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Supporting Information 2

Supplementary results

This appendix was part of the submitted manuscript and has been peer reviewed.
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Appendix to: Roder C, Maggs C, McNamara BJ, et al. Area-level social and economic factors and the local incidence of SARS-CoV-2 infections in Victoria during 2020. *Med J Aust* 2022; doi: 10.5694/mja2.51436.

Figure 1. Distribution of the number of confirmed SARS-CoV-2 infections in regional and metropolitan postcodes

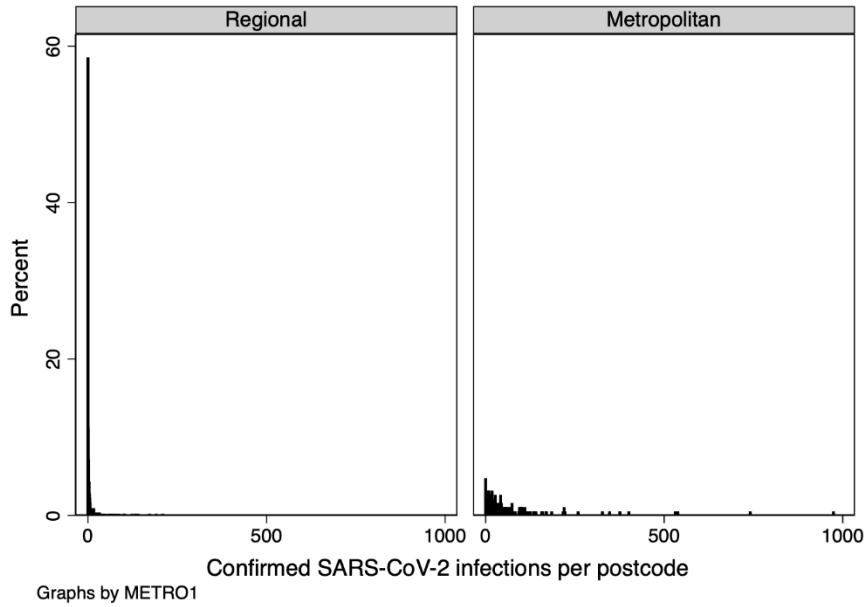

Table 1. Model coefficients with standard errors (SE), representing the expected change in log of confirmed SARS-CoV-2 infections in a postcode per unit change in the socio-economic covariate and AIC model fit statistic

Metropolitan (v regional)	**Model 1**	**SE**		**SE**
Count component (CONFIRMED_CASES)				
METRO1	1.819	(0.147)		
_cons	-7.168	(0.101)		
Inflate (zero component)				
METRO1	-21.50	(4878.8)		
_cons	-0.437	(0.162)		
lnalpha	0.733	(0.0850)		
AIC	4001.1			
Population density (100 persons/km^2)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
POP_DENSITY100	0.0258	(0.00526)	0.139	(0.0251)
0.METRO			0	(.)
1.METRO			2.362	(0.181)
0.METRO#c.POP_DENSITY100			0	(.)
1.METRO#c.POP_DENSITY100			-0.144	(0.0254)
_cons	-6.418	(0.102)	-7.593	(0.110)
Inflate (zero component)				
POP_DENSITY100	-8.880	(2.820)	-9.639	(4.059)
METRO			-2.337	(8.474)
_cons	0.919	(0.187)	0.744	(0.217)
lnalpha	0.877	(0.0737)	0.589	(0.0776)
AIC	4003.1		3844.9	
Median Age (years)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
MEDIAN_AGE	-0.178	(0.0138)	-0.118	(0.0118)
0.METRO			0	(.)
1.METRO			1.371	(0.142)
_cons	0.695	(0.547)	-2.393	(0.496)
Inflate (zero component)				
MEDIAN_AGE	0.222	(0.0342)	0.130	(0.0287)
0.METRO			0	(.)
1.METRO			-21.95	(10331.0)
_cons	-11.21	(1.609)	-6.382	(1.311)
lnalpha	0.822	(0.0931)	0.488	(0.0842)
AIC	3984.6		3855.0	
Working Age persons (%)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
WORKING_AGE_P	0.145	(0.0177)	0.188	(0.0193)
0.METRO			0	(.)
1.METRO			13.27	(1.631)
0.METRO#c.WORKING_AGE_P			0	(.)
1.METRO#c.WORKING_AGE_P			-0.180	(0.0248)
_cons	-15.84	(1.168)	-19.23	(1.226)
Inflate (zero component)				
WORKING_AGE_P	-0.287	(0.0448)	-0.112	(0.0399)
0.METRO			0	(.)
1.METRO			-23.13	(16838.0)
_cons	16.44	(2.706)	6.277	(2.469)
lnalpha	1.043	(0.0914)	0.588	(0.0848)
AIC	4080.4		3875.1	

METRO: 0=Regional 1=Metro;
lnalpha is the log shape coefficient for the negative binomial distribution.
_cons are the intercepts for each model component.

Table 2. Model coefficients with standard errors (SE), representing the expected change in log of confirmed SARS-CoV-2 infections in a postcode per unit change in the socio-economic covariate and AIC model fit statistic

Overseas born persons (%)	**Model 1**	**SE**	**Model 2**	**SE**
Count component (CONFIRMED_CASES)				
OS_PERSONS_P	0.0654	(0.00669)	0.0930	(0.0132)
0.METRO			0	(.)
1.METRO			2.996	(0.328)
0.METRO#c.OS_PERSONS_P			0	(.)
1.METRO#c.OS_PERSONS_P			-0.0844	(0.0152)
_cons	-7.687	(0.161)	-8.626	(0.201)
Inflate (zero component)				
OS_PERSONS_P	-0.349	(0.0552)	-0.272	(0.0631)
0.METRO			0	(.)
1.METRO			-20.03	(11677.1)
_cons	2.965	(0.491)	2.166	(0.567)
lnalpha	0.779	(0.0821)	0.567	(0.0834)
AIC	3948.0		3833.6	
Language other than English spoken at home (%)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
LANGUAGE_OTH_ENGLISH	0.0498	(0.00498)	0.0827	(0.0124)
0.METRO			0	(.)
1.METRO			2.303	(0.234)
0.METRO#c.LANGUAGE_OTH_ENGLISH			0	(.)
1.METRO#c.LANGUAGE_OTH_ENGLISH			-0.0708	(0.0135)
_cons	-7.233	(0.117)	-8.057	(0.135)
Inflate (zero component)				
LANGUAGE_OTH_ENGLISH	-0.417	(0.0862)	-0.298	(0.0959)
0.METRO			0	(.)
1.METRO			-18.52	(4601.8)
_cons	1.223	(0.313)	0.671	(0.360)
lnalpha	0.736	(0.0831)	0.539	(0.0840)
AIC	3959.5		3844.0	
Aboriginal and/or Torres Strait Islander (%)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
ATSI	-0.0676	(0.0821)	-0.145	(0.0910)
0.METRO			0	(.)
1.METRO			0.553	(0.258)
0.METRO#c.ATSI			0	(.)
1.METRO#c.ATSI			2.059	(0.427)
_cons	-6.115	(0.113)	-6.966	(0.141)
Inflate (zero component)				
ATSI	1.101	(0.170)	0.484	(0.155)
0.METRO			0	(.)
1.METRO			-24.10	(20771.3)
_cons	-2.548	(0.298)	-0.956	(0.256)
lnalpha	1.186	(0.0984)	0.586	(0.0848)
AIC	4196.1		3928.5	

METRO: 0=Regional 1=Metro;
lnalpha is the log shape coefficient for the negative binomial distribution.
_cons are the intercepts for each model component.

Table 3. Model coefficients with standard errors (SE), representing the expected change in log of confirmed SARS-CoV-2 infections in a postcode per unit change in the socio-economic covariate and AIC model fit statistic

Mortgage >30% of household income	**Model 1**	**SE**	**Model 2**	**SE**
Count component (CONFIRMED_CASES)				
MORT_GR30	0.116	(0.0286)	0.196	(0.0267)
0.METRO			0	(.)
1.METRO			2.996	(0.373)
0.METRO#c.MORT_GR30			0	(.)
1.METRO#c.MORT_GR30			-0.122	(0.0450)
_cons	-7.223	(0.244)	-8.922	(0.238)
Inflate (zero component)				
MORT_GR30	-0.732	(0.232)	-0.367	(0.0782)
0.METRO			0	(.)
1.METRO			-21.99	(6107.1)
_cons	2.442	(0.928)	1.973	(0.509)
lnalpha	1.363	(0.0977)	0.589	(0.0831)
AIC	4174.3		3847.2	
Rent payments >30% of household income	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
RENT_GR30	0.124	(0.0219)	0.136	(0.0336)
0.METRO			0	(.)
1.METRO			2.615	(0.317)
0.METRO#c.RENT_GR30			0	(.)
1.METRO#c.RENT_GR30			-0.125	(0.0371)
_cons	-7.341	(0.208)	-8.084	(0.238)
Inflate (zero component)				
RENT_GR30	-0.403	(0.0932)	-0.176	(0.0542)
0.METRO			0	(.)
1.METRO			-21.49	(6550.5)
_cons	0.708	(0.405)	0.479	(0.328)
lnalpha	1.176	(0.0944)	0.690	(0.0841)
AIC	4128.5		3935.0	
Private Health Insurance (%)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
PRIVATE_HEALTH_INS_P	-0.0341	(0.00682)	-0.0564	(0.00615)
1.METRO			1.966	(0.135)
_cons	-5.238	(0.236)	-5.603	(0.197)
Inflate (zero component)				
PRIVATE_HEALTH_INS_P	-0.0740	(0.0147)	-0.0692	(0.0196)
1.METRO			-5.981	(4.019)
_cons	0.797	(0.468)	1.639	(0.530)
lnalpha	1.168	(0.114)	0.467	(0.0879)
AIC	4201.4		3892.1	
Standard errors in parentheses				
Median Weekly Equivalised Household income (per $100)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
HOUSEHOLD_INC_MEDEQ100	0.00423	(0.0376)	0.287	(0.0801)
0.METRO			0	(.)
1.METRO			5.967	(0.750)
0.METRO#c.HOUSEHOLD_INC_MEDEQ100			0	(.)
1.METRO#c.HOUSEHOLD_INC_MEDEQ100			-0.489	(0.0884)
_cons	-6.106	(0.342)	-9.411	(0.641)
Inflate (zero component)				
HOUSEHOLD_INC_MEDEQ100	-1.104	(0.142)	-0.941	(0.189)
0.METRO			0	(.)
1.METRO			-20.92	(5901.3)
_cons	7.230	(0.973)	6.348	(1.298)
lnalpha	1.021	(0.0818)	0.607	(0.0825)
AIC	4144.4		3898.5	
No Paid Leave benefits (%)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
NO_LEAVE_P	0.101	(0.0479)	0.00307	(0.0477)
0.METRO			0	(.)

1.METRO			-1.618	(1.795)
0.METRO#c.NO_LEAVE_P			0	(.)
1.METRO#c.NO_LEAVE_P			0.193	(0.103)
_cons	-7.908	(0.844)	-7.184	(0.823)
Inflate (zero component)				
NO_LEAVE_P	-0.745	(0.120)	-0.304	(0.0935)
0.METRO			0	(.)
1.METRO			-20.56	(3595.9)
_cons	10.72	(1.885)	4.505	(1.491)
lnalpha	1.139	(0.0834)	0.684	(0.0825)
AIC	4198.5		3975.2	
Number of Jobs per 100 working age persons	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
JOBS_P100	-0.0553	(0.00567)	-0.0425	(0.00484)
0.METRO			0	(.)
1.METRO			1.511	(0.135)
_cons	-0.0109	(0.654)	-2.221	(0.575)
Inflate (zero component)				
JOBS_P100	0.0794	(0.0149)	0.0422	(0.0118)
0.METRO			0	(.)
1.METRO			11.06	(3.589)
0.METRO#c.JOBS_P100			0	(.)
1.METRO#c.JOBS_P100			-0.150	(0.0468)
_cons	-11.28	(1.899)	-5.670	(1.467)
lnalpha	1.026	(0.0985)	0.499	(0.0867)
AIC	4084.3		3880.2	
% Unemployment	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
UNEMPLOYMENT	0.324	(0.0441)	0.405	(0.0608)
0.METRO			0	(.)
1.METRO			3.156	(0.443)
0.METRO#c.UNEMPLOYMENT			0	(.)
1.METRO#c.UNEMPLOYMENT			-0.273	(0.0723)
_cons	-8.424	(0.281)	-9.465	(0.338)
Inflate (zero component)				
UNEMPLOYMENT	-1.075	(0.477)	-0.0292	(0.0907)
0.METRO			0	(.)
1.METRO			-21.56	(5540.3)
_cons	2.779	(1.768)	-0.335	(0.525)
lnalpha	1.322	(0.0956)	0.595	(0.0857)
AIC	4134.2		3913.0	

METRO: 0=Regional 1=Metro;
lnalpha is the log shape coefficient for the negative binomial distribution.
_cons are the intercepts for each model component.

Table 4. Model coefficients with standard errors (SE), representing the expected change in log of confirmed SARS-CoV-2 infections in a postcode per unit change in the socio-economic covariate and AIC model fit statistic

Housing Density	**Model 1**	**SE**	**Model 2**	**SE**
Count component (CONFIRMED_CASES)				
HOUSE_DENSITY	0.00317	(0.00221)	0.149	(0.0294)
0.METRO			0	(.)
1.METRO			2.325	(0.154)
0.METRO#c.HOUSE_DENSITY			0	(.)
1.METRO#c.HOUSE_DENSITY			-0.150	(0.0294)
_cons	-6.120	(0.0897)	-7.644	(0.108)
Inflate (zero component)				
HOUSE_DENSITY	-18.08	(7.786)	-26.63	(10.03)
0.METRO			0	(.)
1.METRO			-19.42	(22282.1)
_cons	0.947	(0.204)	0.811	(0.225)
lnalpha	0.942	(0.0752)	0.636	(0.0740)
AIC	3999.4		3803.0	
Household size (persons)	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
HOUSEHOLD_SIZE	1.333	(0.234)	1.988	(0.261)
0.METRO			0	(.)
1.METRO			5.627	(1.022)
0.METRO#c.HOUSEHOLD_SIZE			0	(.)
1.METRO#c.HOUSEHOLD_SIZE			-1.437	(0.389)
_cons	-9.726	(0.613)	-12.44	(0.680)
Inflate (zero component)				
HOUSEHOLD_SIZE	-3.281	(0.643)	-2.667	(0.634)
0.METRO			0	(.)
1.METRO			-23.47	(13655.0)
_cons	6.429	(1.524)	5.967	(1.524)
lnalpha	1.226	(0.101)	0.570	(0.0837)
AIC	4168.9		3869.5	
% Home rented	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
HOME_RENT	0.0517	(0.00845)	0.0526	(0.0117)
0.METRO			0	(.)
1.METRO			2.669	(0.352)
0.METRO#c.HOME_RENT			0	(.)
1.METRO#c.HOME_RENT			-0.0461	(0.0138)
_cons	-7.659	(0.242)	-8.219	(0.247)
Inflate (zero component)				
HOME_RENT	-0.0628	(0.0260)	-0.0153	(0.0165)
0.METRO			0	(.)
1.METRO			-20.41	(3114.1)
_cons	-1.142	(1.013)	-0.168	(0.363)
lnalpha	1.397	(0.131)	0.710	(0.0849)
AIC	4190.9		3984.6	
Homeless rate per 10,000	**Model 1**		**Model 2**	
Count component (CONFIRMED_CASES)				
HOMELESS_RATE	0.0165	(0.00290)	0.0171	(0.00498)
0.METRO			0	(.)
1.METRO			2.046	(0.227)
0.METRO#c.HOMELESS_RATE			0	(.)
1.METRO#c.HOMELESS_RATE			-0.0121	(0.00559)
_cons	-6.988	(0.142)	-7.656	(0.156)
Inflate (zero component)				
HOMELESS_RATE	-0.0687	(0.0321)	-0.00552	(0.00835)
0.METRO			0	(.)
1.METRO			-22.05	(6801.0)
_cons	-0.717	(0.509)	-0.295	(0.254)
lnalpha	1.347	(0.0999)	0.687	(0.0857)
AIC	4059.7		3846.5	

METRO: 0=Regional 1=Metro; *lnalpha* is the log shape coefficient for the negative binomial distribution; *_cons* are the intercepts for each model component.