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Canadian Operational Research Society
Société canadienne de recherche opérationnelle

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12:00 – 1:00 p.m. EST

CORS Micro-Event (online):
Redesigning Shift Work to Incorporate Heterogeneous Worker Preferences
Presented by
Hummy Song, Wharton School at the University of Pennsylvania

Hummy Song is an Assistant Professor of Operations, Information and Decisions at the Wharton School at the University of Pennsylvania. She also holds an appointment as Assistant Professor of Health Care Management. She conducted her undergraduate, master's, and PhD studies at Harvard University. Professor Song's research focuses on identifying ways to improve the performance of service systems, with a particular emphasis on the health care sector. Her research utilizes large datasets derived from electronic health record systems, administrative databases, and surveys of the health care workforce. For her research, Professor Song has worked with hospitals and health care delivery organizations in the U.S. and in developing countries. Her work has received several recognitions, including the M&SOM Service Management SIG Best Paper Award and the INFORMS Health Applications Society Best Student Paper Award. She was named by Poets & Quants as one of the Top 50 Undergraduate Business Professors and is the winner of the 2022 POMS Early Career Research Accomplishments Award. She currently serves as an Associate Editor of Management Science, Operations Research, and Service Science.

Abstract

Shifts are the dominant way to organize work in many contexts requiring 24/7 coverage. While the detriments of shift work are well-documented both at the individual and organizational levels, its deployment is often unavoidable given round-the-clock staffing needs. We explore a potential operational lever—incorporating heterogeneous preferences over shift characteristics, which we refer to as the shift choice system—to mitigate ramifications of shift work on worker well-being and turnover. Leveraging rich and novel survey, shift, and administrative data, we document that acute care nurses exhibit heterogeneous preferences over shift schedules, driven by both pecuniary and non-pecuniary considerations. We also show that nursing managers largely reflect preferences into scheduled shifts, albeit imperfectly. We find that the shift choice system improves worker well-being, as measured by self-reported fatigue and work-life balance. Using a difference-in-differences approach, we estimate a 0.58 p.p. decrease in probability of quitting, but only among more experienced nurses. We find these effects are not driven by differences in the degree to which preferences are reflected in scheduled shifts, but rather by corresponding improvements in fatigue and work-life balance concentrated among more experienced nurses. We do not find evidence to suggest that the shift choice system affects care quality. Our results indicate that allowing for shift choice is an effective responsible scheduling strategy that can improve worker well-being and reduce turnover for highly experienced nurses. **Joint work with:** H. Harriet Jeon, Song-Hee Kim, Kyeongsug Kim, Sangwoon Cho, and Jeong Hee Hong

Register at: https://forms.gle/YvPJomNYrhfzsPYT6

Questions? Email: sarhangian@mie.utoronto.ca

Organized by: The Healthcare Operational Research (HCOR) special interest group