

2102C

Title of Research Subject	A Study on Improving Safety by Observing and Controlling Crowd Behavior in Plazas and Walking Spaces
Background and Objective	<p>In large Asian cities, with their dense populations and narrow streets, congestion caused by pedestrians in squares and on streets is an unavoidable problem. In particular, heavy congestion frequently occurred on streets around major events and public transport nodes(e.g. railway stations). Such congestion is likely to affect the safety and comfort of pedestrians, impact on surrounding traffic and even lead to crime. Measures have been taken based on past experience, but due to the difficulty of whole observation, little is known about engineering, regulatory and spatial design interventions related to the characteristics of traffic flows. With the participation of interdisciplinary experts, this research aims to study the latest knowledge on crowd behaviour with crime problems, focusing on its use in traffic flow control, security activities and spatial design.</p>
Expected results	<p>In the past, researches on crowd behavior and its control have been conducted on events in facilities and evacuation simulations during disasters. Still, few studies have applied these to plazas, street spaces, and their walking networks. In this study, we reviewed research and collected case studies in the first year, comparing observation surveys and mobile data at Halloween in Shibuya and Kobe Luminarie in Japan, analyzed pedestrian conditions based on mobile data in the second year, analyzed the relationship between crowds and crime through international hackathon events, and reviewed case studies of image analysis. In particular, the possibility was shown that mobile data could be used to understand crowding and congestion, so in the future, we will increase the number of analysis cases on how to understand crowding conditions in pedestrian spaces, where demand is expected to increase during large-scale events such as</p>

	<p>the Olympics and in response to disasters. Also, we would like to provide new knowledge on measures to mitigate crowding conditions based on the induction of human flows in the country by holding joint research meetings with relevant overseas researchers.</p>
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