The Geography of Structural Vulnerability: Intersections of Climate Exposure, Ecological Insulation, and Economic Capacity

Table A1. Data information

	Data	Description	Source
1	Heat Index (HI)	The Heat Index (HI) represents the perceived temperature by considering both air temperature and relative humidity. It is commonly used in meteorology to assess human thermal comfort. Formula: $HI = c_1 + c_2T + c_3RH + c_4TRH + c_5T^2 + c_6RH^2 + c_7T^2RH + c_8TRH^2 + c_8T^2RH^2$ Where: - HI = Heat Index (℉) - T = Air temperature (℉) - RH = Relative humidity (%) - c_1=-42.379, c_2=2.04901523, c_3=10.14333127. c_4=-0.22475541. c_5=-0.00683783, c_6=-0.05481717. c_7=0.00122874. c_8=0.00085282. c_9=-0.00000199	https://www.ecmwf.int/en/era5-land
2	Environment Stress Index (ESI)	The Environmental Stress Index (ESI) is a composite indicator that integrates multiple meteorological variables, including temperature, humidity, wind speed, and solar radiation, to estimate environmental heat stress on humans. Formula: *ESI = 0.63T+0.03RH+0.002SR-0.0054WS-5.74* Where: - T = Air temperature (℉) - RH = Relative humidity (%) - SR = Solar radiation (W/m²) - WS = Wind speed (m/s)	https://www.ecmwf.int/en/era5-land
3	WBGT JME	The Wet Bulb Globe Temperature (WBGT) is one of the most widely used heat stress indices, incorporating temperature, humidity, wind speed, and	https://www.ecmwf.int/en/era5-land

		solar radiation. The JME version (WBGT JME) refers to a modified version of WBGT based on the Joint Meteorological Evaluation standards. The JME model calculates WBGT using the following formula: $WBGT_{JME} =$ $0.735T_{\alpha} + 0.0347RH + 0.0022T_{\alpha}RH +$ $7.619SR - 4.557SR^2 - 0.0572WS - 4.064$ Where: - T_{α} = Air temperature (℃) - RH = Relative humidity (%) - SR is the total solar radiation (kW/m²) - WS is the wind speed (m/s)	
4	Enhanced Vegetation Index (EVI)	$\mathrm{EVI} = \mathrm{G\ x}\ \frac{(\mathrm{NIR} - \mathrm{RED})}{\mathrm{NIR} + \mathrm{C_1\ x\ RED} - \mathrm{C_2\ x\ BLUE} + \mathrm{L}}$	MODIS/Terra vegetation indices product (MOD13Q1.061)
5	Normalized Difference Vegetation Index (NVDI)	$\mathrm{NVDI} = \frac{(\mathrm{NIR} - \mathrm{RED})}{(\mathrm{NIR} + \mathrm{RED})}$	
6	Leaf Area Index (LAI)	LAI is a dimensionless metric that quantifies the total one-sided leaf surface area per unit of ground area (m²/m²), serving as a direct indicator of canopy density and vertical vegetation structure.	
7	Average income	Average Income (unit: 1,000KRW)	Democratic Party (https://idp.theminjoo.kr/party/sub/news/view.php?brd=177&post=2128)
8	Real estate tax	Real estate tax (unit: 100,000,000KRW)	Democratic Party (https://idp.theminjoo.kr/party/sub/news/view.php?brd=177&post=2128)