Distance and Accountability in Schools

Shekhar Mittal

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1 Introduction

1.1 To ensure accountability monitoring matters.

In a centralised setup, monitoring becomes difficult as the distance from the district HQ increases.

Therefore, maybe distance from the district HQ can be used as a proxy for monitoring in government institutions.

At the same time, distance should not matter in private institutions.

1.2 Concerns

Endogeneity - People become poorer as distance increases.

2 Villages

TABLE 1: Village Infrastructure (Effect of Normalised Distance)					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	road	landline_access	mobile_access	pds	bank
norma_distance	-0.244***	-0.237***	-0.395***	0.199	3.644***
	(0.0545)	(0.0442)	(0.0450)	(0.223)	(0.738)
Constant	1.689***	0.919***	0.796***	0.874***	2.865***
	(0.0522)	(0.0274)	(0.0540)	(0.181)	(0.352)
Observations	1,387	1,387	1,381	1,387	1,387
Number of STATEID	19	19	19	19	19

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

TABLE 2: Village Infrastructure (Effect of Distance)					
	(1)	(2)	(3)	(4)	(5)
VARIABLES	road	landline_access	mobile_access	pds	bank
distance	-0.00231***	-0.00230***	-0.00400***	0.00206	0.0377***
	(0.000619)	(0.000453)	(0.000448)	(0.00226)	(0.00793)
Constant	1.679***	0.912***	0.792***	0.874***	2.867***
	(0.0520)	(0.0284)	(0.0539)	(0.178)	(0.362)
Observations	1,387	1,387	1,381	1,387	1,387
Number of STATEID	19	19	19	19	19

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

3 Schools

3.1 Comparison of MDM at the school

3.1.1 Quality of Cooked Meals

PS10A = 0(no free food), 1(yes-grain only), 2(yes-dalia only), 3(yes-variety)

TABLE 3.a: Mid day Meal in Private Schools (Effect of Distance)

VARIABLES	(1) PS10A	(2) PS10A	(3) PS10A	(4) PS10A
dummy_pds		0.0374		0.0528
		(0.0718)		(0.0747)
distance	0.000605	0.000675	0.000570	0.000645
	(0.00117)	(0.00117)	(0.00117)	(0.00118)
dummy_bank			-0.0362	-0.0465
			(0.0649)	(0.0675)
Constant	0.348**	0.319**	0.363**	0.327**
	(0.152)	(0.149)	(0.145)	(0.144)
Observations	689	689	689	689
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 3.b: Mid Day Meal in Government Schools (Effect of Distance)

VARIABLES	(1) PS10A	(2) PS10A	(3) PS10A	(4) PS10A
dummy_pds		0.115**		0.101*
		(0.0502)		(0.0517)
distance	-0.00133	-0.00125	-0.00125	-0.00120
	(0.000835)	(0.000835)	(0.000837)	(0.000836)
dummy_bank			0.0805*	0.0573
			(0.0479)	(0.0493)
Constant	2.402***	2.314***	2.375***	2.306***
	(0.142)	(0.151)	(0.139)	(0.146)
Observations	1,345	1,344	1,344	1,344
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 4.a: Mid day Meal in Private Schools (Effect of Normalised Distance)

VARIABLES	(1) PS10A	(2) PS10A
dummy_bank		-0.0486
		(0.0674)
dummy_pds		0.0502
		(0.0745)
norma_distance	0.0544	0.0537
	(0.117)	(0.117)
Constant	0.349**	0.331**
	(0.154)	(0.154)
Observations	689	689
Number of STATEID	19	19

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

TABLE 4.b: Mid day Meal in Government Schools (Effect of Normalised Distance)		
VARIABLES	(1) PS10A	(2) PS10A
dummy_bank		0.0572
		(0.0492)
dummy_pds		0.100*
		(0.0516)
norma_distance	-0.142*	-0.130
	(0.0824)	(0.0824)
Constant	2.408***	2.311***
	(0.154)	(0.164)
Observations	1,345	1,344
Number of STATEID	19	19

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

3.1.2 Frequency of Cooked Meal

PS10B = 0(not at all), 1(a few days), 2(most days), 3(everyday)

TABLE 5.a: Frequency of MDM in Private Schools (Effect of Distance)				
	(1)	(2)	(3)	(4)
VARIABLES	PS10B	PS10B	PS10B	PS10B
dummy_pds		0.0539		0.0545
		(0.0769)		(0.0799)
distance	0.00101	0.00111	0.00105	0.00113
	(0.00125)	(0.00126)	(0.00125)	(0.00126)
dummy_bank			0.0131	0.00203
			(0.0695)	(0.0723)
Constant	1.301***	1.260***	1.297***	1.260***
	(0.144)	(0.146)	(0.140)	(0.144)
Observations	689	689	689	689
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 5.b: Frequency of MDM in Government Schools (Effect of Distance)				
	(1)	(2)	(3)	(4)
VARIABLES	PS10B	PS10B	PS10B	PS10B
dummy_pds		0.103*		0.0944
		(0.0615)		(0.0634)
distance	-0.00140	-0.00133	-0.00133	-0.00128
	(0.00102)	(0.00102)	(0.00103)	(0.00103)
dummy_bank			0.0558	0.0340
			(0.0588)	(0.0605)
Constant	3.164***	3.086***	3.145***	3.080***
	(0.184)	(0.193)	(0.169)	(0.178)
Observations	1,345	1,344	1,344	1,344
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 6.a: Frequency of MDM in Private Schools (Effect of Normalised Distance)				
	(1)	(2)	(3)	(4)
VARIABLES	PS10B	PS10B	PS10B	PS10B
dummy_pds		0.0504		0.0504

	(1)	(2)	(3)	(4)
		(0.0767)		(0.0797)
norma_distance	0.0830	0.0892	0.0843	0.0892
	(0.125)	(0.125)	(0.125)	(0.126)
dummy_bank			0.0105	-0.000894
			(0.0694)	(0.0721)
Constant	1.306***	1.268***	1.302***	1.268***
	(0.150)	(0.155)	(0.150)	(0.156)
Observations	689	689	689	689
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 6.b: Frequency of MDM in Government Schools (Effect of Normalised Distance)

	(1)	(2)	(3)	(4)
VARIABLES	PS10B	PS10B	PS10B	PS10B
dummy_pds		0.102*		0.0936
		(0.0614)		(0.0633)
norma_distance	-0.159	-0.152	-0.154	-0.150
	(0.101)	(0.101)	(0.101)	(0.101)
dummy_bank			0.0546	0.0330
			(0.0587)	(0.0604)
Constant	3.175***	3.097***	3.156***	3.092***
	(0.195)	(0.204)	(0.189)	(0.199)
Observations	1,345	1,344	1,344	1,344
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.1.3   Kitchen for cooked meals

PS17G = 0(no), 1(yes)

TABLE 7.a: Kitchen for Cooked Meals in Private Schools (Effect of Distance)				
	(1)	(2)	(3)	(4)
VARIABLES	PS17G	PS17G	PS17G	PS17G
dummy_pds		-0.0122		-0.0199
		(0.0364)		(0.0378)
distance	-0.000203	-0.000226	-0.000178	-0.000201
	(0.000592)	(0.000592)	(0.000594)	(0.000594)
dummy_bank			0.0178	0.0243
			(0.0331)	(0.0343)
Constant	0.789***	0.802***	0.781***	0.799***
	(0.0431)	(0.0487)	(0.0460)	(0.0492)
Observations	688	688	688	688
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 7.b: Kitchen for Cooked Meals in Government Schools (Effect of Distance)				
	(1)	(2)	(3)	(4)
VARIABLES	PS17G	PS17G	PS17G	PS17G
dummy_pds		0.0849***		0.0798***
		(0.0296)		(0.0306)
distance	-0.00124**	-0.00117**	-0.00119**	-0.00115**
	(0.000493)	(0.000492)	(0.000493)	(0.000493)
dummy_bank			0.0382	0.0195
			(0.0283)	(0.0291)
Constant	0.723***	0.658***	0.710***	0.655***
	(0.0383)	(0.0452)	(0.0404)	(0.0462)
Observations	1,345	1,344	1,344	1,344
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 8.a: Kitchen for Cooked Meals in Private Schools (Effect of Normalised Distance)				
	(1)	(2)	(3)	(4)
VARIABLES	PS17G	PS17G	PS17G	PS17G
dummy_pds		-0.0134		-0.0208

	(1)	(2)	(3)	(4)
		(0.0364)		(0.0378)
norma_distance	-0.0284	-0.0322	-0.0253	-0.0298
	(0.0592)	(0.0594)	(0.0595)	(0.0596)
dummy_bank			0.0178	0.0240
			(0.0330)	(0.0343)
Constant	0.794***	0.807***	0.786***	0.804***
	(0.0421)	(0.0495)	(0.0450)	(0.0499)
Observations	688	688	688	688
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 8.b: Kitchen for Cooked Meals in Government Schools (Effect of Normalised Distance)

VARIABLES	(1) PS17G	(2) PS17G	(3) PS17G	(4) PS17G
dummy_pds		0.0851***		0.0798***
		(0.0296)		(0.0306)
norma_distance	-0.123**	-0.114**	-0.117**	-0.112**
	(0.0488)	(0.0487)	(0.0489)	(0.0488)
dummy_bank			0.0388	0.0201
			(0.0283)	(0.0291)
Constant	0.724***	0.658***	0.710***	0.655***
	(0.0365)	(0.0437)	(0.0384)	(0.0444)
Observations	1,345	1,344	1,344	1,344
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.1.4 Cook in the kitchen

PS17H = 0(no), 1(yes)

TABLE 9.a: Cook for the Kitchen in Private Schools (Effect of Normalised Distance)

VARIABLES	(1) PS17H	(2) PS17H	(3) PS17H	(4) PS17H
dummy_pds		0.0327		0.0317
		(0.0277)		(0.0288)
norma_distance	0.00529	0.00903	0.00628	0.00926
	(0.0451)	(0.0453)	(0.0453)	(0.0454)
dummy_bank			0.0113	0.00391
			(0.0251)	(0.0261)
Constant	0.133***	0.107**	0.129***	0.107**
	(0.0506)	(0.0531)	(0.0498)	(0.0529)
Observations	689	689	689	689
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 9.b: Cook for the Kitchen in Government Schools (Effect of Normalised Distance)

VARIABLES	(1) PS17H	(2) PS17H	(3) PS17H	(4) PS17H
dummy_pds		0.0950***		0.0791***
		(0.0283)		(0.0292)
norma_distance	-0.0962**	-0.0885*	-0.0882*	-0.0840*
	(0.0467)	(0.0466)	(0.0467)	(0.0466)
dummy_bank			0.0820***	0.0636**
			(0.0270)	(0.0278)
Constant	0.482***	0.409***	0.453***	0.399***
	(0.0680)	(0.0720)	(0.0643)	(0.0690)
Observations	1,345	1,344	1,344	1,344
Number of STATEID	19	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.2 Pupil Teacher Ratio

TABLE 10: Pupil Teacher Ratio (Effect of Normalised Distance)		
	(1)	(2)
VARIABLES	ptr(P)	ptr(G)
norma_distance	-3.944	7.022
	(2.847)	(5.004)
Constant	33.82***	54.18***
	(2.150)	(6.615)
Observations	688	1,344
Number of STATEID	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.3 Number of Teachers working in the school

	(1)	(2)
TABLE 11: Number of Teachers working in the School (Effect of Normalised Distance)		
VARIABLES	PS23A(P)	PS23A(G)
norma_distance	-0.628	-1.139***
	(0.629)	(0.269)
Constant	7.388***	4.659***
	(0.432)	(0.370)
Observations	689	1,344
Number of STATEID	19	19

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

3.4   Number of Teacher Vacancies

TABLE 12: Number of Teacher Vacancies (Effect of Normalised Distance)		
	(1)	(2)
VARIABLES	PS23C(P)	PS23C(G)
norma_distance	0.0703	0.461***
	(0.148)	(0.148)
Constant	0.204**	0.764***
	(0.101)	(0.138)
Observations	689	1,344
Number of STATEID	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.5 Availability of Chairs and Desks

SO32A = 0 (No) 1(Yes)

TABLE 13: Availability of Chairs and Desks (Effect of Normalised Distance)		
	(1)	(2)
VARIABLES	SO32A(P)	SO32A(G)
norma_distance	-0.132**	-0.0199
	(0.0631)	(0.0391)
Constant	0.624***	0.270***
	(0.0715)	(0.0625)
Observations	658	1,289
Number of STATEID	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

3.6 Blackboard

SO32B == 0(No),1(Yes, blank), 2(Yes,Writing)

TABLE 13: Blackboard (Effect of Normalised Distance)		
	(1)	(2)
VARIABLES	SO32B(P)	SO32B(G)
norma_distance	0.00371	0.0259
	(0.0409)	(0.0375)
Constant	0.944***	0.896***
	(0.0428)	(0.0530)
Observations	273	629
Number of STATEID	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4 Individuals

4.1 Mid Day Meals

CS12 = 0(no free food), 1(yes-grain only), 2(yes-dalia only), 3(yes-variety)

TABLE 15: Quality of Mid-Day Meals (Effect of Normalised Distance)		
	(1)	(2)
VARIABLES	CS12(G)	CS12(P)
norma_distance	0.144***	0.0976***
	(0.0319)	(0.0278)
dummy_bank	-0.129***	-0.0465***
	(0.0208)	(0.0151)
dummy_pds	-0.00486	-0.0319*
	(0.0198)	(0.0166)
Constant	1.170***	0.155***
	(0.126)	(0.0431)
Observations	21,755	5,285
Number of STATEID	19	19

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.2 Total Time Spent Studying

CS10=Hours spent in private tuitions

VARIABLES	TABLE 16: Total time spent studying (Effect of Normalised Distance)			
	(1) total_education_time(G)	(2) total_education_time(P)	(3) CS10(G)	(4) CS10(P)
norma_distance	-1.546***	-2.781***	-0.749***	-0.676***
	(0.293)	(0.674)	(0.0924)	(0.213)
Constant	40.34***	42.75***	1.579***	2.053***
	(1.283)	(1.243)	(0.319)	(0.334)
Observations	20,941	5,033	21,263	5,139
Number of STATEID	19	19	19	19

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.3 Days absent from School in the last month

TABLE 17: Days Absent from School (Effect of Normalised Distance)		
	(1)	(2)
VARIABLES	CS11(G)	CS11(P)
norma_distance	0.605***	1.446***
	(0.135)	(0.282)
Constant	3.061***	1.691***
	(0.593)	(0.368)
Observations	21,596	5,362
Number of STATEID	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.4 Amount of money spent on books,uniform and other stuff

VARIABLES	TABLE 18: Money spent on books, uniform etc.(Effect of Normalised Distance)	
	(1)	(2)
	CS19(G)	CS19(P)
norma_distance	-61.62***	-429.2***
	(18.16)	(79.73)
Constant	612.2***	1,325***
	(91.45)	(172.1)
Observations	21,664	5,382
Number of STATEID	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.5 Amount of money spent on private tuitions

TABLE 19: Money spent on private tuitions (Effect of Normalised Distance)		
	(1)	(2)
VARIABLES	CS20(G)	CS20(P)
norma_distance	-79.21***	-115.4**
	(11.98)	(49.69)
Constant	156.2***	302.5***
	(31.09)	(50.90)
Observations	18,129	4,170
Number of STATEID	19	19

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Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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4.6 Presence of Class teachers

	(1)	(2)
TABLE 20: Presence of Class Teachers (Effect of Normalised Distance)		
VARIABLES	CH5(G)	CH5(P)
norma_distance	-0.0631***	0.0208
	(0.0200)	(0.0253)
Constant	0.973***	0.980***
	(0.0206)	(0.0124)
Observations	1,368	272
Number of STATEID	19	18

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.7 Learning Outcomes and Distance

Reading: TA7LVL: 0 = Cant read, 1= Letter, 2= Word, 3=Paragraph, 4=Story
Math: TA8LVL: 0= Cant, 1= Number, 2=Subtraction, 3= Division
Writing: TA9LVL: 0= Cant, 1=Writes with 2 or less mistakes

TABLE 21.a: Learning Outcomes in Private Schools (Effect of Normalised Distance)

VARIABLES	(1) TA7LVL	(2) TA8LVL	(3) TA9LVL
norma_distance	-0.0941	0.0622	-0.0583
	(0.144)	(0.121)	(0.0512)
CS19	7.73e-05**	9.53e-05***	2.68e-05**
	(3.50e-05)	(2.94e-05)	(1.24e-05)
CS20	5.68e-05	8.80e-05	-4.01e-07
	(7.77e-05)	(6.50e-05)	(2.84e-05)
total_education_time	0.0193***	0.0189***	0.00537***
	(0.00349)	(0.00292)	(0.00124)
Constant	2.301***	1.046***	0.594***
	(0.175)	(0.148)	(0.0624)
Observations	1,006	1,000	996
Number of STATEID	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

TABLE 21.b: Learning Outcomes in Government Schools (Effect of Normalised Distance)

VARIABLES	(1) TA7LVL	(2) TA8LVL	(3) TA9LVL
norma_distance	-0.221***	-0.0715	-0.0401
	(0.0680)	(0.0516)	(0.0251)
CS19	0.000375***	0.000272***	6.66e-05***
	(4.56e-05)	(3.43e-05)	(1.65e-05)
CS20	0.000323***	0.000307***	4.92e-05**
	(6.62e-05)	(5.01e-05)	(2.44e-05)
total_education_time	0.0231***	0.0167***	0.00640***
	(0.00186)	(0.00141)	(0.000689)
Constant	1.565***	0.713***	0.390***
	(0.116)	(0.0805)	(0.0450)
Observations	4,940	4,925	4,899
Number of STATEID	19	19	19

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.8   Enjoyment at School

TA5:0= No, 1=yes

	(1)	(2)
TABLE 22: Child enjoys school (Effect of Normalised Distance)		
VARIABLES	TA5(G)	TA5(P)
norma_distance	-0.0182**	0.0115
	(0.00883)	(0.0135)
Constant	0.975***	0.980***
	(0.00769)	(0.00630)
Observations	6,254	1,389
Number of STATEID	19	19

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1