

# The Hong Kong University of Science and Technology

Department of Information Systems, Business Statistics and Operations Management

Seminar Announcement



## Harnessing Geolocation Information in Mobile Health Apps

by

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**Date** : **Wednesday, 25 August 2021**  
**Time** : **9:00 am - 10:30 am (Hong Kong Time)**  
**Zoom Details** : [Click here to join Zoom](#)  
**Meeting ID: 968 1411 0875 (Passcode: 752909)**



**Abstract:** With increasing mobile penetration, geolocational information can be harnessed in various ways to improve health and wellness offerings. Geolocation information can be processed to provide deeper information about users. For instance, weather conditions faced by users and jogging distance are information that can be readily retrieved from users' mobile apps. At the same time, geolocation information is required to enable ride-sharing services. In this talk, I present three papers that examines how mobile health (mHealth) apps can improve various health outcomes via geolocation features. The first paper looks at how real-time weather information acquired through mobile technology can be leveraged to enhance the efficacy of mobile interventions for spurring users' healthier behaviors. It is known that weather tends to play a big role in affecting mood. There are two competing theories on how mood affects one's receipt of different messages. While the mood congruity perspective argues that message framing that are aligned with the recipients' mood would be ideal, the mood-as-a-resource view posits that the opposite is true. Through a field experiment, we randomly assign users experiencing sunny and cloudy conditions to gain-, loss-, or neutral interventions. We found that loss intervention induces higher levels of participation in exercise challenges and fulfillment of exercise goals than gain intervention in sunny weather, whereas gain interventions are more effective than loss interventions in cloudy weather. Further tests are used to assess that the mechanisms and heterogeneous effects. Despite the growing usage of exercise apps, the efficacy of in-exercise app features in driving usage and athletic outcomes remain to be poorly understood. Drawing on the literature on motivation, the second study examines two specific forms of such in-exercise interventions, namely performance feedback and social feedback. We conducted an 18-month long field study, with 1,037 uniformed group servicemen, to assess the effect of these feedback types on running and usage outcomes. Results from the field study provided evidence that these two app features improved the running times and frequency of application usage of the servicemen, on average. Contrary to the common belief that more features are better, we find that the two feedback features when offered jointly produce detrimental effects. We traced this detrimental effect to arise from the out-exercise feedback presented to users who also received performance feedback. In my third paper, my co-authors and I examine the potential of providing free ride-sharing services to patients as a solution to reduce the medical no-show rates issue. No-shows rates represent a huge cost to the healthcare systems (\$150billion each year), as there are significant opportunity costs are incurred from the wasted physician's time and resources that were allocated to patients

who failed to turn up. While no shows rate can be due to different reasons, past studies have found that transportation access is a major factor (Syed et al. 2013). Despite efforts to alleviate the no-show rates, existing solutions are either ineffective or costly. We collaborate with a platform company that sets up Lyft rides for patients with appointments at a hospital. Using a difference-in-difference method, we contrast the no-show rates of patients who adopted the service with those who did not. Results show that the ride-sharing service does reduce no-show rates, but this effect only shows up in the first two appointments, on average. Upon further investigation, we found that only one-third of the study sample were using the free Lyft rides over extended periods. Further tests were conducted to understand potential reasons for the short-term effect observed.

**Bio:** Dr. Jason Chan is an Associate Professor of Information & Decision Sciences at the Carlson School of Management, University of Minnesota. He holds an interest towards research that has relevant business and policy insights on emerging phenomenon relating Internet platforms and social outcomes, in various areas including healthcare, crime, financial well-being, education, and labor economics. In his research, he adopts a variety of quantitative methods including econometric modeling, experiments and technical methods, to extract meaningful relationships that lies within datasets. His work has been published in top academic journals and conferences such as Information Systems Research, Management Science, MIS Quarterly. His work has also been covered by prominent media outlets, including The Economist, The Washington Post, The Economic Times, NBC News, Newsweek, Forbes, The Daily Beast, and Market Watch. Dr. Chan is a recipient and nominee of several Best Paper Awards in IS conferences and workshops, and has received multiple research grants for his work. He has received Management Science's Best Paper Award in 2020, the AIS Best Published Paper 2014 (selected by senior editors among top MIS journals), the MISQ Best Paper Award 2014, and is also the winner of the 2015 Nunamaker-Chen Dissertation Award conferred by INFORMS ISS. He has served as Track Chair and Associate Editor at the International Conference of Information Systems (ICIS), where he has won the two Best Associate Editor Awards (ICIS 2016, 2017). He is the two-time recipient of the Distinguished Service Award at Management Science, and has also won two Best Reviewer Awards at ISR and MISQ. Jason is an Associate Editor at Management Science and ISR, and is also serving the broader IS community as the Vice President of the Informs Information Systems Society. In 2018, he was named by Poets & Quants as one of the Top 40 Professors Under 40 Worldwide. Jason has taught at various levels, including courses in the Undergraduate, part-time MBA, full-time MBA, executive MBA, and DBA level. He has delivered courses both in the traditional classroom setting and in online modes. Notably, he has a well attended Coursera course on Enterprise Systems. His teaching efforts have earned him a Carlson Teaching Award in 2019. He was an invited speaker at various academic and industry settings, in various countries. Apart from his pedagogical duties, he enjoys mentoring PhD students, some of which have resulted in award-winning research, including Best Track Paper Award at ICIS, AoM Best Paper, Best Paper Nominee at WISE.