Review of: "Causality in Machine Learning: Innovating Model Generalization through Inference of Causal Relationships from Observational Data"

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Summary of Contributions:

This paper focuses on the generalization of causal innovation models by inferring causality from observational data.

Weaknesses:

1. *The paper does not discuss the causal discovery algorithms used in this paper in detail, which makes it difficult to understand the implementation details of the proposed algorithm.*
2. *The contribution of this paper is limited. Many papers have been integrated causal inference to machine learning, such as [1], [2] and [3], but this paper ignore this.*
3. *The references cited in this paper is very old. Authors should cite the reference proposed in the recent three years.*
4. *Authors introduce many causal discovery methods, but do not summarize their differences in detail.*
5. *The paper is written in a quantitative way, but the experiment results is not enough to support the paper. In addition, can authors introduce and analyze the experimental results in detail? The experimental analysis presented in the paper is too general, and the sensation is not related to the experimental data.*
6. *Authors show that causal discovery was most effective in contextual domains with strong prior knowledge. Can you elaborate on it?*

Refs:

[1] Model Agnostic Sample Reweighting for Out-of-Distribution Learning. ICML 2022.

[2] Stable Prediction across Unknown Environments. KDD 2018.

[3] Causal Balancing for Domain Generalization. ICLR 2023.