**Human-Computer interaction in analyzing neighborhood safety**

E. Hwang, A. J. Park, G. Han, E. Song

**Purpose** Demographics play a crucial role in infrastructure and accessibility dynamics. Citizen complaints commonly used as a low-cost decision support tool alone would be insufficient as voices of certain communities may never be heard. During the pandemic, many investigated accessibility issues to develop policies and guidelines for social distancing, and monitored the courses of community actions. The first step for many communities in developing such action plans was to identify the most vulnerable populations such as ethnic minority seniors affected by victim of crime. As the neighborhood safety is the important factor of social trust and connectedness (Hwang et al., 2021), we focused on the perception on crime among ethnic minority groups and developed a virtual tool to simulate their behavior for emergency preparedness. **Method** To analyze the perception on crime during the pandemic, we analyzed a crowdsourcing survey collected by Statistics Canada (2022) in the early pandemic. After the data analysis, we built an agent-based model for emergency evacuation behavior simulation. **Results and Discussion** To compare group differences, we utilized the SPSS analysis of variance (ANOVA) tests and built a regression model. Indigenous and visible minority groups were more likely to perceive an increase in crime and this fear of crime victimization was much higher among them compared to their Caucasian counterparts although the actual crime rates stayed the same or slightly increased during the pandemic. To understand how Asian seniors explored their communities, we also developed an agent-based model to simulate their behavior at decision-making points such as intersections, infrastructure accessibility barriers, landmark tools, and graffiti. Although this study is based on the data from the early pandemic times, it has an important implication how technology may enhance our decision making processes through communication and crime preventive design and facilitate safer infrastructure for everyone.

**References**

Hwang, E., Brossoie, N., Jeong, J.W., & Song, K. (2021). The impacts of the neighborhood built environment on social capital for middle-aged and elderly Koreans. Sustainability, 13, 756. https://doi.org/10.3390/su13020756

Statistics Canada (2022, May 20). Crowdsourcing: Impacts of COVID-19 on Canadians' perception of safety public use microdata file. https://www150.statcan.gc.ca/n1/en/catalogue/35250001