Lingnan University 嶺南大學 電腦及決策科學學系 Department of Computing & Decision Sciences
香港商學研究所 Hong Kong Institute of Business Studies

Academic Seminar

Efficiency of Subsidy Schemes to Reduce Waiting Time for Public Health Services

To reduce waiting times of public health services, many countries subsidize citizens to seek private care. This paper studies the efficiency of two typical subsidy schemes: unconditional and conditional. The former partially subsidizes customers seeking private care without pre-requirement whereas the latter fully subsidizes those customers who have waited in the public system up to a pre-determined level. For each scheme, we consider three information scenarios, i.e., no, partial and full, to represent situations where customers observe no real-time delay information, system occupancy and workload, respectively. In total we consider six combinations of subsidy schemes and information scenarios. We adopt a queueing model to study the congestion of the public system and utilize the game theory to derive customers' equilibrium choice between the private and public systems. We then investigate the optimal design of each subsidy scheme. Our results show that under the no- and partial-information scenarios, the preference over the above two subsidy schemes depends on the size of the total available budget. If such a budget is very limited, unconditional subsidy scheme generates a larger social welfare than the conditional one; otherwise, the conditional subsidy scheme prevails. Under the full-information scenario, the unconditional scheme always outperforms the conditional one. We also show that providing delay information to customers improves social welfare. Finally, we demonstrate that social welfare can be significantly improved by changing the current waiting-time-based subsidy scheme into a virtual-waiting-time-based subsidy scheme.

Dr Pengfei GUO

Assistant Professor of Department of Logistics and Maritime Studies
The Hong Kong Polytechnic University

Dr. Pengfei GUO received his PhD degree in Business Administration from Duke University in 2007. He received his B.Eng. in MIS from Xi'an Jiao Tong University in 1993 and M.S. in Management Science and Engineering from Shanghai Jiao Tong University in 1997. He is now an assistant professor with the Faculty of Business, Hong Kong Polytechnic University. His research interests include multiple-tier supply chain management, queueing systems, and health care management. His research work has appeared on journals such as *Management Science, Operations Research, Production and Operations Management*, etc.

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Time: 10:00 – 11:30 am

Venue: SEK210, 2/F, Simon & Eleanor Kwok Bldg.

Language: English

All are Welcome

For enquiries, please contact 2616-8373 or email to hkibs@Ln.edu.hk