



Tropentag, September 16-18, 2026, hybrid conference

“Towards multi-functional agro-ecosystems
promoting climate resilient futures”

Mapping lived urban food environments: revealing social-spatial disparities and public health implications

SU YUAN KOH¹, NURUL AZIZAN², EE VON GOH³, TRYLEE MATONGERA⁴, ALEX LECHNER⁵,
FESTO MASSAWE⁶

¹University of Nottingham Malaysia, School of Biological and Environmental Sciences, Malaysia

²University of Nottingham Malaysia, School of Biosciences,

³World Vegetable Center, Taiwan

⁴University of Nottingham Malaysia, School of Biological and Environmental Science,

⁵Northeastern University, China., College of Resources and Civil Engineering, China

⁶University of Nottingham Malaysia, Environmental and Biological Sciences,

Abstract

Food environments are the interface between people and the food system, playing a central role in shaping diet and nutrition outcomes. Centring lived experiences of food environments is critical for understanding how policies operate in practice and identifying entry points for effective interventions. However, such research remains limited and predominantly qualitative. This study examines how lived experiences of urban food environments shape food purchasing and consumption behaviours across socioeconomic (SES) groups using a quantitative Public Participation Geographic Information System (PPGIS) approach. A total of 501 adults were recruited through face-to-face interviews using stratified random spatial sampling in Kuala Lumpur, Malaysia. Participants geocoded home locations and food outlets they visited monthly, and completed a structured questionnaire assessing sociodemographic characteristics, food outlet usage, food insecurity, and dietary diversity. Participants were classified into higher and lower SES groups using two-step cluster analysis. Results revealed a transition in food outlet usage, with increased reliance on modern retail and food-service outlets, reflecting greater dependence on food-away-from-home, particularly among higher SES individuals. Higher SES individuals had significantly higher dietary diversity scores than lower SES individuals ($p = 0.006$), though average travel distances to food outlets did not differ significantly. Spatial analysis showed that both SES groups demonstrated high mobility in sourcing food, engaging with diverse food outlets beyond their residential neighbourhoods. However, pronounced socio-spatial disparities in outlet utilisation were observed, with certain areas predominantly utilised by specific SES groups, suggesting that socioeconomic factors such as purchasing power may outweigh spatial proximity in urban contexts. This study advances food environment research by applying a novel PPGIS approach that integrates spatial and non-spatial data to link “where”, “who”, and “what”, providing nuanced, context-specific insights into how individuals navigate complex urban food environments. The findings highlight critical public health implications, emphasising the need for targeted, equity-focused interventions to improve both physical and financial access to healthy foods, particularly for lower SES populations.

Keywords: Activity space, dietary behaviours, food environment, lived experience, participatory mapping, socioeconomic inequalities, urbanisation