

# The Hong Kong University of Science and Technology

Department of Information Systems, Business Statistics and Operations Management

## Seminar Announcement



### Evacuation Paradox and Emergence of Collective Consensus at the Outbreak of War in Ukraine

by

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**Date** : **Wednesday, 19 April 2023**  
**Time** : **10:30 - 11:30 AM**  
**Venue** : **3/F Classroom 1 (3001), LSK Business Building**

**Abstract:** There is longstanding debate as to whether collective human behavior is adaptive during mass emergencies. We used individual-level geolocation data from 8,764,658 mobile phones in Ukraine between February 1 and March 7, 2022 to analyze the temporal-spatial dynamics of wartime evacuation, including socioeconomic inequalities. At the outbreak of war, temporal patterns of evacuation show both panic and hesitancy; spatial dispersion of evacuation do not comport to gravity law but rather exhibit an “evacuation paradox” where people flee to where others are fleeing from. However, entropy of evacuation patterns also decreases over time. We use a model of granular flocking behavior to show that collective consensus between peacetime neighbors is initially low but increases during wartime, which explains harmonizing evacuation patterns. Furthermore, local flocking predicts population flow in evacuation corridors, which offers the prospect of data analytic early-warning tools to help policymakers optimize the distribution of humanitarian resources as evacuations occur.

**Bio:** Dr. Tuan Q. Phan is an Associate Professor at the University of Hong Kong (HKU) of Marketing, Innovation & Information Management at the HKU Business School. He also serves as the director of the Representative Office of HKU Vietnam, and the founding member and current president of the Vietnam Chapter of the Association of Information Systems (VAIS). His research uses large and population-size datasets and spans multiple disciplines including economics, marketing, consumer behavior, computer science, and statistics. His expertise covers various industries including FinTech, retail and e-commerce, logistics and transportation, social media, news and video media, technology and consumer products, and education. His research has been published in leading scientific and management journals including the Harvard Business School Publishing, Proceedings of the National Academy of Science (PNAS), Marketing Science, Journal of Marketing Research (JMR), Information Systems Research (ISR), and Electronic Commerce Research.

He received his doctorate from Harvard Business School, and an undergraduate from MIT. He is also an expert witness, entrepreneur, and frequently consults industry leaders.