

Supplementary Online Appendix to:
Public Pre-Primary and Maternal Employment in Algeria:
Evidence from a Natural Experiment

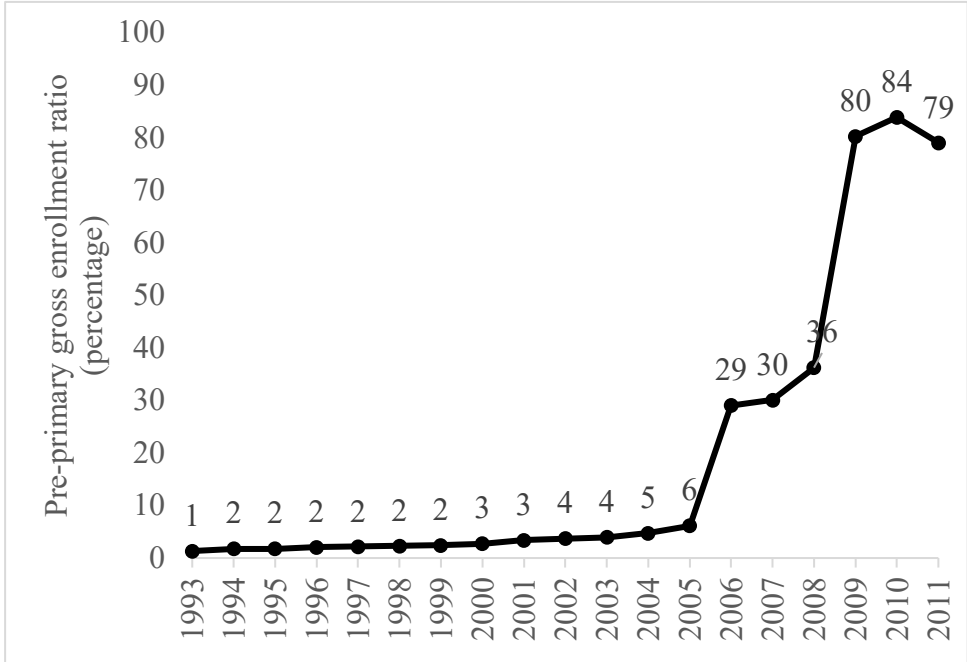
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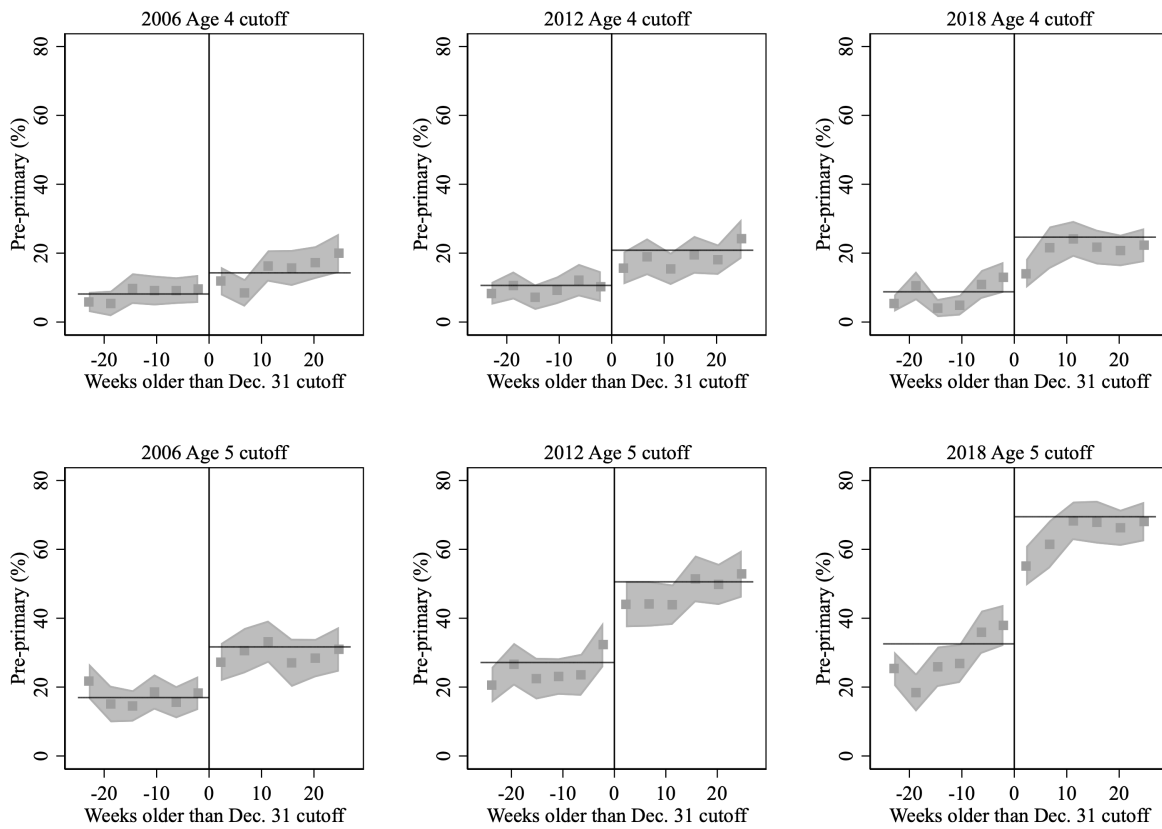
Appendix S1: Additional Figures

Figure S1.1. Algeria’s pre-primary gross enrollment ratio (percentage), 1993-2011



Source: Authors’ construction based on World Bank EdStats (World Bank 2019).

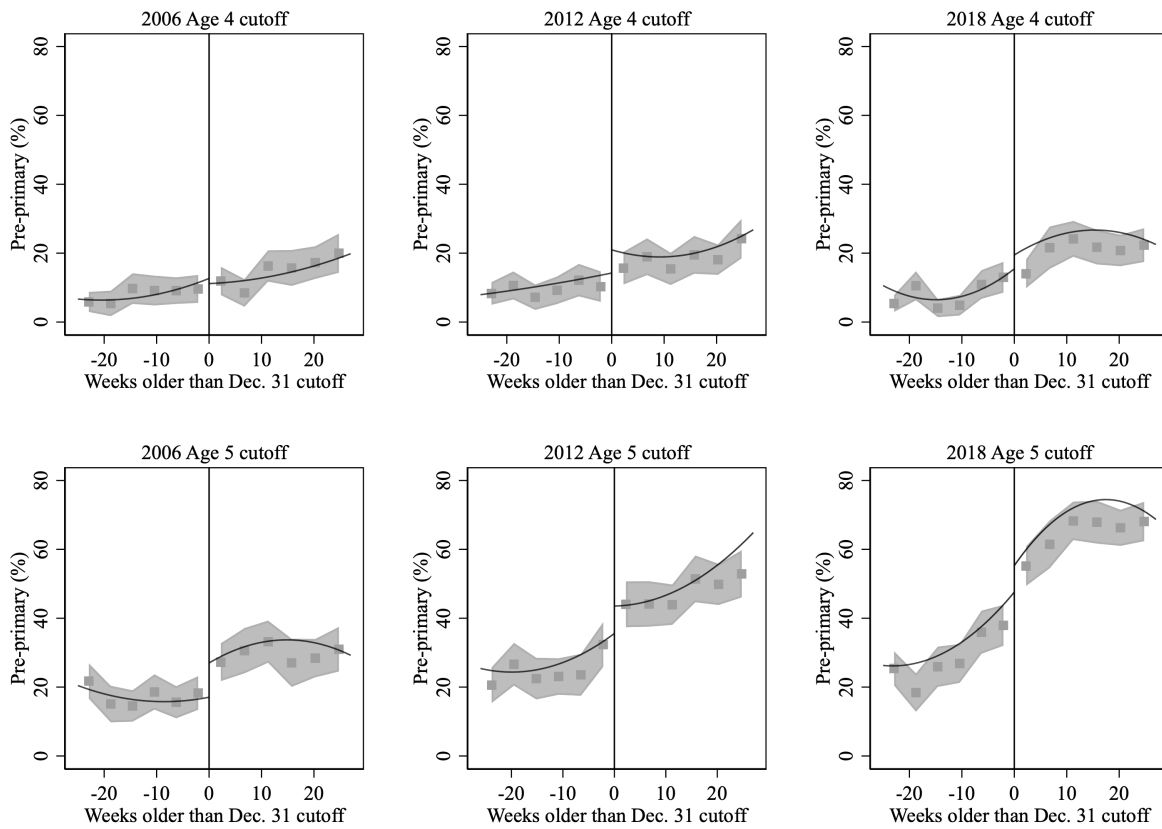
Figure S1.2. Pre-primary attendance (percentage) by weeks from cutoff, age group and year, intercept (means) fit



Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: "Age [X] cutoff" refers to the group of children within (+/-) six months of being age [X] on December 31 of that school year (the cutoff). Points are bin means. Shading represents 95% confidence intervals. The line is an intercept (means) fit.

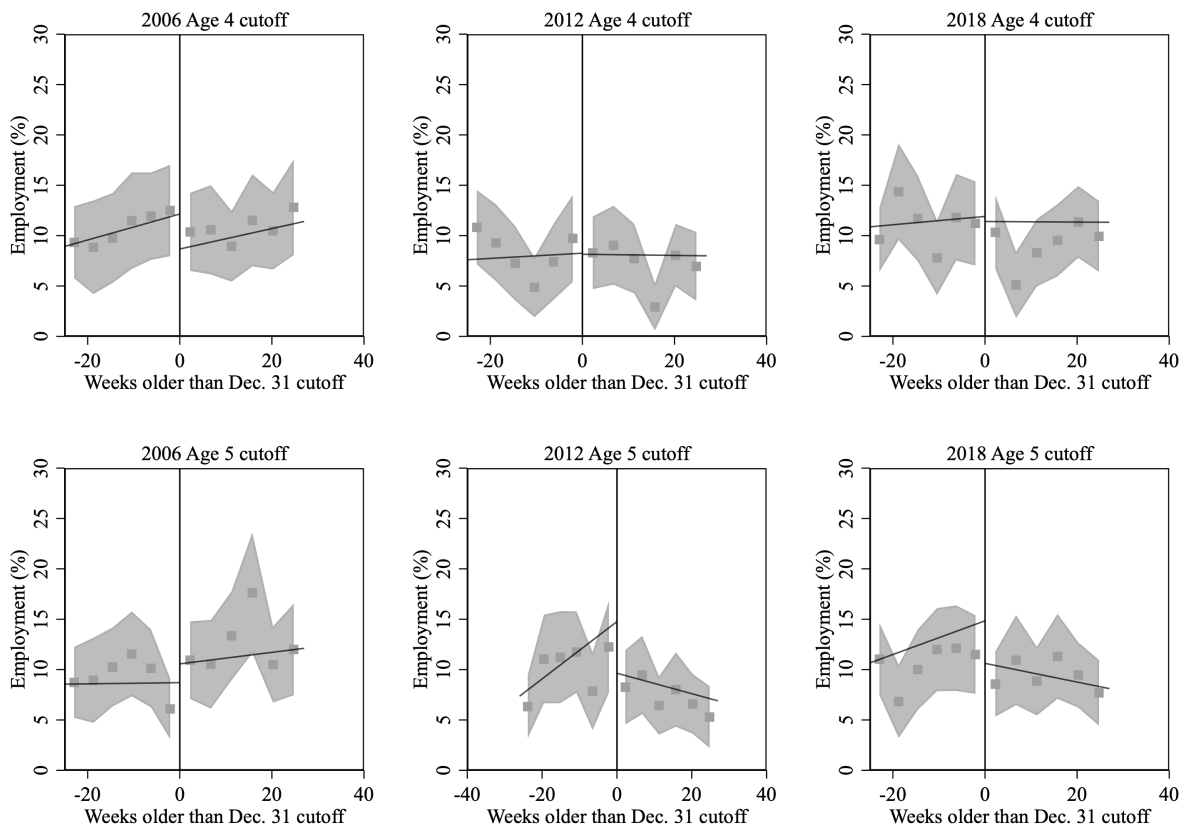
Figure S1.3. Pre-primary attendance (percentage) by weeks from cutoff, age group and year, quadratic fit



Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: "Age [X] cutoff" refers to the group of children within (+/-) six months of being age [X] on December 31 of that school year (the cutoff). Points are bin means. Shading represents 95% confidence intervals. The line is a quadratic fit.

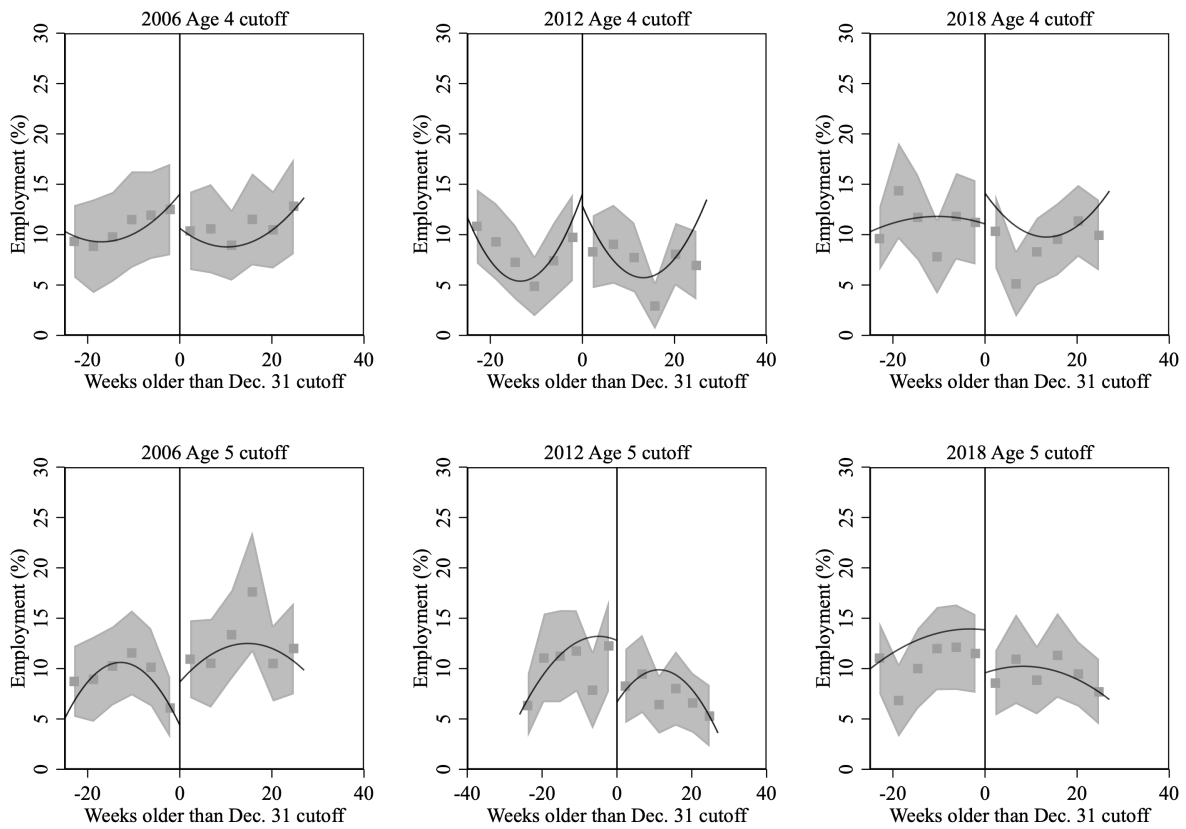
Figure S1.4. Employment (percentage) by weeks from cutoff, age group and year, linear fit



Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: "Age [X] cutoff" refers to the group of children within (+/-) six months of being age [X] on December 31 of that school year (the cutoff). Points are bin means. Shading represents 95% confidence intervals. The line is a linear fit.

Figure S1.5. Employment (percentage) by weeks from cutoff, age group and year, quadratic fit



Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: "Age [X] cutoff" refers to the group of children within (+/-) six months of being age [X] on December 31 of that school year (the cutoff). Points are bin means. Shading represents 95% confidence intervals. The line is a quadratic fit.

Appendix S2: Additional Tables

Table S2.1. Means, differences, and t-tests for mother characteristics below versus above the cutoff by age group and year

	Age 4 cutoff									Age 5 cutoff								
	2006			2012			2018			2006			2012			2018		
	Belo w	Abov e	Below- Above	Belo w	Abov e	Below- Above	Belo w	Abov e	Below- Above	Belo w	Abov e	Below- Above	Belo w	Abov e	Below- Above	Belo w	Abov e	Below- Above
Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	
Mother's Education																		
No education	0.352	0.322	0.030	0.197	0.189	0.008	0.115	0.140	-0.025*	0.380	0.355	0.024	0.178	0.230	-0.052***	0.144	0.148	-0.004
Primary	0.191	0.203	-0.012	0.191	0.178	0.013	0.155	0.140	0.016	0.203	0.208	-0.006	0.186	0.197	-0.011	0.171	0.165	0.006
Middle	0.218	0.240	-0.022	0.284	0.324	-0.040*	0.324	0.339	-0.015	0.198	0.192	0.006	0.308	0.290	0.018	0.315	0.299	0.016
Secondary	0.199	0.186	0.012	0.243	0.228	0.015	0.227	0.232	-0.005	0.177	0.215	-0.039*	0.222	0.216	0.006	0.216	0.256	-0.040*
Tertiary	0.039	0.048	-0.009	0.086	0.082	0.004	0.179	0.150	0.029*	0.042	0.028	0.014	0.106	0.067	0.039***	0.154	0.132	0.022
Mother's age group																		
Age 15-19	0.000	0.000	-0.000	0.000	0.000	-0.000	0.000	0.000	N/A	0.000	0.000	N/A	0.000	0.000	N/A	0.000	0.000	N/A
Age 20-24	0.037	0.043	-0.006	0.068	0.026	0.042***	0.045	0.039	0.006	0.027	0.020	0.007	0.024	0.026	-0.001	0.022	0.017	0.005
Age 25-29	0.182	0.174	0.008	0.225	0.239	-0.013	0.225	0.189	0.036*	0.168	0.163	0.004	0.196	0.189	0.008	0.175	0.158	0.017
Age 30-34	0.298	0.277	0.021	0.301	0.292	0.010	0.264	0.295	-0.031	0.297	0.262	0.035*	0.299	0.281	0.019	0.297	0.302	-0.005
Age 35-39	0.272	0.264	0.008	0.224	0.240	-0.016	0.274	0.258	0.016	0.253	0.269	-0.016	0.268	0.270	-0.002	0.255	0.273	-0.018
Age 40-44	0.156	0.180	-0.025	0.132	0.146	-0.014	0.145	0.167	-0.022	0.181	0.213	-0.032*	0.150	0.162	-0.012	0.178	0.167	0.011
Age 45-49	0.051	0.058	-0.007	0.045	0.052	-0.007	0.041	0.046	-0.005	0.062	0.065	-0.003	0.058	0.063	-0.006	0.065	0.073	-0.008
Age 50-54	0.004	0.003	0.001	0.004	0.005	-0.001	0.005	0.005	-0.001	0.012	0.008	0.004	0.002	0.009	-0.008**	0.009	0.010	-0.001
Age 55-59	0.000	0.000	N/A	0.000	0.000	N/A	0.001	0.000	0.001	0.000	0.000	-0.000	0.003	0.000	0.003	0.000	0.000	N/A
Age 60-64	0.000	0.000	N/A	0.000	0.000	N/A	0.000	0.000	N/A	0.001	0.000	0.001	0.000	0.000	N/A	0.000	0.000	N/A
Age 65-69	0.000	0.000	N/A	0.000	0.000	N/A	0.000	0.000	N/A	0.000	0.000	N/A	0.000	0.000	N/A	0.000	0.001	-0.001
Mother's marital status																		
Single	0.005	0.002	0.003	0.001	0.005	-0.003	0.000	0.001	-0.001	0.005	0.003	0.002	0.004	0.007	-0.003	0.000	0.001	-0.001
Married	0.977	0.978	-0.001	0.976	0.967	0.009	0.978	0.974	0.004	0.976	0.960	0.016*	0.972	0.966	0.006	0.978	0.967	0.011
Divorced	0.011	0.015	-0.005	0.018	0.022	-0.004	0.018	0.016	0.003	0.008	0.022	-0.014**	0.018	0.017	0.001	0.013	0.021	-0.007
Widowed	0.007	0.005	0.002	0.004	0.006	-0.002	0.004	0.009	-0.006*	0.012	0.015	-0.003	0.006	0.010	-0.004	0.008	0.011	-0.003
Household structure																		
Nuclear household	0.785	0.797	-0.012	0.755	0.789	-0.034*	0.739	0.753	-0.014	0.797	0.806	-0.009	0.784	0.808	-0.024	0.800	0.724	0.076***
Residence																		
Urban	0.529	0.552	-0.023	0.585	0.647	-0.062**	0.629	0.562	0.067***	0.522	0.544	-0.021	0.644	0.614	0.029	0.617	0.620	-0.003

	Age 4 cutoff						Age 5 cutoff											
	2006			2012			2018			2006			2012			2018		
	Belo	Abov	Below-	Belo	Abov	Below-	Belo	Abov	Below-	Belo	Abov	Below-	Belo	Abov	Below-	Belo	Abov	Below-
w	e	Above	w	e	Above	w	e	Above	w	e	Above	w	e	Above	w	e	Above	
	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.	Mean	Mean	Diff.
Region																		
North Center	0.343	0.324	0.019	0.342	0.345	-0.003	0.324	0.322	0.002	0.316	0.322	-0.006	0.359	0.298	0.061***	0.332	0.305	0.027
North East	0.138	0.171	-0.033*	0.117	0.116	0.001	0.114	0.127	-0.013	0.138	0.154	-0.017	0.124	0.134	-0.010	0.131	0.130	0.001
North West	0.137	0.149	-0.011	0.149	0.130	0.019	0.141	0.150	-0.009	0.167	0.153	0.014	0.137	0.146	-0.009	0.148	0.180	-0.032*
High Central Plains	0.066	0.053	0.013	0.078	0.077	0.001	0.082	0.099	-0.017	0.079	0.061	0.018	0.071	0.083	-0.012	0.076	0.082	-0.006
High East Plains	0.150	0.134	0.015	0.149	0.149	0.000	0.144	0.144	-0.000	0.123	0.140	-0.018	0.145	0.148	-0.002	0.147	0.139	0.008
High West Plains	0.073	0.064	0.010	0.052	0.065	-0.013	0.056	0.055	0.001	0.065	0.059	0.006	0.058	0.061	-0.003	0.053	0.053	0.000
South	0.093	0.106	-0.012	0.114	0.119	-0.006	0.138	0.102	0.036**	0.113	0.111	0.002	0.106	0.131	-0.025*	0.114	0.111	0.002
Head's education																		
No education	0.293	0.277	0.017	0.209	0.201	0.008	0.166	0.173	-0.007	0.308	0.283	0.025	0.171	0.199	-0.028	0.139	0.194	-0.055***
Primary	0.292	0.283	0.009	0.189	0.206	-0.017	0.189	0.201	-0.013	0.295	0.268	0.028	0.200	0.204	-0.004	0.227	0.176	0.051***
Middle	0.192	0.211	-0.019	0.304	0.314	-0.010	0.338	0.333	0.005	0.192	0.212	-0.020	0.315	0.312	0.003	0.329	0.353	-0.024
Secondary	0.165	0.155	0.010	0.221	0.192	0.029	0.210	0.212	-0.002	0.147	0.157	-0.011	0.221	0.200	0.021	0.206	0.193	0.014
Tertiary	0.058	0.073	-0.015	0.067	0.079	-0.013	0.095	0.080	0.015	0.058	0.080	-0.022*	0.087	0.075	0.012	0.098	0.083	0.016
Missing/DK	0.000	0.001	-0.001	0.010	0.007	0.003	0.002	0.001	0.002	0.000	0.000	-0.000	0.006	0.010	-0.003	0.001	0.002	-0.001
N (Obs.)	1182	1325		1277	1396		1412	1564		1375	1298		1266	1413		1443	1553	

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018. Notes: *p<0.05; **p<0.01; ***p<0.001.

Table S2.2. FRDD, bandwidth 13 weeks, intercept models of employment (percentage points) by year, age four

	2006	2012	2018
Conventional	-0.903 (1.080)	0.121 (0.246)	0.037 (0.141)
Bias-corrected	-2.233* (1.080)	-0.227 (0.246)	0.027 (0.141)
Robust	-2.233 (2.369)	-0.227 (0.550)	0.027 (0.277)
First conventional	2.685 (1.985)	7.512** (2.799)	16.646*** (2.763)
First bias-corrected	-0.816 (1.985)	5.876* (2.799)	0.814 (2.763)
First robust	-0.816 (4.003)	5.876 (5.294)	0.814 (4.751)
N (Obs.)	2499	2666	2976
N right	1321	1391	1564
N left	1178	1275	1412

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.3. FRDD, bandwidth 13 weeks, intercept models of employment (percentage points) by year, age five

	2006	2012	2018
Conventional	0.084 (0.104)	-0.225 (0.170)	-0.166* (0.082)
Bias-corrected	0.318** (0.104)	-0.511** (0.170)	-0.225** (0.082)
Robust	0.318 (0.182)	-0.511 (0.327)	-0.225 (0.155)
First conventional	17.948*** (2.684)	16.020*** (3.508)	30.294*** (3.135)
First bias-corrected	6.094* (2.684)	5.874 (3.508)	6.867* (3.135)
First robust	6.094 (5.031)	5.874 (7.396)	6.867 (6.420)
N (Obs.)	2667	2678	2996
N right	1294	1413	1553
N left	1373	1265	1443

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.4. FRDD linear models of employment (percentage points) by year, age four

	2006	2012	2018
Conventional	4.579 (16.824)	-0.024 (0.719)	-0.041 (0.276)
Bias-corrected	1.143 (16.824)	-0.256 (0.719)	0.223 (0.276)
Robust	1.143 (24.944)	-0.256 (1.080)	0.223 (0.410)
First conventional	-0.758 (2.885)	4.295 (3.939)	12.222** (3.737)
First bias-corrected	-1.306 (2.885)	6.848 (3.939)	4.014 (3.737)
First robust	-1.306 (4.407)	6.848 (5.677)	4.014 (5.046)
N (Obs.)	2499	2666	2976
N right	1321	1391	1564
N left	1178	1275	1412

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.5. FRDD linear models of employment (percentage points) by year, age five

	2006	2012	2018
Conventional	0.119 (0.157)	-0.649 (0.648)	-0.218 (0.185)
Bias-corrected	0.315* (0.157)	-0.771 (0.648)	-0.352 (0.185)
Robust	0.315 (0.228)	-0.771 (0.976)	-0.352 (0.258)
First conventional	15.645*** (3.785)	7.880 (5.150)	19.392*** (4.567)
First bias-corrected	10.186** (3.785)	7.960 (5.150)	7.686 (4.567)
First robust	10.186 (5.469)	7.960 (7.940)	7.686 (6.889)
N (Obs.)	2667	2678	2996
N right	1294	1413	1553
N left	1373	1265	1443

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.6. FRDD quadratic models of employment (percentage points) by year, age four

	2006	2012	2018
Conventional	2.585 (8.033)	-0.170 (0.728)	0.762 (1.464)
Bias-corrected	2.081 (8.033)	-0.394 (0.728)	1.553 (1.464)
Robust	2.081 (10.740)	-0.394 (0.858)	1.553 (1.751)
First conventional	-1.306 (4.407)	6.848 (5.677)	4.014 (5.046)
First bias-corrected	0.290 (4.407)	8.343 (5.677)	-5.624 (5.046)
First robust	0.290 (6.154)	8.343 (7.096)	-5.624 (6.276)
N (Obs.)	2499	2666	2976
N right	1321	1391	1564
N left	1178	1275	1412

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.7. FRDD quadratic models of employment (percentage points) by year, age five

	2006	2012	2018
Conventional	0.419 (0.399)	-0.770 (1.063)	-0.556 (0.820)
Bias-corrected	1.038** (0.399)	-1.704 (1.063)	-0.132 (0.820)
Robust	1.038 (0.568)	-1.704 (1.428)	-0.132 (1.075)
First conventional	10.186 (5.469)	7.960 (7.940)	7.686 (6.889)
First bias-corrected	7.629 (5.469)	3.947 (7.940)	1.023 (6.889)
First robust	7.629 (7.225)	3.947 (10.612)	1.023 (9.189)
N (Obs.)	2667	2678	2996
N right	1294	1413	1553
N left	1373	1265	1443

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Models based on rdrobust. Standard errors in parentheses. Outcomes is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.8. FRDD, including controls, intercept models of employment (percentage points) by year, age four

	2006	2012	2018
Conventional	-0.264 (0.255)	-0.008 (0.129)	0.057 (0.078)
Bias-corrected	-0.870*** (0.255)	-0.103 (0.129)	-0.017 (0.078)
Robust	-0.870 (0.532)	-0.103 (0.289)	-0.017 (0.169)
First conventional	5.956*** (1.534)	10.335*** (1.910)	17.520*** (1.752)
First bias-corrected	-0.818 (1.534)	4.071* (1.910)	13.311*** (1.752)
First robust	-0.818 (3.003)	4.071 (3.898)	13.311*** (3.678)
N (Obs.)	2115	2416	2763
N right	1141	1257	1446
N left	974	1159	1317

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcomes is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.9. FRDD, including controls, intercept models of employment (percentage points) by year, age five

	2006	2012	2018
Conventional	0.172 (0.088)	-0.019 (0.057)	-0.082* (0.035)
Bias-corrected	0.087 (0.088)	-0.167** (0.057)	-0.117*** (0.035)
Robust	0.087 (0.165)	-0.167 (0.117)	-0.117 (0.067)
First conventional	15.615*** (2.040)	25.876*** (2.425)	37.865*** (2.028)
First bias-corrected	14.027*** (2.040)	8.619*** (2.425)	22.566*** (2.028)
First robust	14.027*** (3.957)	8.619 (5.093)	22.566*** (4.182)
N (Obs.)	2219	2408	2784
N right	1098	1267	1441
N left	1121	1141	1343

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.10. FRDD, including primary students as not in pre-primary, intercept models of employment (percentage points) by year, age five

	2006	2012	2018
Conventional	0.217* (0.098)	-0.122 (0.079)	-0.082 (0.047)
Bias-corrected	0.129 (0.098)	-0.283*** (0.079)	-0.155*** (0.047)
Robust	0.129 (0.185)	-0.283 (0.172)	-0.155 (0.097)
First conventional	13.662*** (1.917)	20.117*** (2.420)	34.377*** (2.218)
First bias-corrected	15.271*** (1.917)	7.846** (2.420)	19.092*** (2.218)
First robust	15.271*** (3.717)	7.846 (5.069)	19.092*** (4.572)
N (Obs.)	2751	2769	3060
N right	1361	1503	1613
N left	1390	1266	1447

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.11. 2SLS first stage (pre-primary), age four

	2006		2012		2018	
	Cutoff only	Cutoff + age in wks.	Cutoff only	Cutoff + age in wks.	Cutoff only	Cutoff + age in wks.
Above cutoff	6.158*** (1.446)	-0.852 (2.873)	10.227*** (1.892)	4.330 (3.934)	15.863*** (1.760)	12.245** (3.832)
Age in weeks from cutoff (age 4)		0.271** (0.097)		0.218 (0.126)		0.132 (0.122)
Constant	8.177*** (0.929)	11.597*** (1.632)	10.653*** (1.132)	13.557*** (2.142)	8.790*** (0.933)	10.569*** (1.871)
N (Obs.)	2499	2499	2666	2666	2976	2976
R-sq.	.00933	.0136	.0196	.0215	.044	.0448

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. First stage of 2SLS. Robust standard errors in parentheses. Outcome of first stage is pre-primary (as a percentage).

Table S2.12. 2SLS first stage (pre-primary), age five

	2006		2012		2018	
	Cutoff only	Cutoff + age in wks.	Cutoff only	Cutoff + age in wks.	Cutoff only	Cutoff + age in wks.
Above cutoff	14.899*** (1.975)	15.371*** (3.840)	23.407*** (2.447)	7.935 (5.084)	36.906*** (2.233)	19.640*** (4.574)
Age in weeks from cutoff (age 5)		-0.018 (0.132)		0.578*** (0.163)		0.651*** (0.145)
Constant	16.923*** (1.192)	16.692*** (1.990)	27.160*** (1.693)	34.946*** (2.806)	32.561*** (1.666)	40.962*** (2.562)
N (Obs.)	2667	2667	2678	2678	2996	2996
R-sq.	.03	.0301	.0578	.0659	.136	.146

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. First stage of 2SLS. Robust standard errors in parentheses. Outcome of first stage is pre-primary (as a percentage).

Table S2.13. FRDD, 2SLS, models of employment (percentage points) by year, age four

	2006			2012			2018		
	Cutoff FS/SS	Cutoff + wks. FS/Cutoff SS	Cutoff + wks. FS/SS	Cutoff FS/SS	Cutoff + wks. FS/Cutoff SS	Cutoff + wks. FS/SS	Cutoff FS/SS	Cutoff + wks. FS/Cutoff SS	Cutoff + wks. FS/SS
Child in pre-primary (age 4)	-0.081 (0.237)	0.076 (0.195)	4.041 (13.121)	0.016 (0.134)	0.018 (0.131)	-0.020 (0.731)	0.001 (0.098)	0.003 (0.097)	-0.035 (0.277)
Age in weeks from cutoff (age 4)			-0.981 (3.234)			0.013 (0.259)			0.021 (0.139)
Constant	11.187*** (2.805)	9.384*** (2.294)	-34.907 (146.468)	7.746*** (2.152)	7.708*** (2.062)	8.303 (11.593)	11.342*** (1.815)	11.308*** (1.798)	11.934** (4.596)
N (Obs.)	2499	2499	2499	2666	2666	2666	2976	2976	2976
R-sq.	.	0.018	.	0.006	0.007	.	0.000	0.001	.
p-val. for chi H0: exog.	0.244	0.673	0.164	0.315	0.304	0.795	0.061	0.062	0.376
p-val. for F-test H0: exog.	0.326	0.727	0.238	0.443	0.436	0.845	0.157	0.156	0.525
Partial r-sq.	0.009	0.014	0.000	0.020	0.022	0.001	0.044	0.045	0.007
F-stat. first	18.146	12.743	0.088	29.227	16.360	1.212	81.206	41.526	10.209
p-val F test	0.000	0.000	0.767	0.000	0.000	0.271	0.000	0.000	0.001

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Second stage of 2SLS. Robust standard errors in parentheses. Outcome is employment (as a percentage). FS=first stage; SS=second stage.

Table S2.14. FRDD, 2SLS, models of employment (percentage points) by year, age five

	2006			2012			2018		
	Cutoff FS/SS	Cutoff + wks. FS/Cutoff SS	Cutoff + wks. FS/SS	Cutoff FS/SS	Cutoff + wks. FS/Cutoff SS	Cutoff + wks. FS/SS	Cutoff FS/SS	Cutoff + wks. FS/Cutoff SS	Cutoff + wks. FS/SS
Child in pre-primary (age 5)	0.180*	0.180*	0.118	-0.113	-0.079	-0.652	-0.090*	-0.081*	-0.203
	(0.090)	(0.090)	(0.164)	(0.069)	(0.059)	(0.646)	(0.044)	(0.040)	(0.177)
Age in weeks from cutoff (age 5)			0.037			0.471			0.157
			(0.080)			(0.519)			(0.213)
Constant	5.579**	5.597**	7.097	13.992***	12.678***	34.984	15.620***	15.166***	21.304*
	(2.159)	(2.159)	(3.978)	(2.920)	(2.514)	(25.295)	(2.592)	(2.407)	(9.190)
N (Obs.)	2667	2667	2667	2678	2678	2678	2996	2996	2996
R-sq.	0.021	0.021	0.029
p-val. for chi H0: exog.	0.411	0.417	0.993	0.000	0.000	0.011	0.000	0.000	0.008
p-val. for F-test H0: exog.	0.478	0.483	0.994	0.002	0.002	0.071	0.000	0.000	0.055
Partial r-sq.	0.030	0.030	0.009	0.058	0.066	0.002	0.136	0.146	0.011
F-stat. first	56.928	28.554	16.019	91.468	54.698	2.436	273.282	156.074	18.433
p-val F test	0.000	0.000	0.000	0.000	0.000	0.119	0.000	0.000	0.000

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Second stage of 2SLS. Robust standard errors in parentheses. Outcomes is employment (as a percentage). FS=first stage; SS=second stage.

Table S2.15. Percentage of children enrolled in pre-primary by characteristics, age five

	2006	2012	2018
Mother's Education			
None	9.5	20.0	27.0
Primary	23.2	31.4	40.4
Middle	30.1	41.2	51.8
Secondary	42.4	49.7	62.2
Tertiary	54.6	59.2	70.0
Age group			
20-24	18.4	35.8	37.1
25-29	24.9	40.9	46.1
30-34	26.1	37.5	54.1
35-39	26.3	37.3	53.5
40-44	22.5	34.7	53.5
45-49	15.2	51.5	43.8
50-54	30.2	18.9	38.6
55-59	100.0	100.0	0.0
60-64	0.0	0.0	0.0
65-69	0.0	0.0	0.0
Marital status			
Single	13.8	35.4	96.6
Married	24.5	38.4	51.0
Divorced	28.4	44.6	63.5
Widowed	11.9	35.9	59.1
Household structure			
Extended	25.5	37.2	57.0
Nuclear	24.1	38.8	49.5
Residence			
Rural	14.8	28.2	36.2
Urban	32.8	44.5	60.6
Region			
North Center	26.7	38.9	58.2
North East	30.4	45.4	68.3
North West	20.1	30.1	38.2
High Central Plains	8.3	23.5	34.4
High East Plains	25.9	40.2	49.0
High West Plains	11.3	29.1	32.0

South	31.8	52.1	55.4
Total	24.4	38.5	51.3
N	2673	2679	2996

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Table S2.16. FRDD, nuclear vs. extended households, intercept models of employment (percentage points) by year, age four

	<u>Nuclear household</u>			<u>Extended household</u>		
	2006	2012	2018	2006	2012	2018
Conventional	-0.290 (0.308)	0.022 (0.176)	0.061 (0.100)	0.471 (0.434)	0.023 (0.200)	-0.230 (0.295)
Bias-corrected	-1.057*** (0.308)	0.260 (0.176)	0.050 (0.100)	0.497 (0.434)	-0.429* (0.200)	-0.360 (0.295)
Robust	-1.057 (0.639)	0.260 (0.417)	0.050 (0.232)	0.497 (0.879)	-0.429 (0.384)	-0.360 (0.489)
First conventional	5.713*** (1.542)	8.288*** (2.191)	16.909*** (2.085)	8.185* (3.732)	17.041*** (3.965)	12.610*** (3.440)
First bias-corrected	-0.440 (1.542)	5.576* (2.191)	12.712*** (2.085)	-0.775 (3.732)	0.768 (3.965)	10.096** (3.440)
First robust	-0.440 (3.114)	5.576 (4.446)	12.712** (4.415)	-0.775 (7.169)	0.768 (8.750)	10.096 (7.491)
N (Obs.)	1969	1965	2202	530	701	774
N right	1045	1048	1155	276	343	409
N left	924	917	1047	254	358	365

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.17. FRDD, nuclear vs. extended households, intercept models of employment (percentage points) by year, age five

	<u>Nuclear household</u>			<u>Extended household</u>		
	2006	2012	2018	2006	2012	2018
Conventional	0.161 (0.104)	-0.109 (0.081)	-0.117* (0.050)	0.243 (0.169)	-0.140 (0.126)	0.011 (0.086)
Bias-corrected	0.059 (0.104)	-0.326*** (0.081)	-0.228*** (0.050)	0.341* (0.169)	-0.170 (0.126)	0.150 (0.086)
Robust	0.059 (0.192)	-0.326 (0.176)	-0.228* (0.103)	0.341 (0.340)	-0.170 (0.258)	0.150 (0.163)
First conventional	14.227*** (2.223)	23.185*** (2.839)	37.368*** (2.512)	17.696*** (4.319)	24.198*** (4.913)	34.188*** (4.561)
First bias-corrected	15.600*** (2.223)	8.949** (2.839)	20.020*** (2.512)	16.423*** (4.319)	4.058 (4.913)	13.709** (4.561)
First robust	15.600*** (4.211)	8.949 (5.985)	20.020*** (5.204)	16.423 (8.709)	4.058 (10.634)	13.709 (9.476)
N (Obs.)	2137	2029	2266	530	649	730
N right	1038	1082	1147	256	331	406
N left	1099	947	1119	274	318	324

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.18. FRDD intercept models of employment and non-wage employment (percentage points) by year, age four

	Wage employment			Non-wage employment		
	2006	2012	2018	2006	2012	2018
Conventional	-0.008 (0.192)	0.070 (0.114)	-0.007 (0.095)	-0.063 (0.140)	-0.037 (0.073)	0.008 (0.033)
Bias-corrected	-0.831*** (0.192)	0.146 (0.114)	0.076 (0.095)	0.110 (0.140)	-0.148* (0.073)	-0.108*** (0.033)
Robust	-0.831* (0.385)	0.146 (0.260)	0.076 (0.204)	0.110 (0.297)	-0.148 (0.166)	-0.108 (0.062)
First conventional	6.158*** (1.454)	10.227*** (1.903)	15.863*** (1.772)	6.158*** (1.454)	10.227*** (1.903)	15.863*** (1.772)
First bias-corrected	-0.758 (1.454)	4.295* (1.903)	12.222*** (1.772)	-0.758 (1.454)	4.295* (1.903)	12.222*** (1.772)
First robust	-0.758 (2.885)	4.295 (3.939)	12.222** (3.737)	-0.758 (2.885)	4.295 (3.939)	12.222** (3.737)
N (Obs.)	2499	2666	2976	2499	2666	2976
N right	1321	1391	1564	1321	1391	1564
N left	1178	1275	1412	1178	1275	1412

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).

Table S2.19. FRDD intercept models of employment and non-wage employment (percentage points) by year, age five

	Wage employment			Non-wage employment		
	2006	2012	2018	2006	2012	2018
Conventional	0.162* (0.074)	-0.132* (0.060)	-0.071 (0.041)	0.023 (0.055)	0.019 (0.038)	-0.020 (0.015)
Bias-corrected	0.136 (0.074)	-0.253*** (0.060)	-0.114** (0.041)	-0.010 (0.055)	-0.040 (0.038)	-0.043** (0.015)
Robust	0.136 (0.143)	-0.253* (0.125)	-0.114 (0.087)	-0.010 (0.091)	-0.040 (0.088)	-0.043 (0.028)
First conventional	14.899*** (1.971)	23.407*** (2.454)	36.906*** (2.213)	14.899*** (1.971)	23.407*** (2.454)	36.906*** (2.213)
First bias-corrected	15.645*** (1.971)	7.880** (2.454)	19.392*** (2.213)	15.645*** (1.971)	7.880** (2.454)	19.392*** (2.213)
First robust	15.645*** (3.785)	7.880 (5.150)	19.392*** (4.567)	15.645*** (3.785)	7.880 (5.150)	19.392*** (4.567)
N (Obs.)	2667	2678	2996	2667	2678	2996
N right	1294	1413	1553	1294	1413	1553
N left	1373	1265	1443	1373	1265	1443

Source: Authors' calculations based on Algeria MICS 2006, 2012, 2018

Notes: *p<0.05; **p<0.01; ***p<0.001. Models based on rdrobust. Standard errors in parentheses. Outcome is employment (as a percentage). "First" denotes the first-stage discontinuity in pre-primary. N right denotes the number of observations to the right of the cutoff; N left denotes the number of observations to the left of the cutoff, and N (Obs.) is the total number of observations (sum of N left and N right).