The Influence of Built Environment Characteristics on Public Intention of Supporting Seismic Retrofit Policy: A Comparison in a High Seismic Zone of Two Asia Cities

Hao-Teng Cheng
Department of Urban Planning, National Cheng Kung University, Taiwan

Building city resilience through disaster risk reduction strategies is one of the most important urban planning concept for decreasing earthquake damages in Taiwan. The infrequently occurrence of large earthquakes is discussed by abundant studies attributed to the serious casualties and damages with high uncertainty familiar, and the built environment characteristic is identified its impact on risky decision making for intense discussion (Tsao and Chang, 2012; Farley et al., 1993), such as the frequency of disaster occurrence. The purpose of this study applies Mitigation Policy Acceptance Model (MPAM) from Cheng and Tsou (2018), constructed by affective feeling, risk perception, trust, responsibility and intentional behavior, to compare the differences in structural relationship in post-earthquake individual behavioral intention by the structural equation model (SEM). Two case study areas of Yongkang and Hualien City in Taiwan are selected due to suffer serious damage during the scale above 5 magnitude in 2016 and 2018. The former occurs once, the latter occurs fourteen times in ten years. The results show the difference goodness of fit (R^2=0.20 and R^2=0.54) and structural relationship in the model framework, and a significant different is shown the direct effect of affective feeling on risk perception. Also, the total effectiveness of the each variable on the behavioral intention confirm the importance of built environmental condition in local areas. Governments should pay the attention with local difference in risk communication when implementing disaster risk reduction strategies.

REFERENCES

Cheng, H.-T., & Tsou, K.-W. (2018). Mitigation policy acceptance model: An analysis of individual decision making process toward residential seismic strengthening. *International Journal of Environmental Research and Public Health*, *15*(9), 1883. https://doi.org/10.3390/ijerph15091883

Farley, J. E., Barlow, H. D., Finkelstein, M. S., & Riley, L. (1993). Earthquake hysteria, before and after: A survey and follow-up on public response to the Browning forecast. *International Journal of Mass Emergencies & Disasters*, *11*(3), 271–277.

Tsao, C.-Y., & Chang, C.-Y. (2008). The Residents' Experience and Behavior of the Earthquake Hazard: A Comparative Study in Paiho and Tungshih. *Hwa Kang Geographical Journal*, *21*, 52–75. (in Chinese) https://doi.org/10.7110/HKGJ.200806.0052