‹Simulation Scenario 구현 결과›

- 11월 28일 Version

‹What To Do›

: #of obs, Replication number, Exposure ratio(δ_0) 변경하면서 variance estimator of IPW Estimator, variance estimator of DR Estimator 들의 Coverage probability 확인

‹Result›

① #of obs = 1000, REPL = 1000, δ_0= 1 (Exposure ratio가 0.7)

	Naive var Coverage(ATE)	Sandwich var Coverage (ATE)	Naive var Coverage(ATT)	Sandwich var Coverage (ATT)
IPW	1	0.976	1	0.976
DR	0.936	0.939	0.936	0.939

② #of obs = 1000, REPL = 1000, δ_0= -2 (Exposure ratio가 0.12)

	Naive var Coverage(ATE)	Sandwich var Coverage (ATE)	Naive var Coverage(ATT)	Sandwich var Coverage (ATT)
IPW	1	0.982	1	0.982
DR	0.938	0.980	0.938	0.980

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① #of obs = 500, REPL=1000, δ_0= 0.3 (Exposure ratio가 0.5)

	Naive var Coverage(ATE)	Sandwich var Coverage (ATE)	Naive var Coverage(ATT)	Sandwich var Coverage (ATT)
IPW	1	0.982	1	0.982
DR	0.958	0.963	0.958	0.963

② #of obs = 500, REPL = 1000, δ_0= -2 (Exposure ratio가 0.12)

	Naive var Coverage(ATE)	Sandwich var Coverage (ATE)	Naive var Coverage(ATT)	Sandwich var Coverage (ATT)
IPW	1	0.981	1	0.981
DR	0.946	0.994	0.946	0.994

① #of obs = 100, REPL=1000, δ_0= 0.3 (Exposure ratio가 0.5)

	Naive var Coverage(ATE)	Sandwich var Coverage (ATE)	Naive var Coverage(ATT)	Sandwich var Coverage (ATT)
IPW	1	0.970	1	0.970
DR	0.929	0.965	0.929	0.965

② #of obs = 100, REPL = 1000, δ_0= -2 (Exposure ratio가 0.12)

	Naive var Coverage(ATE)	Sandwich var Coverage (ATE)	Naive var Coverage(ATT)	Sandwich var Coverage (ATT)
IPW	0.992	0.949	0.992	0.949
DR	0.912	0.997	0.912	0.997

Question 1)

추정량이 ATE일 때와 ATT일 때 결과 값이 똑같이 나오는데 true ATE, true ATT가 동일 해서 그런 것일까? 즉, Data generating 때 변수들 간 상호작용 term을 반영하지 않아서인지.

Question 2)

Exposure ratio가 작은 경우에는 Coverage probability가 커져서 Conservation Confidence Interval이 되는 반면, Exposure ratio가 큰 경우에 Coverage probability가 Debugging 상황과 비슷해짐.

--- Exposure ratio와 Coverage probability 간의 관계?