The Vulnerability and Coping Mechanisms of Ageing Communities to Urban Heat Island Issues in Bangkok, Thailand S. Tuntivivat, A. Oo, D. Minh. *Gerontechnology* 25(s*)*

Purpose Extreme temperature and climate change pose serious threats to the elderly population (UN_Habitat 2022, IPCC 2022). Bangkok is experiencing intense heat due to the combined effects of climate change, higher population density, and rapid urban development (Tun et al. 2025, Adil et al. 2025). Older adults are particularly at risk, especially in low-income neighborhoods where infrastructure is poor and green space is limited. Despite this growing challenge, there is a critical gap in understanding how heat exposure affects ageing populations and how cities can better protect them. The research aims to address this innovation gap by identifying how extreme urban heat impacts elderly populations and how personal and environmental factors shape their vulnerability and their coping strategies. **Methods** This study applies a mixed-methods approach combining climate records, household surveys, and participatory community research. This study uses a two-stage cluster sampling design in Bangkok, selecting 10 neighborhoods and 25 households per cluster to survey 250 older adults. Health, socio-economic, and climate data are collected through structured surveys, interviews, and remote sensing to capture heat exposure and living conditions. Qualitative research includes focus groups and participatory workshops with elderly residents, leaders, and policymakers to identify vulnerabilities, coping strategies, and policy gaps. Data analysis employs R, SPSS, Stata, and QGIS to calculate the Livelihood Vulnerability Index (LVI), assess socio-economic determinants, and map heat hotspots. **Results and Discussion** The preliminary result shows that low-income neighborhoods with dense housing, poor ventilation, exhibit higher surface and ambient temperatures 4–7°C hotter compared to wealthier or greener areas. Moreover, older adults in Bangkok face compounding vulnerabilities such as age-related health issues, social isolation, and poor housing quality. The older adults' coping strategies include reducing outdoor activity, visiting malls, and using fans for temporary relief, beyond documenting these challenges, which align with global patterns observed in other major cities. This ongoing study will develop the Heat and Elderly Vulnerability Map and UHI Dashboard, a digital platform that integrates environmental, demographic, and sensor-based data to pinpoint urban heat hotspots and visualize vulnerability among older adults at the neighborhood level. By combining spatial heat analytics with community engagement, the project highlights the global importance of data-informed tools for protecting ageing populations in rapidly warming cities.

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