

Accessibility of Hong Kong’s Public Housing to Health Facilities

Introduction

Access to health facilities is critical for all individuals, including low income individuals. 45% of Hong Kong’s population live in public housing (Vetter, 2019). Residents of public housing tend to earn lower incomes, have less job flexibility, and have higher health needs. For this reason, health clinics must be accessible from public housing buildings.

Mansour’s 2016 study considered accessibility to health facilities in Saudi Arabia using near analysis. Our analysis similarly identifies how accessible health facilities are for residents of public housing in Hong Kong. We particularly focus on the elderly, pregnant women, and individuals struggling with addiction living in public housing.

Methods

We classify accessibility based on an aerial distance in kilometers from public housing units to clinics. Depending on the anticipated users of each type of clinic, accessibility is considered within 1 or 2 kilometers.

Using ArcMap 10.7.1, we created a binary accessibility index for each public housing unit using the Select by Location spatial query tool to determine if each type of clinic is within the designated distance of the unit, and created five maps illustrating the index for each clinic type. We summed these indices with the Field Calculator to determine how many of the five types of clinics each public housing is accessible to, and then averaged the total accessibility for all public housing units in each district by using the Statistics menu and Field Calculator.

Additionally, we created the same type of index identifying public housing units that are accessible to three key clinics: elderly health centers, maternal health centers, and methadone clinics.

References

Mansour, S. (2016). Spatial analysis of public health facilities in Riyadh Governorate, Saudi Arabia: a GIS-based study to assess geographic variations of service provision and accessibility. *Geo-Spatial Information Science*, 19(1), 26–38. doi: 10.1080/10095020.2016.1151205

Vetter, D. (2019, January 19). How Hong Kong’s public housing system works: costs, waiting times and sales. Retrieved April 1, 2020, from <https://www.scmp.com/news/hong-kong/society/article/2182106/why-public-housing-shortfall-will-remain-thorn-hong-kongs>

Wong, Yeung (2019). *Population ageing trend of Hong Kong*. Office of the Government Economist The Government of the Hong Kong Special Administrative Region. Retrieved 23 April 2020, from <https://www.hkeconomy.gov.hk/en/pdf/el/el-2019-02.pdf>

Findings

Our analysis shows a wide variety of accessibility between public housing buildings in Hong Kong. 94% of buildings have access to at least one type of clinic, and in more densely populated regions, 50% of public housing have access to 4+ types of clinics (*Figure 1*). The average public housing building is accessible to 3+ clinics in one third of the districts (*Figure 2*). The rural district of Tai Po has the highest average total accessibility and Wan Chai and Yau Tsim Mong, two urban districts, have the lowest average total accessibility (*Figure 2*).

Dental and orthodontic clinics are the most common and accessible clinics (*Figure 3*). Nearly 70% of public housing units are accessible to methadone clinics, 64% are accessible to chest and x-ray clinics, 45% are accessible to maternal health centers, and only 24% are accessible to elderly health clinics (*Figures 4, 5, 6, and 7*).

Considering only the three key clinic types, 20% of public housing do not have access to any clinics and only 17% have access to all three (*Figure 8*). Further, the average public housing unit is accessible to 2+ clinics in only two districts (*Figure 9*).

One unanticipated finding is that public housing units in Hong Kong district are located on either the east or the west side, and not throughout (*Figure 10*). This suggests that Hong Kong island may be very expensive, may be more of a business hub, and people may not want to see culturally stigmatized public housing units as frequently.

Discussion

Health clinics are too often inaccessible to public housing buildings. All people should have access to clinics, and since public housing residents often have less time and fewer resources, this accessibility is more critical. It is crucial for decision makers to know how accessible particular critical clinics are to low-income citizens. Offering public housing units in accessible areas and incentivizing clinics to open near public housing buildings will increase health and lower costs for taxpayers.

A limitation of our analysis is that we only consider accessibility in terms of aerial distance because we do not have data on journey times. Since public transportation in Hong Kong is well developed, future analyses should use public transportation travel data to determine accessibility for public housing residents based on total travel times.

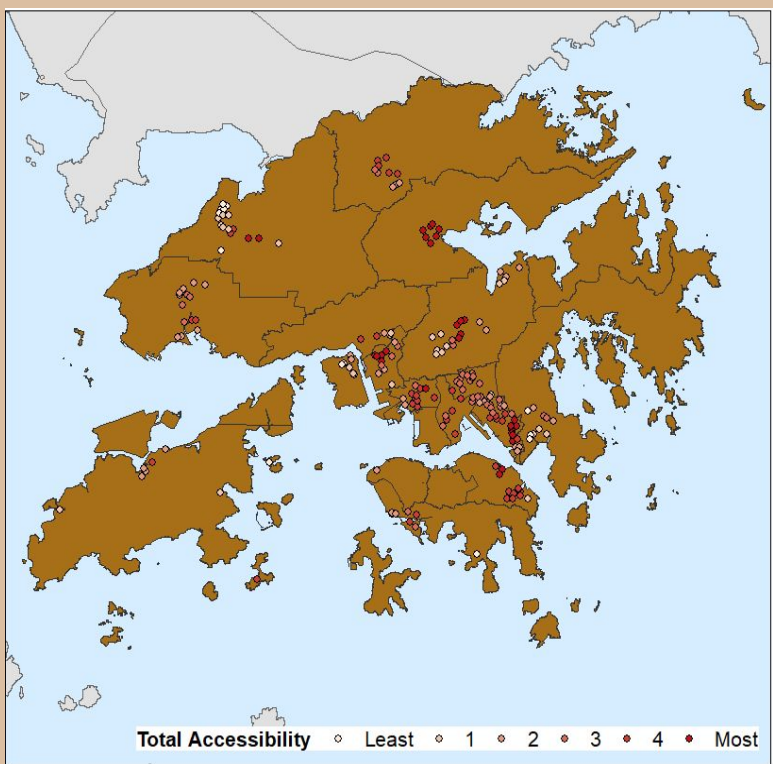


Figure 1. Total Accessibility of Public Housing to All Types of Health Facilities.

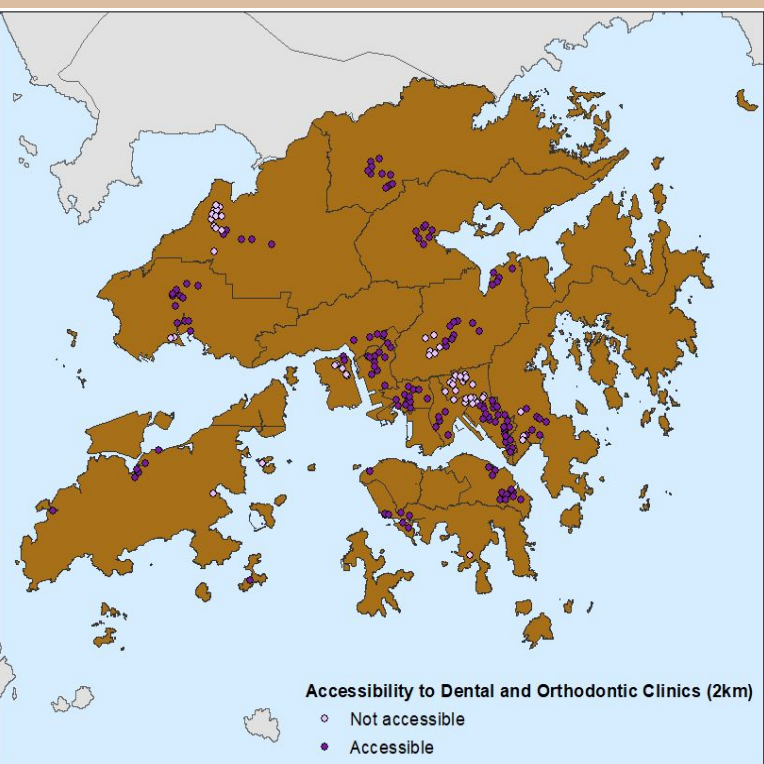


Figure 3. Accessibility of Public Housing to Dental and Orthodontic Clinics within 2km.

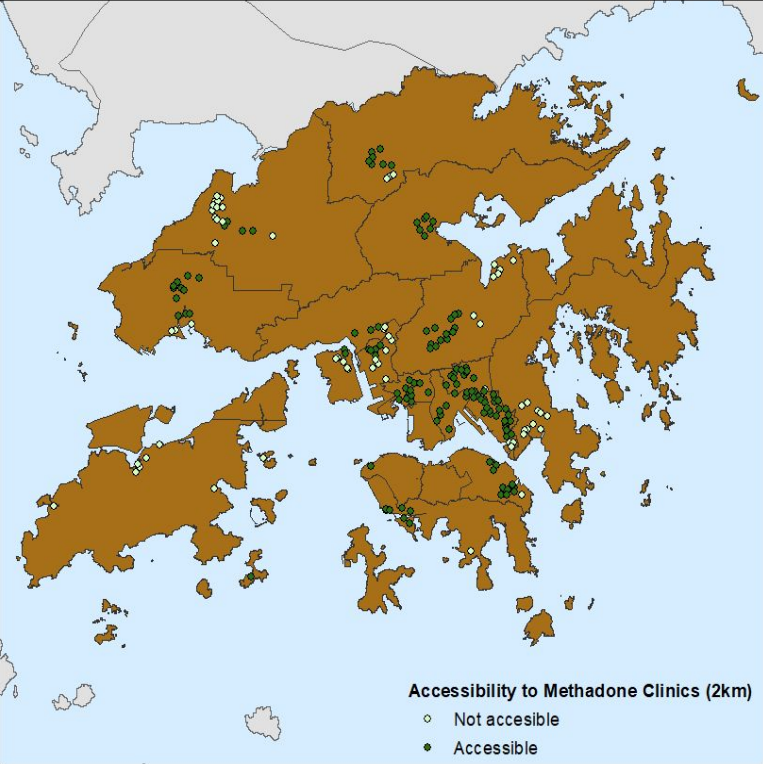


Figure 4. Accessibility of Public Housing to Methadone Clinics within 2km.

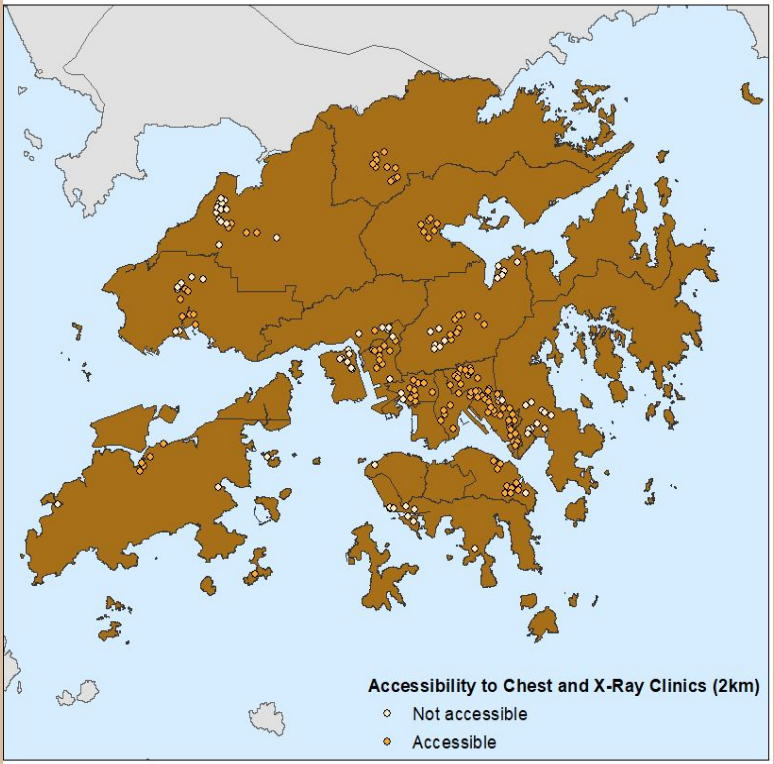


Figure 5. Accessibility of Public Housing to Chest and X-Ray Clinics within 2km.

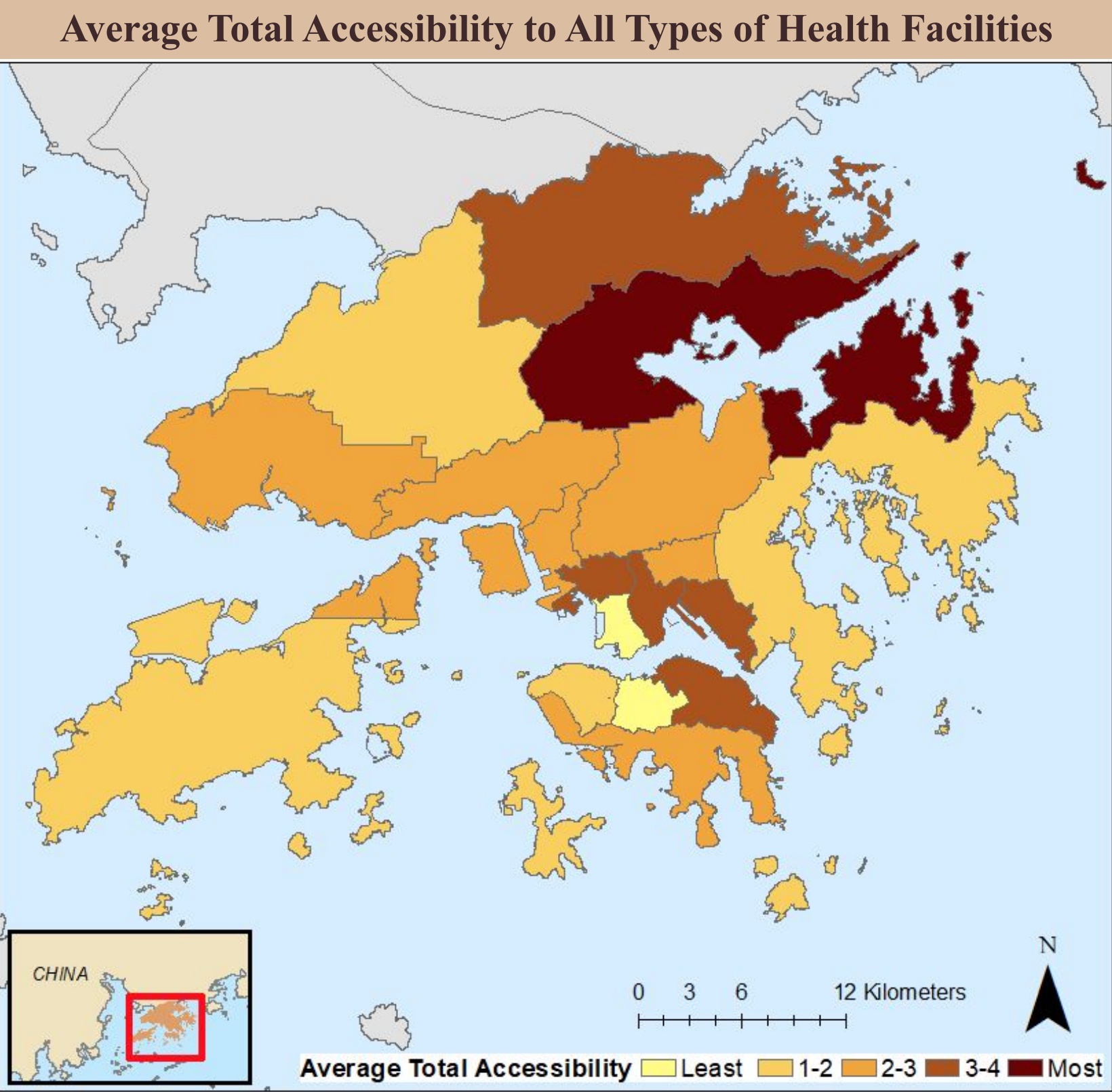


Figure 2. Average Total Accessibility of Public Housing to All Types of Health Facilities by District.

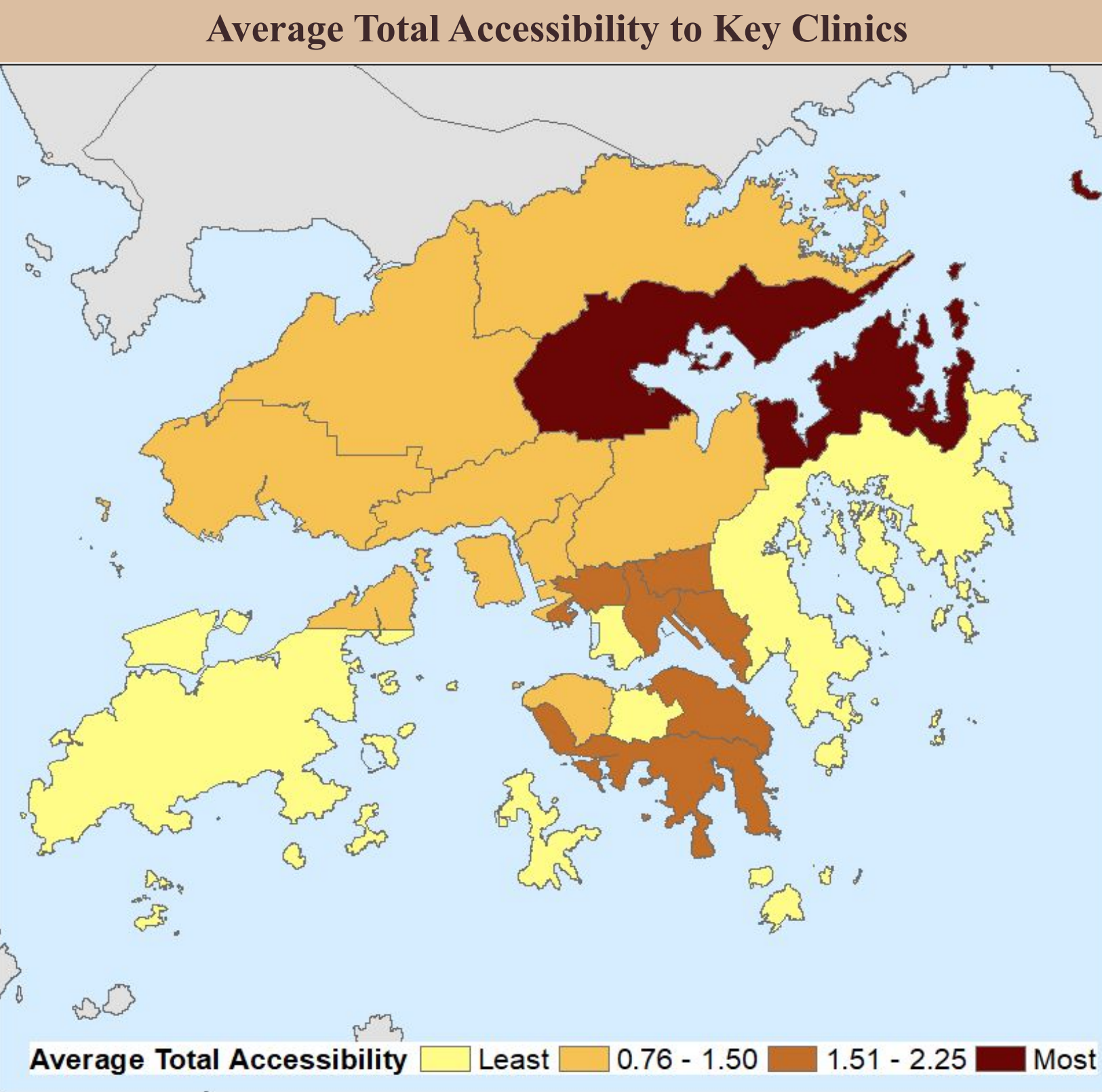


Figure 9. Average Total Accessibility of Public Housing to Key Clinics by District.

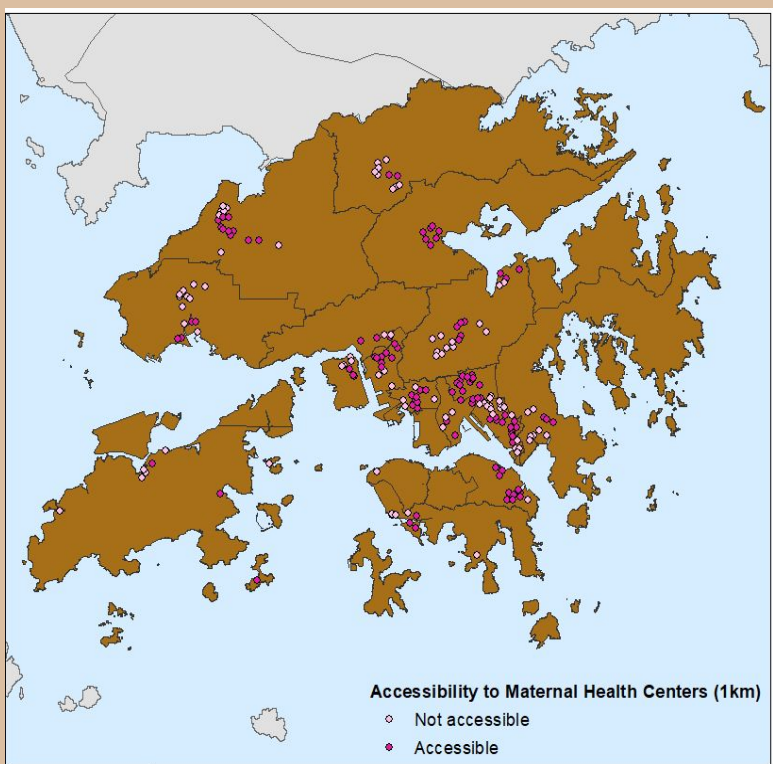


Figure 6. Accessibility of Public Housing to Maternal Health Centers within 1km.

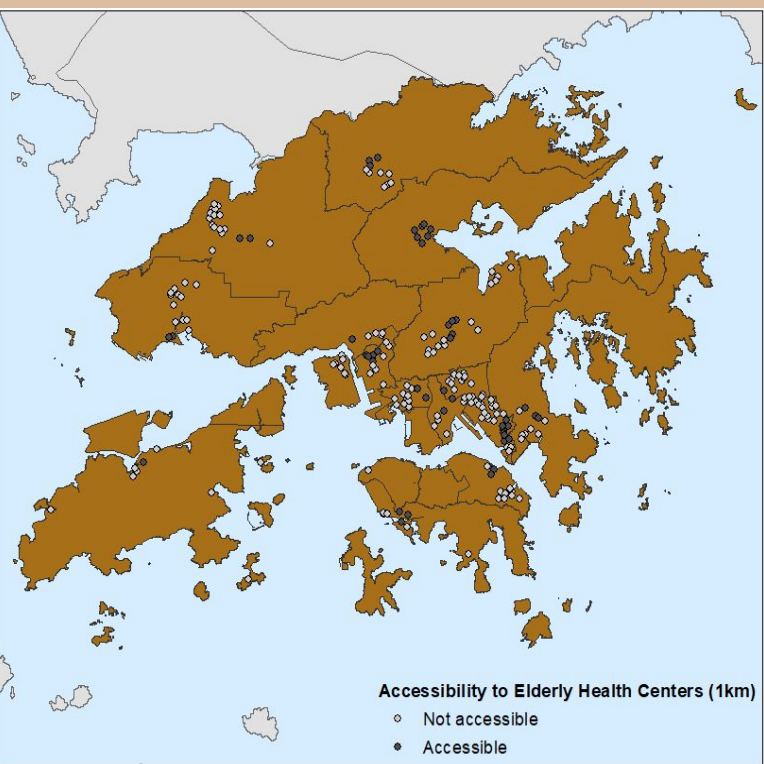


Figure 7. Accessibility of Public Housing to Elderly Health Centers within 1km.

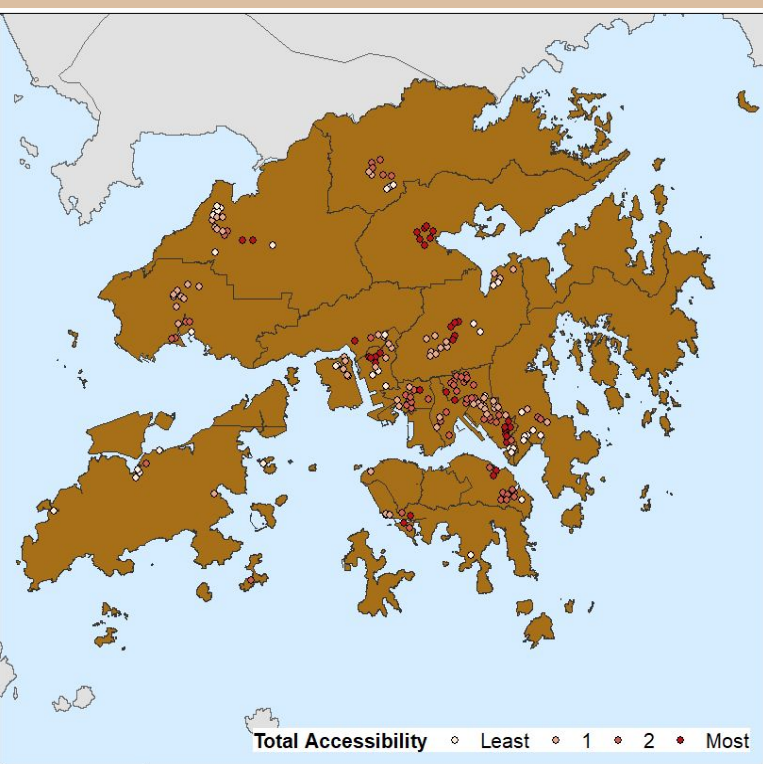


Figure 8. Total Accessibility of Public Housing to Key Clinics.

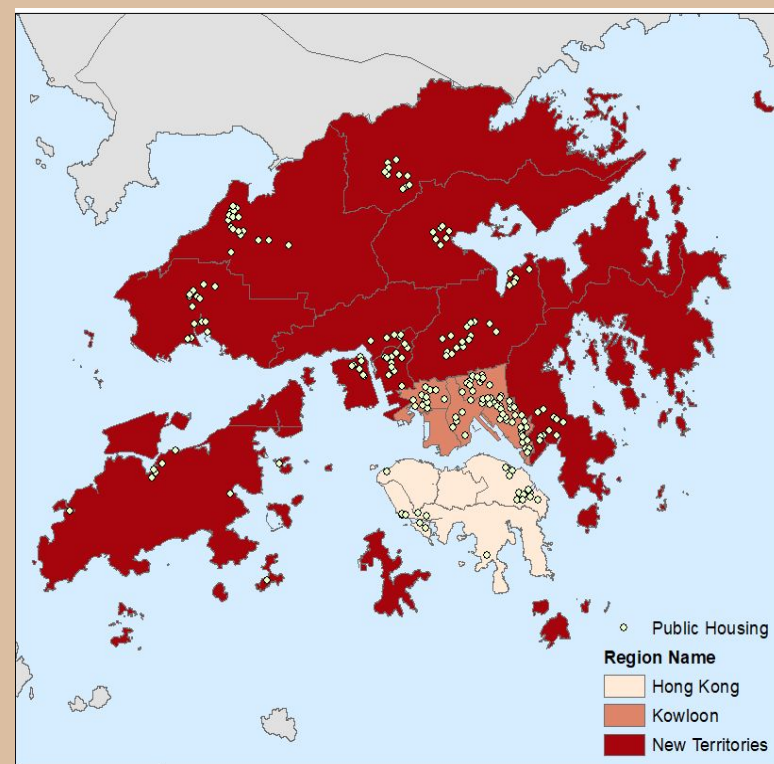


Figure 10. Location of Public Housing Units in Hong Kong's Administrative Regions.