



الهيئة العامة للإحصاء
General Authority for Statistics

Metadata Report of Establishments ICT Access and Usage Survey 2022

V-2.0

Quality Management

Last update: 05.02.2023



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1. Contact

1.1. Contact organization	General Authority of Statistics
1.2. Contact organization unit	Digital Economy Statistics Department
1.3. Contact person function	Director of Digital Economy Statistics Department
1.4. Contact mail address	P.O. Box: 3735 Riyadh, 11481 Kingdom of Saudi Arabia
1.5. Contact email address	info@stats.gov.sa
1.6. Contact phone number	920020081

2. Metadata Update

2.1. Metadata last update	22/05/2023
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3. Statistical Presentation

3.1. Data description
<p>The Establishments ICT Access and Usage Survey presents the data on the recent indicators and statistics on the extent of Information and Communication Technology (ICT) access and usage for establishments in Saudi Arabia.</p> <p>It is a survey conducted to collect data on the main characteristics as following:</p>



1. The availability of ICT devices in establishments.
2. The extent to which establishments use ICT.
3. Identify the fields of using ICT for establishments.
4. Identify the type of Internet access used by the establishments.
5. Identify the most notable activities carried out by establishments through their use of the Internet.

The data is also used to estimate the most important variables used in this survey, including:

1. Establishments ICT access and usage (telephone, mobile phone, computers, Internet, Local Area Network (LAN), Extranet, intranet, cloud computing).
2. Activities carried out by the establishments through their use of the Internet.
3. The use of e-governmental services by establishments.

3.2. Classification system

The following classifications are applied in the Establishments ICT Access and Usage survey 2022:

For example:

- **National classification of economic activities (ISIC4):**

The statistical classification based on the International Standard of Industrial Classification of All Economic Activities (ISIC4) is used to describe productive activities of an establishment.

The classifications are available on the GASTAT's website: www.stats.gov.sa

3.3. Sector coverage

The establishments ICT Access and Usage survey 2022 covers the following main economic sectors:

1. Agriculture, forestry, and fishing.
2. Mining and quarrying.
3. Manufacturing.
4. Supplying of electricity, gas, steam, and air conditioning.
5. Water supplying and sanitation activities and waste management and treatment.



6. Construction.
7. Wholesale and retail trade and repair of motor vehicles and motorcycles.
8. Transportation and storage.
9. Accommodation and food service activities.
10. Information and Communication.
11. Financial and insurance activities.
12. Real estate activities.
13. Professional, scientific, and technical activities.
14. Administrative and support services.
15. Education.
16. Human health and social work activities.
17. Arts, Entertainment and Leisure.
18. Other service activities.

The survey covers all economic sectors.

The size classes are divided into four categories in term of the size of establishments as follow:

- Micro: It includes all establishments with (1-5) employees.
- Small: It includes all establishments with (6-49) employees.
- Medium: It includes all establishments with (50-249) employees.
- Large: It includes all establishments with (more than 249) employees.

3.4. Statistical concepts and definitions

Terminologies and concepts of Establishments ICT Access and Usage survey 2022:

- **Information and Communication Technology (ICT):**

Information and Communications Technology (ICT) refers to a group of technologies that came out of the close relation between computing and modern technologies of multimedia and communications which allowed the emergence of more effective ways of communications by improving information processing, storage, publication, and exchange.

According to the agreement stated by the Organization for Economic Cooperation and Development, ICT includes :

- All sectors producing ICT (manufacturing computer devices, televisions, radio, phone, etc...)
- Sectors distributing ICT (such as wholesale of computer devices, etc...)
- Sectors providing ICT services (communications, computer services, visual and audio services, etc...).



- **ICT access and usage**

It is important to distinguish between what we mean by access to ICT and using this technology. Access to ICT is the extent to which this technology is available to the establishment. However, the use of ICT refers to the use of one or more operators, whether in the establishment or elsewhere

- **Computer**

The computer includes a desktop computer, laptop, or a tablet. It does not include devices that are equipped with integrated computerized tools such as smart televisions or devices whose primary function is to make calls.

- **Cell Phone**

It uses cellular technology that permits access to the public switched telephone network (PSTN). It includes digital and cellular symmetry technology such as Universal Mobile Telecommunications System (UMTS) 2000 of the 3rd generation and 4th generation and Advanced Mobile Systems.

- **Fixed Telephone Line**

It refers to the telephone line that connects terminal user device (such as telephone or fax) to the public switched telephone network (PSTN) which has a special outlet at phone switch.

- **Internet:**

The Internet is a public and international computer web that provides access to communications services including the world web. It transfers e-mails, news, entertainment, and data files disregarding the device used. Access is not restricted to computers solely, as it is available also via cell phone, tablet, PDA, games tools, and digital television, etc. Access is possible through fixed or mobile communication networks.

- **Internet Connection Patterns**

The type of Internet subscription from an ISP company

- **Social Media Websites**

A group of websites on the Internet that primarily aim at forming a communication among a number of people or establishments all over the world. They provide many services such as written conversations with other people, audio, and visual communication. Such websites include Twitter, Facebook, Instagram, Snapchat, TikTok, ...etc.).

- **E-Governmental Services**

A system adopted by the governmental agencies through using the World Wide Web in connecting devices together and to connect between their various services with the private establishments and the public in large, and to provide information to people and establishments aiming to create a transparent relationship described with speed and accuracy to improve the performance.



- **Cloud Computing**

Cloud computing is a model that enables easy, on-demand network access to a shared set of configurable computing resources (such as networks, servers, storage, applications, and software services) that can be quickly provisioned and launched with minimal administrative effort or human interaction with the service provider.

- **Internet of things**

It is a network of things that contains embedded technology that allows Internet connection. It also refers to the communication that occurs between these things and other devices and systems that support the Internet. These things can be machines or components.

- **A local area network (LAN)**

refers to a wired network that interconnects computers within a single geographic area such as a single building, department, or site, and this network may be wireless.

- **Intranet:**

An intranet is an internal communications network that uses Internet protocols and allows communication within the establishment (and with other authorized persons), usually built behind a firewall in order to control access.

- **Extranet:**

A closed network that uses Internet protocols to securely exchange business information with suppliers, customers, or other business partners. It can take the form of a secure extension of the intranet that allows external users to access some parts of the establishment's intranet. It can also be a private part of the establishment's website, where business partners can navigate this network after their access has been authenticated on the login page.

- **IT Policy**

A regulation on the safe use of the computer devices and network of the establishment, submitted to all its employees and shall be binding for the safe and secure use of the establishment's property, such as equipment, software, networks, information and communication devices, to prevent intrusions or legal problems.

3.5. Statistical unit

The statistical unit in Establishments ICT Access and Usage survey is the economic establishment.



3.6. Statistical population

The statistical populations of Establishments ICT Access and Usage survey 2022 are all the economic establishments that have active commercial records at the Ministry of Commerce and cover all economic activities in Saudi Arabia.

3.7. Reference area

The survey sample is a representative sample for Saudi Arabia's 13 administrative regions.

3.8. Time coverage

The Establishments ICT Access and Usage survey's data is covered, which was implemented during December 2022.
Before that, the latest data of the Establishments ICT Access and Usage survey dates to 2017.

3.9. Base period

Not applicable.

4. Unit of measure

The units used in this survey are:

- The average number of employees in the establishments (number).
- Total of establishment's sales in goods and services (SAR).
- Internet subscription speed of the establishment (megabits)
- Other indicators of establishments' ICT access and usage (%)



5. Reference period

References period to the variables or dataset as following:
The past 12 months that precede the survey month.

6. Confidentiality

6.1. Confidentiality - policy

According to the Royal Decree No. 23 dated 07-12-1397, data must always be kept confidential, and must be used by GASTAT only for statistical purposes. Therefore, the data are protected in the data servers of the Authority.

6.2. Confidentiality - data treatment

Data were displayed in appropriate tables to facilitate its summarization, comprehension, and results extraction. Also, to compare data with other data and extract statistical meanings for the study community. It is also easier to check tables without the need to see the original questionnaire, which usually include data like names and addresses of individuals, names of data providers, which violates data confidentiality of statistical data.

"Anonymity of data" is one of the most important procedures. To keep data confidential, GASTAT removed information on individual persons, households, or business entities such a way that the respondent cannot be identified either directly (by name, address, contact number, identity number etc.) or indirectly (by combining different - especially rare - characteristics of respondents: age, occupation, education etc.).

7. Release policy

7.1. Release calendar

The Establishments ICT Access and Usage survey 2022 results are bound by a release calendar.



7.2. Release calendar access

Available on the: <https://www.stats.gov.sa/ar/future-releases>

7.3. User access

One of GASTAT's objectives is to meet its clients' needs better, so it immediately provides them with the bulletin's results once the (Establishments ICT Access and Usage survey 2022) Publication is published. It also receives questions and inquiries of the clients about the Bulletin and its results through various communication channels, such as:

- GASTAT's official website www.stats.gov.sa
- GASTAT's official e-mail address info@stats.gov.sa
- Client Support's e-mail address cs@stats.gov.sa
- Official visits to GASTAT's official head office in Riyadh or one of its branches in Saudi Arabia.
- Official letters.
- Statistical telephone (92002008).

8. Frequency of dissemination

Annual.

9. Accessibility and clarity

9.1. News release

The announcements for each publication are available on release calendar as mentioned in 7.2. Release calendar access. The news release can be viewed on the website of GASTAT in the link <https://www.stats.gov.sa/en/news>.



9.2. Publications

GASTAT issues Establishments ICT Access and Usage survey publications and reports on a regular basis within a pre-prepared publishing plan and installed on GASTAT's website. GASTAT is keen to publish its publications in a manner that serves all users of different types, including publications in different formats that contain (publication tables, data graphs, indicators, metadata, methodology, and used questionnaires) in both English and Arabic.

The Establishments ICT Access and Usage survey publications are available on the www.stats.gov.sa/en/963

9.3. On-line database

Not applicable.

9.4. Micro-data access

Microdata are unit-level data obtained from sample surveys, censuses, and administrative systems. They provide information about characteristics of individual people or entities such as households, business enterprises, facilities, farms, or even geographical areas such as villages or towns.

The different types of microdata files to meet different information needs:

- Public use: It consists sets of records containing information on individual persons, households, or business entities anonymized in such a way that the respondent cannot be identified either directly (by name, address, contact number, identity number etc.) or indirectly (by combining different - especially rare - characteristics of respondents: age, occupation, education etc.).
- Scientific use: These files established based on specific methodology asked by data requester to extract the datasets with specific characteristics used for strategic studies and decision making as well scientific research purposes on individuals, households and enterprises with no direct identifiers, which have been subject to control methods to protect confidentiality.

Eligible users can access microdata sets through secure interface built-in by GASTAT called "Etaha" with specific documentary requirements.



9.5. Other

Not available.

9.6. Documentation on methodology

The survey questionnaire was reviewed, and the most important indicators were prepared according to the Manual for Producing Statistics in the Digital Economy issued by UNCTAD in the United Nations, edition 2020:
Manual for the Production of Statistics on the Digital Economy 2020.

Information about the methodology (metadata) and the questionnaire used in the Establishments ICT Access and Usage survey is published on GASTAT's website via the following link <https://www.stats.gov.sa/en/963>

9.7. Quality documentation

Quality documentation covers documentation on methods and standards for assessing, measuring, and monitoring the quality of statistical process and output. It is based on standard quality criteria such as relevance, accuracy and reliability, timeliness and punctuality, accessibility and clarity, comparability, and coherence.

10. Quality management

10.1. Quality assurance

GASTAT declares that it considers the following principles: impartiality, user orientated, quality of processes and output, effectiveness of statistical processes, reducing the workload for respondents.

Quality controls and validation of data are actions carried out throughout the process in different stages such as the data input and data collection and other final controls.



10.2. Quality assessment

GASTAT performs all statistical activities according to a national model (Generic Statistical Business Process Model - GSBPM). According to the GSBPM, the final phase of statistical activities is overall evaluation using information gathered in each phase or sub-process. This information is used to prepare the evaluation report which outlines all the quality issues related to the specific statistical activity and serves as input for improvement actions.

11. Relevance

11.1. User needs

Internal GASTAT's users, which make use of (Establishments ICT Access and Usage survey) data, include:

- International indicators department.
- Other statistical departments.
- Partnerships and customer support department.

External users who make significant use of Establishments ICT Access and Usage survey data include, but is not limited to:

1. Governmental entities.
2. Regional and International Organizations.
3. Research institutions.
4. Media.
5. Individuals.

The disseminated key variables that mostly used by key users:

Ministry of Communications and Information Technology	Establishments ICT Access and Usage indicators during the past 12 months according to economic activity.
Communications, Space, and Technology Commission	Establishments that exist on the internet according to economic activity. Internet connection patterns according to economic activity.
Ministry of Commerce	Establishments that have an account on social media platforms according to economic activity.



11.2. User satisfaction

Not available.

11.3. Completeness

In the final aggregate tables, the status of the data is complete, from which the product indicators have been prepared.

12. Accuracy and reliability

12.1. Overall accuracy

The data collected is improved through the researchers, that have been selected according to a set of practical and objective criteria and training program related to the field of work.

The electronic data collection form of the Establishments ICT Access and Usage survey questionnaire includes alert, prevention rules and correction rules during the data collection process in order to improve data quality.

Overall, the data is checked with previous years to identify any significant changes in the data. The internal consistency of the data is checked before it is finalized. The links between variables are checked and coherence between different data series is confirmed.

13. Timeliness and punctuality

13.1. Timeliness

GASTAT uses the Special Data Dissemination Standard (SDDS) issued by the International Monetary Fund. According to this Standard, all statistics agencies are required to publish data on an annual basis, and with a delay of not more than one quarter (180 days) after the end of



the reference period. If the data are from different source, they may be published in a different frequency.

13.2. Punctuality

Publication takes place in accordance with published release dates for Establishments ICT Access and Usage survey 2022 in the GASTAT webpage. The data are available at the expected time, as scheduled the release calendar, If the publication delayed the reasons would be provided.

14. Coherence and comparability

14.1. Comparability - geographical

The data is comparable regionally and internationally, compared to the rest of the world, given that the preparation and implementation of this survey relied on international concepts and standards.

14.2. Comparability - over time

The survey started in 2017, and is considered the first survey done by GASTAT on Establishments ICT Access and Usage. The second survey that was conducted by GASTAT is in 2022.

It was decided that this survey will be carried out annually starting in 2022.

The main changes that occurred during 2022 compared to 2017:

In 2022, CATI (Computer Assisted Telephone Interviewing) was used.

14.3. Coherence- cross domain

Not applicable.

14.3.1. Coherence - sub annual and annual statistics

Not applicable.



14.3.2. Coherence- National Accounts

Not applicable.

14.4. Coherence - internal

Establishments ICT Access and Usage survey 2022 estimates for a given reference period have full internal coherence, as they are all based on the same corpus of microdata, and they are calculated using the same estimation methods.

15. Resources used

Description	Total
Total staff (GASTAT's staff, researchers)	72
Number of surveyed establishments	40857
Total days of data collection period (end date - start date)	28
Average conducted interviewer per day (during data collection)	1459

16. Data revision

16.1. Data revision - policy

Not applicable, only final results will be published.

16.2. Data revision - practice

Not applicable, only final results will be published.



17. Statistical processing

17.1. Source data

The Establishments ICT Access and Usage survey is considered the main source of data on Establishments ICT Access and Usage in Saudi Arabia.

Data is collected from a sample of establishments, and the sample size is estimated at about 40,857 establishments.

The disseminated key variables of survey data are:

1. Indicators of Establishments ICT Access and Usage during the past 12 months, according to economic activity.
2. Establishments that have a presence on the web by economic activity.
3. Establishments that have a local area network (LAN).
4. Establishments that have an account on social media platforms, according to economic activity.

17.2. Frequency of data collection

Annual.

17.3. Data collection

Data collection from survey:

The Establishments ICT Access and Usage survey 2022 data collection is carried out through computer-assisted telephone interviewing (CATI).

The data were saved on GASTAT's databases, data have been audited and reviewed according to the statistical method and recognized quality standards, in case of defect quality issues or errors in the data we refer back to the data source.

17.4. Data validation

Data are reviewed and matched to ensure their accuracy and precision in a way that suits their nature with the aim of giving the presented statistics quality and accuracy.



The data of the publication's current year are compared with the data of 2017 to ensure their integrity and consistency in preparation for processing data and extracting and reviewing results.

In addition to the data processing and tabulation to check their accuracy, all the outputs are stored and uploaded to the database after being calculated by GASTAT to be reviewed and processed by specialists in Establishments ICT Access and Usage survey through modern technologies and software designed for this purpose.

17.5. Data compilation

Data Coding

In the (Establishments ICT Access and Usage survey), interviewers collect from respondents a detailed description of each field. This information is then coded in-house by an automated process, which is reviewed by a small-dedicated team of coding experts using a series of consistency checks.

Data Editing

Specialists of (Statistical dept. name) Department have processed and analyzed data in this stage, and this step was based on the following measures:

- Sort and arrange data in groups or different categories in a serial order.
- Summarize detailed data into main points or main data.
- Linking between many parts of data and make them connected.
- Process incomplete or missing data.
- Process illogical data.
- Converting data into statistically significant data.
- Organize, display, and interpret data.

Imputation (for Non-Response or Incomplete Data Sets)

GASTAT uses the following methods to replace data in the ICT Access and Usage Survey for Establishments:

- Using measures of central tendency at the level of the target classes to compensate for the values.
- Using measures of dispersion at the level of the target layers to compensate the values.
- Using administrative records data.
- Using historical data.

Extrapolation and weighting

After processing the data collected from the responding establishments, survey weights were generated to produce indicator tables by following two main steps in creating survey weights:

- Adjustment of non-response
- Weight calibration.



Applied statistical estimation

GASTAT has relied on the formulas approved by the international standards in calculating the survey's indicators, as follows:

The percentage for each indicator will be calculated in relation to the total number of establishments within the scope of the indicator. Examples of most important indicators are as follows:

- Percentage of computer access and use by economic activity =
(The number of establishments that use the computer / the total number of establishments in the domain) * 100.
- Percentage of internet access and use by economic activity =
(The number of establishments that use the Internet / the total number of establishments in the domain) * 100.
- Percentage of establishments that have a web presence by economic activity =
(Number of establishments that have a website / Total number of establishments in the domain) *100.

17.6. Adjustment

Not applicable, only final results will be published.

18. Comment