

## Dip in population density, but not in crowded feeling

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As Singapore's population growth slowed and the island increased in physical size, population density stagnated last year for the first time in more than a decade.

But though the objective measure says one thing, observers said the figures may not translate into people feeling spaces are less crowded - at least not immediately.

Population density rose between 1 per cent and 4.5 per cent annually from 2007 to 2016. But it fell slightly last year, official data shows. The average number of people per square kilometre dipped from 7,797 in 2016 to 7,796 last year.

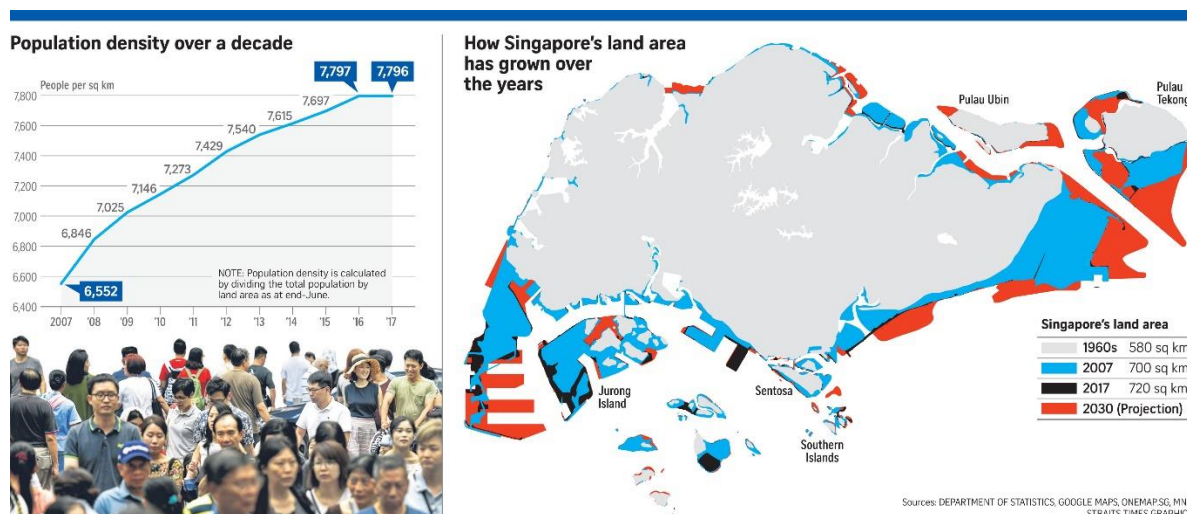
As density is total population divided by land area, experts pointed to the recent slowdown in population growth as the main reason for the change.

"This is the result of a conscious decision by the Government to limit the number of new immigrants," said population expert and National University of Singapore (NUS) sociologist Jean Yeung.

Last year saw the first drop since 2003 in the number of foreigners living here. The non-resident population fell to 1.65 million, from 1.67 million in 2016. Residents - comprising Singaporeans and permanent residents - still grew, so all in all, total population increased by 0.1 per cent over the previous year.

Meanwhile, reclamation has boosted the island's size over the years. Singapore's land area grew to 719.9 sq km last year, up from 719.2 sq km the year before. A decade ago, the island's size was 700 sq km.

The stagnation in population density is likely to be a short-term phenomenon, said Institute of Policy Studies senior research fellow Leong Chan-Hoong. He noted that it may rise again after a few years as foreign manpower will likely be needed to supplement workers in critical service industries like healthcare as the population ages.



Among economies and countries, Singapore ranks third in density, according to the World Bank - behind Macau (20,204 people per sq km) and Monaco (19,250).

Among cities studied in a report by the Singapore think-tank Centre for Liveable Cities, Singapore ranks second, after Dhaka (13,547). Hong Kong (6,553) and London (5,210) are other dense cities in that report, while Berlin (192) and Nairobi (208) occupy the other end of the spectrum.

But experts pointed out that the population density measure does not fully capture the lived experience of crowdedness in a city.

Total land area may include uninhabitable areas such as hills. Also, people's experience depends on how infrastructure and other resources are managed.

"People may still feel it is equally dense or more dense because they may be spending a big part of their time in their workplace in the central business district (CBD) or industrial areas, which feel crowded," said Dr Leong, noting how density may feel different depending on which area one is in - at home, at work or in other parts of the city.

Associate Professor Pow Choon-Piew of the NUS geography department noted that many other cities with high population density - some higher than Singapore - are located within a larger country. This means people choose to live in those cities despite the density, for the sake of other benefits.

In Singapore, however, residents cannot move out of the city if they want to get away from the crowd, he said, adding: "While the statistics may show stagnation or marginal drop, people don't feel it on the ground, especially during peak hours, when crowds congregate in train stations or on the streets."

Other indicators like green space per capita or living space per household could better reflect the sensation of crowdedness, he said.

Over the years, the Government has made moves to ease the condition. Prof Pow said this includes building parks and sky gardens in neighbourhoods and reducing golf courses to free up space. Dr Leong said that moving work hubs further out of the CBD and increasing access to MRT stations are steps in the right direction.

Another suggestion made by veteran architect Tay Kheng Soon, an adjunct professor at NUS, is to redesign the country into many "modular cities".

The idea is to build cities of 1 sq km to house 100,000 people each, with 70 such units lining the island's circumference and the centre reserved for a forested catchment area. This ensures most of the island will be green space.

Buildings would see various functions stacked atop each other, with traffic flowing underground. Within each module, Mr Tay envisions schools, entertainment, businesses and community areas all connected along a central pathway so that more people can interact daily.

"The urban areas are surrounded by a ring of farms where people can go out to take a break, and the vibrancy of each module compensates for the density," he said.