The Hong Kong University of Science and Technology

Dept of Information Systems, Business Statistics and Operations Management
Dept of Industrial Engineering & Decision Analytics
Joint Seminar Announcement

Managing Calibration Bias in Healthcare Risk Adjustment: Lessons from ACA Marketplace

by

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Date	:	**6 March 2026 (Friday)**
Time	:	**10:30 – 11:45 AM**
Venue	:	**Classroom 3005, 3/F, LSK Business Building**

Abstract: Risk adjustment models are central to determining health plan payments in insurance markets such as the Affordable Care Act (ACA) Marketplace. However, these models often exhibit systematic miscalibration, i.e., persistent discrepancies between predicted and actual costs across patient subgroups. This miscalibration bias (MCB) leads to a counterintuitive market dynamic: health plans tend to incur losses when enrolling low-risk patients but earn profits from enrolling high-risk patients. The resulting distortions have contributed to health plan exits and broader instability in the ACA Marketplace. To address this problem, the Centers for Medicare & Medicaid Services (CMS) proposed a two-stage risk adjustment (2RA) method that achieves nearly perfect calibration. However, the approach faced widespread criticism from both practitioners and academics for lacking theoretical justification and degrading model discrimination (DSC) ability, e.g., lower R2. We develop a theoretical framework that formalizes this DSC-MCB trade-off, and propose a calibration-aware 2RA method that effectively balances these two competing objectives. Using ACA Marketplace data, we show that our method Pareto-dominates the CMS approach, offering improvements in both subgroup calibration and overall model fit.

Bio: Dr. Zhaowei She is an Assistant Professor of Operations Management at the Lee Kong Chian School of Business, Singapore Management University. A Ph.D. graduate in Operations Research from the H. Stewart School of Industrial & Systems Engineering at Georgia Institute of Technology, Dr. She specializes in healthcare data analytics with a mission to enhance healthcare services and public health through a problem-driven research approach. His research has been published in leading academic journals such as MSOM, and has achieved finalist status in prestigious awards like the INFORMS Pierskalla Best Paper Award and the INFORMS Public Sector Operations Research Best Paper Award.

All interested are welcome!
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