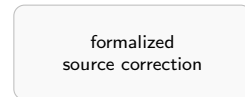
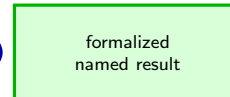
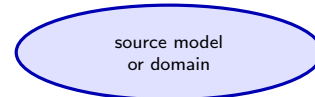


Paper: Balancing Producer Fairness and Efficiency via Prior-Weighted Rating System Design
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Legend



Theorem 3.1 correction

The printed universal strict claim fails at $q = 0, 1$. The formalized target records weak closed-interval and strict interior conclusions.

Fixed binary-rating model

positive discrete review count; Beta shape and nonnegative strength; conditional posterior mean, bias, variance, and squared bias

Source theorem domains

positive Beta-shape parameters; $q \in [0, 1]$; nonnegative and ordered prior strength

Theorem 3.1

squared bias nondecreasing; variance weakly decreasing on $[0, 1]$ and strictly decreasing on $(0, 1)$

Theorem 3.2

squared-bias convexity and prior-mean minimum; variance concavity and maximum at $q = 1/2$

Supplementary Appendix corrections

Equation 20 uses $\text{Beta}(C, 1 - C)$, compatible with $(k + mC)/(n + m)$. Equation 21 includes Dirichlet prior pseudo-counts in both sums; its printed display is the zero-prior special case.