Causal Inference

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1. 因果经济学导论

2. 必备知识

1. 因果推论分类

2. 统计模型分类

3. 流行病学的基本定义与测量

3. 因果推论

1. Introduction of causal inference 1

2. Introduction of causal inference 2

3. Framework of causal inference

4. Causal structure: DAGs

5. Variable in causal inference

6. Causal structure: D-separation rule

7. Causal structure: NPSEM

8. Causal structure: NPSEM for d-separation 1

9. Causal structure: NPSEM for d-separation 2

4. 辛普森悖论

5. 干扰因子

6. 分层分析与模型

10. Counterfactual outcome model

11. Identification: exchangeability and RCT

12. Estimation: g-formula, IPW, and MSM

13. Estimation: g-estimation and SNM

14. Estimation: doubly robust estimator

15. Efficiency theorem: Why EIF

16. Efficiency theorem: What is EIF

17. Efficiency theorem: How to derive EIF 1

18. Efficiency theorem: How to derive EIF 2,3

4. 因果推论架构与概念

1. 常见名词

2. 绪论

3. Causal Diagram

4. counterfactual model

5. 常见 causal effects

6. positivity and consistency

7. exchangeability

8. 其它两种 assumptions

9. 因果研究中 assumption 的重点

10. sensitivity analysis

11. Identification

12. Statistical Inference

5. Da	ata analysis DEMO						
1.	Demo 1 2	. Demo 2		3. Demo 3			
6. NI	DE and NIE						
1.	1. Introduction of causal mediation analysis						
2.	2. Definition for causal mediation analysis (NDE and NIE)						
3.	Identification for NDE and NIE	1					
4.	. Identification for NDE and NIE 2						
5.	5. Identification for NDE and NIE 3 recanting witness and NPSEM						
6.	6. Review framework						
7.	7. Identification for NDE and NIE 4 when M is continuous						
8.	8. Estimation for NDE and NIE 1						
9.	9. Estimation for NDE and NIE 2						
10.	O. Estimation for NDE and NIE 3						
11.	1. Estimation for NDE and NIE 4						
12.	2. Estimation for NDE and NIE 5: regression with interaction term						
13.	3. Estimation for NDE and NIE 6: Monte-Carlo simulation and software (mediation.R)						
14.	4. Estimation for NDE and NIE 7: IPW						
7. Bi	nary outcome						
1.	Causal mediation analysis with	binary outcom	e 1				
2.	2. Causal mediation analysis with binary outcome 2: Counterfactual OR and PM						
3.	3. Causal mediation analysis with binary outcome 3: Estimation A						
4.	4. Causal mediation analysis with binary outcome 4: Estimation B						
8. Al	ternative definition						
1.	3 diff. def. for causal mediation	analysis	3. CDE 2				
2.	CDE 1		4. Interventional	approach 1: Introduction			

9. 中介效应分析					
1. Mediation analysis 基本概念常见的错误解读					
2. 传统 Mediation analysis 的做法以及 causal mediation					
3. Mediation analysis 三种常见的定义及 interpretation					
4. Mediation analysis 三种常见的定义在辨识中需要的假设及意义					
5. Mediation analysis identification and estimation					
10. 交互作用分析					
1. Introduction	4. RERI 1				
2. 三种 interaction	5. RERI 2				
3. additive vs multiplicative interaction	6. Effect modification				
11. 多重中介效应					
1. DAGs	4. Difficulty of identification				
2. counterfactual 1					
3. counterfactual 2	5. Introduction of different strategy				
12. 时变系统的因果推论					
1. Introduction of time-varying system	6. g-formula 3				
2. DAGs of time-varying system	7. g-formula 4				
3. Why regression fail and g-formula in simple	8. g-formula 5				
case	9. g-formula 6				
4. g-formula 1	10. g-formula 7				
5. g-formula 2	11. g-formula 8				

6. Interventional approach 3: Identification

5. Interventional approach 2: Definition

October 10, 2025