Population and Human Settlement

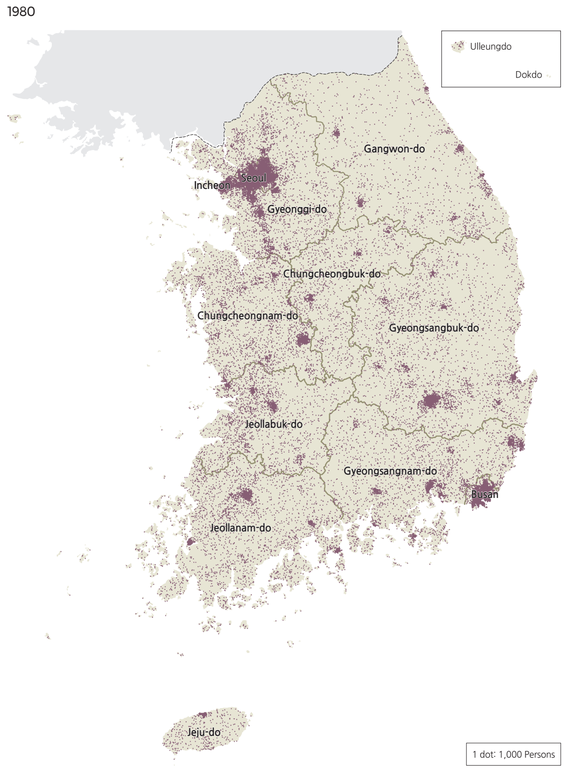
Population affects a nation's politics, economy, culture, and infrastructure. The key characteristics of the population of a country or region include the distribution, structure, and migrational patterns. Population distribution is the population size of regions at a particular time. Population structure is the composition of the population of a region that denotes particular demographic attributes, including such important variables as age, gender, income, and household composition. Migrational patterns show the population movement between regions over a particular period. Changes in population distribution come from natural increase and decrease (births and deaths) and migration. Natural increases and decreases in the population are monitored with statistics on total fertility and mortality rates. Migration, on the other hand, is affected by the geographical distribution of the political, economic, social, cultural, and spatial characteristics. Such influences function as determining factors for population influxes and outflows between regions; as a result, the socio-spatial process of migration takes place. Migration includes regional in-migration and out-migration, both domestically and internationally. Domestic migration is classified as the migration between urban and rural areas, between city and city, and between rural areas. In general, economic, demographic, and geographic factors jointly affect migration patterns.

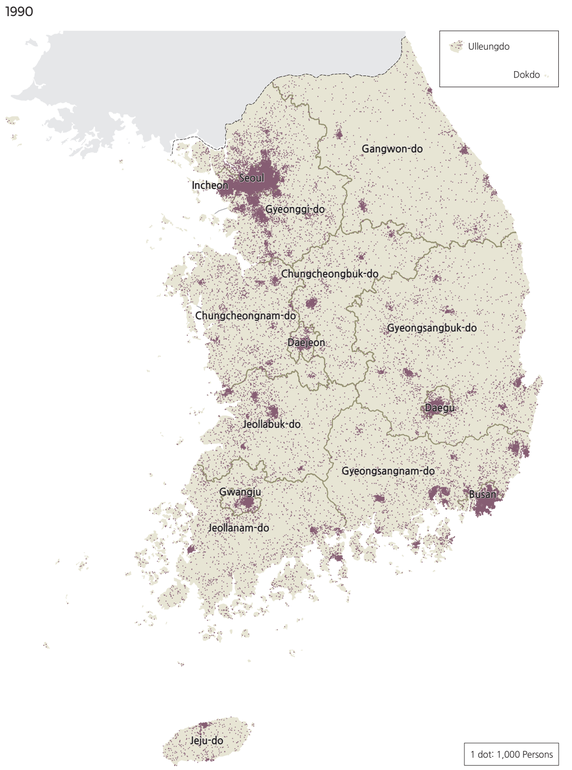
The following maps illustrate population distributions at the national level for every decade since 1980. Each dot represents 1,000 persons at the city, county, and district (si, gun, gu) levels. These maps identify both over-populated and under-populated areas. Population distribution patterns differ over time, and they can be used to identify the growth or decline of a population spatially. Over the past several decades, the population of Korea has migrated to the northwest region of the country, showing the importance of the Seoul Capital Region. Understanding population distribution is of paramount importance since the distribution provides a synopsis of a country's political, economic, social, cultural, and spatial patterns at the national and regional levels.

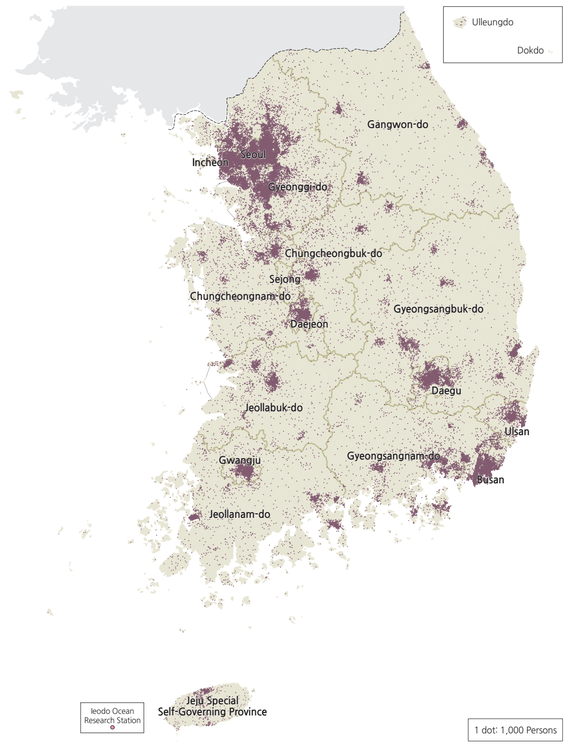
Rural Area

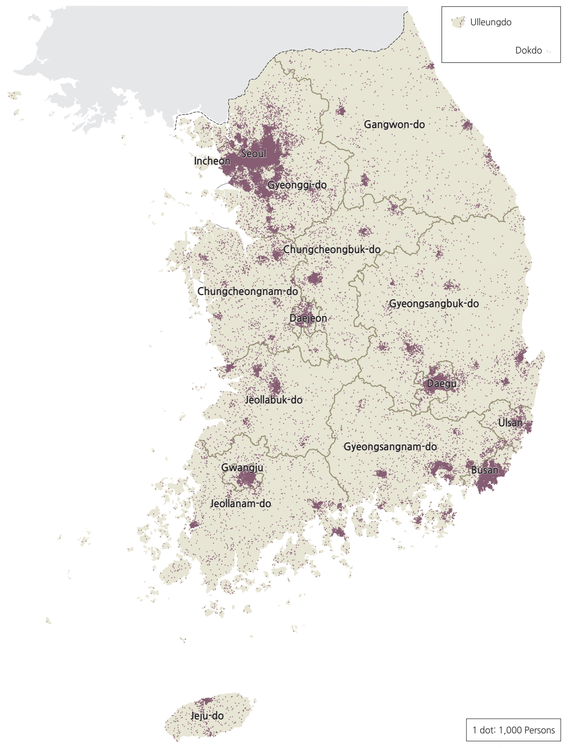
Urban Area

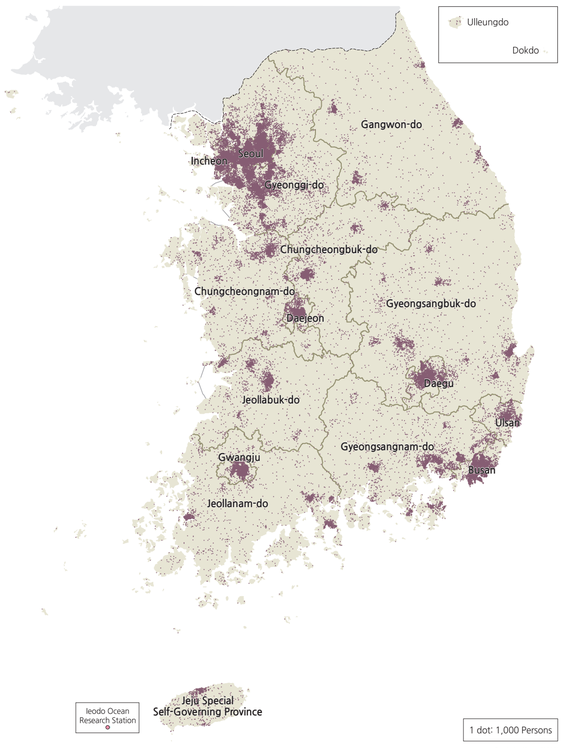
Population Distribution







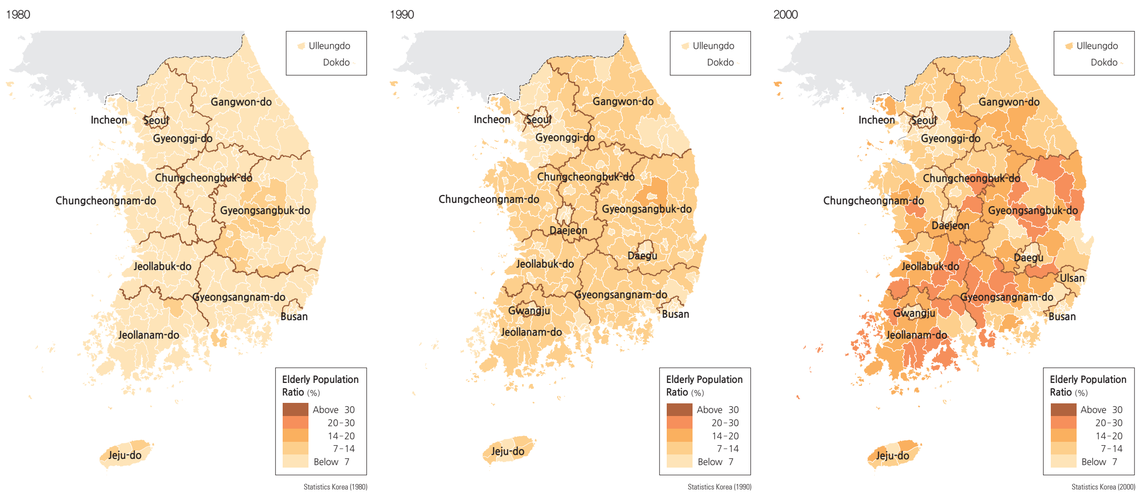




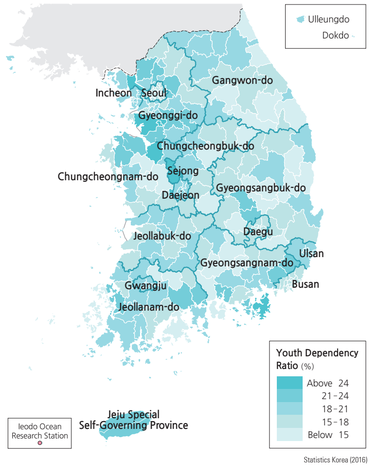
Population Structure: Population Aging and Fertility Decline

An aging population and fertility decline have drastically changed Korea's population structure. In 2000, Korea became an aging society, with over 7% of the population aged 65 years or older. The population is moving towards an aged society at a faster rate than other nations; in 2017, over 14% of the population was aged 65 years or older. Although a more extended life expectancy has affected the population aging, the decline in the birthrate has played a crucial role. Total fertility rate (TFR) is a standard demographic indicator used internationally to estimate the average number of children that a woman would have over her childbearing years, based on current birth trends. In the early 1970s, the TFR was about 4.5 but had declined to below-replacement fertility in the early 1980s. According to OECD standards, the TFR is classified as a "low birth rate" if it is below 2.1 births per woman and "super low birth rate" if falls below 1.3. Both TFR and the number of babies born each year rapidly decreased through the financial crisis in the late 1990s. Korea has become a super low fertility country since 2002 (TFR of less than 1.3) and recorded a TFR of 0.98 in 2018. The demographic changes with the population pyramid start to round out and look similar in shape to a tombstone. The rapidly aging population and associated demographic changes have raised serious issues that might cause enormous social and economic effects.

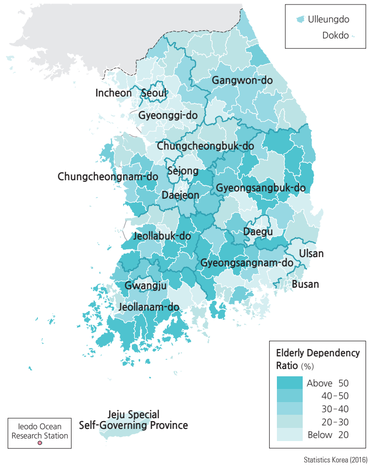
Population Aged 65 Years or Older



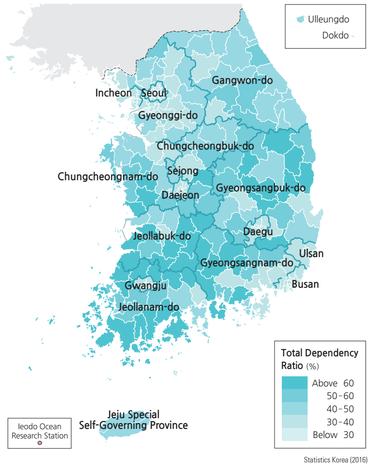
Youth Dependency Ratio



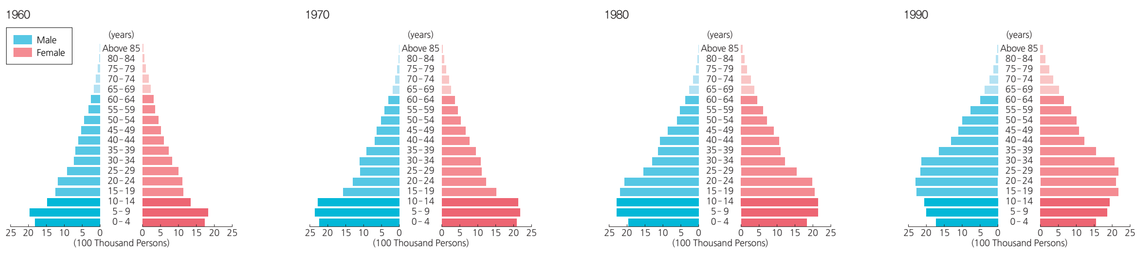
Elderly Dependency Ratio



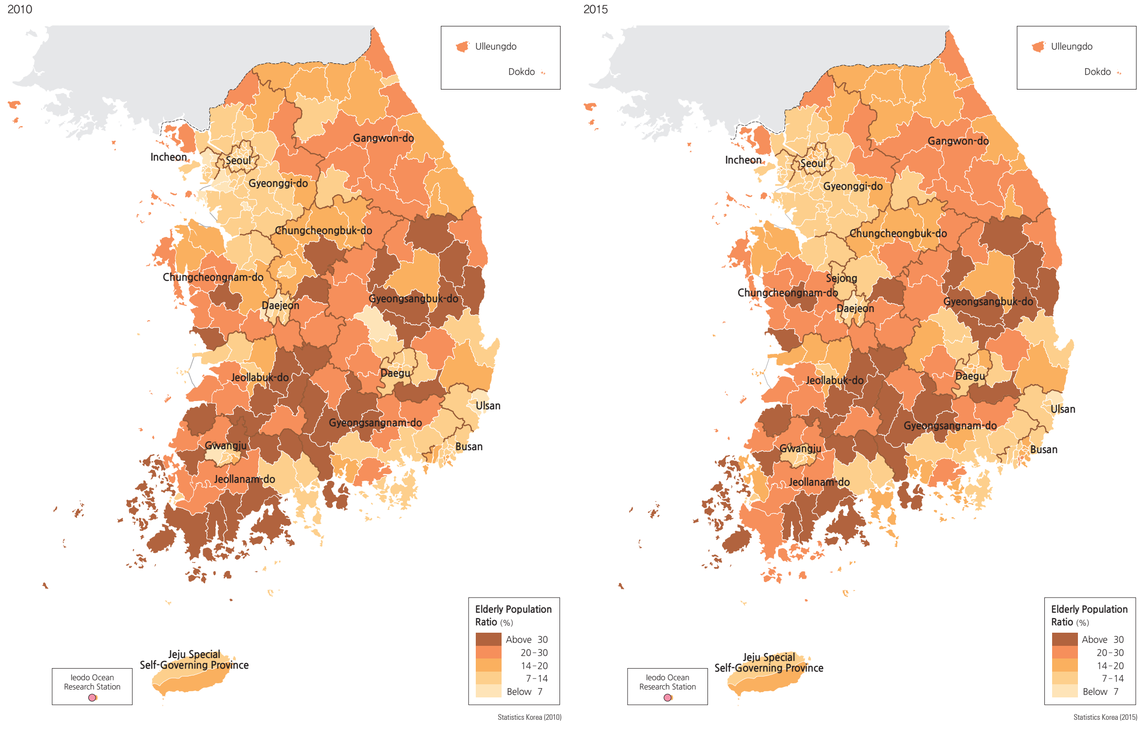
Total Dependency Ratio

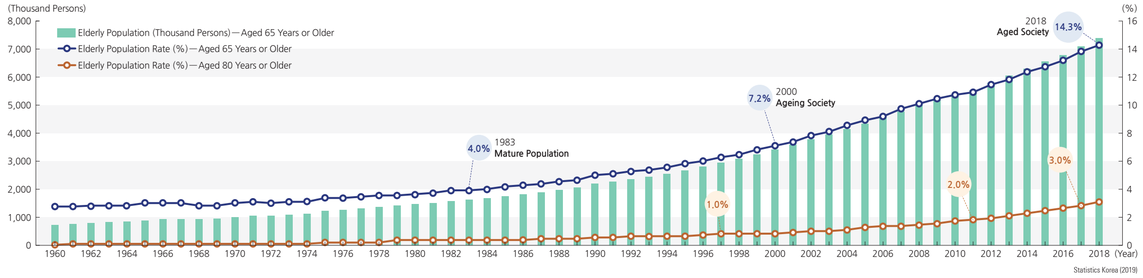


Change in Population Structure

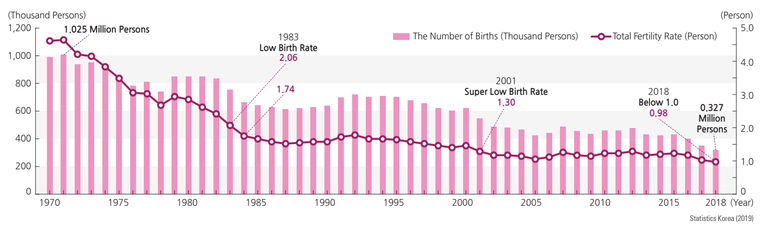


Increase in the Elderly Population Ratio

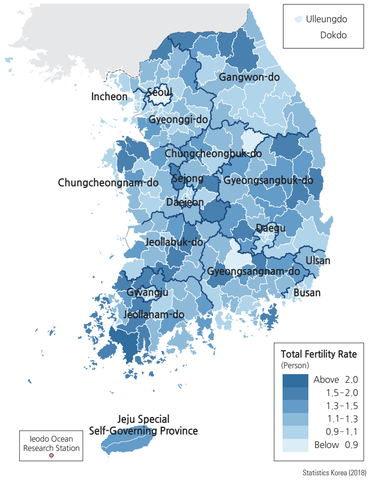


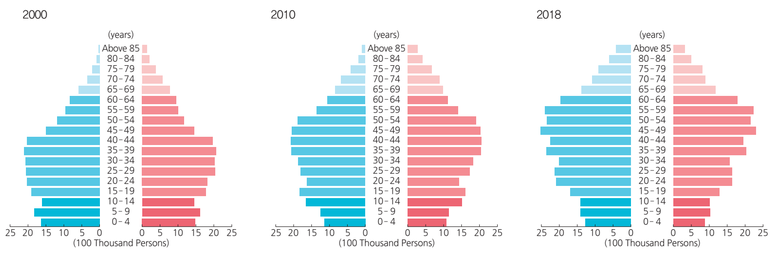


Decrease In Fertility



Total Fertility Rate

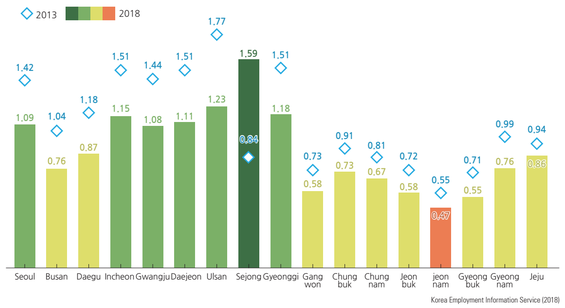




Spatial Unevenness of Aging Population

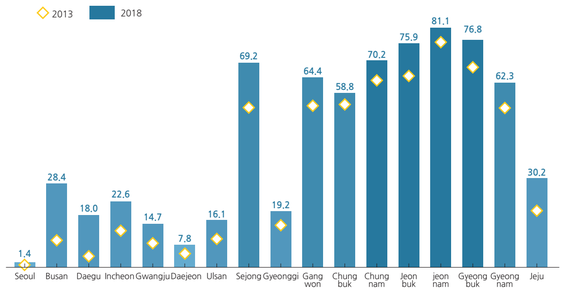
While the Korean population is aging rapidly, the rural population is aging more rapidly than that in urban areas. Population aging issues may have greater impacts on small and medium cities and rural communities already suffering from socio-economic decline. The situation in local communities in the non-Capital areas is more critical than in local communities in the Capital area because of out-migration among youth. The risk index for local extinction is generally defined as the number of women aged 20 to 39 years in a region divided by the number aged 65 or older, with a greater risk of extinction if the index is below 0.5. The maps below shows non-Capital areas experiencing serious population loss and aging due to an outflow of young people and low fertility. The polarization between the Capital and the non-Capital areas has been expanding. If this trend continues, rural communities may be in danger of socially unstable situations and have less access to public services in the near future. Korea's major large cities are also undergoing a demographic change, from the steady expansion they saw between the 1960s and the early 2000s. This net decline in the number of residents may be due to the outflow of people to new residential towns.

Changes in the Risk Index for Local Extinction by Administrative Units



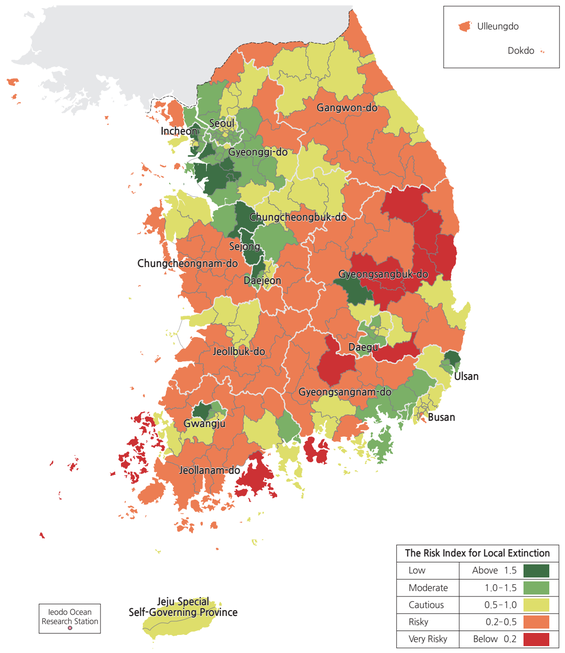
Korea Employment Information Service (2018)

Changes in the Risk Index for Local Extinction by Administrative Units (Eup·Myeon·Dong)



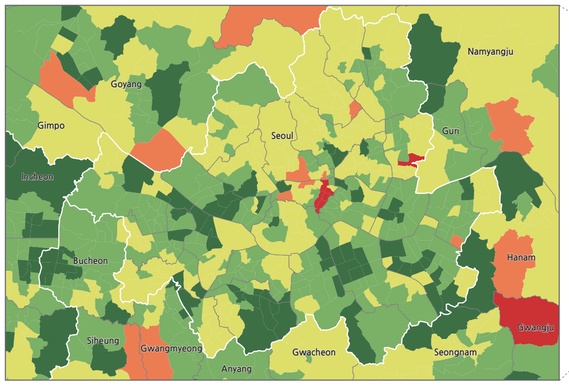
Korea Employment Information Service (2018)

The Risk Index for Local Extinction by Administrative Units (Si·Gun·Gu)

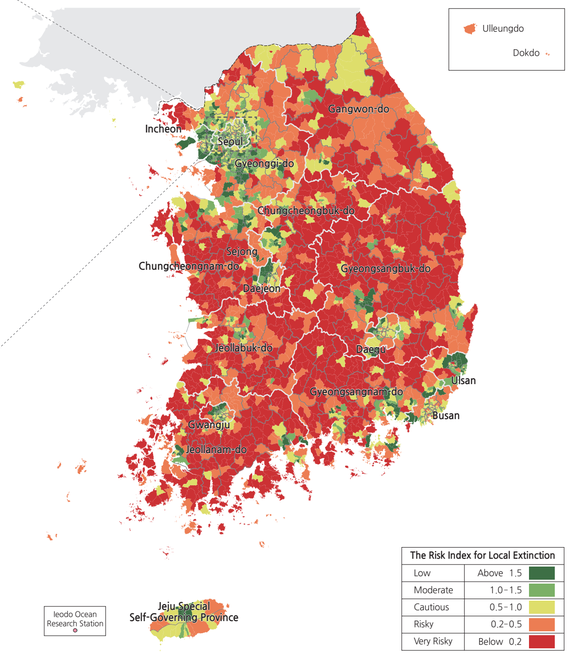


The Risk Index for Local Extinction	
Low	Above 1.5
Moderate	1.0–1.5
Cautious	0.5–1.0
Risky	0.2–0.5
Very Risky	Below 0.2

Korea Employment Information Service (2018)



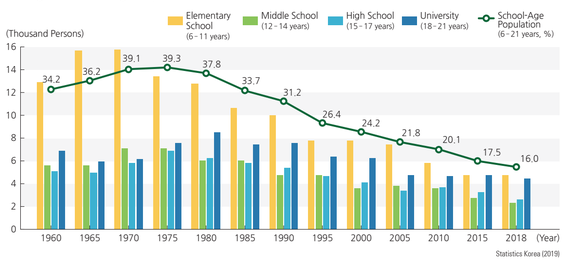
The Risk Index for Local Extinction by Administrative Units (Eup·Myeon·Dong)



The Risk Index for Local Extinction	
Low	Above 1.5
Moderate	1.0–1.5
Cautious	0.5–1.0
Risky	0.2–0.5
Very Risky	Below 0.2

Korea Employment Information Service (2018)

Change in School-Age Population

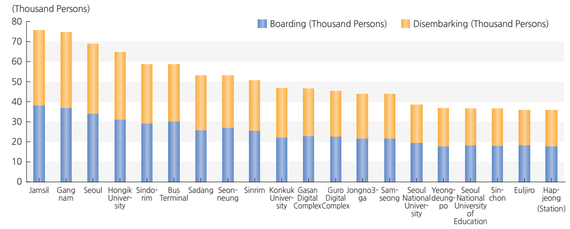


Statistics Korea (2019)

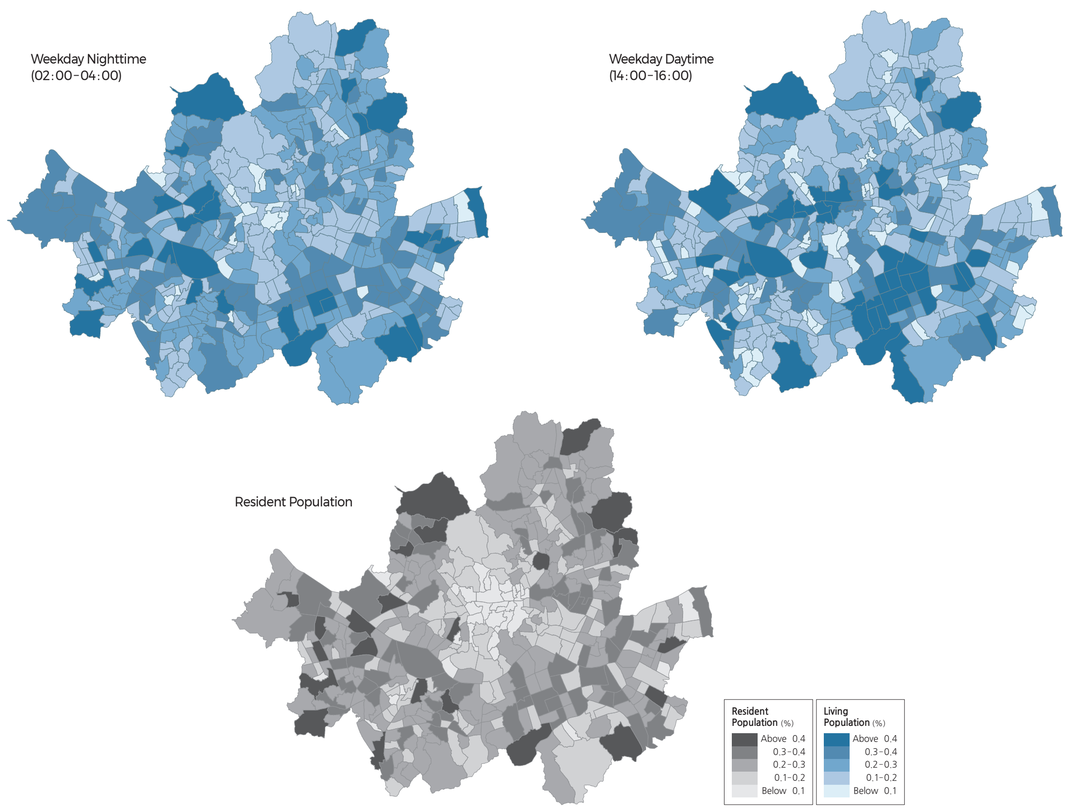
Living Population

Living population (de facto population) in Seoul suggests the estimated population at a specific time and place by combining the public big data from the Seoul metropolitan government and telecommunication data from Korea Telecom. Big data like the public transportation census, population census, economic census, and building database are used to estimate the living population. There is a difference between the real and estimated population at a specific time and place due to people who do not have a cellular phone, and it can be moderated by calibrating the population census. However, living population in Seoul can suggest a difference between the time and place which cannot be detected from the population by census data. The choropleth map below shows the resident population, weekday nighttime, weekday daytime, weekday evening time, and weekend daytime by administrative dong (neighborhood). Distribution of population from census data shows the emptying out of the central business districts in Seoul. However, comparing the distribution of the population along time, residential and business districts can be easily detected. Spatio-temporal population distribution can be captured by visualizing the population in Seoul.

Number of Seoul Metro Users

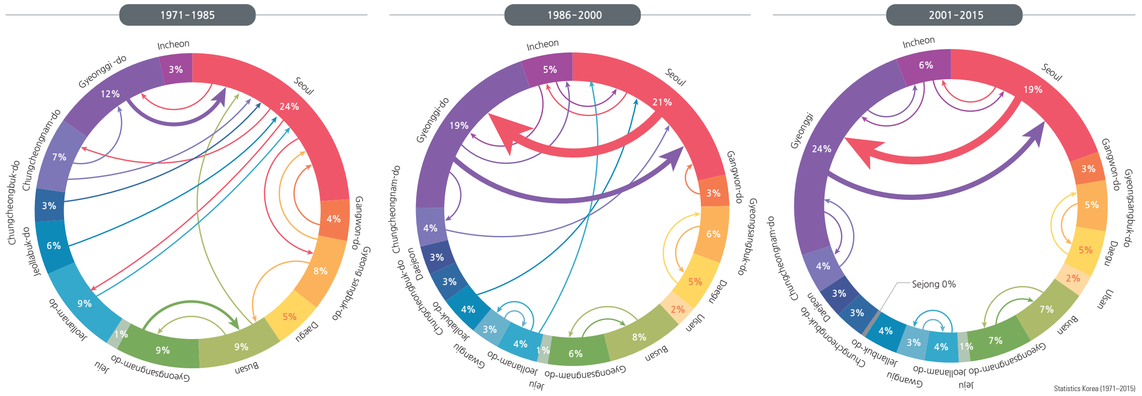


Gyeonggi Transport Operation Service (2018)

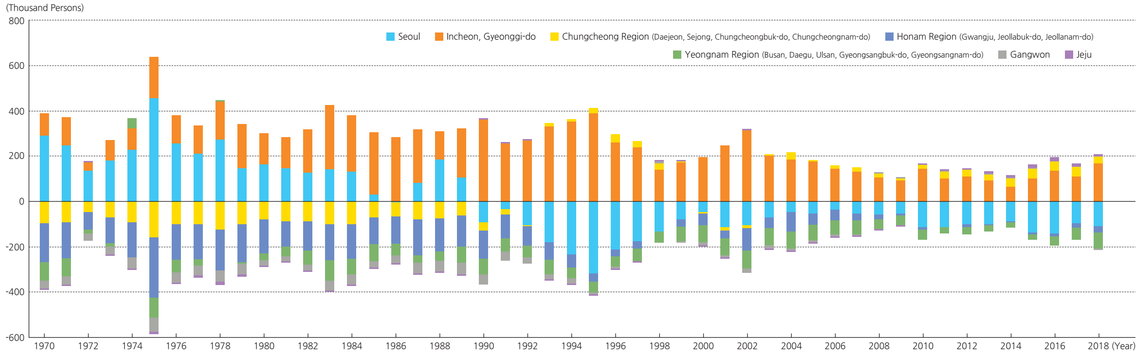


Migration

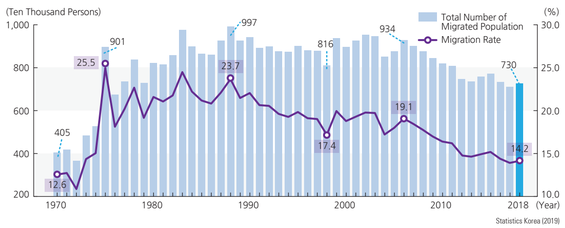
Population Migration By Period



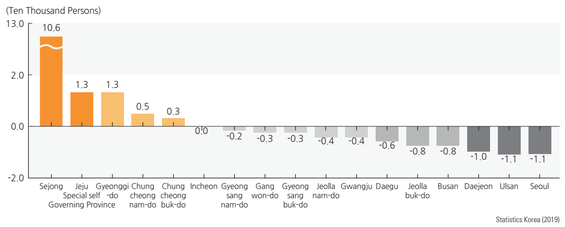
Change of Net Migration by Region



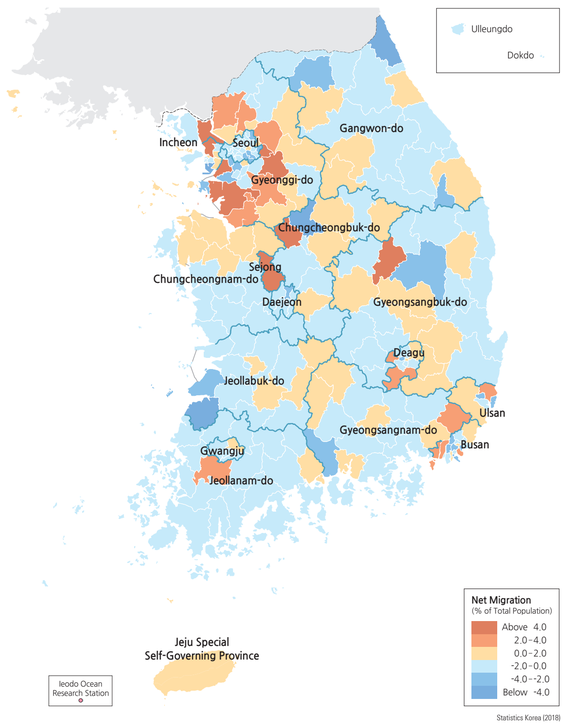
Total Number of Migrated Population and Migration Rate

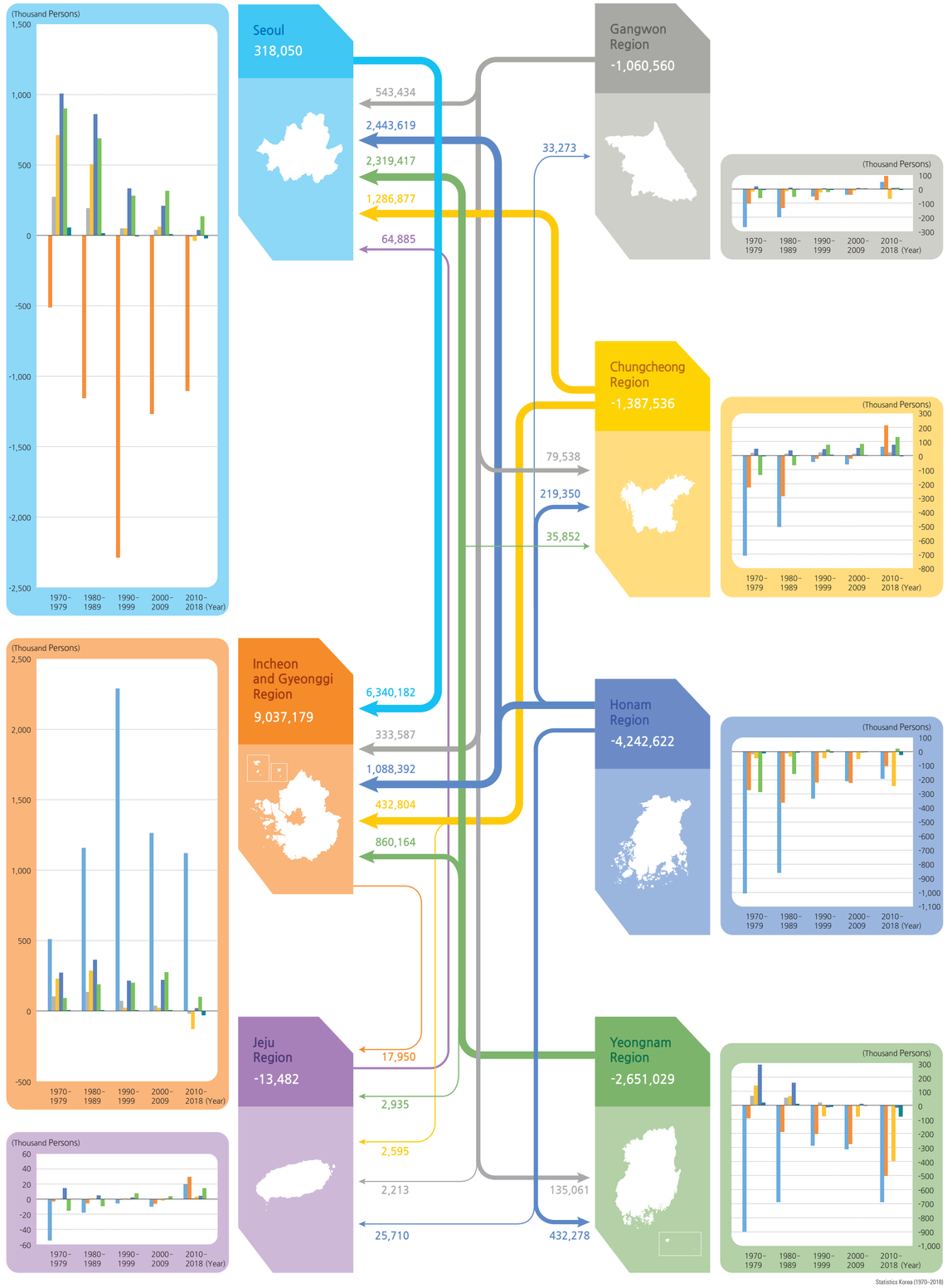


Net Migration Rate (2018)



Net Migration (2018)



Korea's migrational patterns show that the number of migrants increased rapidly from 1970 to 1980; this trend decreased a bit in 1990, and finally, the absolute number of migrants has decreased since 2000. Since 1990, the data indicate that the population has settled down and become stabilized. The direction of migration and origin and destination distributions often reflect distance decay (basically, the closer the destination from the origin, the higher the volume of migration, and vice versa). The population migration patterns observed in Korea over the last half-century reflect the characteristics of urbanization more than distance decay in the 1970s and 1980s. Distance decay characteristics became much more prominent from the 1990s onward. Suburbanization/counter-urbanization has frequently appeared locally since 2000. Additionally, the percentage of the population returning to farming is on the rise due to the baby boomer generation retiring. Many new retirees are now heeding the call of local rural governments who are attempting to attract them to migrate to their territories.

Net Migration