Cases of Good Governance in Korea

The Government of
the Republic of Korea

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Korean Statistical Information System (KOSIS)

National Statistical Infrastructure

Single window for official statistics that maximizes the utility of statistical information

**System combined with an integrated statistical database**

Develops user-centered features based on feedback from the Service Design Group and general public

KOSIS: Overview

KOSIS, which was developed and is maintained by Statistics Korea, is a single window for official statistics on South and North Korea and other countries that makes it possible for users to search, browse, and obtain the statistical information they need.

KOSIS provides nine main types of visual content (Men Vs. Women, etc.), statistics-themed comic strips, and card-style news to make it easier for the general public to understand and use statistics.

KOSIS: Main
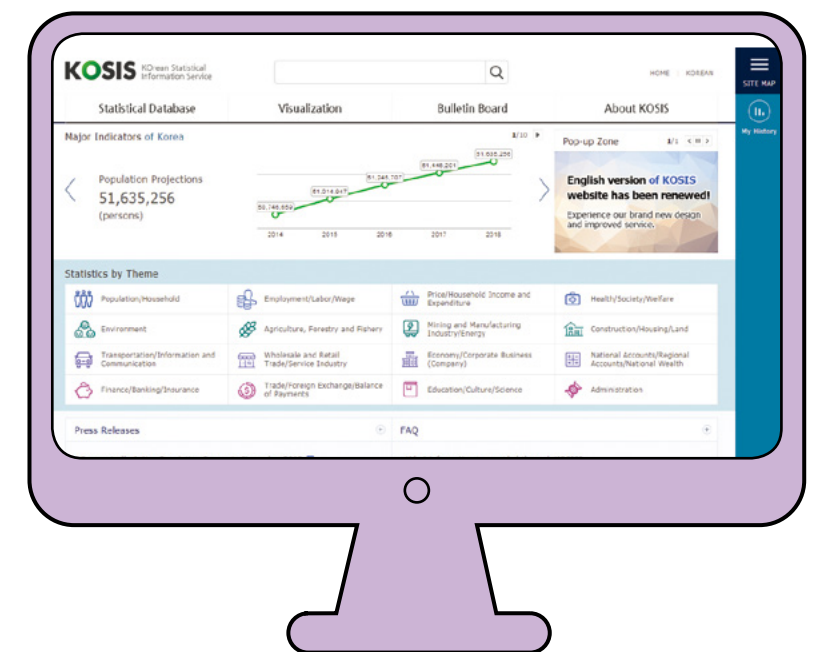
Background

With the growing perception of statistics as a public good that is pivotal to the development of national infrastructure, it became necessary to establish a national statistical infrastructure through the innovation of statistical systems.

It was also important to establish an integrated database for gathering and maintaining the official statistics of all statistics-producing agencies in order to provide the public with useful statistical information.

The development of a standard statistical database was also necessary to help statistics-producing agencies reduce the costs of system development.

History

1991	Statistical Database Service launched for national administrative agencies and named "KOSIS."
1998	Statistical Database Service now provided for the general public.
2006	Integrated national statistical database developed and portal system launched.
2007	National Integrated Statistics Portal launched (July) and named "KOSIS."
2008	Meta-data service for all nationally approved statistics provided (November).
2012	KOSIS Mobile launched.
2013	KOSIS Open Data Service developed.
2016-2018	Statistical Database Management System rebuilt.

Features

The main page of the Korean version of KOSIS features Domestic Statistics, International and North Korean Statistics, Statistics at a Glance, Online Publications, Civil Requests, and Service Descriptions.

Domestic Statistics, which attracts the most traffic, is arranged so that each user can view a wide range of statistics on a single page by subject, organization, and region, as well as past and terminated statistics.

In light of the diversification of needs for statistics and growing public awareness of the importance of reliable statistics, KOSIS has come to provide a growing range of quality data and related features, including statistics published by international organizations, visualization content, channels of communication with users, service policy updates, a feature allowing users to mix statistical tables and graphs, MyPage and personal accounts, an integrated search browser, and so forth.

KOSIS Menu

Menu		Content
GNB*	Domestic Statistics	Statistics by subject and organization, e-Regional Indicators (by subject, region, and theme), past and terminated statistics (pre-liberation statistics, Statistical Yearbooks of the Republic of Korea, and statistics that are no longer published)
	International and North Korean Statistics	Statistics from international organizations and their websites and statistics about North Korea
	Statistics at a Glance	Approaching by target, Apporoaching by issue, Visualization content (KOSIS 100 Indicators, Korean Population at a Glance, Experience of My Price, Homo Statisticus, Regional Economic Dashboard, Korea in the World, Men Vs. Women, Business Cycle Clock, Bubble Charts for Statistics, Statistics Comics, UGC Contest Winning Pieces, and Statistical Education Videoclips)
	Online publications	By subject and title
	Civil Requests	FAQs, Q&A, KOSIS Guide, Website Improvement Feedback, and KOSIS Training on Demand
	Service Descriptions	About KOSIS, National Statistics Today, National Statistics Release Schedule, News Updates, Service Policy, and additional features
Mixing Statistical Tables		Allows users to collate two or more statistical tables to generate a mixed one.
MyPage		Allows users to keep track of statistics of interest, view the questions and opinions they have posted, share feedback on how the website can be improved, update their personal information, and deactivate their accounts.
Member information		Logging in, becoming members, looking for forgotten IDs, and changing passwords
Related websites		Statistics Korea, Statistical Geographic Information System (SGIS), Microdata Integrated System (MDIS), KOSIS Open Data Service, National Indicator System, Korean Standard Statistical Classification Portal, Quality of Life Indicators, and Tonggurami (statistical training)
Integrated search		Returns search results, by matching the words and phrases entered by users, from the Statistical Database, official statistical explanations, statistical terminology, and all other such locations where data are stored.

* GNB: Global Navigation Bar (found in the upper part of the main page of KOSIS).

KOSIS visualization content provide statistics in easy and accessible ways by applying the latest visualization techniques and trends.

KOSIS 100 Indicators (which displays statistical trends along 100 or so indicators in which the public is strongly interested), Men Vs. Women (which provides information on how men and women differ along certain statistical indicators), Korean Population at a Glance, Experience of My Price, Homo Statisticus, Regional Economic Dashboard, Business Cycle Clock, Korea in the World, Bubble Charts for Statistics, and other such features make statistics, which can be complex and daunting, quite easy for the public to understand and use.
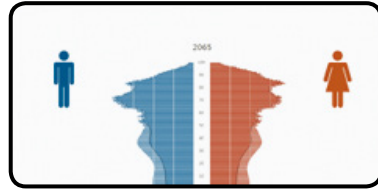
KOSIS Visualization Content
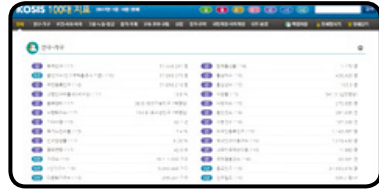
100 indicators

Shows trends along major indicators, including those related to the population and consumer prices, using graphs.

Men Vs. Women

Shows statistics on how men and women differ across various economic and social planes to promote debate and communication.

Korean Population at a Glance

Provides statistical analyses on how demographic changes in Korea would likely affect the country in the future.


Experience of My Price

Allows the user to choose goods and compare their prices against the official consumer price index.

Homo Statisticus

Allows the user to enter statistical information about himself/herself, such as height, weight, and education, in order to find out where he/she stands in comparison to nationwide statistics.

Regional Economic Dashboard

Allows the user to compare regions according to major economic indicators.
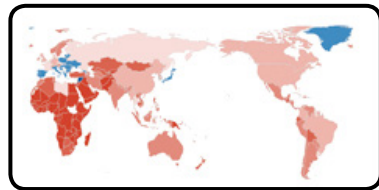
Korea in the World

Provides visualizations of how Korea fares in comparison to other countries according to important indicators.

Business Cycle Clock

Shows where on the business cycle the main economic indicators are currently located.

Bubble Charts for Statistics

Allows the user to view Korea and G20 states according to the indicators of his/her choice through bubble charts.

KOSIS Mobile

KOSIS strives to ensure users' convenience by providing a growing range of mobile services and features as well.

Menu	Description
Domestic/international statistical indicators	Provides statistical information along the KOSIS 100 Indicators on Korea and around the world.
Visualization content	Homo Statisticus and Men Vs. Women
Statistical comics and card news	Diverse issues of everyday life and related statistics are provided together in accessible comic strips and card news.

System Structure

KOSIS mainly consists of the KOSIS Service System, which provides information and services for the public, and the National Integrated Statistics Database System, which provides data necessary for public services.

More specifically, the former is made up of the National Statistics Portal Administration System, Content Management System, Statistical Information Sharing System, Mobile Service Management System, Statistical Database Integrated Search Browser and System, and Open Data System.

The latter consists of the Statistical Database Management System, Statistical Database View System, Statistical Publications System, Large Statistical Tables, File Service System, Statistics Gathering and Monitoring System, Korean Statistics Provision System for International Organizations, International Statistics Gathering System, and Statistical Database Quality Control System.

KOSIS Structure

Policy management system

Statistics Policy DB

Statistical database for Statistics Korea

Working DB

Statistics-producing agencies

Hosting organizations

Distributing organizations

Own DB organizations

International organizations

- OECD
- UNITED NATIONS
- INTERNATIONAL MONETARY FUND
- THE WORLD BANK

Integrated login management system

Integrated statistical database management system

Integrated database quality assurance system / Authorization management system
- Manages database structural inspections and output by user.
- Manages user authorization by system.
- Manages vocabulary, terminology, and domain standards and task rules.
- Manages menu and user authorization by system.

Automatic gathering/monitoring system
- Converts data, creates XML, and transmits related services.
- Monitors statistical table transmissions.
- Provides views of the current status (transmissions /service lists) and reconstructs them.
- Manages basic inspection (statistical quality assurance) and officials in charge.

Statistical database management system
- Manages statistical tables (new, simplified, files, related, inherited, and recommended).
- Manages information contained in statistical tables.
- Manages items and classifications.
- Enters numerical figures.
- Manages statistical lists.
- Transmits data.
- Manages data reconstruction.
- Manages service lists.
- Manages sources, organizations, and officials in charge.
- Provides views of statistical tables.
- Manages settings.
- Manages large-quantity statistics.

International statistics gathering system
- Manages information by source and type.
- Manages data extraction and items, properties, and numerical figures.
- Manages statistical table mapping information and processing equations.
- Transfers data to KOSIS and manages work histories.

Data provision system for international organizations
- Manages requests (details).
- Manages data (data provided and transferred to KOSIS).
- Manages data provision (data provided and general ledgers).
- Manages users, user logs, and codes.

Statistical publications system
- Lists and manages publications.
- Manages tables and chapters and connects them.
- Manages text production and services.
- Provides views of the current status and administrator features.

KOSIS Services

Statistics services by area
- Statistics lists
- e-Regional Indicators
- Wide search
- English KOSIS
- My Page
- Online publications
- North Korean Statistics Portal
- Open Data Service (open API)

Gateway to other websites
- Statistics Korea
- Government/public agencies
- Schools/research organizations
- Statistics-producing agencies
- Major corporations
- International statistics websites

Mobile services — KOSIS

Statistical content
- KOSIS 100 Indicators
- Korea in the World
- Statistics Comics
- Korean Population at a Glance
- Men Vs. Women
- UGC Contest Winning Pieces
- Experience of My Price
- Business Cycle Clock
- Homo Statisticus
- Bubble Charts for Statistics
- Regional Economic Dashboard

Integrated KOSIS management system
- Integrated system management
- Integrated solution management

Standardized integrated framework system settings

- Hosting/distributing databases
- Web Service (XMI, SOAP, WSDI, UDDI)
- Correction database
- Open transmission of statistical tables
- Integrated database

Public
- End users
- Government/public agencies
- Students
- Businesses
- Statistics officials

Integrated portal verification

Channels
- Web browsers
- Mobile
- Telephone
- Civil petitions

Main systems and functions

Main System	Subsystem	Features and functions
KOSIS Service System	KOSIS Administration System	• News and notifications, press releases, bulletin board, integrated management system, etc.
	Content management systems	• KOSIS 100 Indicators, Homo Statisticus, and other visualization aids
	Statistical Information Sharing System	• Supports services based on a statistical database
	Mobile Service Management System	• Mobile service and statistical indicator management • Indicator synchronization and management, user activity management
	Integrated Search and Management System	• Enables users to browse the statistical database by search word. • Manages synonyms, related words, search words, etc.
	Open Data Service (OpenAPI)	• Manages statistics by item, figure, and statistical meta data. • Provides links to the Public Data Portal and outside institutions.
National Integrated Statistical Database System	Statistical Database Management System	• Manages information and numerical data on statistical tables. • Reconfigures statistical database by category, item, etc. • Manages changes made to statistical data, codes (standard classifications and units), data transmitted, and internal users. • Manages simple and file statistical tables. • Manages Web-standard-based statistical database.
	Statistical Database View System	• Enables users to view statistical tables (HTML). • Enables users to look up statistical tables by subject and organization. • Enables users working in different jobs to access the information they need and add statistics of interest to "My Statistics."
	Statistical Publications System	• Manages manuscripts, special marks, information making up statistical tables published, etc. • Enables users to browse and print out publications.
	Large Statistical Tables and File Service System	• Manages large statistical table standards and file generation function, etc. • Manages file statistical tables and service features.
	Statistics Gathering and Monitoring System	• Transmits each organization's statistics to integrated database. • Tracks records of statistics transmitted to integrated database.
	Korean Statistics Provision System for International Organizations	• Manages requests made to international organizations for statistics and the provision of statistics to those organizations.
	International Statistics Gathering System	• Generates international statistics and stores them in database (from IMF, OECD, UN, World Bank, etc.).
	Statistical Database Quality Control System	• Manages policy resources, instructions, and processes concerning data quality control. • Inspects structural differences between databases and takes necessary steps based on inspection results. • Manages data dictionaries (domains, words, and terms) and codes.

Obstacles and solutions

Under the current decentralized statistics system in Korea, statistics-producing agencies produce their own statistics. Statistics Korea, however, led the movement to develop a centralized channel of statistical information and services in order to enhance the public's knowledge and convenience.

At first, the diversity of the methods with which different agencies gathered, produced, and managed their statistics made it difficult to establish a centralized database.

Statistics Korea sought to solve this problem by dividing statistics-producing agencies into two types. The first included those that managed their data systems by installing and using a database standard distributed by Statistics Korea, while the other included those that entered statistics directly into servers hosted by Statistics Korea. By providing different solutions for these two types of agencies, Statistics Korea established an environment that ensured the efficient management and use of statistical data.

Success of KOSIS: Factor analysis

Statistical data are gathered from disparate sources in many countries, including Korea. In Korea, such data were not only collected, but also provided to the public by diverse agencies before KOSIS came along.

With the growing demand for statistics in policymaking and business strategy development, the desire to obtain statistical information from a single accessible source naturally grew as well.

Individual organizations or businesses had to spend considerable amounts of time and money to survey statistical publications and the websites of various statistics-producing agencies.

KOSIS was thus born to provide a centralized platform upon which statistical data, gathered by multiple agencies, can be provided for the public through a single window.

By introducing and developing diverse visualization content to help the public gain a better understanding of statistics, KOSIS has been leading efforts to achieve the innovation of statistics-based services in Korea.

In developing visualization content, such as Experience of My Price, Korea at a Glance in Population, and Men Vs. Women, Statistics Korea assembled the Service Design Group, consisting of members drawn from the lay public, to generate the user-focused feedback necessary to develop new features and services beyond supplier-centered statistics.

KOSIS Today

National Integrated Statistical Database

* Including those that are no longer published.

As of the end of November 2018, KOSIS has provided 1,156 types of statistical data from 384 agencies.

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
No. of organizations	116	114	117	124	244	335	370	376	2018
Types of statistics*	501	486	530	581	749	883	1,011	1,066	1,156

Also, the number of KOSIS visitors and users of the statistical database has been rising steadily.

KOSIS user statistics

(Unit: 1,000s of people, 1,000s of cases)

Year	2013	2014	2015	2016	2017	2018
No. of Visitors (Monthly avg.)	6,113 (509)	5,606 (467)	6,278 (523)	7,760 (647)	8,955 (746)	10,704 (892)
No. of DB connections (Monthly avg.)	13,122 (1,093)	17,736 (1,478)	20,776 (1,731)	26,128 (2,177)	37,682 (3,140)	55,295 (4,608)

International cooperation

Statistics Korea's own ODA projects

• Development of a statistical database and service system in Mongolia (2012)

• Development of a statistical database and service system in Sri Lanka (2014)

• Development of a statistical database and service system in Azerbaijan (2018)

• Development of a statistical database and service system in Laos (to take place in 2019).

International partnership projects

• With World Bank, to reinforce the Mongolian national statistical system (2010 to 2012)

• With World Bank, to enhance Kazakhstan's capability to provide statistical services (2012 to 2016)

Future plan

With the cooperation of other statistics-producing agencies, KOSIS has become the world's largest statistical database. Statistics Korea is now making efforts to take the system a step further, making it the global standard for official statistical databases worldwide.

Statistics Korea plans to improve the services and features of KOSIS in the future as well, ensuring the accuracy and timeliness of the data it provides and enhancing its accessibility and utility.

About the institution

Statistics Korea

• The central statistical agency of the national government in Korea tasked with gathering, processing, and publishing official statistics. In Korea's decentralized statistical system today, Statistics Korea coordinates, produces official national statistics, and develops and provides related services.

Website: www.kostat.go.kr

Contact

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