

Mapping the supply-demand gap in childcare services with GIS: A case study in Naha City, Okinawa

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The aim of this study is to visualize the spatial pattern of the gap between childcare supply and demand on a map. Study area is Naha City where the number of children awaiting enrollment in licensed childcare centers is exceptionally large for local cities. To map the supply-demand gap with geographic information systems, we calculated difference between supply and demand densities after converting the vector data concerning childcare supply from the public sector and pre-school children into raster data using kernel density estimation. The result of the analysis showed a spatial imbalance between childcare supply and demand. The map that added the distribution of unlicensed childcare centers proved that the shortage of the childcare supply by the public sector is spatially complemented by the services by the private sector.

Keywords: childcare services, supply-demand gap, kernel density estimation, raster calculation, Naha City