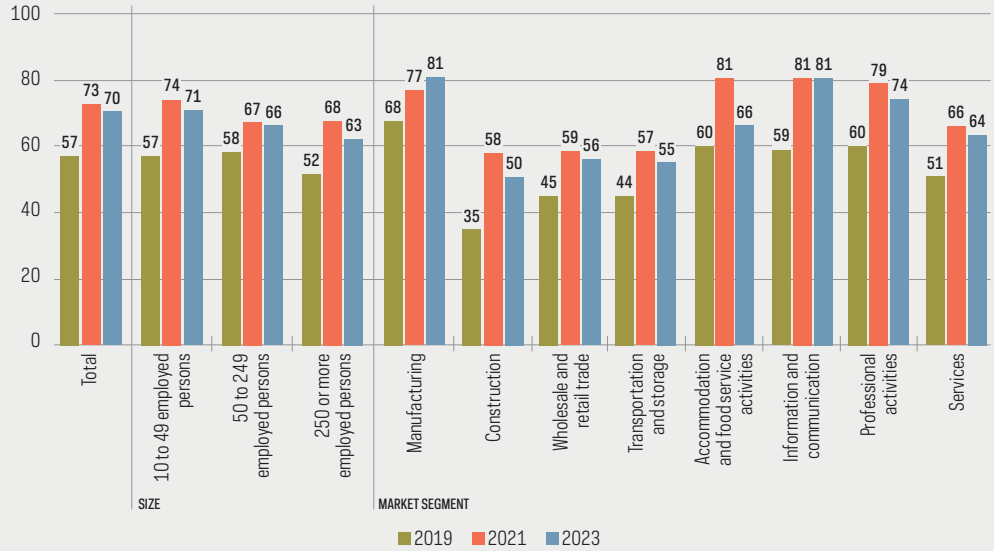
61,900 enterprises

in Brazil used AI applications

CHART 2

ENTERPRISES THAT SOLD ON THE INTERNET, BY SIZE AND SECTOR (2019-2023)

Total number of enterprises with Internet access (%)



enterprises made greater use of messaging applications, whereas large enterprises made greater use of automated and impersonal forms, such as emails and websites (Chart 3).

New technologies

The current edition of the ICT Enterprises survey showed that there was no increase in the use of IoT in Brazilian enterprises in 2023. According to the survey, 14% of enterprises said they used smart or IoT devices, the same proportion as in 2021. The distribution by size and sector also maintained the same characteristics between 2021 and 2023: Devices are more concentrated in large enterprises and the ICT sector (Chart 4). Following the trend of the same characteristics observed in the previous version of the survey, the types of devices most used by enterprises were related to facility security, such as alarm systems, smoke detectors, door locks, and smart security cameras.

AMONG ENTERPRISES THAT HAVE USED AI, MOST OF THE APPLICATIONS INVOLVED AUTOMATING WORKFLOW PROCESSES

As observed with the use of IoT devices, the ICT Enterprises 2023 survey showed stability in the use of AI compared to 2021. The use of this technology was also more recurrent among large enterprises and those in the ICT sector. The data indicated that it is difficult for enterprises to implement AI applications in their routines, which is possibly the most complex step in terms of financial and human costs for broader digitization, given the low presence in small enterprises and the concentration in large enterprises (Chart 5).

Survey methodology and access to data

The ICT Enterprises 2023 survey maps the incorporation of ICT among Brazilian enterprises with more than ten employees. The survey also investigates practices related to electronic commerce, digital security, and the adoption of emerging technologies, covering several characteristics of the digital economy. Data collection for the 2023 edition, conducted by telephone, took place between March and December 2023. A total of 4,457 enterprises was interviewed, providing results by size, geographic region, and economic sector. The survey results, including the tables of proportions, total values, and margins of error, are available at https://www.cetic.br. The "Methodological Report" and the "Data Collection Report" can be accessed in both the printed publication and on the website.

Payment for Internet ads

The limitations imposed by the COVID-19 pandemic, despite driving greater digitization and online exposure for enterprises, have not necessarily resulted in a more strategic use of the Internet. An example of this restricted use of the possibilities of the digital environment is the proportion of enterprises that have paid for online advertising: There was a small increase between 2019 and 2021, from 36% to 40%, settling at 37% in 2023. From a sectoral point of view, it is important to note the drop in the accommodation and food sector: In 2019, 50% of enterprises in the sector paid for online advertising, rising to 54% in 2021 and falling to 41% in 2023. Since the accommodation and food service sector is heavily made up of small enterprises, the decrease observed between 2021 and 2023 may indicate a reduction in investments aimed at consolidation in the digital environment and a return to traditional ways of operating.

56%
of enterprises said they had websites

89%
of enterprises said they had their own profiles or accounts on social networks

53%
of enterprises said they had digital security policies, with the majority being medium and large enterprises

CHART 3

ENTERPRISES THAT SOLD ON THE INTERNET, BY TYPE OF ONLINE MEDIA USED FOR TRANSACTIONS AND SECTOR (2023)

Total number of enterprises that sold on the Internet (%)

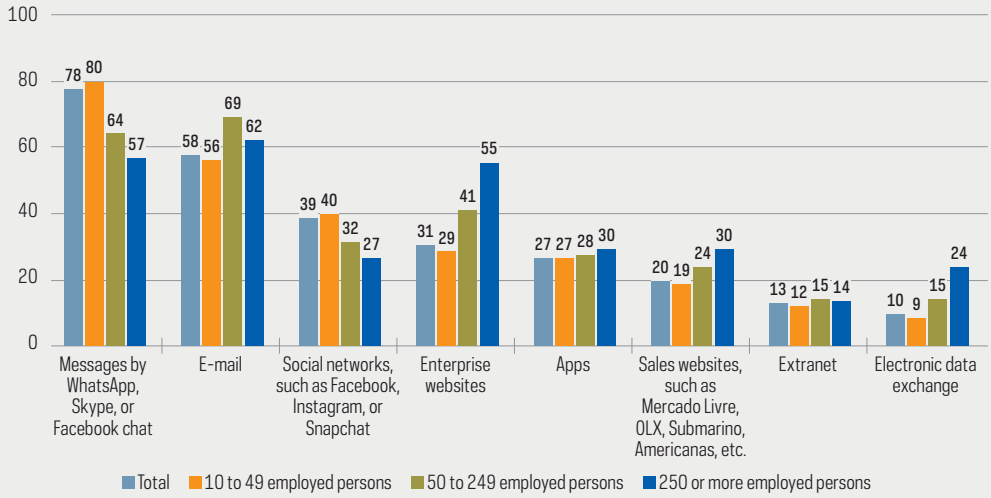


CHART 4

ENTERPRISES THAT USED IOT DEVICES, BY SIZE AND SECTOR (2021-2023)

Total number of enterprises (%)

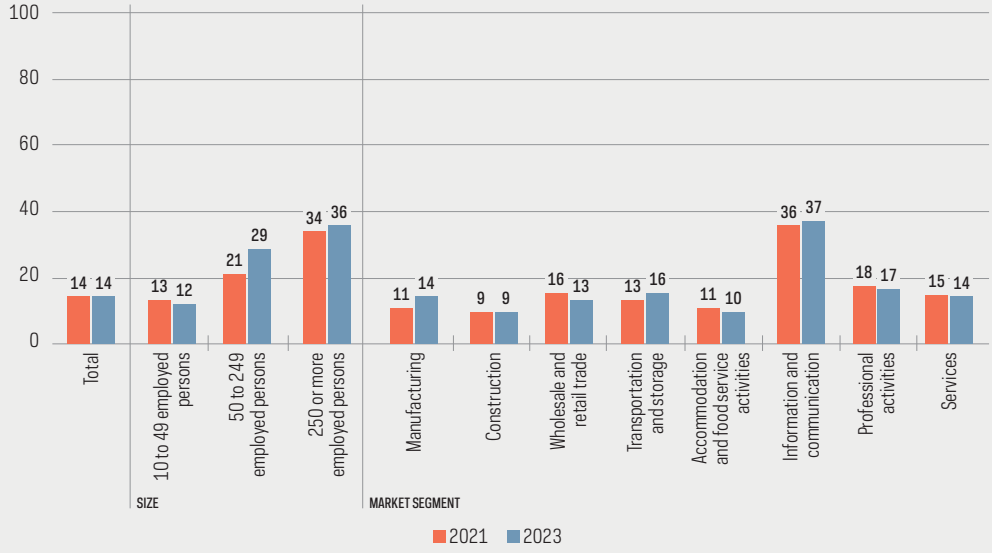
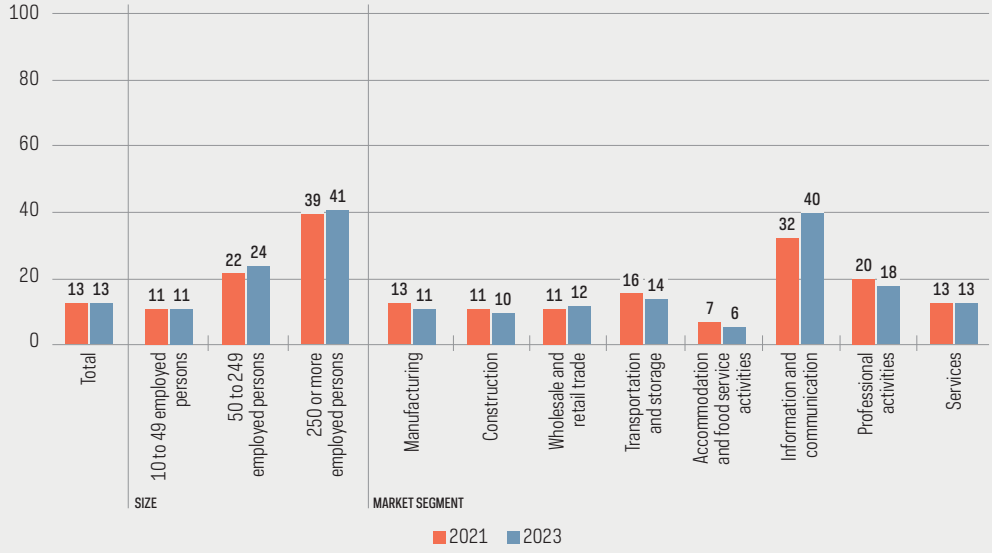


CHART 5

ENTERPRISES THAT USED AI TECHNOLOGIES, BY SIZE AND SECTOR (2021-2023)

Total number of enterprises (%)



ABOUT CETIC.br

The Regional Center for Studies on the Development of the Information Society, a department of NIC.br, is responsible for producing indicators and statistics on the access and use of the Internet in Brazil, disseminating analyzes and periodic information on the Internet development in the country. Cetic.br is a Regional Study Center, under the auspices of UNESCO. More information at http://www.cetic.br/.

ABOUT NIC.br

The Brazilian Network Information Center – NIC.br (http://www.nic.br/) is a non-profit civil entity, which in addition to implementing the decisions and projects of the Brazilian Internet Steering Committee, has among its attributions: coordinate the registration of domain names – Registro.br (http://www.registro.br/), study, address and handle security incidents in Brazil – CERT.br (http://www.cert.br/), study and research network technologies and operations – CEPTRO.br (http://www.ceptro.br/), produce indicators on information and communication technologies – Cetic.br (http://www.cetic.br/), implement and operate Internet Exchange Points – IX.br (http://ix.br/), enable the participation of the Brazilian community in the global development of the Web and support the formulation of public policies – Ceweb.br (http://www.ceweb.br), and host the Brazilian W3C office (http://www.w3c.br/).

ABOUT CGI.br

The Brazilian Internet Steering Committee, responsible for establishing strategic guidelines related to the use and development of the Internet in Brazil, coordinates and integrates all Internet service initiatives in the country, promoting technical quality, innovation and dissemination of the services offered. Based on the principles of multistakeholderism and transparency, CGI.br represents a democratic Internet governance model, internationally praised, in which all sectors of society participate equitable in the decision-making. One of its formulations is the 10 Principles for the Governance and Use of the Internet in Brazil (http://www.cgi.br/principios). More information at http://www.cgi.br/.

Access complete data from the survey

The full publication and survey results are available on the **Cetic.br** website, including the tables of proportions, totals and margins of error.

ACCESS
WWW.CETIC.BR