Research Papers on 'Poverty'

Paper 1:

Assessing Heterogeneity of Treatment Effects

Date: 2025-02-11

Time: 19:19:34

Authors:

Tetsuya Kaji, Jianfei Cao

Summary:

- Treatment effect heterogeneity is of major interest in economics, but its assessment is often hindered by the fundamental lack of identification of the individual treatment effects. For example, we may want to assess the effect of a poverty reduction measure at different levels of poverty, but the causal effects on wealth at different wealth levels are not identified. Or, we may be interested in the proportion of workers who benefit from the minimum wage increase, but the proportion is not identified in the absence of counterfactuals. This paper derives bounds useful in such situations, which only depend on the marginal distributions of the outcomes. The bounds are nonparametrically sharp, making clear the maximum extent to which the data can speak about the heterogeneity of the treatment effects. An application to microfinance shows that the bounds can be informative even when the average treatment effects are not significant. Another application to the welfare reform identifies a nonnegligible portion of workers who increased and decreased working hours due to the reform.

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Paper 2:

Technical note on calibrating vision-language models under covariate   shift

Date: 2025-02-11

Time: 10:10:15

Authors:

Behraj Khan, Rizwan Qureshi, Tahir Syed

Summary:

- Despite being a successful example of emerging capability, vision-

language foundation models for low-shot vision classification have a limited ability to sufficiently generalize to the target data distribution due to sample poverty, leading to sensitivity to variations in the data. A popular mitigation strategy is finetuning over multiple datasets, but domain generalization is expensive when practiced in this manner. This work examines both covariate shift between pre-training data and the underspecified target data, and \textit{confidence misalignment}, where the model's prediction confidence amplified by the limited data availability. We propose \textit{Confidence-Calibrated Covariate Shift Correction ($C3SC$)}, a unified framework to mitigate both covariate shift and confidence misalignment. $C3SC$ leverages Fisher information penalty for covariate shift correction and confidence misalignment penalty (CMP) to lower confidence on misclassified examples. Experimental results across various vision and covariate shift datasets demonstrates that $C3SC$ significantly improves in calibration (ECE) by 5.82% at maximum. $C3SC$ shows better robustness as well by showing 3.5% improvement in accuracy metric on challenging covariate shift datasets, making $C3SC$ a promising solution for reliable real-world vision-language low-shot applications under distribution shift.

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