

Table A1. Associations between missing ECERS &amp; CLASS scores and provider-level characteristics

	Missing ECERS				Missing CLASS			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Prop. Black	-0.04 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	-0.15 *** (0.04)	-0.04 (0.03)	-0.07 * (0.03)	-0.06 * (0.03)
Prop. Hispanic	-0.01 (0.02)	0.01 (0.02)	0.00 (0.02)	0.00 (0.02)	0.03 (0.04)	0.07 * (0.03)	0.03 (0.03)	0.03 (0.03)
Prop. Asian	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	-0.04 (0.04)	-0.04 (0.04)	-0.05 (0.03)	-0.05 (0.03)
Prop. Other	0.06 (0.08)	0.06 (0.07)	0.05 (0.07)	0.06 (0.07)	0.01 (0.14)	0.00 (0.11)	-0.06 (0.10)	-0.07 (0.10)
Entry (enrollment in 2017, not 2015)		0.42 *** (0.02)	0.42 *** (0.02)	0.35 *** (0.02)		0.87 *** (0.03)	0.92 *** (0.02)	0.85 *** (0.03)
DOE K12			0.03 ** (0.01)	0.01 (0.01)			0.24 *** (0.01)	0.24 *** (0.01)
DOE prek			0.02 (0.02)	0.02 (0.02)			0.00 (0.03)	-0.02 (0.03)
Charter			0.01 (0.05)	0.01 (0.05)			0.01 (0.07)	0.00 (0.07)
Average ECERS				-				0.02 (0.01)
Missing ECERS				-				0.26 *** (0.05)
Average CLASS				0.00 (0.01)				-
Missing CLASS				0.06 (0.05)				-
N	1869	1869	1869	1869	1869	1869	1869	1869

Note. ECERS - Early Childhood Environment Rating Scale; CLASS - Classroom Assessment Scoring System

Table A2. Demographic composition of kindergarten classrooms in NYC, by student race/ethnicity

Panel A. Enrollment composition

	All students		White		Black		Hispanic		Asian	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
% white	16.5	(22.2)	46.3	(23.6)	5.6	(11.4)	10.1	(16.0)	17.7	(18.6)
% black	24.4	(27.5)	8.2	(13.5)	55.3	(27.5)	19.1	(20.0)	7.7	(13.9)
% Hispanic	40.3	(26.4)	24.7	(17.3)	31.6	(23.1)	57.5	(24.3)	28.1	(19.2)
% Asian	15.9	(21.0)	17.0	(16.1)	5.0	(9.6)	11.1	(15.9)	43.6	(25.5)
% other non-white	2.8	(4.5)	3.8	(3.8)	2.5	(3.7)	2.1	(3.0)	2.9	(4.1)

Panel B. Gaps in enrollment composition

	black-white gap	Hispanic-white gap	Asian-white gap
% white	-40.7 *	-36.2 *	-28.6 *
% black	47.1 *	10.9 *	-0.5 *
% Hispanic	6.9 *	32.8 *	3.4 *
% Asian	-12.0 *	-5.9 *	26.6 *
% other non-white	-1.3 *	-1.7 *	-0.9 *

Note. Authors' calculations using student-level enrollment data from the Research Alliance for New York City Schools. All estimates are weighted to be representative of the average child in each group in the 2017-2018 school year. Gaps reported as raw (unstandardized) differences across groups. Gaps in Panel B may not match reported differences in Panel A exactly due to rounding.

\*  $p < .05$ .

Table A3. Demographic composition of first grade classrooms in NYC, by student race/ethnicity

Panel A. Enrollment composition

	All students		White		Black		Hispanic		Asian	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
% white	15.9	(21.7)	45.4	(23.8)	5.6	(11.1)	9.9	(15.6)	17.4	(18.5)
% black	24.6	(27.2)	8.6	(13.9)	54.7	(26.9)	19.0	(20.0)	8.5	(14.7)
% Hispanic	41.7	(26.7)	25.9	(18.1)	32.2	(22.9)	58.8	(24.5)	28.9	(19.5)
% Asian	15.0	(20.1)	16.3	(15.7)	5.2	(9.7)	10.4	(15.3)	42.0	(25.1)
% other non-white	2.8	(5.6)	3.8	(4.8)	2.3	(4.0)	1.9	(3.3)	3.1	(4.6)

Panel B. Gaps in enrollment composition

	black-white gap	Hispanic-white gap	Asian-white gap
% white	-39.8 *	-35.5 *	-28.0 *
% black	46.0 *	10.4 *	-0.1
% Hispanic	6.3 *	32.9 *	3.0 *
% Asian	-11.1 *	-5.9 *	25.7 *
% other non-white	-1.4 *	-1.9 *	-0.7 *

Note. Authors' calculations using student-level enrollment data from the Research Alliance for New York City Schools.. All estimates are weighted to be representative of the average child in each group in the 2017-2018 school year. Gaps reported as raw (unstandardized) differences across groups. Gaps in Panel B may not match reported differences in Panel A exactly due to rounding.

\*  $p < .05$ .

Table A4. Comparison of reported Early Childhood Environment Rating Scale (ECERS) scores across study populations

Location	N	Year	Total score		Source
			M	SD	
North Carolina	2447	2014-15	5.52	0.50	Authors' calculations
Tennessee	1755	2015-16	4.88	0.91	Authors' calculations
Boston pre-K	83	Spr. 2010	4.47	0.50	Weiland, Ulvestad, Sachs, & Yoshikawa (2013)
Tennessee pre-K	114	n.r.	4.40	0.82	Denny, Hallam, & Homer (2012)
Head Start FACES*	370	Spr. 2010	4.30	n.r.	Moiduddin et al. (2012)
<b>New York City pre-k</b>	<b>1724</b>	<b>2016-17</b>	<b>4.22</b>	<b>0.73</b>	<b>Authors' calculations</b>
A Midwestern state	189	Fall 2013	4.12	0.84	Lin & Magnuson (2018)
California	615	Spr. 2007	4.10	1.09	Karoly et al. (2008)
NCEDL-SWEEP* (11 states)	671	2001-04	3.85	0.82	Mashburn et al. (2008)

Note. n.r. - not reported. Mean scores

\*NCEDL: National Center for Early Development & Learning's multi-state study of pre-kindergarten; SWEEP: State-Wide Early Education Programs study; Head Start FACES: Head Start Family and Child Experiences Survey.

Table A5. Comparison of reported Classroom Assessment Scoring System (CLASS) scores across study populations

Location	N	Year	Emotional support		Classroom organization		Instructional support		Source
			M	SD	M	SD	M	SD	
<b>New York City pre-k</b>	<b>1493</b>	<b>2016-17</b>	<b>6.38</b>	<b>0.51</b>	<b>6.20</b>	<b>0.61</b>	<b>3.13</b>	<b>0.87</b>	<b>Authors' calculations</b>
San Mateo County, CA	8	2006-07	6.20	n.r.	5.10	n.r.	3.80	n.r.	American Institutes for Research (2007)
Head Start	319	2015-16	6.00	0.29	5.73	0.35	2.83	0.52	Office of Head Start (2017)
San Francisco County, CA	32	2006-07	6.00	n.r.	5.20	n.r.	3.70	n.r.	American Institutes for Research (2007)
Louisiana	636	2014-15	5.76	0.55	5.47	0.68	2.92	0.79	Bassok, Markowitz, Player, & Zagardo (2018)
Boston pre-K	83	Spr. 2010	5.63	0.60	5.10	0.68	4.30	0.84	Weiland, Ulvestad, Sachs, & Yoshikawa (2013)
NCEDL-SWEEP* (11 states)	671	2001-04	5.57	0.68	n.r.	n.r.	2.08	0.83	Mashburn et al. (2008)
Georgia pre-k	3883	2010-11	5.53	0.76	5.17	0.89	2.06	0.72	Bassok & Galdo (2016)
California	615	Spr. 2007	5.50	0.88	4.90	1.06	2.60	1.05	Karoly et al. (2008)
Eastern NC & Central PA	807	2003-04	5.35	0.69	4.82	0.83	2.59	0.95	Broekhuizen et al. (2016)
Tennessee pre-K	114	n.r.	5.30	0.87	4.70	0.93	2.50	0.86	Denny, Hallam, & Homer (2012)
Head Start FACES*	370	Spr. 2010	5.30	n.r.	4.70	n.r.	2.30	n.r.	Moiduddin et al. (2012)
Tulsa pre-k	77	Spr. 2006	5.23	0.57	4.96	0.69	3.21	0.93	Phillips, Gormley, & Lowenstein (2009)
10 cities across the US	314	2008-10	5.11	0.87	5.05	0.76	2.36	0.86	Hamre, Hatfield, Pianta, & Jamil (2013)

Note. Note. n.r. - not reported.

\*NCEDL: National Center for Early Development & Learning's multi-state study of pre-kindergarten; SWEEP: State-Wide Early Education Programs study; Head Start FACES: Head Start Family and Child Experiences Survey

Table A6. Correlations between ECERS and CLASS scales

	Overall CLASS score (1-7)	Emotional support	Classroom organization	Instructional support
Overall ECERS score (1-7)	0.17	0.15	0.15	0.12
Language reasoning	0.12	0.08	0.07	0.13
Interaction	0.12	0.10	0.11	0.08
Activities	0.16	0.12	0.13	0.13
Personal care routines	0.05	0.05	0.04	0.04
Space and furnishings	0.12	0.14	0.13	0.05
Program structure	0.16	0.17	0.15	0.10

Note. ECERS - Early Childhood Environment Rating Scale; CLASS - Classroom Assessment Scoring System

Table A7. Pre-k program characteristics and gaps by student race/ethnicity

## Panel A. Program characteristics

	All students		White		Black		Hispanic		Asian	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
DOE program	0.42	(0.49)	0.38	(0.49)	0.40	(0.49)	0.45	(0.50)	0.44	(0.50)
DOE program in K-12 school	0.35	(0.48)	0.30	(0.46)	0.38	(0.48)	0.37	(0.48)	0.32	(0.47)
DOE pre-k center	0.07	(0.26)	0.08	(0.27)	0.03	(0.16)	0.08	(0.27)	0.11	(0.31)
NYCEEC program	0.57	(0.50)	0.62	(0.49)	0.58	(0.49)	0.54	(0.50)	0.56	(0.50)
Provider offers full day seats	0.97	(0.17)	0.91	(0.29)	0.99	(0.12)	0.99	(0.12)	0.99	(0.10)
Provider offers half day seats	0.07	(0.25)	0.12	(0.32)	0.07	(0.25)	0.06	(0.23)	0.03	(0.16)
# of pre-k seats (2017)	64.46	(52.29)	66.81	(68.92)	55.44	(37.58)	65.94	(46.63)	71.17	(57.88)
Dual language program	0.04	(0.20)	0.02	(0.15)	0.03	(0.18)	0.06	(0.25)	0.03	(0.16)
Enhanced language program	0.10	(0.30)	0.12	(0.32)	0.06	(0.23)	0.12	(0.32)	0.10	(0.30)
Income requirement	0.19	(0.39)	0.08	(0.27)	0.29	(0.45)	0.23	(0.42)	0.09	(0.29)
# of meals/day (incl. snacks)	2.43	(0.51)	2.32	(0.54)	2.55	(0.50)	2.46	(0.50)	2.36	(0.49)
Offers indoor play area	0.73	(0.44)	0.76	(0.43)	0.73	(0.44)	0.75	(0.44)	0.68	(0.47)
Offers outdoor play area	0.96	(0.19)	0.96	(0.20)	0.98	(0.15)	0.96	(0.20)	0.95	(0.22)
Offers early dropoff	0.41	(0.49)	0.48	(0.50)	0.41	(0.49)	0.35	(0.48)	0.43	(0.50)
Offers late pickup	0.45	(0.50)	0.54	(0.50)	0.45	(0.50)	0.39	(0.49)	0.48	(0.50)

Note. Authors' calculations using publicly-available data from NYC's OpenData portal. All estimates are weighted to be representative of the average child in each group in the 2017-2018 school year. Gaps in Panel B are reported as raw (unstandardized) differences between groups, and may not match reported differences in Panel A exactly due to rounding. \*  $p < .05$ .

NYCEEC - New York City Early Education Center

Table A7. Pre-k program characteristics and gaps by student race/ethnicity (continued)

Panel B. Gaps in pre-k program characteristics			
	black-white gap	Hispanic- white gap	Asian-white gap
DOE program	0.02 *	0.07 *	0.05 *
DOE program in K-12 school	0.08 *	0.07 *	0.02 *
DOE pre-k center	-0.05 *	0.00	0.03 *
NYCEEC program	-0.04 *	-0.07 *	-0.05 *
Provider offers full day seats	0.08 *	0.08 *	0.08 *
Provider offers half day seats	-0.05 *	-0.06 *	-0.09 *
# of pre-k seats (2017)	-11.37 *	-0.87	4.36 *
Dual language program	0.01 *	0.04 *	0.00
Enhanced language program	-0.06 *	0.00	-0.02 *
Income requirement	0.21 *	0.15 *	0.01 *
# of meals/day (incl. snacks)	0.24 *	0.14 *	0.05 *
Offers indoor play area	-0.03 *	-0.02 *	-0.08 *
Offers outdoor play area	0.02 *	0.00	-0.01 *
Offers early dropoff	-0.07 *	-0.13 *	-0.05 *
Offers late pickup	-0.09 *	-0.14 *	-0.06 *

Note. Authors' calculations using publicly-available data from NYC's OpenData portal. All estimates are weighted to be representative of the average child in each group in the 2017-2018 school year. Gaps in Panel B are reported as raw (unstandardized) differences between groups, and may not match reported differences in Panel A exactly due to rounding. \*  $p < .05$ .

NYCEEC - New York City Early Education Center



Table A8. Census tract level estimates of the association between tract demographics and presence of at least 1 nearby UPK provider who scored high on the CLASS

Panel A. Providers within .25 miles

Tract level variable	Any providers with CLASS rating >=					
	50th pctile	75th pctile	90th pctile	50th pctile	75th pctile	90th pctile
pr. Black	-0.07 (0.09)	-0.09 (0.10)	-0.09 (0.07)	0.06 (0.10)	0.02 (0.06)	-0.09 (0.05)
pr. Hispanic	0.06 (0.11)	0.00 (0.12)	-0.09 (0.06)	0.05 (0.09)	-0.03 (0.09)	-0.08 (0.06)
pr. Asian	0.09 (0.13)	0.04 (0.13)	-0.06 (0.17)	0.19 * (0.09)	0.06 (0.14)	-0.08 (0.14)
pr. Other race/ethnicity	0.06 (0.14)	0.31 (0.21)	0.26 (0.13)	0.09 (0.29)	0.26 (0.24)	0.14 (0.15)
N	2127	2127	2127	2127	2127	2127
Borough FE	X	X	X			
District FE				X	X	X

Panel B. Providers within .5 miles

Tract level variable	Any providers with CLASS rating >=					
	50th pctile	75th pctile	90th pctile	50th pctile	75th pctile	90th pctile
pr. Black	-0.04 (0.05)	-0.12 (0.11)	-0.14 (0.13)	0.11 (0.06)	0.19 * (0.08)	-0.06 (0.10)
pr. Hispanic	-0.04 (0.13)	-0.07 (0.25)	-0.16 (0.16)	0.03 (0.07)	-0.02 (0.11)	-0.07 (0.15)
pr. Asian	0.10 (0.08)	0.08 (0.16)	0.04 (0.27)	0.16 * (0.08)	0.14 (0.18)	0.04 (0.23)
pr. Other race/ethnicity	-0.08 (0.20)	-0.09 (0.15)	0.64 * (0.30)	0.04 (0.25)	0.06 (0.24)	0.38 (0.25)
N	2127	2127	2127	2127	2127	2127
Borough FE	X	X	X			
District FE				X	X	X

Note. Authors' calculations using publicly-available data from NYC's OpenData portal. Estimates are presented as average marginal effects, and can be interpreted as the average percentage point change associated with a 1 percentage point increase in each variable. All models include the tract-level proportions of the population that are black, Hispanic, Asian, some other race, and multiple races. The omitted group is the proportion of the population that is white. All estimates control for the total land area and population density of each census tract, as well as a composite measure of SES. \* p<.05 \*\* p<.01 \*\*\* p<.001.

CLASS - Classroom Assessment Scoring System

Figure A1. High and low-quality UPK providers in Brooklyn

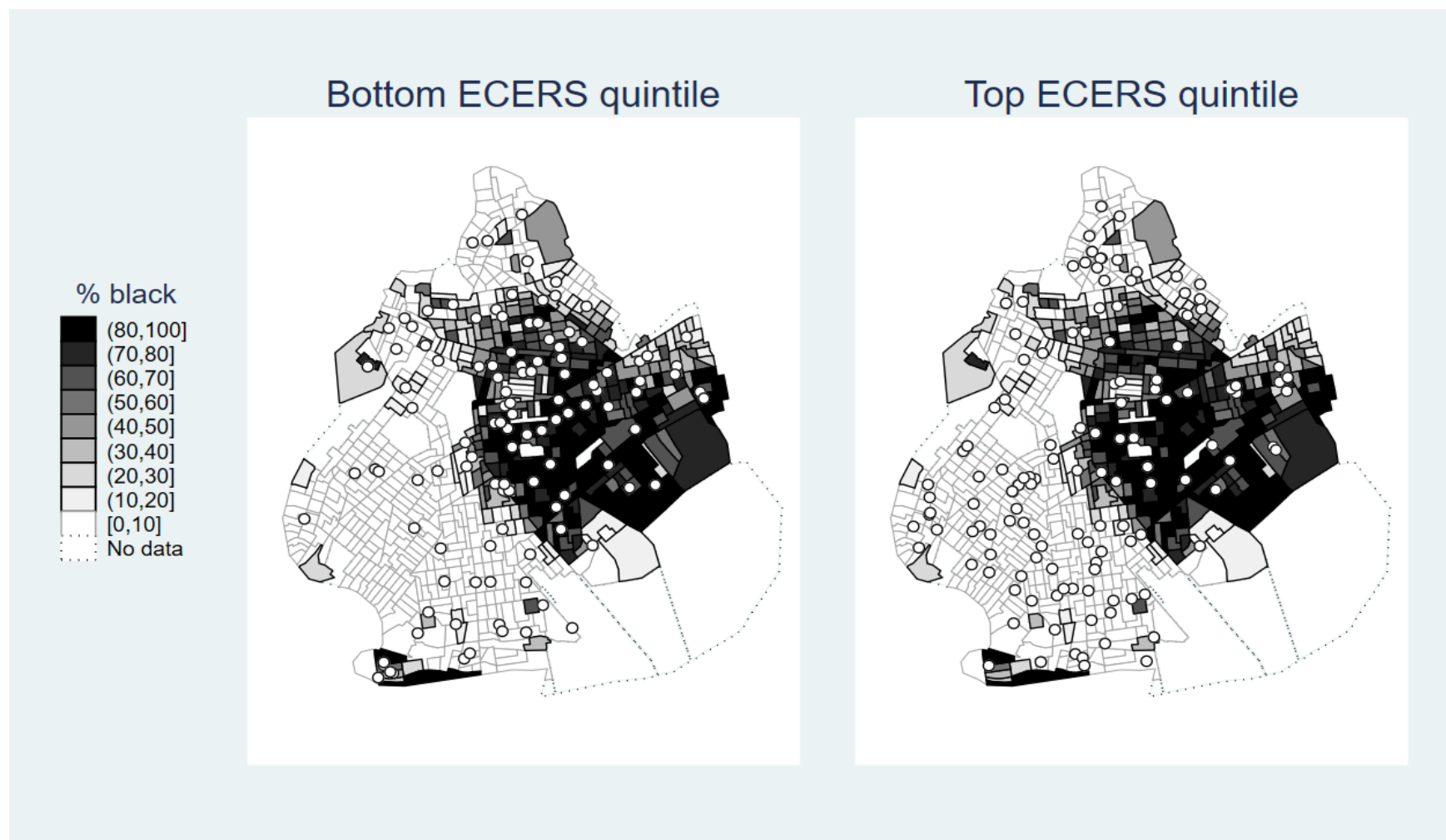


Figure A2. High and low-quality UPK providers in The Bronx

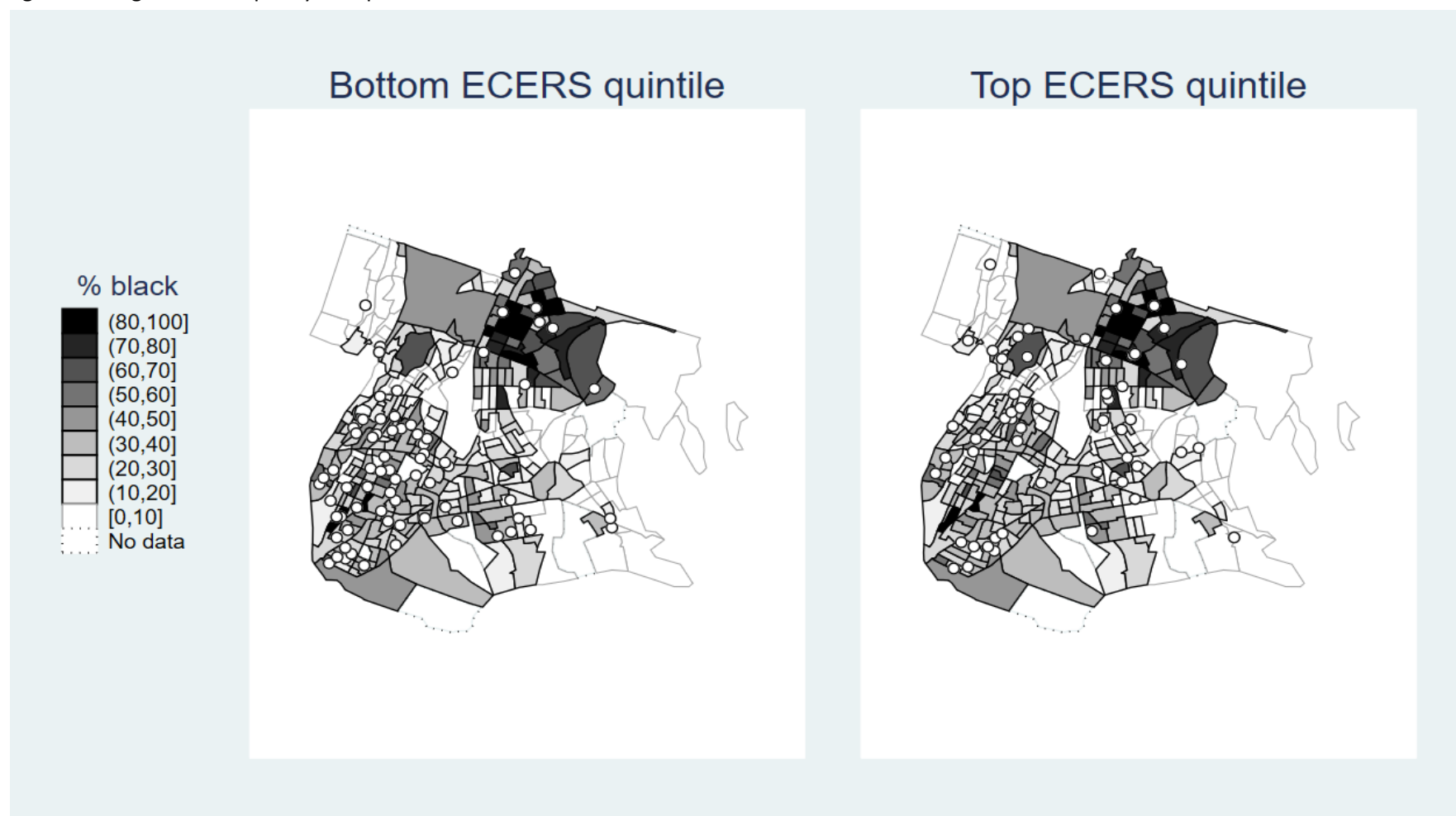


Figure A3. High and low-quality UPK providers in Manhattan

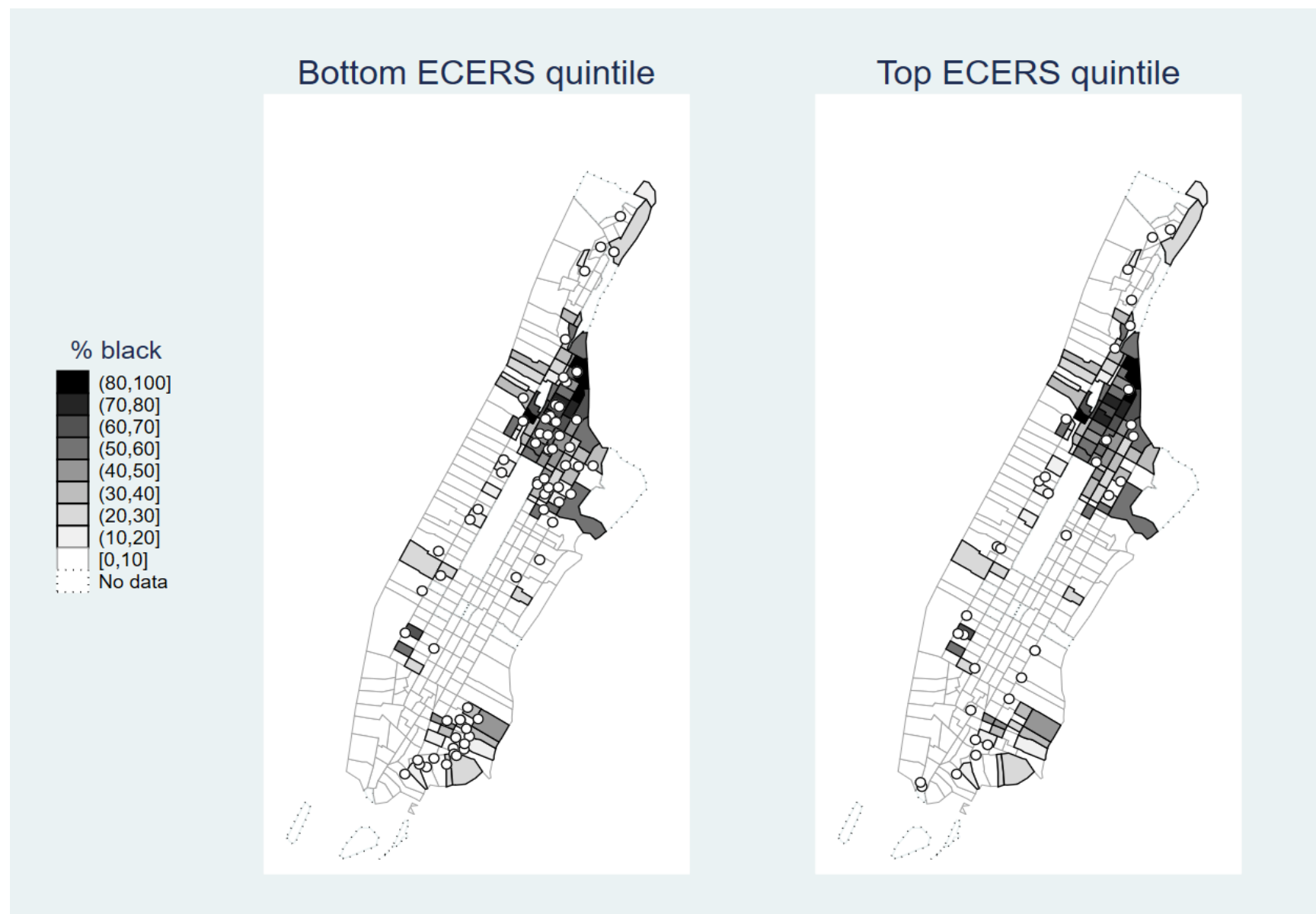


Figure A4. High and low-quality UPK providers in Queens

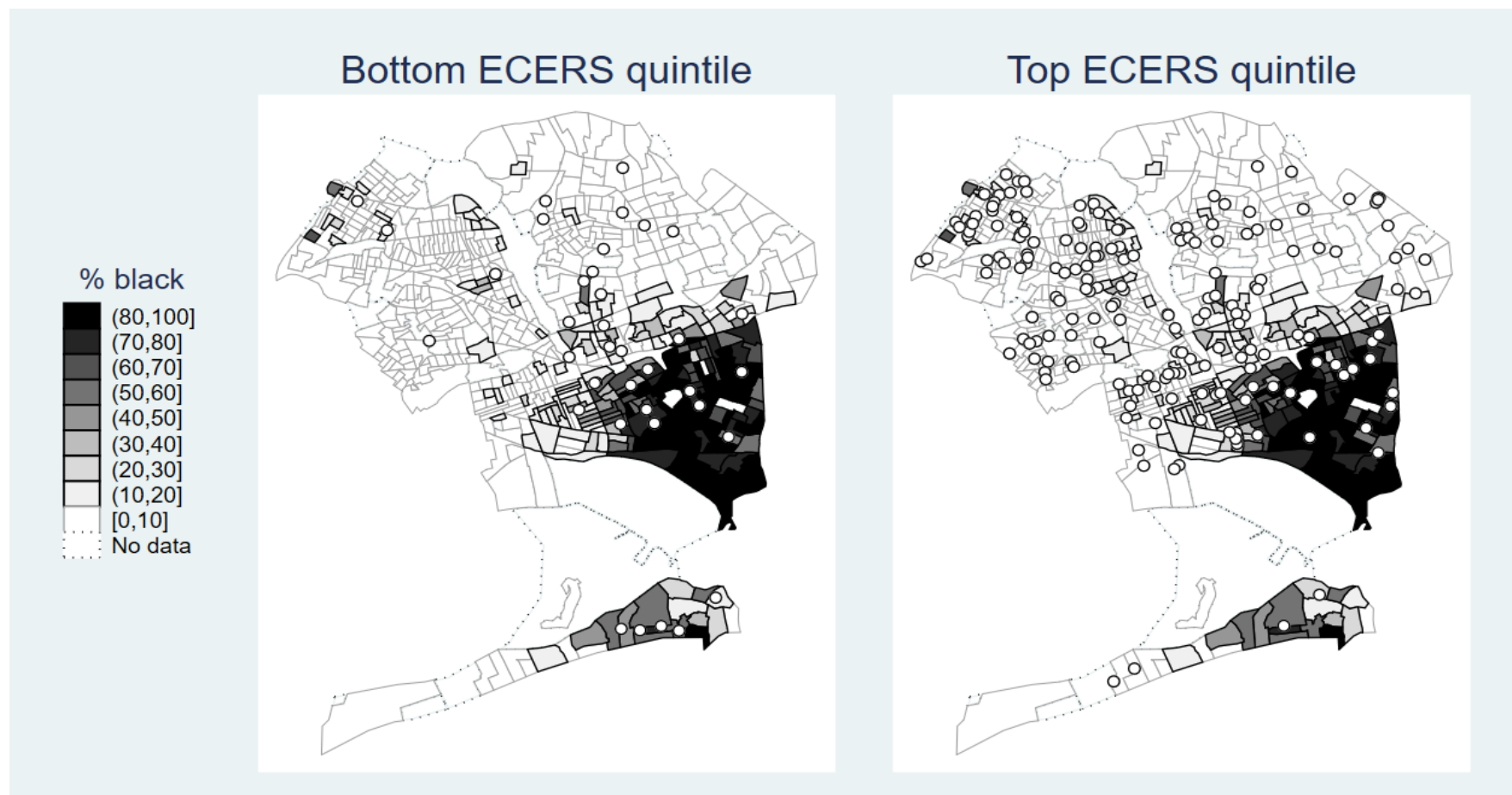


Figure A5. High and low-quality UPK providers in Staten Island

