

Studying pedestrian's personal space in mass religious gatherings

A case study of Kumbh Mela

Karthika P S1, Dr. Ashish Verma2

Abstract

Personal space can be defined as the physical distance between two individuals in a social environment. Studying personal space includes the ability to recognize the various zones of involvement and the activities, relationships, and emotions associate with each zone. This paper tries to formulate and define personal space in high density crowd situations in Kumbh Mela, one of the world's largest mass religious gatherings. It is found that the average speed of the individual, the group size, and the gender ratio of group members have a significant effect on the personal space of an individual.

Keywords: Inter-personal distance, Personal space, Mass religious gatherings, Stampede

Reference

- [1] Hayduk, L. A. (1981). The shape of personal space: An experimental Investigation. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences DuComportement*, 13(1), 87-93. doi:10.1037/h0081114
- [2] Hall, E. T. (1973). The Hidden Dimension. *Leonardo*, 6(1), 94. doi:10.2307/1572461
- [3] Gérin-Lajoie, M., Richards, C. L., & Mcfadyen, B. J. (2005). The Negotiation of Stationary and Moving Obstructions during Walking: Anticipatory Locomotor Adaptations and Preservation of Personal Space. *Motor Control*, 9(3), 242-269. doi:10.1123/mcj.9.3.242
- [4] Hayduk, L. A., & Mainprize, S. (1980). Personal Space of the Blind. *Social Psychology Quarterly*, 43(2), 216. doi:10.2307/30336243

1. Research Scholar, Department of Civil Engineering, Indian Institute of Science (IISc), Bangalore - 560012, India. Email: pskarthika85@gmail.com

2. Associate professor, Department of Civil Engineering and Robert Bosch Centre for Cyber Physical Systems, Indian Institute of Science (IISc), Bangalore-560012, India. Email: ashishv@iisc.ac.in