

Supplementary Table 1. Comparison of analytic sample to project playgroups

	Panel project preschools		Non-panel project preschools		Non-panel minus panel	
	Mean	(S.D.)	Mean	(S.D.)	Diff	(S.E.)
1. Quality						
Prop. of teachers w/ sr sec degree or more	0.20	(0.34)	0.20	(0.36)	0.01	(0.03)
Prop. of teachers w/ ECED experience	0.31	(0.42)	0.33	(0.43)	0.02	(0.04)
Number of children	39.82	(42.85)	39.24	(41.87)	-0.58	(4.11)
Number of teachers	2.05	(1.72)	1.90	(1.36)	-0.15	(0.15)
Number of days of service per week	4.28	(1.27)	4.22	(1.31)	-0.06	(0.13)
Number of hours of service per day	2.21	(0.37)	2.15	(0.36)	-0.06	(0.04)
2. Finance						
Prop. of block grant spent on admin	0.14	(0.13)	0.15	(0.13)	0.01	(0.01)
Prop. of block grant spent on children	0.36	(0.12)	0.36	(0.10)	-0.00	(0.01)
Prop. of block grant spent on infrastructure	0.31	(0.15)	0.31	(0.12)	-0.00	(0.01)
Prop. of block grant spent on teachers	0.15	(0.07)	0.16	(0.07)	0.01	(0.01)
Prop. of block grant spent on outreach	0.03	(0.05)	0.03	(0.03)	-0.00	(0.00)
Students attending with no fee (1=Yes)	0.53	(0.50)	0.53	(0.50)	0.00	(0.05)
Amount of mandatory fee IDR)	6656.86	(5433.66)	6260.00	(4883.34)	-396.86	(779.23)
3. Supplementary services						
Provides weekly food program (1=Yes)	0.42	(0.50)	0.44	(0.50)	0.01	(0.05)
Provides weekly vitamin (1=Yes)	0.07	(0.25)	0.10	(0.30)	0.03	(0.03)
Provides deworming (1=Yes)	0.44	(0.50)	0.47	(0.50)	0.03	(0.05)
4. Market condition						
No. of kindergarten per 100 children	0.71	(1.45)	0.62	(0.76)	-0.09	(0.11)
No. of other preschools per 100 children	0.35	(1.45)	0.19	(0.72)	-0.16	(0.11)
Distance to village center (km)	1.22	(1.75)	1.64	(2.19)	0.42*	(0.20)
Distance to nearest preschools (km)	2.20	(2.47)	2.04	(2.22)	-0.16	(0.23)
5. Household wealth						
	-0.07	(0.99)	0.04	(0.94)	0.10	(0.09)
6. Parental participation						
	0.00	(1.02)	-0.00	(0.97)	-0.00	(0.10)
Observations	245		187			

* p<0.05, ** p<0.01, *** p<0.001

Note: Data from the 2010 Indonesia ECED Survey. See main text for definition of variables. Robust standard errors clustered at the playgroup level. Column of difference is a regression of the variables on an indicator for whether playgroup was a panel playgroup (measured in 2010, 2013 and 2016) or not (only measured in 2010 and open/closed status checked in 2016).

Supplementary Table 2. Summary statistics of factors of sustainability

Year of observation:	2010			2013			2016	
Status in 2016:	Closed (N=20)	Open w/ 1 trained teacher (N=141)	Open w/ 2+ trained teachers (N=84)	Closed (N=20)	Open w/ 1 trained teacher (N=141)	Open w/ 2+ trained teachers (N=84)	Open w/ 1 trained teacher (N=141)	Open w/ 2+ trained teachers (N=84)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Quality								
Classroom obs.	.	.	.	2.72 (0.71)	3.07 (1.02)	3.20 (0.96)	.	.
Prop. w/ post-sec degree	0.14 (0.32)	0.19 (0.33)	0.21 (0.36)	0.12 (0.28)	0.24 (0.33)	0.23 (0.29)	0.38 (0.37)	0.42 (0.30)
Prop. w/ teaching exp.	0.28 (0.41)	0.32 (0.44)	0.28 (0.40)	0.25 (0.41)	0.38 (0.46)	0.36 (0.44)	0.14 (0.25)	0.12 (0.21)
Number of children	33.60 (28.65)	41.00 (49.55)	39.32 (32.63)	25.75 (19.82)	32.33 (16.74)	35.32 (16.38)	29.69 (16.19)	34.25 (14.78)
Number of teachers	1.85 (1.60)	2.05 (1.80)	2.08 (1.63)	2.40 (1.39)	2.38 (1.57)	2.75 (1.48)	2.69 (1.22)	3.31 (1.12)
Number of days per week	4.21 (1.18)	4.13 (1.27)	4.55 (1.26)	3.86 (1.73)	4.30 (1.28)	4.73 (1.12)	4.47 (1.03)	4.86 (0.95)
Number of hours per day	2.34 (0.58)	2.17 (0.33)	2.24 (0.37)	2.04 (0.33)	2.19 (0.40)	2.18 (0.32)	2.28 (0.52)	2.29 (0.37)
2. Finance								
Proportion of project block grant spent annually on:								
Admin	0.19 (0.13)	0.14 (0.12)	0.14 (0.13)	0.18 (0.07)	0.17 (0.10)	0.14 (0.08)	.	.
Children	0.35 (0.12)	0.37 (0.11)	0.35 (0.13)	0.41 (0.09)	0.38 (0.10)	0.41 (0.12)	.	.
Infrastructure	0.25 (0.14)	0.30 (0.13)	0.34 (0.19)	0.22 (0.08)	0.23 (0.09)	0.22 (0.11)	.	.
Teacher salary	0.14 (0.07)	0.16 (0.07)	0.14 (0.08)	0.14 (0.07)	0.18 (0.08)	0.19 (0.08)	.	.
Outreach	0.07 (0.15)	0.03 (0.03)	0.03 (0.04)	0.06 (0.07)	0.05 (0.05)	0.04 (0.04)	.	.
Amount received in the past three years (million IDR):								
Govt sources	.	.	.	3.71 (11.91)	23.20 (49.56)	25.07 (54.26)	14.37 (44.91)	8.98 (31.89)
Non-govt org	.	.	.	0.15 (0.45)	0.62 (3.60)	0.66 (3.58)	0.27 (1.83)	0.15 (0.90)
Local comm	.	.	.	1.56 (3.21)	4.69 (22.29)	5.46 (16.25)	2.86 (5.67)	8.08 (25.16)
Prop. w/ no fee	0.75 (0.44)	0.57 (0.50)	0.40 (0.49)	0.60 (0.50)	0.30 (0.46)	0.24 (0.43)	0.25 (0.43)	0.14 (0.35)
Monthly fee (IDR)	5666.67 (4041)	5648.15 (4089.37)	7933.33 (6626.05)	9714.29 (9604)	9281.25 (7076.95)	13698.28 (9890.16)	12755.74 (9246.23)	16214.29 (12119.20)
3. Supp. services								
Provides weekly	0.15	0.38	0.56	0.25	0.26	0.27	0.09	0.12

food program	(0.37)	(0.49)	(0.50)	(0.44)	(0.44)	(0.45)	(0.29)	(0.33)
Provides weekly vitamin	0.20 (0.41)	0.06 (0.23)	0.06 (0.24)	0.10 (0.31)	0.06 (0.25)	0.08 (0.28)	0.03 (0.17)	0.01 (0.11)
Provides deworming	0.45 (0.51)	0.43 (0.50)	0.45 (0.50)	0.60 (0.50)	0.60 (0.49)	0.68 (0.47)	0.55 (0.50)	0.61 (0.49)
4. Market condition								
Number of kindergartens	1.14 (2.60)	0.52 (0.81)	0.94 (1.84)	0.26 (0.47)	0.51 (0.58)	0.55 (0.54)	0.48 (0.47)	0.55 (0.53)
Number of other preschools	1.03 (2.63)	0.16 (0.75)	0.51 (1.86)	0.17 (0.46)	0.29 (0.61)	0.27 (0.45)	0.26 (0.53)	0.18 (0.27)
Distance to village center	0.72 (1.02)	1.35 (1.98)	1.12 (1.44)	0.72 (1.02)	1.35 (1.98)	1.12 (1.44)	1.35 (1.98)	1.12 (1.44)
Distance to nearest preschool	1.02 (1.08)	2.49 (2.74)	2.00 (2.13)	1.02 (1.08)	2.49 (2.74)	2.00 (2.13)	2.49 (2.74)	2.00 (2.13)
5. Household wealth	-0.37 (0.90)	-0.11 (1.02)	0.07 (0.93)	-0.34 (0.91)	-0.16 (1.04)	0.21 (0.94)	-0.11 (1.06)	0.23 (0.89)
6. Parental participation	-0.31 (0.71)	0.07 (1.09)	-0.03 (0.96)	-0.08 (0.95)	0.05 (1.03)	0.32 (1.14)	0.04 (0.98)	0.12 (1.03)

* p<0.05, ** p<0.01, *** p<0.001

Note: Columns show means and standard deviations in parentheses. Cells with "." indicate that variables were not measured that year or not applicable. For "Amount received in the past three years (million IDR)", variables measured in 2013 capture the amount received between 2010-2013 and variables measured in 2016 capture the amount received between 2013-2016. "Classroom observation" is measured using the ECERS-R, which ranges from 1 to 7. "Number of kindergarten" and "Number of other playgroups" are measured in units per 100 children in village. "Distance to village center" and "Distance to nearest playgroup" are measured in kilometers. "Supplementary services" are all binary variables coded as 0 = No and 1 = Yes. Differences across columns are presented in Supplementary Tables 3 and 4.

Supplementary Table 3. Difference across groups in each year of observation

Year of observation:	2010			2013			2016
Status in 2016:	One trained teacher – Closed	Two+ trained teachers – Closed	Two+ trained teachers – One trained teacher	One trained teacher – Closed	Two+ trained teachers – Closed	Two+ trained teachers – One trained teacher	Two+ trained teachers – One trained teacher
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Quality							
Classroom obs.	.	.	.	0.35 (0.18)	0.48* (0.19)	0.12 (0.14)	.
Prop. w/ post-sec degree	0.05 (0.07)	0.07 (0.08)	0.02 (0.05)	0.12 (0.07)	0.11 (0.07)	-0.01 (0.04)	0.04 (0.05)
Prop. w/ teaching exp.	0.05 (0.10)	0.01 (0.10)	-0.04 (0.06)	0.13 (0.10)	0.12 (0.10)	-0.02 (0.06)	-0.02 (0.03)
Number of children	7.40 (7.56)	5.72 (7.22)	-1.68 (5.50)	6.58 (4.57)	9.57* (4.70)	2.99 (2.28)	4.56* (2.11)
Number of teachers	0.20 (0.38)	0.23 (0.39)	0.03 (0.23)	-0.02 (0.33)	0.35 (0.35)	0.37 (0.21)	0.62*** (0.16)
Number of days per week	-0.08 (0.29)	0.34 (0.30)	0.42* (0.18)	0.44 (0.41)	0.86* (0.42)	0.43** (0.16)	0.38** (0.14)
Number of hours per day	-0.17 (0.13)	-0.10 (0.14)	0.07 (0.05)	0.14 (0.08)	0.14 (0.08)	-0.01 (0.05)	0.00 (0.06)
2. Finance							
Proportion of project block grant spent annually on:							
Admin	-0.05 (0.03)	-0.05 (0.03)	0.00 (0.02)	-0.01 (0.02)	-0.03 (0.02)	-0.02 (0.01)	.
Children	0.02 (0.03)	0.01 (0.03)	-0.02 (0.02)	-0.03 (0.02)	0.00 (0.02)	0.03* (0.02)	.
Infrastructure	0.05 (0.03)	0.08* (0.04)	0.03 (0.02)	0.02 (0.02)	0.01 (0.02)	-0.01 (0.01)	.
Teachers	0.02 (0.02)	-0.00 (0.02)	-0.02* (0.01)	0.04* (0.02)	0.05** (0.02)	0.01 (0.01)	.
Outreach	-0.04 (0.03)	-0.03 (0.03)	0.01 (0.01)	-0.01 (0.01)	-0.03 (0.02)	-0.01 (0.01)	.
Amount received in the past three years (million IDR):							
Govt sources	.	.	.	19.48*** (4.93)	21.36** (6.47)	1.88 (7.25)	-5.39 (5.14)
Non-govt org	.	.	.	0.47 (0.32)	0.52 (0.40)	0.04 (0.50)	-0.12 (0.18)
Local comm	.	.	.	3.13 (2.01)	3.90* (1.91)	0.77 (2.59)	5.21 (2.78)
Prop. students w/ no fee	-0.18 (0.11)	-0.35** (0.11)	-0.17* (0.07)	-0.30* (0.12)	-0.36** (0.12)	-0.06 (0.06)	-0.11* (0.05)
Monthly fee (IDR)	-18.52 (2013.15)	2266.67 (2173.13)	2285.19* (1138.44)	-433.04 (3469.15)	3983.99 (3632.87)	4417.03** (1488.26)	3458.55 (2096.36)
3. Supplementary services							
Provides weekly food program	0.23* (0.09)	0.41*** (0.10)	0.18* (0.07)	0.01 (0.10)	0.02 (0.11)	0.02 (0.06)	0.03 (0.04)

Provides weekly vitamin	-0.14 (0.09)	-0.14 (0.09)	0.00 (0.03)	-0.04 (0.07)	-0.02 (0.07)	0.02 (0.04)	-0.02 (0.02)
Provides deworming	-0.02 (0.12)	0.00 (0.12)	0.02 (0.07)	0.00 (0.12)	0.08 (0.12)	0.08 (0.07)	0.05 (0.07)
4. Market condition							
Number of kindergartens	-0.62 (0.57)	-0.21 (0.60)	0.42 (0.21)	0.25* (0.11)	0.29* (0.12)	0.03 (0.08)	0.08 (0.07)
Number of other preschools	-0.86 (0.58)	-0.52 (0.61)	0.35 (0.21)	0.12 (0.11)	0.10 (0.11)	-0.02 (0.07)	-0.08 (0.05)
Distance to village center	0.63* (0.28)	0.40 (0.27)	-0.23 (0.23)	0.63* (0.28)	0.40 (0.27)	-0.23 (0.23)	-0.23 (0.23)
Distance to nearest preschools	1.47*** (0.33)	0.98** (0.33)	-0.49 (0.33)	1.47*** (0.33)	0.98** (0.33)	-0.49 (0.33)	-0.49 (0.33)
5. Household wealth	0.26 (0.22)	0.44* (0.22)	0.19 (0.13)	0.17 (0.22)	0.55* (0.22)	0.38** (0.13)	0.33* (0.13)
6. Parental participation	0.37* (0.18)	0.27 (0.19)	-0.10 (0.14)	0.13 (0.23)	0.41 (0.24)	0.27 (0.15)	0.09 (0.14)

* p<0.05, ** p<0.01, *** p<0.001

Note: Columns show mean differences and standard errors in parentheses based on Table 1. Cells with "." indicate that variables were not measured that year or not applicable. For "Amount received in the past three years (million IDR)", variables measured in 2013 capture the amount received between 2010-2013 and variables measured in 2016 capture the amount received between 2013-2016. "Classroom observation" is measured using the ECERS-R, which ranges from 1 to 7. "Number of kindergarten" and "Number of other playgroups" are measured in units per 100 children in village. "Distance to village center" and "Distance to nearest playgroup" are measured in kilometers. "Supplementary services" are all binary variables coded as 0 = No and 1 = Yes.

Year of observation:	Difference between 2013-2010			Difference between 2016-2013	
Status in 2016:	Closed	Open with 1 trained teacher	Open with 2+ trained teachers	Open with 1 trained teacher	Open with 2+ trained teachers
	(1)	(2)	(3)	(4)	(5)
1. Quality					
Classroom obs.
Prop. w/ post-sec degree	-0.02 (0.08)	0.05 (0.03)	0.02 (0.03)	0.14*** (0.03)	0.18*** (0.04)
Prop. w/ teaching exp.	-0.03 (0.08)	0.06 (0.05)	0.08 (0.06)	-0.24*** (0.04)	-0.24*** (0.05)
Number of children	-7.85 (7.81)	-8.67* (4.20)	-4.00 (3.03)	-2.64* (1.06)	-1.07 (1.43)
Number of teachers	0.55 (0.34)	0.33* (0.15)	0.67*** (0.16)	0.32** (0.11)	0.56*** (0.13)
Number of days per week	-0.35 (0.39)	0.17 (0.09)	0.18* (0.08)	0.18* (0.08)	0.13 (0.08)
Number of hours per day	-0.30* (0.14)	0.02 (0.04)	-0.06 (0.05)	0.09* (0.04)	0.11* (0.05)
2. Finance					
Proportion of project block grant spent annually on:					
Admin	-0.02 (0.03)	0.03* (0.01)	0.00 (0.01)	.	.
Children	0.06 (0.04)	0.01 (0.01)	0.06** (0.02)	.	.
Infrastructure	-0.04 (0.03)	-0.07*** (0.01)	-0.11*** (0.02)	.	.
Teachers	0.00 (0.02)	0.02* (0.01)	0.05*** (0.01)	.	.
Outreach	-0.00 (0.03)	0.02*** (0.01)	0.00 (0.01)	.	.
Amount received in the past three years (million IDR):					
Govt sources	.	.	.	-8.83 (4.72)	-16.09* (6.95)
Non-govt org	.	.	.	-0.35 (0.34)	-0.52 (0.40)
Local comm	.	.	.	-1.83 (1.97)	2.62 (3.27)
Prop. students w/ no fee	-0.15 (0.13)	-0.28*** (0.04)	-0.17** (0.05)	-0.05 (0.03)	-0.10* (0.04)
Monthly fee (IDR)	4047.62 (3708.60)	3633.10*** (716.77)	5764.94*** (927.58)	3474.49*** (1002.67)	2516.01 (1473.93)
3. Supplementary services					
Provides weekly food program	0.10 (0.10)	-0.13** (0.04)	-0.29*** (0.06)	-0.16*** (0.04)	-0.15** (0.05)

Provides weekly vitamin	-0.10 (0.10)	0.01 (0.03)	0.02 (0.03)	-0.04 (0.02)	-0.07* (0.03)
Provides deworming	0.15 (0.17)	0.17** (0.05)	0.23*** (0.06)	-0.05 (0.05)	-0.07 (0.06)
4. Market condition					
Number of kindergartens	-0.88 (0.62)	-0.01 (0.07)	-0.39 (0.20)	-0.03 (0.04)	0.01 (0.04)
Number of other playgroups	-0.85 (0.62)	0.13 (0.08)	-0.24 (0.21)	-0.04 (0.02)	-0.09* (0.04)
Distance to village center	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Distance to nearest playgroup	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
5. Household wealth					
	0.03 (0.13)	-0.05 (0.06)	0.14* (0.06)	0.06 (0.10)	0.01 (0.12)
6. Parental participation					
	0.22 (0.26)	-0.02 (0.11)	0.36* (0.14)	-0.01 (0.10)	-0.20 (0.14)

* p<0.05, ** p<0.01, *** p<0.001

Note: Columns show mean differences and standard errors in parentheses based on Table 1. Cells with "." indicate that variables were not measured that year or not applicable. For "Amount received in the past three years (million IDR)", variables measured in 2013 capture the amount received between 2010-2013 and variables measured in 2016 capture the amount received between 2013-2016. "Classroom observation" is measured using the ECERS-R, which ranges from 1 to 7. "Number of kindergarten" and "Number of other playgroups" are measured in units per 100 children in village. "Distance to village center" and "Distance to nearest playgroup" are measured in kilometers. "Supplementary services" are all binary variables coded as 0 = No and 1 = Yes.

Predictors measured in 2010:	Open in 2016	Open in 2016 w/ two+ trained
	(vs. Closed in 2016)	teachers
	(1)	(vs. Open in 2016 w/ one
		trained teacher)
	(1)	(2)
Prop. of project block grant spent on infrastructure	0.14 (0.12)	0.22 (0.25)
Prop. of project block grant spent on teachers	0.44 (0.26)	-0.12 (0.48)
Prop. of project block grant spent on outreach	-0.69 (0.36)	2.06* (0.94)
Prop. of children attending with no fee	-0.03 (0.04)	-0.06 (0.08)
Monthly fee (IDR)	0.00 (0.00)	0.00* (0.00)
Prop. of teachers with teaching experience	0.01 (0.04)	-0.08 (0.07)
Number of days of service per week	0.01 (0.01)	0.04 (0.03)
Number of hours of service per day	-0.05 (0.06)	0.16 (0.09)
Number of kindergartens	-0.02 (0.02)	0.08*** (0.02)
Distance to village center (km)	0.01 (0.01)	-0.01 (0.02)
Distance to nearest playgroup (km)	0.02** (0.01)	-0.02 (0.01)
Provides weekly food program	0.11** (0.03)	0.17** (0.06)
Parental involvement index (z-score)	0.01 (0.01)	-0.02 (0.03)
Average wealth of households in village (z-score)	0.03 (0.02)	0.05 (0.03)
N	245	225

* p<0.05, ** p<0.01, *** p<0.001

Note: Covariates in model were selected from lasso regression of 48 predictors from 2010 and 2013, which are described in Table 1. The outcome in column (1) is a binary variable of whether centers were open in 2016 (1=Yes, 0 = No). The outcome in column (2) is a binary variable of whether centers were open in 2016 with two trained teachers (=1) or whether centers were open in 2016 with only one trained teacher (=0). Robust standard errors clustered by centers.