Demographics and Population Projections

The demographic structure is affected by factors such as births and deaths, it reflects the socioeconomic characteristics of a region at a certain point in time. A country’s demographic structure can be viewed from the demographic aspects of gender and age or from the economic aspects of production and consumption. A demographic structure is represented by a population pyramid in which male and female populations are aggregated and classified at one-year intervals. A population pyramid helps better understand the characteristics of population distribution by sex and age.

According to the 2020 population pyramid, the middle-aged (15–49 years old) and the elderly (60 years and older) populations make up about 36 percent of the total population. The median ages of the total population with foreigners and the Korean domestic population are 43.9 and 44.3, respectively, indicating a high level of aging in the country. When the proportion of the population aged 65 or over of a society exceeds 14 percent of its total population, the society is often referred to as an aged society. Korea is already an aged society. Meanwhile, the proportion of infants (0–5 years old) and children (6–12 years old) are lower than the proportions of the elderly by about 4 percent and about 6 percent, respectively. If the current low fertility and high level of marriage keep improving, Korea will enter into a super-aged society having more than 20 percent of the elderly proportion in the total population. Considering sex ratio by age, the male population is more than the female population below 15 years old, but the opposite pattern occurs between aged 60 or over.

In economic terms, a demographic structure can be viewed with dependency ratios, such as total dependency ratio, youth dependency ratio, and old-age dependency ratio, that are calculated by working-age populations (ages 15–64) and other youth populations (ages 0–14) or elderly populations (ages 65 and older). The youth dependency ratio and the old-age dependency ratio refer to the ratios of the youth and elderly populations over the working-age population, respectively, and the total dependency ratio reflects the sum of the youth dependency ratio and the old-age dependency ratio. Due to the aging of the population, the old-age dependency ratio is higher than that of the youth dependency ratio. As of 2020, the total dependency ratio is 38 percent, based on the total population with foreigners, and 40 percent with only domestic Koreans. In addition, the dependency ratio is anticipated to rise due to the decrease of the working-age population and the increase of the elderly population.

The sex ratio, an indicator of the gender structure of the population, is determined by the number of men per 100 women (male population to female population ratio × 100). Based on Korea’s total population with foreigners, the sex ratio has decreased from 110 in 1980 to 105.4 in 2010, showing a generally balanced tendency. In 2020, the sex ratio of the country was 100.6, which means the male population is slightly more than the female population. When examining maps at each 10-year age group, the sex ratio is high in some areas such as southern Gyeongsang-do, northern Changwon-si, and Changjung-un, and Goegu, where industries are well-developed due to industrial complex locations. In addition, a similar tendency in sex ratio can be observed in the border regions of Gangwon-do. On the other hand, there are more women than men in rural areas of the Honam and Yeongnam regions, and the sex ratio is lower in most areas of Seoul. A similar tendency in sex ratio is also found on the map at the level of metropolitan cities and provinces. Seoul, Haman, Yanggu, Chungju, and Jeju-do have more women than men, and Ulsan has the inverse sex ratio. On the other hand, the male population is higher in the other areas. For example, the highest sex ratio occurs in Ulsan (106.8), Changwon-si (105.8), and Changchung-un (104.9). Median age is the age that divides the population into two equal-sized groups. The median age of the total population with foreigners was similar until the mid-1960s (18 years old). Since then, the median age has continued to rise and appears to be about 45 years old in 2020, as the birth rate has decreased. In general, the median age of the female population is higher than that of males, and the gap continues to grow.

In economic terms, a demographic structure can be viewed with the preferences of males at birth, which means the male population/female population x 100). Based on Korea’s total population with foreigners, and 40 percent with only domestic Koreans. In addition, a relatively high median age can be found in Gyeongbuk-do and Jeollabuk-do, and a relatively low median age can be found in the border regions of Gangwon-do. On the other hand, there are more women than men in rural areas of the Honam and Yeongnam regions, and the sex ratio is lower in most areas of Seoul. A similar tendency in sex ratio is also found on the map at the level of metropolitan cities and provinces. Seoul, Haman, Yanggu, Chungju, and Jeju-do have more women than men, and Ulsan has the inverse sex ratio. On the other hand, the male population is higher in the other areas. For example, the highest sex ratio occurs in Ulsan (106.8), Changwon-si (105.8), and Changchung-un (104.9). Median age is the age that divides the population into two equal-sized groups. The median age of the total population with foreigners was similar until the mid-1960s (18 years old). Since then, the median age has continued to rise and appears to be about 45 years old in 2020, as the birth rate has decreased. In general, the median age of the female population is higher than that of males, and the gap continues to grow.
The sex ratio of the domestic population also tends to be declining and is generally lower than that of the total population with foreigners. In 2020, the sex ratio of only Koreans was 99.3, while the sex ratio of the domestic population is slightly more than the total population, while it was 100.6 when including foreigners. On a regional scale, the sex ratio is remarkably different in all regions except Jeju-do, where the opposite trend occurs. In 2020, the lowest ratio was observed in the Seoul Metropolitan Area, and the highest ratio occurred in the Chungcheong region. Like the whole country, the sex ratio of Koreans is lower than that of the total population with foreigners in metropolitan cities, meaning that foreigners are more than females in the nation. The sex ratio of the domestic population in major city areas gradually decreased and reached a balance between males and females from 1970 to 2020. The sex ratios categorized into a 5-year-interval explain the characteristics of each age group. From 1970 to 2020, the female population was more than the male population in the 15 years and older group. However, the opposite appeared in the age groups younger than 50 years. While looking at productive activity, there are more males that females in youth and working-age groups (sex ratio over 100), but two sexes in the elderly group. The median age of the domestic population is also increasing like that of the total population with foreigners. However, the age between males and females is widening. The former tends to be slightly higher than the latter. The aging population can also be observed in the change of median age in metropolitan cities and provinces between 2000 and 2020. Median changes in median age are also found in major city areas. In general, an increase in median age occurs in both the birth rate and death rate of population groups.

As of 2020, a relatively low median age occurs in Jeju and other metropolitan cities except for Busan. The lowest median age appears in Beijing as a result of an influx of young people as many government agencies have recently relocated. The sex ratio of each age group is.

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Based on population activity, the Korean demographic change is characterized by a decrease in the youth population and an increase in the elderly population. The youth population, which exceeded 6.45 million in 1970, plummeted to 2.72 million by 2020 (a 59% decrease compared to 1970). In contrast, the elderly population increased sharply to over 3.5 million in 2020 (a 769% increase compared to 1970).

When comparing the five-year-old population with 1970, a sharp decrease can be observed in the age group under 15 years old. In particular, as of 2020, there was a decrease of over 1 million people in the age group, which can be interpreted as the large impact of the low birth rate. On the other hand, the population aged 15 years and older is increasing. The youth, working-age, and elderly populations are all concentrated in dongs and myeons, which are classified as areas within an urban form for more than 40 years. The composition of each population group is large in the dongs. In particular, more than 90% of the working-age population resides in dongs, mainly in metropolitan areas with strong industrial and economic foundations. All of these population groups were generally evenly distributed in the Seoul Metropolitan Area, the Incheon region, and the Yeongnam region in 1970, but the tendency to concentrate in the Seoul Metropolitan Area is getting stronger. As of 2020, more than 50% of the working-age population resides in the metropolitan area.

As of 2020, the concentration of population in the metropolitan area was also found in the distribution maps of the youth population and the working-age population at the levels of metropolitan cities and provinces as well as urban areas. The age structure population is concentrated in the Seoul Metropolitan Area. Gyeonggi-do has the largest population in each population group. It results from the influx of young people into the province, following the development of new towns. The smallest youth population is found in Jeongseon, Gangwon, and Yeongwol. The largest elderly population is found in Changwon, Gyeongsan, and Ulsan. The proportion of the youth population was higher than the average of the OECD and the world until the mid-1970s. However, as the proportion has declined sharply, it is lower than the average of OECD countries as of 2020. The proportion of the working-age population has been higher than the OECD or global average since the mid-1990s. However, the proportion of the elderly population was lower than the averages of the OECD and the world until the mid-1990s. Since then, it has been higher than the world average and close to the OECD average due to the steep increase in the elderly population.
The total dependency of Korea’s total population with foreigners peaked in 2013 at 19.6% and is gradually decreasing. When considering only Koreans, it decreased to over 35 percent between 1970 (35.2%) and 2020 (14.2%), following the same trend. Such a decrease in the total dependency ratio is occurring in all regions. A very high rate of decrease can be found in the Chungcheong region and the youth dependency ratio results from a decrease in the youth population. The old-age dependency ratio in the -si/-gun/-gu areas. The decrease in the working-age population and the increase in the elderly population result from the increase of the total dependency ratio in -myeon areas while it has decreased in -dong/-eup areas. The decrease in the youth dependency ratio is occurring in all regions. A very high rate of decrease can be found in the Chungcheong region and the youth dependency ratio results from a decrease in the youth population. The old-age dependency ratio in the -si/-gun/-gu areas.

Statistics Korea (2020)

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Statistics Korea (2020)
Vital statistics refer to data on changes in a population, e.g., births, deaths, marriages, and divorces, that occurred in a region during one year. In particular, birth and death rates determine the changes in the natural population size and the demographically structure of a specific region. The level of fertility and mortality in a population group can generally be measured by crude birth rate and crude death rate, respectively.

The fertility rate has declined sharply, and the crude birth rate in 2020 is 5.3, which is lower than the OECD average. The birth rate in metropolitan cities and provinces has also been declining over the past 30 years, and the crude birth rate in 2020, compared to 1990, has decreased by more than 94 percent in all cities and provinces except Ulsan and Jeongseon. The decline in fertility results from the decrease in the number of births by more than 58 percent between 1990 and 2020. The rate of decrease in the number of births higher than the national average was found in the Yeongnam region (69.3%) and Gangwon-do (58.7%). At a provincial level, Busan (73.1%), Seoul (71.9%), Gyeongsangnam-do (70.6%), Daegu region (65.8%), and Gangwon-do (58.8%) witnessed the largest declines in the number of births. Despite the low fertility rate in the Honam region, Yeonggwang-gun, Gwangyang, and Yeosu had the highest crude birth rates in the country, along with their city counterparts, Jeonju-gun, Changwonnam-do, and Busan-gu. Changwonnam-do has very low fertility rates of 2.0 and 2.5, respectively. If the trend of declining fertility continues, these areas are expected to be classified as high-risk areas for population extinction in the future.

As for the crude death rate in the Honam region, Yeonggwang-gun (10.9%), Jeonju-gun, and the highest crude birth rate in the year are due to the implementation of active fertility policies. The gye-areas of metropolitan cities have a higher crude birth rate. However, Jeonju, Ulsan, and Jeongseon, despite having a similar fertility rate to the high-risk areas of population extinction, the geographic distribution of the total fertility rate, another indicator of fertility, appears similar to the crude birth rate. Among the provinces, the average age of mothers is also increasing. The average birth year for age of mothers, which was 20 years old in the early 1950s, increased to 35 years in 2015, which can be seen in the rate of the number of births to mothers. In 1990, the number of births to mothers under the age of 29 was more than 50 percent of the total births. However, in 2020, it fell to a quarter of the total births. On the other hand, the number of births to mothers aged 30 to 35 is gradually increasing. In particular, the number of births to mothers aged 30 to 35 is increasing rapidly. In 2020, the proportion of first children was the highest at 57 percent, and the proportion of third children or more accounted for only 7 percent of all births.

Until the late 1980s, the crude death rate was higher than the OECD average and lower than the world average, but it gradually decreased with the development of medical technology and improved medical welfare. In 2015, the rate was lower than both OECD and global averages. As of 2020, Sejong (4.5), Ulsan (4.7), Gyeongsang-do (6.7), Seongnam (5.2), Incheon (5.6), and Gwangju (5.4) are provinces whose crude death rate is lower than the national average (5.4). On the other hand, the rates of Gyeongsangbuk-do (6.8), Gyeongsangnam-do (6.6), Jeollabuk-do (6.2), Gangwon-do (6.0), and Gyeongsangnam-do (6.3) are higher than the national average (5.4). Due to regional differences, urban and rural areas are also higher in the death rate than the national level, and higher in the death rate than the national level is due to the implementation of active fertility policies. The number of births among the elderly may become another social problem. The national increase in population size is due to the implementation of active fertility policies. The number of births among the elderly may become another social problem. As a result, the number of deaths among the elderly may increase as a social problem. Therefore, the increase in the number of deaths after divorce among the elderly may become another social problem.

A national change in population size for a certain area is determined by crude birth rates and crude death rates. When the former is higher than the latter, the population of the area naturally increases, and vice versa, it naturally decreases. As of 2020, the national average rate of Korea is negative 0.6, which means the population of the country is in a state of natural decline. Metropolitan cities and provinces, except Seoul, Incheon, Ulsan, Jeongseon, and Gangneung, are now at a stage of a natural decrease in population size. The number of births is higher than the number of deaths in 72 percent of OECD-level areas. The age-pattern in the severe decrease in population size generally coincides with high-risk areas for population extinction. If there is no influx of people from other regions, the population of these regions will continue to decline.
The number of marriages has been declining since the peak of about 455,000 in 1989. The crude marriage rate, which refers to the number of marriages per 1,000 people, maintained a similar level from the 1990s to the mid-1990s but declined sharply after that. Between 1990 and 2020, the number of marriages has fallen (about 800,000 in 1990, about 318,000 in 2020), and the crude marriage rate also decreased steadily (6.6 in 1990, 4.2 in 2020).

As of 2020, the number of marriages in the entire nation decreased by 36 percent compared to 2000, and it declined more than 50 percent in all metropolitan cities and provinces, except for Sejong, which was launched in early 2010. In 2000 and 2020, the number of marriage was higher in the Seoul Metropolitan area, where the nation’s population was concentrated. The decrease rate of marriage in this region (37%) was lower than those of the Hanam region (60%), Yeongju region (65%), and Gangneung area (45%). The decrease in marriages can also be found in the map of the distribution of the crude marriage rates in 2000 and 2020 at the $\text{province level from the 1980s to the mid-1990s but declined sharply after that.}$

Meanwhile, the average age of the first marriage for men and women has been increased. Compared to 1990, the average age of first marriage for men and women in 2020 was 5.4 years and 6 years older, respectively. The trend of late marriage also appears in a recent survey conducted in 2018 by the Korea Institute for Health and Social Affairs. According to this, the proportion of men and women who do not intend to marry is high, and the proportion of men and women who answered that 30 or older is the ideal marriage age, exceeds 80 percent of both men and women. More than 40 percent of both men and women answered that the low fertility phenomenon has no effect on themselves, which could be interpreted as deepening the low fertility phenomenon in the future.

From 1990 to 2020, the number of divorces and the crude divorce rate have been on a downward trend since they peaked in the early 2000s. However, during the same period, the average divorce age for men and women rose from the 30s to 40s. In 2020, the men’s average divorce age (46.5 years) was about 3.4 years older than the women’s average divorce age (43.1 years). This increase in the average divorce age can also be seen in the number of divorces for both men and women by life cycle. Recently, the number of divorces under 49 years old has decreased, but the number of divorces 50 years old and over has increased. Compared with 1990, divorces for men and women between 50 to 65 years old in 2020 (increased by about 3,300 percent and 2,869 percent, respectively), and divorces for men and women over 65 years old increased by about 2,698 percent and 3,489 percent, respectively. The phenomenon of late-life divorce is getting worse in Korean society. The main cause of divorce between 2006 and 2015 was personality differences, and the number of divorces due to family discord has been gradually decreasing.
A projected population refers to estimates of the structure and size of the future population by assuming future patterns of births, deaths, and international migration. The base population estimates are projections made by applying the population balance equation, which adds births and net international migration to the base population of July 1, 2017, and subtracts deaths.

According to the 2017 Population Projection, the total population of the country with foreigners continued to decrease, while the elderly population will increase sharply. Compared to 2020, the youth population and the working-age population of 2030 are expected to decrease by 2.3 percentage points and 13.6 percentage points, respectively, and the elderly population is anticipated to increase by 57.9 percentage points. According to this trend, the youth dependency ratio will gradually decline. However, the old-age dependency ratio will rise sharply, and the total dependency ratio is expected to increase. As the nation’s population grows older, the aging index, which is the ratio of the youth population to the elderly population, is also expected to increase significantly.

According to the 2018 census population, the crude birth rates of several metropolitan cities and provinces, such as Gangneung, Daegu, Goyang, Goyang-daegu, Seoul, Daejeon, Busan, and Beun, are lower than the national average of 1.3, and Busan has the lowest rate in the nation. Conversely, Seoul has the highest birth rate. Most metropolitan cities and Goyang-daegu have higher crude death rates than the national average, and the rates of birth and death are also higher than the national level. According to the natural increase rate in population based on the crude birth rate and the crude death rate, the population of all the metropolitan cities and provinces, except Jeju, Seoul, Daejeon, Goyang-daegu, and Seoul has increased.

Considering the population estimates projected by the median level of the demographic factors, the population will increase significantly only in Jeju-do, Daejeon, Seoul, Goyang-daegu, and Seoul to 2030, but a natural decrease in the population is expected in all regions except Jeju-do by 2040. When looking at the natural increase according to births and deaths by region, as of 2020, natural increase was negative in all regions except the Seoul Metropolitan Area, and natural population decrease was the largest in the Yeongnam region. The natural population increase of 2020 is expected to have a similar pattern to that of 2020. However, in 2040, the natural population increase will turn negative in all regions. In particular, the populations of the metropolitan region (approximately 35.0 million) and Yeongnam region (approximately 30.0 million) are expected to decrease significantly.
The dependency ratio is also expected to change due to demographic changes. Compared with 2020, the national average old-age dependency ratio is anticipated to increase by more than 170 percent in 2040, and the dependency ratio in the Seoul Metropolitan Area is expected to be at 152 percent, higher than the national average. This rapid increase in the dependency ratio is due to the rapid increase in the elderly population. The large increase in the aging index surpasses the. On the other hand, the youth dependency ratio is expected to increase slightly in all regions. Therefore, the total dependency ratio is also expected to increase significantly in the old-age dependency ratio increases.

The maps of dependency ratio and aging index by metropopulation cities and provinces show a large increase in the old-age dependency ratio and a small increase in the youth dependency ratio. These changes in the dependency ratio would result in a higher total dependency ratio. During the period of 2020-2040, the aging index is expected to be the lowest in Jeju and the highest in Jeolla-nam-do.

Across the nation, the proportions of the youth and working-age populations will decrease. In contrast, the proportion of the elderly population will increase. Between 2020 and 2040, the working-age population will be decreased by 15.5 percent. While the elderly population will be decreased by 2.7 percent. The sharp decline in the working-age population may lead to a contraction of the economic activity of the nation. The proportion of the elderly population in Seoul and Jeju will be lower than the national average (18.5%) while the proportions of the elderly population in the North and Gyeongsang regions will be higher than the national average.