Metadata Report of ICT Access and Use by Households and Individuals Survey 2022

V-2.0

Quality Management

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2. Metadata Update

2.1.	Metadata last update	12/03/2023

3. Statistical Presentation

3.1. Data description
The ICT Access and Use by Households and Individuals Survey is a survey conducted to collect data on key characteristics as follows: Providing updated data and indicators on ICT access and use by households and individuals in a way that helps decision and policy makers to identify and understand the following: • Availability of information and communications technology devices for households.

- Households' access to ICT.
- Reasons why households do not have access to ICT.
- Use of information and communications technology devices by individuals.
- Age groups of individuals using ICT.
- Educational status of individuals using ICT.
- Employment status of individuals using ICT.
- Internet domains that have been used by individuals.
- Places where the Internet has been used by individuals.
- Reasons why ICT is not used by individuals.

The most important variables used in this survey are as follows:

- Availability or access to ICT for households (television, radio, computer, mobile phone, Internet)
- Sex of individual
- Nationality of individual
- Educational status of individual
- Job of individual
- Employment status of individual
- Main occupation of individual
- Individual's ownership of mobile phone
- Individual's use of mobile phone
- Individual's use of mobile phone
- Individual's use of computer
- Individual's use of the Internet
- Individual's purchase of goods and services via the Internet
- Individual's communication and interaction with government agencies or services via the Internet

3.2. Classification system

The following classifications are applied in the ICT Access and Use by Households and Individuals Survey:

- **Saudi Standard Classification of Professions (ISCO_08)**

A statistical classification based on the International Classification (ISCO_08) that provides a system for the classification and compilation of professional information obtained through censuses and statistical surveys, as well as administrative records. This classification is used in the ICT Access and Use by Households and Individuals Survey to classify workers based on their occupations.

- **Saudi Standard Classification of Educational Levels and Specializations**

A statistical classification based on the International Standard Classification of Education (ISC) (ISCED_11) and (ISCED_13) of Education and Training issued by the United Nations Educational, Scientific and Cultural Organization (UNESCO), which is the reference classification for the organization of educational programs and qualifications related to their educational

levels and specializations. It includes all educational programs, levels and methods of education, and covers all educational levels from kindergarten to postgraduate levels. This classification is used in the ICT Access and Use by Households and Individuals Survey to classify individuals aged 15 years and above according to their specializations and levels of education.

- **National Code for Countries and Nationalities (ISO 3166 - Country Codes)**

A statistical classification based on the international standard (ISO 3166_Country codes), which is a standard issued by the International Organization for Standardization (ISO of the UN), and this classification gives numeric and literal codes for the world's (248) countries, based on the classification of countries. This classification is used in the ICT Access and Use by Households and Individuals Survey to classify individuals into Saudis or non-Saudis.

Detailed data are collected through the interview to allow output to be produced in accordance with all relevant classifications.

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

3.3. Sector coverage

The ICT Access and Use by Households and Individuals Survey covers the household sector (whether Saudi or non-Saudi) who habitually reside in Saudi Arabia.

3.4. Statistical concepts and definitions

- Information and Communication Technology (ICT): A description of the tools and methods of IT access. It also refers to being able to recall, save, organize, and process data. Moreover, it describes the means of information display and exchange through manual and electronic methods. Some of the IT tools are: computers, scanners, digital cameras, telephones, faxes, CDs, and software such as: database system and multimedia applications.
- Access and Use of ICT: It is important to differentiate between what we mean by accessing ICT and using ICT. ICT access refers to the availability of such technology to the household. On the other hand, ICT usage refers to the actual usage of ICT by one or more members of the household either inside the dwelling units or elsewhere.
- TV set: TV set is a device that receives TV broadcast signals using common access means such as over the air, central cable, or satellites. It is usually a separate set or integrated with other devices such as computer or mobile phone.
- Radio: It is a device that receives radio signals using general frequencies such as: LW, AM, FM, SW. The radio can be a separate device or integrated with another device such as an alarm clock, Walkman, mobile phone, or a computer.

- Computer: It includes desktop computer, laptop, or tablet. It does not include devices that are equipped with integrated computerized tools such as smart televisions or smart phones.
- Mobile Phone: It uses a 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. Subscribers are of two types: Prepaid or post-paid (bill) subscribers.
- Smart Mobile Phone: A phone that enables the user to surf the Internet, check e-mail, open office files, and it contains a complete keyboard (Qwerty). It is also defined as the phone that uses one of the following operation systems: Windows phone, Symbian and its affiliated programs, Lennox and its affiliated programs, and BlackBerry. Smart phones do not differ from laptops or personal computers. All smart devices are composed of two integrated parts: hardware (the physical part), and Software (the programming operation system).
- Non-smart Mobile Phone: A phone that provides the user with the service of making or receiving phone calls and sending SMS or media messages.
- Internet: The Internet is a public and international computer web that provides access to communications services including world web. Internet service can be accessed in several ways, for example, the digital subscriber line, mobile modem, mobile phone packages or fiber optics.
- Digital Subscriber Line (DSL): A technology that connects high broadband to dwelling units and small economic establishments via regular copper phone lines.
- Portable Modem: The device that transmit digital signals issued from a computer or a digital device or another to symmetric signal of a telephone line, and it removes the formation of the received symmetric signal and transform it into a digital signal to the digital device.
- Mobile Phone Packages: Different products with different components (duration of the phone call, number of messages, internet flow...) and different prices. They are provided by various telecommunication companies in a certain country or region.
- Optical Fibers Flexible tiny optical wires that carry data in the form of light. This technology is characterized with extreme speed, and it allows making use of utmost speed on the line with a speed larger 60 times than that of DSL.
- Landline Telephone Line: It refers to the telephone line that connects the user device (a telephone or a fax) to the public switched telephone network PSTN, which has a specific port on the telephone exchange.
- Social Media: Websites aiming to connect a group of individuals or establishments worldwide. Some of the social media services are: ability to chat with others in writing, verbal communication, and visual communication. Some of these networks are (Twitter, Facebook, Instagram, Snapchat, ...etc.)

- Email: It is a tool that enables network local and international users to exchange messages, texts, and attachments from one computer to another inside or outside the establishment.
- Blog: A discussion site or an advertisements site on the world wide web and consists of posts ordered chronologically from the recent to the older.
- Government E-services: A system adopted by governmental entities by using internet to connect their devices with each other. It is also used to link the entity services with other establishments and the public in general. By using these services, individuals and establishments can access any information easily, in a way that would create a transparent, quick, and accurate relationship for a high quality performance.

3.5. Statistical unit

The statistical unit used in ICT Access and Use by Households and Individuals Survey is households and individuals.

3.6. Statistical population

The statistical population of the ICT Access and Use by Households and Individuals Survey is all resident households (Saudi and non-Saudi) and individuals residing (Saudi and non-Saudi) in the Kingdom of Saudi Arabia during the reference period of the survey.

3.7. Reference area

The survey sample is a representative sample of the 13 administrative regions of the Kingdom of Saudi Arabia.

3.8. Time coverage

ICT Access and Use by Households and Individuals Survey covers the year 2022.

3.9. Base period

Not applicable.

4. Unit of measure

The unit used in the ICT Access and Use by Households and Individuals Survey is the percentage, such as: Percentage of households with internet access.

5. Reference period

References period to the variables or dataset as following:

1. The metadata of the household, the housing characteristics, data of household ICT access, household members' characteristics such as marital and educational status are referred to the time during which the household was visited.
2. Data of the educational status are referred to the week preceding the household visit.
3. Data of the household ICT access and individuals' ownership and use of mobile phone, computer, and internet are referred to the last (3) months preceding the household visit.

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 date of the ICT Access and Use Survey for Individual Households has been listed in the statistical calendar (release dates of publications) on the official website of the General Authority for Statistics. The results of this survey are scheduled to be published on 02 April 2023.

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 better its clients' needs, so it immediately provides them with the bulletin's results once the Air Transport Publication Bulletin 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 8.2. 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

The General Authority for Statistics issues ICT Access and Use by Households and Individuals Survey publications on a regular basis within a pre-prepared publication plan which is published on the Authority'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 results of the ICT Access and Use by Households and Individuals Survey are available on https://www.stats.gov.sa/ar/952

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 concepts, definitions, issues and classifications are based on the International Standards for the Guide to Measuring Access and Use of ICT by Households and Individuals, issued by the International Telecommunication Union (ITU), 2020 Edition.

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

The internal users of the ICT Access and Use by Households and Individuals Survey are the following departments:

- Department of International Indicators.
- Department of Strategic Partnerships and Customer Support.

External users and significant beneficiaries of ICT Access and Use by Households and Individuals Survey include:

- Government entities
- Regional and international organizations
- Research institutions.
- Media.
- Individuals.

The disseminated key variables that mostly used by key users:

- Percentage of households that have Internet access.
- Percentage of households that have a computer.
- Percentage of households that have a TV.
- Percentage of individuals aged 15 years and older who own a phone in the last 3 months.
- Percentage of individuals aged 15 years and older who use a phone in the last 3 months.
- Percentage of individuals aged 15 years and older who use the Internet in the last 3 months.
- Percentage of individuals aged 15 years and older who purchased goods and services online in the last 3 months.
- Percentage of individuals aged 15 years and older who have executed government transactions online in the last 3 months.

11.2. User satisfaction

Not available.

11.3. Completeness

ICT Access and Use by Households and Individuals Survey data is based on completed household and individual data where all data are published in the form of statistical indicators.

12. Accuracy and reliability

12.1. Overall accuracy

The quality of data is improved by selecting researchers based on several practical and objective criteria related to the nature of work, as well as qualification and training of researchers.

Alert, prevention and correction rules are applied during the data collection process to thee-questionnaire of ICT Access and Use by Households and Individuals Survey 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 correlation between variables is examined and consistency between different data series is confirmed in general. Data is examined over previous years to determine any significant changes in the data. The internal consistency of the data is checked before it is finalized. The correlation 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 (180 days) after the reference period. If the data are from different source, they may be published in a different frequency.

13.2. Punctuality

ICT Access and Usage by Households and Individuals Survey is published based on the release dates listed on the release calendar published on GASTAT website. 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

All data is fully comparable between the administrative regions of the Kingdom of Saudi Arabia.

14.2. Comparability - over time

The survey began in 2017 as an annual survey.
Following are the major changes occurred in recent years:

Starting in 2020, 2021 and 2022, computer-aided telephone interviews (CATI) were adopted.

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

ICT Access and Use by Households and Individuals Survey estimates have complete internal consistency, as they are all based on the same exact microdata set and are calculated using the same estimation methods.

15. Resources used

Description	Total
Total staff (GASTAT's staff, researchers)	236
Number of surveyed households	40,000
Total days of data collection period (end date - start date)	28 days
Average conducted interviewer per day (during data collection)	1,429 Interviews

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

ICT Access and Use by Households and Individuals Survey is the main source of data on the extent to which households and individuals' access and use ICT in the Kingdom of Saudi Arabia.

Data is collected from a sample of households estimated at 40,000 households.

17.2. Frequency of data collection

Annual.

17.3. Data collection

Data collection from survey:

ICT Access and Use by Households and Individuals Survey data is collected through computer-aided telephone interviews (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 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 the previous year to ensure their integrity and consistency in preparation for processing data and extracting and reviewing results.

In addition to processing and tabulating data to verify its accuracy, all outputs are stored and uploaded to the database after being calculated by GASTAT to be reviewed and processed by specialists in the Digital Economy Statistics Department through modern technologies and software designed for this purpose.

17.5. Data compilation

Data Coding

In the ICT Access and Use by Households and Individuals Survey, researchers collect a detailed description of the fields from respondents. This information is then encoded internally through an automated process, which is reviewed by a small-dedicated team of coding experts using a series of consistency checks.

Data Editing

During this phase, Digital Economy Statistics Department specialists conducted data processing and analysis based on several procedures, as follows:

- Sorting and arranging data in sequence or in different groups or categories.
- Summarizing detailed data into key points or data.
- Combining many data segments and ensuring their interconnection.
- Processing missing or lost data.

- Processing illogical data.
- Converting data into a form that has statistical significance.
- Organizing, presenting and interpreting data.

Imputation (for Non-Response or Incomplete Data Sets)

The following methods are used by GASTAT for data imputation in the ICT Access and Use by Households and Individuals Survey:

- Using central tendency measures at the level of target strata to impute values.
- Using dispersion measures at the level of target strata to impute values.
- Using administrative records data.
- Using historical data.

Extrapolation and Weighting

After processing the data collected from the respondent households, the survey weights were created to produce indicator tables following two main steps to create the survey weights, namely:

- Adjustment for nonresponse
- Weight calibration.

The basic weights (design) are calculated as follows:

Weight of sampling unit is the inverse probability of selecting the sampling unit from the sample frame. If the probability of selecting the sampling unit is pi, the weight will be the inverse probability $\frac{1}{\text{pi}}$

$$\text{pi} = \frac{n}{N}$$

n: Sample size
N: Population size

Applied statistical estimates

GASTATs relied on the equations adopted according to international standards in calculating the main indicators for ICT Access and Usage by Households and Individuals Survey as follows:

- Percentage of households by ICT availability at administrative region level = (Number of households with ICT device in the respective administrative region / Total households in each administrative region of survey sample) *100
- Percentage of individuals aged 15 years and older using ICT by sex and nationality = (Number of individuals in the range aged 15 years and older by nationality using ICT / Total individuals in the range by nationality in survey sample) *100
- Percentage of Individuals aged 15 years and older using ICT by age group = (Number of individuals aged 15 years and older by age group using ICT / Total individuals by age group in survey sample) *100

- Percentage of Individuals aged 15 years and older using ICT by educational status = (Number of individuals aged 15 years and older by educational status using ICT / Total individuals by educational status in survey sample) *100
- Percentage of Individuals aged 15 years and older using ICT by employment status = (Number of individuals aged 15 years and older by employment status using ICT / Total individuals by employment status in survey sample) *100
- Percentage of Individuals aged 15 years and older using ICT by administrative region = (Number of individuals aged 15 years and older using ICT / Total individuals by administrative region in survey sample) *100
- Percentage of Individuals aged 15 years and older and activities they performed using a computer or mobile phone by sex and nationality = (Number of individuals in the range aged 15 years and older using a computer, mobile phone or other electronic device by activities / Total number of individuals in the range by sex and nationality in survey sample) *100

17.6. Adjustment

Not applicable, only final results will be published.

18. Comment