This bulletin has been independently peer reviewed.

CRIME AND JUSTICE BULLETIN

NUMBER 251 | AUGUST 2022

The effectiveness of alcohol interlocks in reducing repeat drink driving and improving road safety

Sara Rahman

APPENDIX

Validity of regression discontinuity approach

Table A1. Relevance of high range PCA threshold

	(1)	(2)	(3)	(4)	(5)
Outcome	Issued a MAIO	Issued a MAIO	Issued a MAIO	Issued a MAIO	Issued a MAIO
Estimate	0.889***	0.889***	0.889***	0.890***	0.889***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.011)
Observations	43,196	43,189	43,186	43,186	43,186
Effective observations	7,635	7,635	7,632	7,632	18,454
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.11 - 0.19	0.09 - 0.21
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
	(6)	(7)	(8)	(9)	(10)
Outcome	Started MAIP	Started MAIP	Started MAIP	Started MAIP	Started MAIP
Estimate	0.630***	0.632***	0.630***	0.635***	0.627***
	(0.017)	(0.017)	(0.017)	(0.016)	(0.019)
Observations	43,196	43,189	43,186	43,186	43,186
Effective observations	6,896	6,896	6,449	6,449	14,315
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.13 - 0.17	0.13 - 0.17	0.13 - 0.17	0.12 - 0.18	0.10 - 0.20
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$

KEYWORDS Driving offences | Alcohol | Regression discontinuity | Difference-in-differences

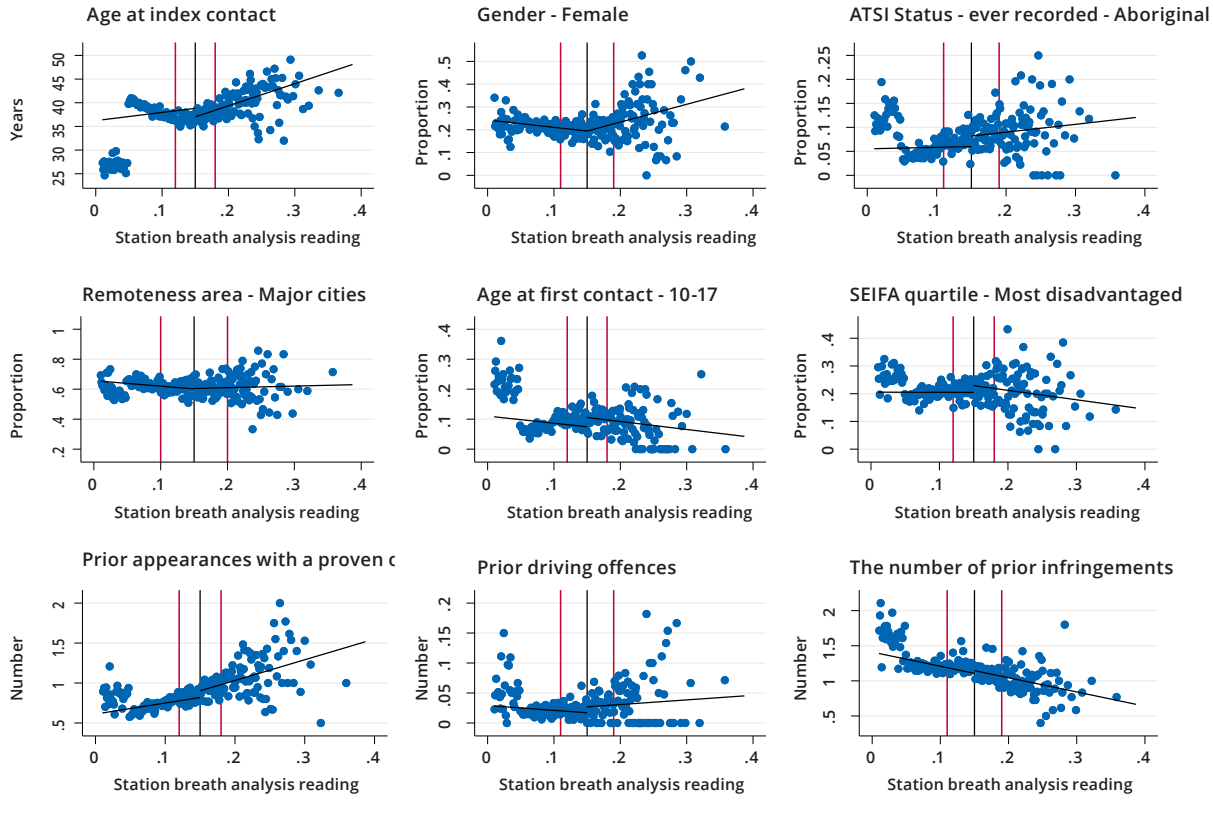
Suggested citation: Rahman, S. (2022). *The effectiveness of alcohol interlocks in reducing repeat drink driving and improving road safety* (Crime and Justice Bulletin No. 251). Sydney: NSW Bureau of Crime Statistics and Research.

Table A2. Tests of continuity (randomisation) at the high range PCA threshold

	(1)	(2)	(3)
Outcome	Age at index contact	Gender - Female	ATSI Status - ever recorded - Aboriginal
Estimate	-0.028	-0.004	-0.001
	(0.667)	(0.018)	(0.013)
Observations	43,195	43,196	43,196
	6189	8,149	6,452
Bandwidth	(0.13 - 0.17)	(0.12 - 0.18)	(0.13 - 0.17)
	(4)	(5)	(6)
Outcome	Remoteness area - Major cities	SEIFA quartile - Most disadvantaged	Age at first contact - 10-17
Estimate	0.0232	0.001	-0.015
	(0.025)	(0.016)	(0.015)
Observations	43,196	43,196	43,189
	6,452	10,800	5,940
Bandwidth	(0.13 - 0.17)	(0.11 - 0.19)	(0.13 - 0.17)
	(7)	(8)	(9)
Outcome	Prior appearances with a proven offence	The number of prior infringements	Prior driving offences
Estimate	0.0641	-0.0539	-0.002
	(0.049)	(0.051)	(0.007)
Observations	43,196	43,196	43,196
	7,635	7,879	8,149
Bandwidth	(0.12 - 0.18)	(0.12 - 0.18)	(0.12 - 0.18)

Estimates obtained from sharp regression discontinuity analyses with a uniform kernel without controls and fixed effects
Standard errors in parentheses
*** $p<.001$, ** $p<.01$, * $p<.05$

Figure A1. Continuity around the 0.15 BAC thresholds, sample limited to BAC readings between 0.12 and 0.18



Regression discontinuity tables

Sharp regression discontinuity estimates

Table A3. Sharp RD estimates at the 0.15 threshold, main sample

	(1)	(2)	(3)	(4)	(5)
Panel A: PCA offending in initial disqualification period					
Estimate	-0.012	-0.010	-0.0121*	-0.010	-0.008
Standard error	(0.006)	(0.006)	(0.006)	(0.005)	(0.006)
Observations	43,196	43,189	43,186	43,186	43,186
Effective N	7,148	7,633	7,377	10,273	20,251
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.11 - 0.19	0.08 - 0.22
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel B: PCA offending in interlock period					
Estimate	-0.066***	-0.064***	-0.064***	-0.065***	-0.067***
Standard error	(0.009)	(0.008)	(0.008)	(0.007)	(0.011)
Observations	43,196	43,189	43,186	43,186	43,186
Effective N	8,708	11,421	11,420	16,135	15,230
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.11 - 0.19	0.11 - 0.19	0.10 - 0.20	0.10 - 0.20
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel C: PCA offending in 24 months after interlock period					
Estimate	-0.021**	-0.020*	-0.018*	-0.020**	-0.022**
Standard error	(0.008)	(0.008)	(0.008)	(0.007)	(0.008)
Observations	43,196	43,189	43,186	43,186	43,186
Effective N	7,380	6,450	7,145	9,711	16,797
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.13 - 0.17	0.12 - 0.18	0.12 - 0.18	0.09 - 0.21
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel G. Number of traffic infringements in the 36 months following finalisation					
Estimate	-0.240***	-0.261***	-0.292***	-0.232***	-0.207**
Standard error	(0.067)	(0.058)	(0.059)	(0.060)	(0.079)
Observations	27,648	27,643	27,643	27,643	27,643
Effective N	4,718	5,575	5,214	6,020	7,970
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.11 - 0.19
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular

Table A3. Sharp RD estimates at the 0.15 threshold, main sample *(continued)*

	(1)	(2)	(3)	(4)	(5)
Panel H. Probability of an alcohol-related crash					
Estimate	-0.006	-0.006	-0.002	-0.006	-0.012
Standard error	(0.004)	(0.004)	(0.003)	(0.004)	(0.007)
Observations	27,648	27,643	27,643	27,643	27,643
Effective N	6,022	6,556	9,150	7,468	6,878
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.11 - 0.19	0.10 - 0.20	0.11 - 0.19	0.11 - 0.19
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel I. Probability of a crash involving an injury or fatality					
Estimate	-0.003	-0.005	-0.006	-0.005	-0.004
Standard error	(0.006)	(0.006)	(0.007)	(0.007)	(0.008)
Observations	27,648	27,643	27,643	27,643	27,643
Effective N	7,307	6,703	6,020	7,113	11,973
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.11 - 0.19	0.11 - 0.19	0.12 - 0.18	0.11 - 0.19	0.09 - 0.21
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular

Standard errors in parentheses
*** $p<.001$, ** $p<.01$, * $p<.05$

Main estimates and additional specifications

Table A4. Main fuzzy regression discontinuity estimates

	(1)	(2)	(3)	(4)	(5)
Panel A: PCA offending in initial disqualification period					
Estimate					
Standard error	-0.018	-0.0252*	-0.0208*	-0.0175*	-0.017
	(0.010)	(0.010)	(0.009)	(0.008)	(0.010)
Observations	43,196	43,189	43,186	43,186	43,186
Effective N	6,896	5,940	7,377	10,518	10,518
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.13 - 0.17	0.13 - 0.17	0.12 - 0.18	0.11 - 0.19	0.09 - 0.21
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel B: PCA offending in interlock period					
Estimate	-0.105***	-0.103***	-0.110***	-0.102***	-0.108***
Standard error	(0.014)	(0.014)	(0.016)	(0.012)	(0.019)
Observations	43,196	43,189	43,186	43,186	43,186
Effective N	9,715	8,705	6,893	14,315	14,315
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.13 - 0.17	0.10 - 0.20	0.10 - 0.20
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular

Table A4. Main fuzzy regression discontinuity estimates *(continued)*

	(1)	(2)	(3)	(4)	(5)
Panel C: PCA offending in 12 months after interlock period					
Estimate	-0.0378*	-0.0263	-0.0307*	-0.0314**	-0.0354**
Standard error	(0.016)	(0.014)	(0.013)	(0.012)	(0.013)
Observations	43,196	43,189	43,186	43,186	43,186
Effective N	4,343	5,940	6,449	9,443	9,443
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.13 - 0.17	0.13 - 0.17	0.13 - 0.17	0.12 - 0.18	0.09 - 0.21
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel D. Number of traffic infringements in the 36 months following finalisation					
Estimate	-0.432***	-0.374***	-0.354**	-0.352***	-0.339**
Standard error	(0.101)	(0.102)	(0.108)	(0.099)	(0.119)
Observations	27,648	27,643	27,643	27,643	27,643
Effective N	5,215	4,883	4,397	5,575	5,575
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.13 - 0.17	0.12 - 0.18	0.10 - 0.20
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel E. Probability of an alcohol-related crash in the 36 months following finalisation					
Estimate	-0.009	-0.010	-0.002	-0.017	-0.021
Standard error	(0.007)	(0.006)	(0.005)	(0.009)	(0.011)
Observations	27,648	27,643	27,643	27,643	27,643
Effective N	5,577	6,556	8,362	4,555	4,555
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.11 - 0.19	0.10 - 0.20	0.12 - 0.18	0.11 - 0.19
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular
Panel F. Probability of a crash involving an injury in the 36 months of finalisation					
Estimate	-0.003	-0.008	-0.006	-0.010	-0.010
Standard error	(0.011)	(0.011)	(0.011)	(0.013)	(0.015)
Observations	27,648	27,643	27,643	27,643	27,643
Effective N	5,399	5,739	5,575	4,883	4,883
Controls	No	Yes	Yes	Yes	Yes
Fixed effects	No	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	2
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.10 - 0.20
Kernel	Uniform	Uniform	Uniform	Triangular	Triangular

Standard errors in parentheses
*** $p<.001$, ** $p<.01$, * $p<.05$

Regression discontinuity robustness checks

Falsification test: Sharp regression discontinuity estimates at various thresholds

Figure A2. Sharp regression estimates at 0.14, 0.16, and 0.18 thresholds

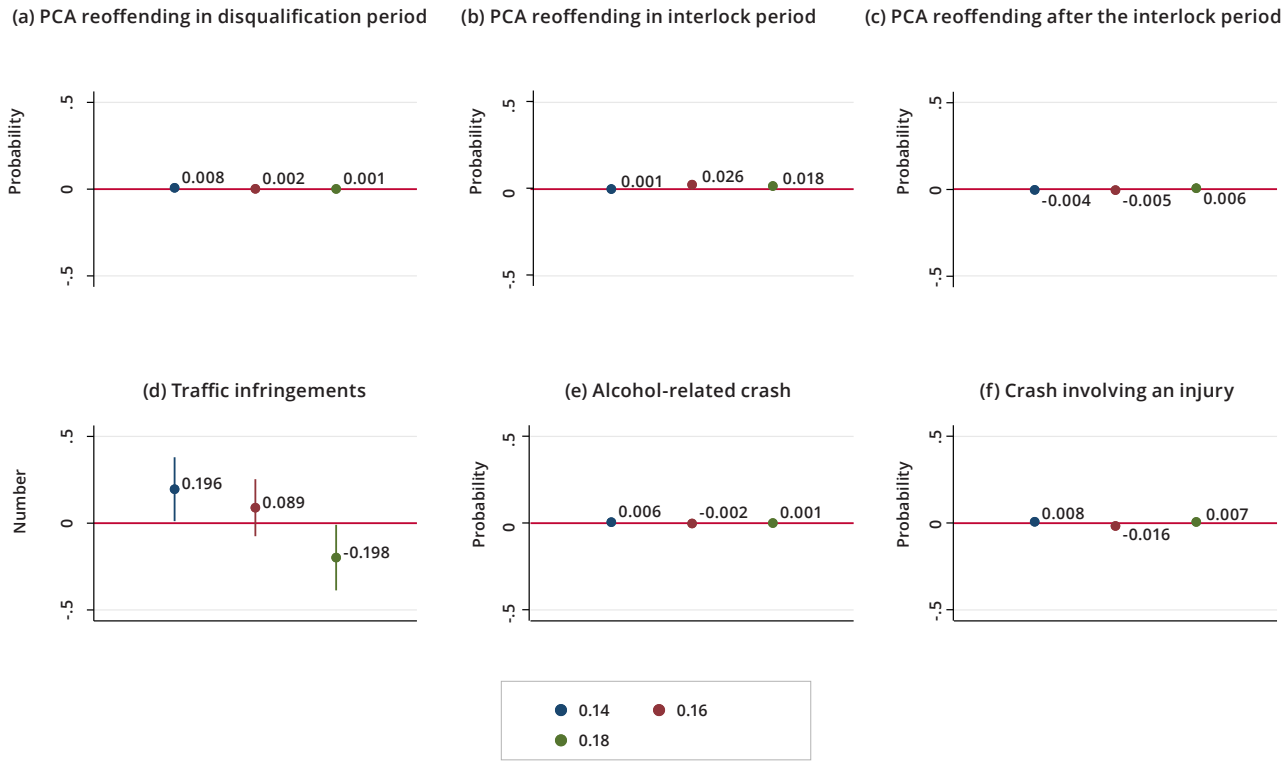


Table A5. Sharp RD estimates at 0.14, 0.16, and 0.18 thresholds

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Outcome	PCA reoffence in disqualification period	PCA reoffence in disqualification period	PCA reoffence in disqualification period	PCA reoffence in interlock period	PCA reoffence in interlock period	PCA reoffence in interlock period	PCA reoffence in 24 months after interlock period	PCA reoffence in 24 months after interlock period	PCA reoffence in 24 months after interlock period
Estimate	0.008	0.002	0.001	0.001	0.026	0.018	-0.004	-0.005	0.006
Standard error	(0.007)	(0.007)	(0.009)	(0.014)	(0.014)	(0.013)	(0.009)	(0.009)	(0.014)
Observations	43,186	43,186	43,186	43,186	43,186	43,186	43,186	43,186	43,186
Effective N	12,825	109,38	6,899	12,825	6,115	4,447	13,146	8,590	6,018
Threshold	0.14	0.16	0.18	0.14	0.16	0.18	0.14	0.16	0.18
Controls									
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Polynomial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	2	2	2	2	2	2	2	2	2
Kernel	0.09 - 0.19	0.11 - 0.21	0.13 - 0.23	0.10 - 0.18	0.12 - 0.20	0.15 - 0.21	0.10 - 0.18	0.11 - 0.21	0.13 - 0.23
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Outcome	Number of traffic infringements	Number of traffic infringements	Number of traffic infringements	Alcohol-related crash	Alcohol-related crash	Alcohol-related crash	Crash involving an injury or fatality	Crash involving an injury or fatality	Crash involving an injury or fatality
Estimate	0.196*	0.089	-0.198*	0.006	-0.002	0.001	0.008	-0.0161*	0.007
Standard error	(0.094)	(0.084)	(0.096)	(0.005)	(0.005)	(0.005)	(0.007)	(0.007)	(0.009)
Observations	27,643	27,643	27,643	27,643	27,643	27,643	27,643	27,643	27,643
Effective N	5,762	4,916	2,894	10,119	8,835	6,982	12,194	8,456	4,948
Threshold	0.14	0.16	0.18	0.14	0.16	0.18	0.14	0.16	0.18
Controls									
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Polynomial	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bandwidth	2	2	2	2	2	2	2	2	2
Kernel	0.10 - 0.18	0.12 - 0.20	0.15 - 0.21	0.10 - 0.18	0.12 - 0.20	0.12 - 0.24	0.10 - 0.18	0.11 - 0.21	0.13 - 0.23

Estimates from sharp RD without controls or fixed effects, uniform kernel and polynomial of order 2
Standard errors in parentheses
*** $p<.001$, ** $p<.01$, * $p<.05$

Falsification test: Sharp regression discontinuity estimates, prior to the introduction of MAIP

Figure A3. Sharp RD estimates between 01 February 2012 to 01 February 2015

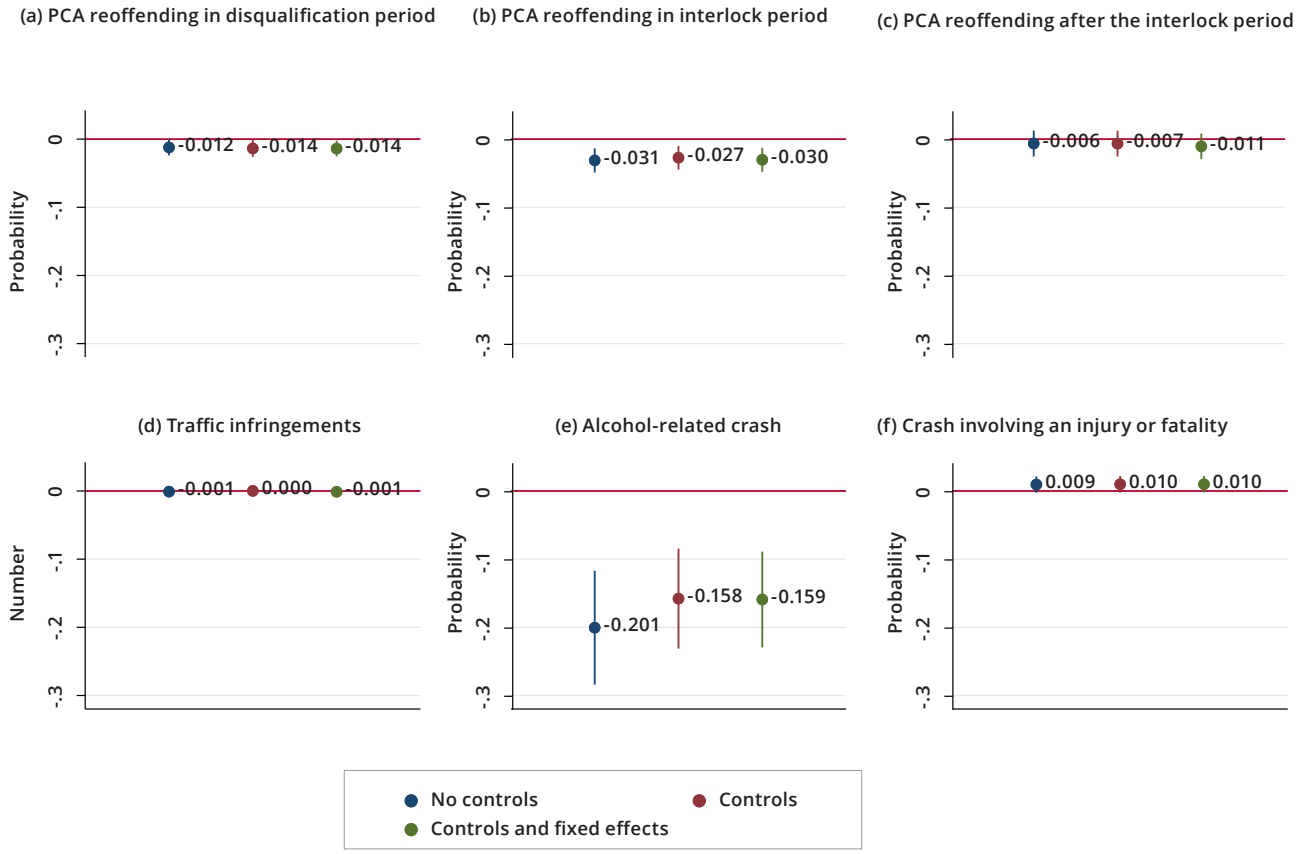


Table A6. Sharp RD estimates, between 01 February 2012 to 01 February 2015

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Outcome	PCA offence within disqualification period	PCA offence within disqualification period	PCA offence within disqualification period	PCA reoffence within interlock period	PCA reoffence within interlock period	PCA reoffence within interlock period	PCA offence following interlock period	PCA offence following interlock period	PCA offence following interlock period
Estimate	-0.0122*	-0.0137*	-0.0139*	-0.0312***	-0.0273**	-0.0303***	-0.006	-0.007	-0.011
Standard error	(0.006)	(0.006)	(0.006)	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.010)
Observations	40,059	40,056	40,055	40,059	40,056	40,055	40,059	40,056	40,055
Effective N	10,359	9,134	10,088	10,359	10,925	10,358	8,609	8,609	8,609
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
Polynomial	1	1	1	1	1	1	1	1	1
Bandwidth	0.11 - 0.19	0.12 - 0.18	0.11 - 0.19	0.11 - 0.19	0.11 - 0.19	0.11 - 0.19	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Outcome	Number of traffic infringements	Number of traffic infringements	Number of traffic infringements	Crashes involving alcohol	Crashes involving alcohol	Crashes involving alcohol	Crash involving an injury or fatality	Crash involving an injury or fatality	Crash involving an injury or fatality
Estimate	-0.201***	-0.158***	-0.159***	-0.001	0.000	-0.001	0.000	0.000	0.000
Standard error	(0.043)	(0.037)	(0.036)	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
Observations	40,053	40,050	40,049	40,053	40,050	40,049	40,053	40,050	40,049
Effective N	10,085	12,582	13,438	10,629	9,567	10,085	16,112	14,679	12,283
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Fixed effects	No	No	Yes	No	No	Yes	No	No	Yes
Polynomial	1	1	1	1	1	1	1	1	1
Bandwidth	0.11 - 0.19	0.11 - 0.19	0.10 - 0.20	0.11 - 0.19	0.12 - 0.18	0.11 - 0.19	0.10 - 0.20	0.10 - 0.20	0.11 - 0.19
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$

Robustness check: Donut regression discontinuity

Figure A4. Regression discontinuity estimates omitting readings within 0.002 points of the high range PCA threshold

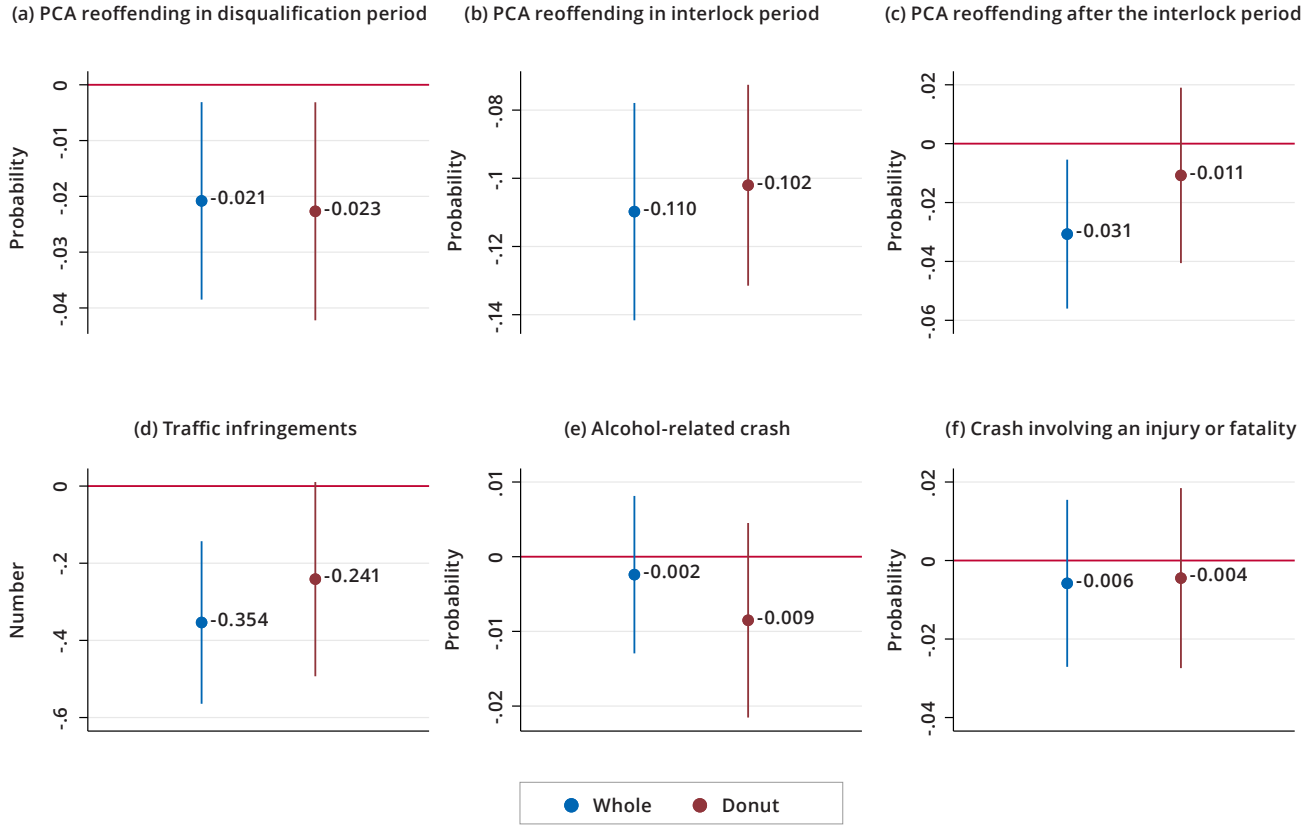


Table A7. Regression discontinuity estimates omitting readings within 0.002 points of the high range PCA threshold

	(1) PCA offence within disqualification period	(2) PCA offence within disqualification period	(3) PCA reoffence within interlock period	(4) PCA reoffence within interlock period	(5) PCA offence following interlock period	(6) PCA offence following interlock period
Panel A. PCA offending						
Estimate	-0.0208*	-0.0227*	-0.110***	-0.102***	-0.0307*	-0.0108
	(0.0090)	(0.0100)	(0.0163)	(0.0150)	(0.0129)	(0.0152)
Observations	43,186	42,843	43,186	42,843	43,186	42,843
Effective observations	6,896	8,364	9,715	6,552	4,343	5,271
Specification	Whole	Donut	Whole	Donut	Whole	Donut
Controls	No	No	No	No	No	No
Fixed effects	No	No	No	No	No	No
Polynomial	1	1	1	1	1	1
Bandwidth	0.13 - 0.17	0.12 - 0.18	0.12 - 0.18	0.13 - 0.17	0.13 - 0.17	0.13 - 0.17
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform
	(7) Number of traffic infringements	(8) Number of traffic infringements	(9) Alcohol-related crash	(10) Alcohol-related crash	(11) Crash involving an injury or fatality	(12) Crash involving an injury or fatality
Panel B. Traffic outcomes						
Estimate	-0.354**	-0.241	-0.002	-0.008	-0.006	-0.004
	(0.1080)	(0.1280)	(0.0054)	(0.0066)	(0.0109)	(0.0117)
Observations	27,643	27,430	27,643	27,430	27,643	27,430
Effective observations	5,215	4,185	6,022	3,037	7,115	3,571
Specification	4397	3369	8362	5362	5575	5362
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	1	1
Bandwidth	0.13 - 0.17	0.13 - 0.17	0.10 - 0.20	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform

Standard errors in parentheses
*** $p<.001$, ** $p<.01$, * $p<.05$

Difference-in-differences analyses

Tests of common trends

Figure A5. Event study estimates of impact of the introduction of MAIP on study outcomes

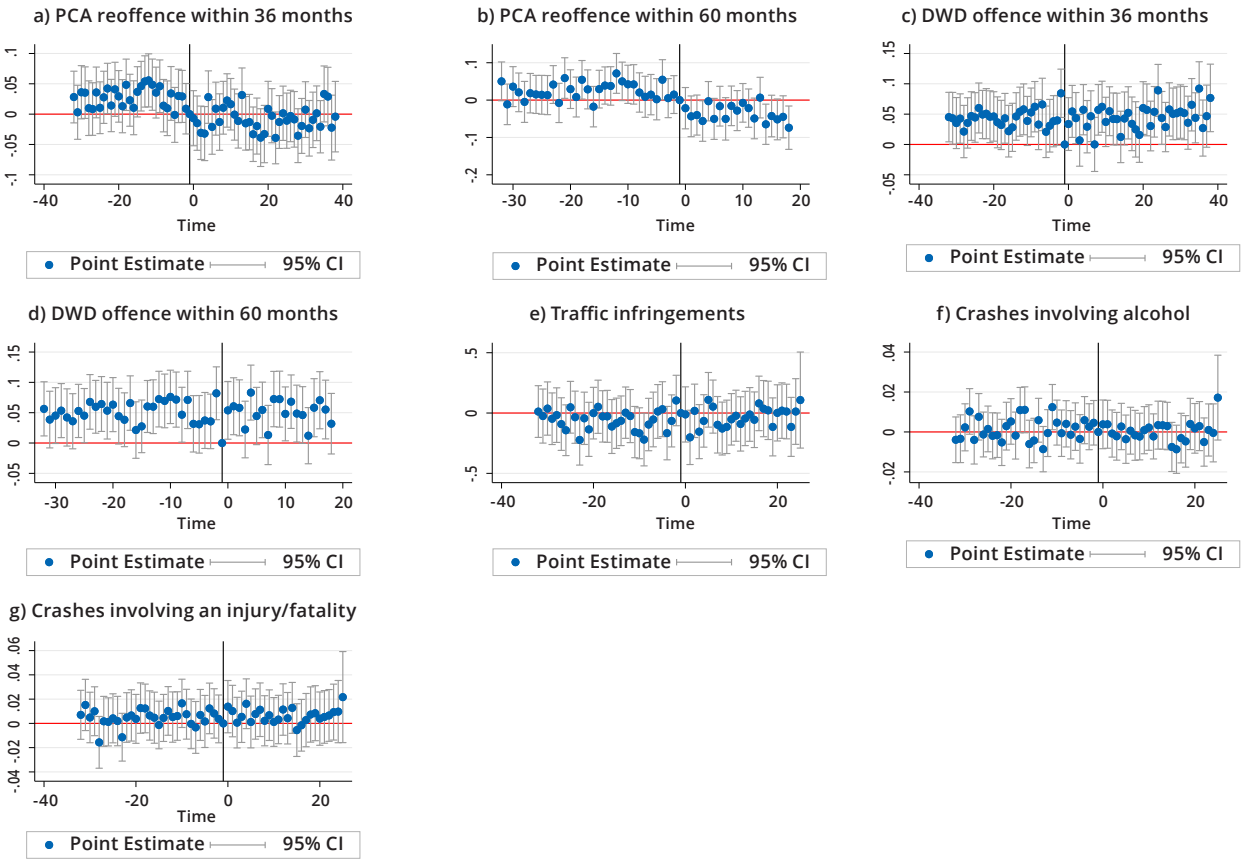


Table A8. Tests of joint significance of event study lags

	(1) PCA reoffence within 36 months	(2) PCA reoffence within 60 months	(4) DWD offence within 36 months	(5) DWD offence within 60 months
Panel A. PCA and DWD offending				
F-statistic	1.10	1.30	1.08	1.24
p-value	.324	.125	.342	.167
Number of leads	31	31	31	31
	(6) Traffic infringements		(7) Crashes involving alcohol	(8) Crash involving an injury or fatality
Panel B. Road safety outcomes				
F-statistic	1.05		1.67	0.79
p-value	.384		.011	.795
Number of leads	31		31	31

Standard errors in parentheses
*** $p<.001$, ** $p<.01$, * $p<.05$

Table A9. Difference-in-differences estimates

	(1) PCA reoffence within 36 months	(2) PCA reoffence within 36 months	(3) PCA reoffence within 36 months	(4) PCA reoffence within 60 months	(5) PCA reoffence within 60 months	(6) PCA reoffence within 60 months	(7) DWD offence within 36 months	(8) DWD offence within 36 months	(9) DWD offence within 36 months	(10) DWD offence within 60 months	(11) DWD offence within 60 months	(12) DWD offence within 60 months
Panel A. PCA and DWD offending												
Estimate	-0.035***	-0.034***	-0.034***	-0.059***	-0.060***	-0.060***	0.002	0.005	0.005	0.001	0.002	0.002
Standard error	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.006)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Observations	98,501	98,489	98,483	73,208	73,200	73,194	98,501	98,489	98,483	73,208	73,200	73,194
R-squared	0.002	0.026	0.028	0.003	0.036	0.039	0.003	0.066	0.069	0.003	0.085	0.088
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Fixed effects	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes

	(13) Traffic infringements	(14) Traffic infringements	(15) Traffic infringements	(16) Crashes involving alcohol	(17) Crashes involving alcohol	(18) Crashes involving alcohol	(19) Crash involving an injury or fatality	(20) Crash involving an injury or fatality	(21) Crash involving an injury or fatality
Panel B. Traffic infringements									
Estimate	0.0188	0.0264	0.0262	-0.002	-0.002	-0.002	0.002	0.002	0.002
Standard error	(0.019)	(0.019)	(0.019)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Observations	80,271	80,256	80,254	80,271	75,796	75,796	80,265	75,790	75,790
R-squared	0.015	0.099	0.108	0.001	0.002	0.004	0.001	0.004	0.006
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Fixed effects	No	No	Yes	No	No	Yes	No	No	Yes

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$

Main difference-in-differences estimates

Negative binomial and logistic regressions

Table A10. Marginal effects estimated from logistic and negative binomial regressions of the impact of MAIP

	(1) PCA reoffence within 36 months	(2) PCA reoffence within 36 months	(3) PCA reoffence within 36 months	(4) PCA reoffence within 60 months	(5) PCA reoffence within 60 months	(6) PCA reoffence within 60 months	(7) DWD offence within 36 months	(8) DWD offence within 36 months	(9) DWD offence within 36 months	(10) DWD offence within 60 months	(11) DWD offence within 60 months	(12) DWD offence within 60 months
Panel A. PCA and DWD offending												
Estimate	-0.040***	-0.041***	-0.042***	-0.062***	-0.064***	-0.064***	0.002	0.006	0.006	0.001	0.004	0.004
Standard error	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.006)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.005)
Observations	98,501	93,016	93,014	73,208	69,018	69,016	98,501	93,016	92,871	73,208	69,018	68,963
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Fixed effects	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes

	(13) Traffic infringements	(14) Traffic infringements	(15) Traffic infringements	(16) Crashes involving alcohol	(17) Crashes involving alcohol	(18) Crashes involving alcohol	(19) Crashes involving an injury or fatality	(20) Crashes involving an injury or fatality	(21) Crashes involving an injury or fatality
Panel B. Traffic infringements									
Estimate	0.028	0.045	0.036	-0.002	-0.002	-0.002	0.001	0.001	0.001
Standard error	(0.026)	(0.053)	(0.040)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Observations	80,271	75,796	75,796	80,265	75,790	68,493	80,265	75,790	73,601
Controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Fixed effects	No	No	Yes	No	No	Yes	No	No	Yes

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$

Subgroup analyses

Penalty groups

Table A11. Difference-in-differences estimates, PCA offending within disqualification period, within interlock period, and following interlock period, by penalty group

	(1) PCA offence within disqualification period	(2) PCA offence within interlock period	(3) PCA offence following interlock period	(4) DWD offence within disqualification period	(5) DWD offence within interlock period	(6) DWD offence following interlock period	(7) Traffic infringements	(8) Crashes involving alcohol	(9) Crashes involving an injury or fatality
Panel A. Repeat low range PCA offenders									
Estimate	-0.005	-0.008	-0.0299**	-0.0128	0.0208*	0.012	-0.127*	0.001	-0.003
Standard error	(0.005)	(0.006)	(0.009)	(0.007)	(0.009)	(0.009)	(0.053)	(0.004)	(0.006)
Observations	77,391	77,391	73,877	77,391	77,391	73,877	63,028	63,034	63,028
R-squared	0.015	0.014	0.021	0.024	0.042	0.049	0.104	0.005	0.006
F-statistic	2.37	1.04	1.19	2.21	1.71	1.41	1.00	2.49	1.57
p-value	.000	.412	.215	.000	.008	.065	.465	.000	.022
Panel B. Repeat mid range PCA or first time refuse breath test									
Estimate	-0.006*	-0.030***	-0.028***	-0.004	0.007*	0.006	0.040*	-0.002	0.002
Standard error	(0.002)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)	(0.020)	(0.001)	(0.002)
Observations	92,478	92,478	86,424	92,478	92,478	86,424	75,266	75,272	75,266
R-squared	0.016	0.02	0.019	0.038	0.045	0.034	0.109	0.005	0.006
F-statistic	1.09	0.85	8.37	0.65	2.59	2.56	24.70	1.69	1.74
p-value	.329	.707	.000	.935	.000	.000	.000	.010	.006
Panel C. Repeat high range PCA or refuse breath test									
Estimate	0.00319	-0.048**		0.004	0.039*		0.110**	-0.003	0.004
Standard error	(0.008)	(0.015)		(0.008)	(0.018)		(0.038)	(0.002)	(0.003)
Observations	76,402	52,023		76,402	52,023		62,204	62,210	62,204
R-squared	0.017	0.034		0.049	0.075		0.108	0.005	0.007
F-statistic	1.947	1.822		1.013	5.063		8.369	0.627	0.631
p-value	.001	.003		.445	.000		.000	.947	.944

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$

Demographics and criminal history

Table A12. Regression discontinuity estimates, PCA reoffending in interlock period, various subgroups

Group	(1) ATSI Status - ever recorded - Aboriginal	(2) ATSI Status - ever recorded - Non-Aboriginal	(3) ATSI Status - ever recorded - Unknown	(4) Gender - Female	(5) Gender - Male	(6) Age categories - 18-24	(7) Age categories - 25-34	(8) Age categories - 35-44	(9) Age categories - 45-54	(10) Age categories - 55+
Estimate	-0.184*	-0.110***	-0.062***	-0.096**	-0.103***	-0.066*	-0.108***	-0.103***	-0.134***	-0.106**
	(0.078)	(0.019)	(0.018)	(0.029)	(0.016)	(0.032)	(0.027)	(0.027)	(0.031)	(0.041)
Observations	2,665	26,379	14,142	9,391	33,795	8,392	12,292	9,346	7,348	5,808
Effective N	630	5464	2351	1714	6731	1586	2651	1854	1423	931
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	1	1	1	1	1	1
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform

Group	(11) - Most disadvantaged	(12) - More disadvantaged	(13) - Less disadvantaged	(14) - Least disadvantaged	(15) Remoteness area - Major cities	(16) Remoteness area - Outside major cities	(17) Prior court appearances - No prior court appearances	(18) Prior court appearances - 1 or more prior appearances	(19) Prior infringements - No	(20) Prior infringements - Yes
Estimate	-0.128***	-0.147***	-0.0718**	-0.0852**	-0.104***	-0.110***	-0.0897***	-0.122***	-0.0535	-0.111***
	(0.034)	(0.028)	(0.025)	(0.028)	(0.018)	(0.024)	(0.018)	(0.022)	(0.032)	(0.016)
Observations	8,929	11,430	10,710	9,873	26,982	13,965	24,799	18,387	8,153	35,033
Effective N	1,789	2,376	2,166	1,706	5,123	2,916	4,446	3,999	1,591	6,854
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Polynomial	1	1	1	1	1	1	1	1	1	1
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform

Standard errors in parentheses
*** $p<.001$, ** $p<.01$, * $p<.05$

Table A13. Regression discontinuity estimates, PCA offending in 24 months after interlock period, various subgroups

Group	(1) ATSI Status - ever recorded - Aboriginal	(2) ATSI Status - ever recorded - Non-Aboriginal	(3) ATSI Status - ever recorded - Unknown	(4) Gender - Female	(5) Gender - Male	(6) Age categories - 18-24	(7) Age categories - 25-34	(8) Age categories - 35-44	(9) Age categories - 45-54	(10) Age categories - 55+
Estimate	-0.113	-0.045**	-0.003	-0.024	-0.040**	-0.043*	-0.040*	-0.088***	0.016	0.031
	(0.066)	(0.015)	(0.008)	(0.021)	(0.013)	(0.017)	(0.019)	(0.022)	(0.029)	(0.027)
Observations	2,665	26,379	14,142	9,391	33,795	8,392	12,292	9,346	7,348	5,808
Effective observations	630	5,464	2,351	1,714	6,731	1,586	2,651	1,854	1,423	931
Controls	No	No	No	No	No	No	No	No	No	No
Fixed effects	No	No	No	No	No	No	No	No	No	No
Polynomial	1	1	1	1	1	1	1	1	1	1
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform

Group	(11) SEIFA - Most disadvantaged	(12) SEIFA - More disadvantaged	(13) SEIFA - Less disadvantaged	(14) SEIFA- Least disadvantaged	(15) Remoteness area - Major cities	(16) Remoteness area - Outside major cities	(17) Prior court appearances - No prior court appearances	(18) Prior court appearances - 1 or more prior appearances	(19) Prior infringements - No	(20) Prior infringements - Yes
Estimate	-0.054*	-0.041*	-0.055*	0.0162	-0.031*	-0.041*	-0.021	-0.046*	-0.002	-0.039**
	(0.022)	(0.021)	(0.023)	(0.021)	(0.014)	(0.019)	(0.012)	(0.018)	(0.026)	(0.012)
Observations	8,929	11,430	10,710	9,873	26,982	13,965	24,799	18,387	8,153	35,033
Effective observations	1,789	2,376	2,166	1,706	5,123	2,916	4,446	3,999	1,591	6,854
Controls	No	No	No	No	No	No	No	No	No	No
Fixed effects	No	No	No	No	No	No	No	No	No	No
Polynomial	1	1	1	1	1	1	1	1	1	1
Bandwidth	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18	0.12 - 0.18
Kernel	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform	Uniform

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$

Table A14. Difference-in-differences estimates, PCA offending within 36 months of finalisation, various groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Group	ATSI Status - ever recorded - Aboriginal	ATSI Status - ever recorded - Non-Aboriginal	ATSI Status - ever recorded - Unknown	Gender - Female	Gender - Male	Age categories - 18-24	Age categories - 25-34	Age categories - 35-44	Age categories - 45-54	Age categories - 55+
Estimate	-0.0374*	-0.0366***	-0.0253***	-0.0334***	-0.0344***	-0.0251**	-0.0392***	-0.0368***	-0.0367***	-0.0240*
Standard error	(0.016)	(0.005)	(0.006)	(0.008)	(0.004)	(0.010)	(0.007)	(0.008)	(0.009)	(0.009)
Observations	7,140	63,988	27,355	20,671	77,812	18,984	28,506	22,032	16,583	12,378
R-squared	0.041	0.017	0.014	0.040	0.026	0.040	0.033	0.036	0.041	0.036
F-statistic on leads	1.08	0.96	1.71	0.82	1.16	0.90	0.74	1.03	1.01	1.01
p-value	.349	.532	.008	.741	.247	.632	.849	.423	.452	.452

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Group	SEIFA - Most disadvantaged	SEIFA - More disadvantaged	SEIFA - Less disadvantaged	SEIFA- Least disadvantaged	Remoteness area - Major cities	Remoteness area - Outside major cities	Prior court appearances - No prior court appearances	Prior court appearances - 1 or more prior appearances	Prior infringements - No	Prior infringements - Yes
Estimate	-0.045***	-0.035***	-0.032***	-0.021**	-0.029***	-0.043***	-0.035***	-0.034***	-0.025*	-0.037***
Standard error	(0.008)	(0.007)	(0.008)	(0.008)	(0.005)	(0.007)	(0.006)	(0.005)	(0.010)	(0.004)
Observations	20,815	26,320	24,177	22,264	61,277	32,308	50,326	48,157	13,449	85,034
R-squared	0.031	0.034	0.032	0.026	0.026	0.031	0.028	0.022	0.039	0.029
F-statistic on leads	1.748	1.060	1.357	1.056	1.064	1.745	0.624	1.183	0.687	1.080
p-value	.006	.376	.089	.382	.370	.006	.949	.223	.903	.348

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$

Table A15. Difference-in-differences estimates, PCA offending within 60 months of finalisation, various groups

Group	(1) ATSI Status - ever recorded - Aboriginal	(2) ATSI Status - ever recorded - Non-Aboriginal	(3) ATSI Status - ever recorded - Unknown	(4) Gender - Female	(5) Gender - Male	(6) Age categories - 18-24	(7) Age categories - 25-34	(8) Age categories - 35-44	(9) Age categories - 45-54	(10) Age categories - 55+
Estimate	-0.096***	-0.062***	-0.035***	-0.047***	-0.063***	-0.059***	-0.059***	-0.062***	-0.063***	-0.065***
Standard error	(0.023)	(0.007)	(0.009)	(0.012)	(0.006)	(0.014)	(0.010)	(0.012)	(0.013)	(0.014)
Observations	5,375	47,983	19,836	15,348	57,846	14,091	21,147	16,559	12,348	9,049
R-squared	0.049	0.020	0.015	0.050	0.037	0.059	0.045	0.042	0.053	0.060
F-statistic on leads	0.95	1.16	1.90	0.95	1.19	0.78	0.93	0.93	1.49	1.45
p-value	.554	.248	.002	.549	.220	.800	.585	.586	.038	.050

Group	(11) SEIFA - Most disadvantaged	(12) SEIFA - More disadvantaged	(13) SEIFA - Less disadvantaged	(14) SEIFA- Least disadvantaged	(15) Remoteness area - Major cities	(16) Remoteness area - Outside major cities	(17) Prior court appearances - No prior court appearances	(18) Prior court appearances - 1 or more prior appearances	(19) Prior infringements - No	(20) Prior infringements - Yes
Estimate	-0.085***	-0.054***	-0.056***	-0.044***	-0.057***	-0.067***	-0.050***	-0.064***	-0.058***	-0.061***
Standard error	(0.012)	(0.011)	(0.011)	(0.012)	(0.007)	(0.010)	(0.008)	(0.008)	(0.015)	(0.006)
Observations	15,394	19,423	18,026	16,838	45,860	23,829	37,304	35,890	7,720	65,474
R-squared	0.044	0.043	0.044	0.037	0.036	0.042	0.037	0.026	0.063	0.039
F-statistic on leads	1.702	1.047	1.738	0.961	1.396	1.447	1.026	1.204	1.165	1.246
p-value	.009	.395	.007	.529	.070	.051	.427	.202	.242	.163

Standard errors in parentheses

*** $p<.001$, ** $p<.01$, * $p<.05$