

THE HONG KONG POLYTECHNIC UNIVERSITY DEPARTMENT OF MANAGEMENT AND MARKETING

Departmental Research Seminar

The Winner's Curse in Data-Driven Decision Making: Evidence and Solutions

By

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Date : 24 Apr 2026 (Fri)
Time : 10:30 am – 12 noon
Venue : M802, PolyU

Abstract

Data-driven decision making involves estimating the value of each potential option and selecting the one with the highest estimated efficacy. This approach underpins a wide array of modern marketing and AI applications, including A/B testing, advertising and bidding, pricing, and personalized targeting. However, it has been shown that the estimated values of the chosen options will be systematically over-optimistic (Smith and Winkler 2006, Efron 2011, Andrews et al. 2024), even when the estimated outcomes are themselves unbiased and efficient. Using simulations calibrated to realistic parameter values from recent marketing studies, we demonstrate that the winner's curse is often a severe issue in marketing and AI applications, and its severity depends on key factors such as the true performance difference between options, the level of noise in the data, the number of alternatives under consideration, and the reliance on machine learning models for estimation. We propose a correction method based on a non-continuous bootstrap that effectively mitigates the winner's curse in most settings we study. Recognizing the generality of this issue, we then benchmark our method against several existing proposed solutions across many key marketing scenarios, and show that a bootstrap approach usually outperforms previously recommended corrections.

Prof. Raphael Thomadsen is a Professor of Marketing at the Olin Business School at Washington University in St. Louis. His research spans a wide range of topics in quantitative marketing, including both theoretical and empirical research. Much of his past research has studied the interplay between pricing and product offerings. Some of his recent research has focused on how the content of advertising affects sales. He has also studied the role of point-of-sale marketing. Prof. Thomadsen will serve as the next Editor in Chief of the *Journal of Marketing Research (JMR)*, starting from July 1, 2026. He was previously a department editor (Marketing) at *Management Science*. He holds a PhD in Economics from Stanford University, and has previously served on the faculty of Columbia Business School and UCLA's Anderson School of Management.

All interested are welcome.



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