Education and Long Term Social Mobility in Benin

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Motivation

- Intergenerational mobility refers to the relationship between parents' social-economic status and that of their children. It measures how better off (or worse off) children/descendants are compared with their parents.

- Intergenerational Social Mobility depends on innate abilities (e.g. I.Q, personal motivation, risk aversion), on family background and social environment (norms, parental investment) as well as public policies.

Motivation

- ISM is a micro indicator of economic progress and should be central to development debates. It highlights the importance of public policies as much as the role of individuals, families in the process of development.

- There is a vast literature in economics and sociology (See Black and Devereux [2011] , Grusky and Weeden [2006] for a review). But it has three limitations. 1. Focuses mostly on measurement, and on OECD countries, 2. Covers only two generations and 3. Rarely discusses the effects of mobility on current attitudes

This Paper

- We use a unique social and demographic data from the first regional schools in colonial Benin to uncover intergenerational education and mobility across three generations (1895- 2016).

- We investigate the causal effect of intergenerational income mobility on current generation attitudes toward risk, self-reliance, work ethics, and life outlook.

Main Findings

- We find evidence for upward education mobility of both the second and third generations. However, the evidence suggests that the second generation moved up and the third generation moved down from their parents' income levels.

- Thus, there is a sharp decline in the return to human capital that could be attributed to the dominance of the public sector on formal labor markets: 67% of the third generation respondents are low-wage public employees and only 3% are entrepreneurs.

- Income downward mobility is associated with more risk aversion, worse life outlook and work ethics. No significant effect on mental health.
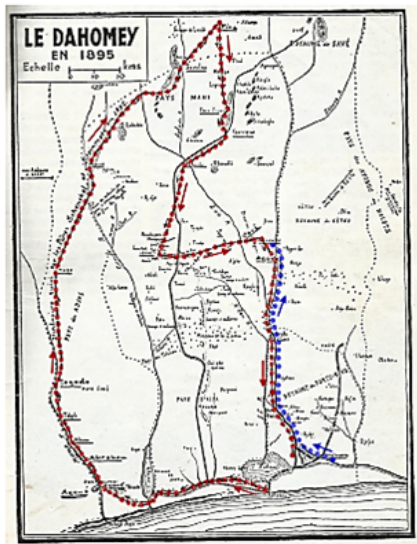
II. Context

Context

- Dahomey (Benin) colonized in 1894 after the Army of the Dahomey Kingdom and its "Amazones" were defeated by French colonial troops.

- Strong presence of catholic missionaries in coastal towns of Agoue and Porto Novo from 1840. Thus, de facto joint administration by Vatican and France.

Context

Figure A.10: Missionary Journey to Zagnanado

Context

▶ Catholic and public schools were created in various regions or "cercles" during the military expansion, 8 to 10 years before the establishment of formal colonial administration.

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III. Data Collection

Site Selection

- Criteria for selection of treatment sites:

- 100 km from the Atlantic Coast, north of the Dahomey Kingdom that was impenetrable to Europeans settlers prior to Colonial conquest (d'Almeida Topor, 1995); no prior European settlements or institutions

- No formal educational institution exists in these regions, prior to the creation of the school. Thus, limited self-selection in education.

- Sites selected: Zagnanado (1895), Kandi (1913), Save (1911), Natitingou (1922)

Site Selection

Figure A.1: Historical Map of Benin, Four School Sites Selection

Note: Each of the four school sites are indicated in red. Shaded area from Abomey to the coast signifies areas that are excluded from control sampling because they already possess various colonial infrastructures.

Selection of Control Sites:

- Exclude villages that lie within 7 km from the school

- List candidates for control locations (villages 7 to 20 km from school)

- Randomly select 2 villages from the candidates

Control Sites

Figure A.8: Historical Map of Zagnanado
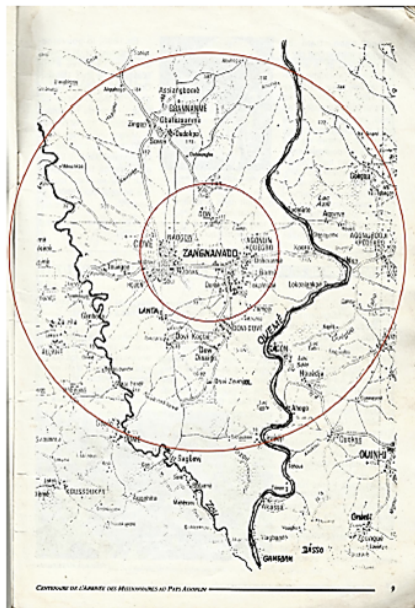
Treatment 1

- **Treatment 1**: List the first two cohorts of students in the 4 schools (archives, cemeteries, informants)

Premier Noyau de la Mission de Zagnanado (1897)

Treatment 1

Treatment 1

Student and Control Cohort Selection

- **Treatment 2**: Backward/retrospective sampling of subjects from same generation as T1, who did not attend school

- **Control**: Backward/retrospective sampling of subjects from the same generation as T1 and T2, from a control village with no school at the time and who did not attend school. The control group was selected randomly at the start of the project.

- Socio-demographic surveys of T1, T2 and C (age, profession, education, income, siblings [maximum 10], etc.)

Student and Control Cohort Selection

Second Generation

- List all children of subjects in Treatment 1, Treatment 2 and Control

- List all siblings of subjects in T1, T2 and C

- Sample children for each subject /

- Sample siblings for each subject

- List children of sampled siblings (nephews/nieces) of each subject

- Sample nephews/nieces of each subject

- Socio-demographic surveys of sampled children and nephews

Third Generation

- Same as for Second Generation

- Survey of Time Preference, Risk Preference, Self-Reliance, Life Outlook, Mental Health

IV.Results

Mobility: Second Generation

- Second Generation

Table 6.1 A – Transition Matrix of Education between First and Second Generations

		Second Generation Education			
		0	1	2	3
First Generation Education	0	56.37%	25.13%	14.54%	3.96%
	1	31.24%	29.54%	28.74%	10.48%

Mobility: Second Generation

Table 6.1 B – First to Second Generation Education

VARIABLES	(1) Odds-Ratio	(2) Odds-Ratio	(3) Odds-Ratio
Second generation Education Scale			
Second generation Wealth Scale	2.810***	2.610***	2.624***
	(0.0920)	(0.0878)	(0.0960)
Individual-level treatment		1.501***	1.014
		(0.135)	(0.104)
Village-level treatment		1.727***	1.800***
		(0.181)	(0.212)
First generation Wealth Scale			1.465***
			(0.0548)
Constant cut1	9.385***	13.35***	33.62***
	(0.817)	(1.384)	(4.991)
Constant cut2	47.62***	70.11***	187.8***
	(4.967)	(8.565)	(31.31)
Constant cut3	422.4***	640.3***	1,806***
	(55.77)	(93.58)	(353.4)
Observations	2,797	2,797	2,498

Robust Seeform in Parentheses

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Mobility: Second Generation

Table 6.1 C – **First to Second Generation Marginal Effects for Education**

VARIABLES	Category			
	0	1	2	3
Second generation Wealth Scale	-0.238***	0.0936***	0.123***	0.0215***
	(-0.00901)	(-0.00742)	(-0.00658)	(-0.00184)
Individual-level treatment	-0.00338	0.00132	0.00175	0.000306
	(-0.0254)	(-0.00994)	(-0.0132)	(-0.00231)
Village-level treatment	-0.146***	0.0653***	0.0687***	0.0116***
	(-0.0289)	(-0.0151)	(-0.0125)	(-0.00226)
First generation Wealth Scale	-0.0942***	0.0370***	0.0487***	0.00851***
	(-0.00925)	(-0.00449)	(-0.00514)	(-0.00101)
Observations	2498	2498	2498	2498

Standard Errors in Parentheses
* $p< 0.05$ ** $p< 0.01$ *** $p< 0.001$

Mobility: Second Generation

Table 6.1 D – Transition Matrix of Income Category between First and Second Generations

		Second Generation Income Category		
		1	2	3
First Generation Income Category	1	65.95%	21.43%	12.62%
	2	52.51%	27.30%	20.19%
	3	38.69%	30.60%	30.72%

Mobility: Second Generation

Table 6.1 E – First to Second Generation Wealth

VARIABLES	(1) Odds-Ratio	(2) Odds-Ratio	(3) Odds-Ratio	(4) Odds-Ratio	(5) Odds-Ratio	(6) Odds-Ratio	(7) Odds-Ratio
Second generation Wealth Scale							
First generation Wealth Scale	1.377***	1.037	1.037	0.968	0.968	1.037	1.037
	(0.0394)	(0.0330)	(0.0330)	(0.0341)	(0.0341)	(0.0330)	(0.0330)
Second generation Wealth Scale		4.051***	4.051***	3.764***	3.764***	4.051***	4.051***
		(0.190)	(0.190)	(0.180)	(0.180)	(0.190)	(0.190)
Individual-level treatment				1.456***	1.456***		
				(0.143)	(0.143)		
Village-levelt treatment				1.977***	1.977***		
				(0.196)	(0.196)		
Constant cut1	1.268***	1.422***	1.422***	2.047***	2.047***	1.422***	1.422***
	(0.104)	(0.126)	(0.126)	(0.225)	(0.225)	(0.126)	(0.126)
Constant cut2	3.844***	5.901***	5.901***	8.878***	8.878***	5.901***	5.901***
	(0.330)	(0.545)	(0.545)	(1.015)	(1.015)	(0.545)	(0.545)
Constant cut3	7.667***	15.45***	15.45***	23.81***	23.81***	15.45***	15.45***
	(0.702)	(1.541)	(1.541)	(2.902)	(2.902)	(1.541)	(1.541)
Constant cut4	30.12***	92.39***	92.39***	145.4***	145.4***	92.39***	92.39***
	(3.389)	(11.92)	(11.92)	(21.24)	(21.24)	(11.92)	(11.92)
Observations	2,516	2,498	2,498	2,498	2,498	2,498	2,498

Standard Seeform in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Mobility: Second Generation

Table 6.1 F – **First to Second Generation Marginal Effects for Income**

VARIABLES	Category				
	1	2	3	4	5
Second Generation Wealth Scale	-0.0858***	0.0316***	0.0385***	0.0127***	0.00292***
	(0.0127)	(0.00537)	(0.00593)	(0.00209)	(0.000648)
Third Generation Education	-0.252***	0.0928***	0.113***	0.0374***	0.00858***
	(0.0102)	(0.00851)	(0.00686)	(0.00313)	(0.00142)
Individual-level treatment	-0.00928	0.00339	0.00419	0.00138	0.000318
	(0.0224)	(0.00814)	(0.0101)	(0.00335)	(0.000771)
Village-level treatment	-0.0466	0.0185	0.0201	0.00649	0.00148
	(0.0299)	(0.0128)	(0.0124)	(0.00399)	(0.000944)
Observations	2,139	2,139	2,139	2,139	2,139

Robust Standard Errors in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Mobility: Third Generation

▶ Third Generation

Table 6.2 G – Transition Matrix, Education Outcomes from Second to Third Generation

		Third Generation Education				
		0	1	2	3	4
Second Generation Education	0	56.54%	34.80%	6.26%	2.24%	0.16%
	1	11.68%	40.05%	28.77%	17.94%	1.57%
	2	1.33%	8.49%	19.72%	56.91%	13.54%
	3	0.14%	0.96%	2.99%	35.26%	60.65%

Note: Computed using Ordered Probit Regressions.

Mobility: Third Generation

Table 6.2 H – Ordered Logit Model of Education Mobility: Odd Ratio

VARIABLES	(1) Odds-Ratio	(2) Odds-Ratio	(3) Odds-Ratio
Child Education Scale			
Parent Education Scale	10.82***	10.40***	10.29***
	(0.782)	(0.769)	(0.998)
Parent Wealth Scale	1.349***	1.257***	1.257***
	(0.0781)	(0.0772)	(0.0772)
Grandparent Education Scale		1.352***	1.326**
		(0.0761)	(0.176)
Grandparent*Parent			1.012
			(0.0706)
Individual-level treatment	0.764***	0.672***	0.672***
	(0.0766)	(0.0703)	(0.0703)
Village-level treatment	2.252***	2.207***	2.208***
	(0.276)	(0.279)	(0.280)
Constant cut1	47.53***	46.71***	46.01***
	(8.485)	(8.604)	(9.416)
Constant cut2	376.2***	372.5***	366.7***
	(79.88)	(81.37)	(87.72)
Constant cut3	1,440***	1,451***	1,430***
	(305.5)	(316.0)	(334.5)
Constant cut4	22,948***	24,487***	24,254***
	(-6,610)	(-7,264)	(-7,351)
Observations	2,139	2,099	2,099

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

Note: The coefficient of Parents education consistently shows a positive impact on the third generation education (positive since the odds ratio is higher than 1)

Mobility: Third Generation

Table 6.2 I – Ordered Logit Model of Education Mobility: Marginal Effects

Post estimation results: Marginal Effects

VARIABLES	1	2	3	4	5
Panel A: Model (1)					
Parent Education Scale	-0.488***	0.0549***	0.266***	0.155***	0.0121***
	(0.0171)	(0.0212)	(0.0120)	(0.0104)	(0.00195)
Parent Wealth Scale	-0.0614***	0.00691**	0.0335***	0.0194***	0.00152***
	(0.0119)	(0.00297)	(0.00664)	(0.00388)	(0.000368)
Individual-level treatment	0.0559***	-0.00806*	-0.0296***	-0.0169***	-0.00132**
	(0.0211)	(0.00438)	(0.0109)	(0.00617)	(0.000525)
Village-level treatment	-0.182***	0.0555***	0.0808***	0.0424***	0.00324***
	(0.0291)	(0.0145)	(0.0115)	(0.00568)	(0.000668)
Observations	2,139	2,139	2,139	2,139	2,139
Panel B: Model (2)					
Parent Education Scale	-0.483***	0.0632***	0.262***	0.147***	0.0108***
	(0.0175)	(0.0214)	(0.0122)	(0.0100)	(0.00179)
Parent Wealth Scale	-0.0471***	0.00617***	0.0256***	0.0144***	0.00105***
	(0.0127)	(0.00265)	(0.00695)	(0.00393)	(0.000323)
Grandparent Education Scale	-0.0622***	0.00813***	0.0337***	0.0189***	0.00139***
	(0.0116)	(0.00308)	(0.00648)	(0.00368)	(0.000350)
Individual-level treatment	0.0838***	-0.0146**	-0.0435***	-0.0240***	-0.00175***
	(0.0225)	(0.00598)	(0.0113)	(0.00617)	(0.000535)
Village-level treatment	-0.178***	0.0565***	0.0787***	0.0401***	0.00286***
	(0.0301)	(0.0151)	(0.0118)	(0.00569)	(0.000618)
Observations	2,099	2,099	2,099	2,099	2,099

Standard errors in parentheses

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

Note: Each column represents how a change in the variable of interests affects the probability of the dependent variable exhibiting a specific value. For instance, as the parent education increases, it becomes less likely that third generation is reported as 1 and it becomes more likely to have a higher level of education. As the parent scale goes up, it becomes more likely to be in the higher levels of education (3, 4 and 5, respectively)

Mobility: Third Generation

Table 6.2 J – Transition Matrix, wealth Outcomes from Second to Third Generation

		Third Generation Income Category				
		1	2	3	4	5
Second Generation Income Category	1	56.74%	27.23%	10.26%	4.24%	1.53%
	2	51.54%	25.16%	15.05%	6.04%	2.20%
	3	46.94%	26.97%	15.95%	8.35%	1.79%

Note: Computed using Ordered Probit Regressions.

Mobility: Third Generation

Table 6.2 K – Ordered Logit of Wealth Mobility

Third Generation Mobility (Ordered Logit Model)

VARIABLES	(1) Odds Ratio	(1) Marginal Effect	(2) Odds Ratio	(2) Marginal Effect	(3) Odds Ratio	(3) Marginal Effect
Parent's Wealth	0.285***	-0.0464	0.777**	-0.1239	0.781***	-0.1245
	(-0.0618)	(0.0100)	(-0.237)	(0.0375)	(-0.237)	(0.0376)
Parent's Education	0.207***		0.0918		0.095	
	(-0.0561)		(-0.0754)		(-0.0758)	
Grandparent's Wealth			-0.306		-0.273	
			(-0.19)		(-0.216)	
Grandparent*Parent					-0.0171	
					(-0.0536)	
Constant Cut 1	2.183***		2.857***		2.856***	
	(-0.162)		(-0.4)		(-0.4)	
Constant Cut 2	4.811***		5.372***		5.371***	
	(-0.215)		(-0.447)		(-0.447)	
Observations	2562		1612		1612	

Standard errors in parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Mechanism

Table 7.1 A – Income Scale by Sector/Education

	Education scale					
	1	2	3	4	5	Total
Public	1.557	2.131	2.608	3.000	3.152	1.958
St. Dev.	0.756	0.980	1.047	0.932	1.145	1.101
No. Obs.	440	282	181	335	79	1850
Private	1.209	2.145	1.712	3.118		1.768
St. Dev.	0.608	1.028	0.779	1.409	0.000	0.987
No. Obs.	540	716	260	34	0.000	1550
Total	1.365	2.141	2.079	3.011	3.152	1.905
	0.700	1.014	1.000	0.984	1.145	1.068
	980	998	441	369	79	3559.000

Mechanism

Table 7.2 B – Income Scale by Occupation

Public Sector Employees with at Least High School Education

Occupation	N	mean	St. Dev.	min	max	Proportion in Income Scale 1 or 2
Accountant / Manager / Cashier	62	3.29	0.86	2	5	21.0
Agricultural Engineer / Structural Engineer	10	3.80	1.03	2	5	20.0
Commercial Agent	14	2.71	1.07	1	4	42.9
Communicator / Journalist	10	3.50	0.85	2	5	10.0
Construction Industry/ Civil Engineering	25	3.12	0.97	1	5	28.0
Customs Officer	2	3.50	0.71	3	4	0.0
Dev Consultant	9	3.44	1.51	1	5	33.3
Diplomat	1	5.00	.	5	5	0.0
Doctor	4	3.50	1.73	1	5	25.0
Economist	11	3.36	1.21	1	5	27.3
Forester	3	3.33	0.58	3	4	0.0
Geographer	2	3.00	1.41	2	4	50.0
Hotelier	8	2.63	1.41	1	5	50.0
Lawyer	6	3.67	0.52	3	4	0.0
Magistrate	3	3.33	1.15	2	4	33.3
Microfinance Agent / Banker	9	4.11	1.05	2	5	11.1
Midwife	13	2.69	0.75	1	4	30.8
Nurse / Med School	23	2.61	0.72	2	4	52.2
Other	2	1.50	0.71	1	2	100.0
Priest / Religious	11	1.73	0.90	1	4	90.9
Professor	23	3.09	0.85	1	4	21.7
Unemployed	531	1.15	0.53	1	5	97.6
Radiologist / Dispensary Technician	14	3.43	1.16	2	5	28.6
Taxes Agent	2	3.00	0.00	3	3	0.0
Teacher	139	2.80	0.78	1	4	30.9
Veterinary / Logger / Framed	10	3.30	0.95	2	5	20.0
Total	947	1.35	0.53	1	5	67.90

Mechanism

Table 7.2 C

Education = 2, 3, 4, or 5

VARIABLES	(1) Highschool or more	(2) Highschool or more	(3) Highschool or more
Private Sector	0.201***	0.168***	0.154***
	(0.0485)	(0.0547)	(0.0527)
Child Education Scale		0.0389	0.0498*
		(0.0301)	(0.0294)
Individual-level treatment			-0.510***
			(0.0508)
Village-level treatment			0.235***
			(0.0733)
Constant	-0.551***	-0.642***	-0.683***
	(0.0338)	(0.0779)	(0.0916)
Observations	1,350	1,350	1,350
R-squared	0.013	0.014	0.083

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

Behavioral Effects

Table 8.0 A – Effect of Mobility on Risk Aversion

VARIABLES	(1) Social Risk Aversion	(2) Social Risk Aversion	(3) Financial Risk Aversion	(4) Financial Risk Aversion	(5) Physical Risk Aversion	(6) Physical Risk Aversion
Social Mobility	-2.961***	-3.019***	-1.672***	-1.696***	-0.696**	-0.720**
	(0.373)	(0.370)	(0.249)	(0.249)	(0.238)	(0.235)
Gender	0.0410	0.0651	-0.00448	0.00580	-0.0643	-0.0546
	(0.0797)	(0.0790)	(0.0515)	(0.0515)	(0.0530)	(0.0525)
Income	-0.00935	0.00104	-0.0157	-0.0113	-0.0413*	-0.0371
	(0.0350)	(0.0346)	(0.0242)	(0.0241)	(0.0205)	(0.0207)
Treatment	0.132*		0.0474		0.116**	
	(0.0561)		(0.0362)		(0.0370)	
Individual-Level Treatment		0.231**		0.107*		0.0294
		(0.0808)		(0.0532)		(0.0467)
Village-Level Treatment		-0.702***		-0.291***		-0.345***
		(0.116)		(0.0721)		(0.0823)
Control	2.501***	3.223***	1.701***	1.982***	0.709***	1.188***
	(0.156)	(0.150)	(0.105)	(0.0995)	(0.0970)	(0.101)
Observations	2604	2604	2604	2604	2604	2604

Standard Errors in Parentheses
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Behavioral Effects

Table 8.0 B – Effect on behavioral variables. Subset of people of third generation in level 2.

	Simple regression model					
VARIABLES	(1) Social Risk Aversion	(2) Financial Risk Aversion	(3) Physical Risk Aversion	(5) Self Reliance	(6) Life Outlook	(8) Work Ethics
Rise from 1 to 2	0.826***	-0.124	0.139	0.343*	0.759***	-0.132
	(0.295)	(0.206)	(0.150)	(0.208)	(0.168)	(0.184)
Down from 3 to 2	-0.148	-0.103	0.232**	-0.318**	-0.153	-0.460***
	(0.189)	(0.131)	(0.105)	(0.140)	(0.126)	(0.116)
Sex of descendent	0.212	0.237**	-0.0864	0.0163	0.00720	-0.238**
	(0.162)	(0.112)	(0.101)	(0.121)	(0.104)	(0.107)
Wealth Scale	0.258**	-0.167*	-0.0356	-0.113	-0.309***	0.164**
	(0.123)	(0.0884)	(0.0698)	(0.0899)	(0.0728)	(0.0769)
Individual-level treatment	0.505***	-0.00683	0.192*	0.269**	0.166	0.143
	(0.178)	(0.120)	(0.111)	(0.126)	(0.111)	(0.115)
Village-level treatment	-0.598**	0.106	-0.192	-0.103	0.206	-0.356**
	(0.267)	(0.182)	(0.150)	(0.187)	(0.177)	(0.152)
Constant	1.679***	1.958***	0.837***	6.013***	2.155***	3.941***
	(0.494)	(0.341)	(0.270)	(0.340)	(0.305)	(0.291)
Observations	470	470	470	470	470	470
R-squared	0.055	0.019	0.018	0.042	0.099	0.060

Robust Standard Errors in Parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Behavioral Effects

Table 8.1 C – First Stage IV Results: Effects of Treatment on Mobility

VARIABLES	(1) Social Mobility	(2) Social Mobility
Treatment	-0.0153***	
	(-0.00301)	
Individual-Level Treatment		0.0199***
		(-0.00426)
Village-Level Treatment		0.0081
		(-0.00665)
Gender	0.00532	0.00562
	(-0.0043)	(-0.00431)
Income	-0.0364***	-0.0363***
	(-0.00165)	(-0.00165)
Control	0.231***	0.190***
	(-0.00681)	(-0.00711)
Observations	2604	2604

Standard Errors in Parentheses

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Behavioral Effects

Table 8.1 D – Second Stage: Effect of Mobility on Risk Aversion

VARIABLES	(1) Social Risk Aversion	(2) Social Risk Aversion	(3) Financial Risk Aversion	(4) Financial Risk Aversion	(5) Physical Risk Aversion	(6) Physical Risk Aversion
Social Mobility	-11.59**	-5.678	-4.768*	-2.286	-8.285**	-5.636*
	(3.934)	(3.496)	(2.399)	(2.273)	(2.874)	(2.377)
Gender	0.0869	0.0601	0.0120	0.000763	-0.0239	-0.0359
	(0.0890)	(0.0816)	(0.0534)	(0.0516)	(0.0626)	(0.0573)
Income	-0.323*	-0.113	-0.128	-0.0399	-0.318**	-0.223*
	(0.147)	(0.131)	(0.0884)	(0.0843)	(0.108)	(0.0903)
Control	4.498***	3.296***	2.418***	1.913***	2.465***	1.927***
	(0.815)	(0.726)	(0.493)	(0.469)	(0.605)	(0.502)
Observations	2604	2604	2604	2604	2604	2604

Standard Errors in Parentheses
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Appendix

Table A1 – Effect of Mobility on Mental Health and Life Outlook

VARIABLES	(1) Mental Health	(2) Mental Health	(3) Life Outlook	(4) Life Outlook
Social Mobility	0.0299	0.0324	-2.282***	-2.298***
	(0.120)	(0.120)	(0.203)	(0.203)
Gender	0.0607*	0.0597*	-0.00819	-0.00160
	(0.0259)	(0.0260)	(0.0471)	(0.0470)
Income	-0.0387***	-0.0392***	-0.218***	-0.215***
	(0.0116)	(0.0115)	(0.0197)	(0.0197)
Treatment	0.0757***		-0.0156	
	(0.0183)		(0.0323)	
Individual-Level Treatment		-0.0915***		0.115*
		(0.0265)		(0.0490)
Village-Level Treatment		-0.0508		-0.140*
		(0.0380)		(0.0632)
Control	0.449***	0.662***	2.419***	2.461***
	(0.0526)	(0.0504)	(0.0927)	(0.0762)
Observations	2604	2604	2604	2604

Standard Errors in Parentheses

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table A2 – Effect of Upward or Downward Mobility on Risk Aversion, Mental Health, Self-reliance, and Work Ethic using Restricted Sample of Children from Income Group 2

VARIABLES	(1) Social Risk	(2) Social Risk	(3) Financial Risk	(4) Financial Risk	(5) Physical Risk	(6) Physical Risk
Upward/Downward						
Mobility	-0.877**	-0.926***	0.0186	0.0211	0.0844	0.0721
	(0.278)	(0.271)	(0.184)	(0.185)	(0.142)	(0.142)
Gender	0.0185	0.0852	0.139	0.135	-0.0990	-0.0825
	(0.184)	(0.181)	(0.121)	(0.121)	(0.118)	(0.119)
Income	0.284*	0.330*	-0.0998	-0.102	-0.0298	-0.0185
	(0.144)	(0.141)	(0.0944)	(0.0955)	(0.0820)	(0.0816)
Treatment	-0.172		-0.0538		-0.186	
	(0.152)		(0.0922)		(0.0966)	
Individual-Level						
Treatment		0.650**		0.0294		0.304*
		(0.200)		(0.132)		(0.133)
Village-Level						
Treatment		-0.843**		0.106		-0.0639
		(0.304)		(0.191)		(0.176)
Control	2.466***	2.529***	1.869***	1.678***	1.204**	0.788*
	(0.664)	(0.557)	(0.409)	(0.377)	(0.385)	(0.307)
Observations	384	384	384	384	384	384

Standard Errors in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Note: Mobility equals 1 if child from income group 2 had parents in income group 3 and 0 if the child's parents were in income group 1.

Table A3 – Effect of Upward or Downward Mobility on Risk Aversion, Mental Health, Self-reliance, and Work Ethic using Restricted Sample of Children from Income Group 2

VARIABLES	(7) Mental Health	(8) Mental Health	(9) Self-Reliance	(10) Self-Reliance	(11) Cynicism	(12) Cynicism	(13) Work Ethic	(14) Work Ethic
Upward Mobility	-0.0546	-0.0569	0.338	0.363*	0.569***	0.583***	-0.00198	0.0151
	(0.0815)	(0.0817)	(0.181)	(0.178)	(0.129)	(0.128)	(0.166)	(0.169)
Downward Mobility	-0.0169	-0.0170	-0.181*	-0.180*	-0.249**	-0.249**	-0.224**	-0.223**
	(0.0419)	(0.0418)	(0.0922)	(0.0918)	(0.0801)	(0.0801)	(0.0829)	(0.0822)
Gender	0.0605*	0.0594**	-0.109*	-0.0967	-0.0238	-0.0177	-0.182***	-0.174***
	(0.0260)	(0.0260)	(0.0541)	(0.0540)	(0.0477)	(0.0476)	(0.0480)	(0.0479)
Income	-0.0359*	-0.0364**	-0.0345	-0.0291	-0.112***	-0.109***	0.0519*	0.0556*
	(0.0125)	(0.0125)	(0.0273)	(0.0273)	(0.0233)	(0.0233)	(0.0239)	(0.0237)
Treatment	0.0758***		0.0368		0.00990		0.0815*	
	(0.0184)		(0.0354)		(0.0322)		(0.0321)	
Individual-Level Treatment		-0.0919***		0.143*		0.0837		0.0391
		(0.0265)		(0.0576)		(0.0494)		(0.0501)
Village-Level Treatment		-0.0505		-0.320***		-0.157*		-0.271***
		(0.0381)		(0.0697)		(0.0642)		(0.0626)
Control	0.451***	0.665***	5.722***	5.990***	1.887***	1.999***	3.714***	4.063***
	(0.0461)	(0.0424)	(0.0910)	(0.0773)	(0.0818)	(0.0705)	(0.0825)	(0.0715)
Observations	2604	2604	2604	2604	2604	2604	2604	2604

Standard Errors in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Table A4 – Effect of Mobility on Self-Reliance and Work Ethic

VARIABLES	(1) Self-Reliance	(2) Self-Reliance	(3) Work Ethic	(4) Work Ethic
Social Mobility	0.0299	0.0324	-2.282***	-2.298***
	(0.120)	(0.120)	(0.203)	(0.203)
Gender	0.0607*	0.0597*	-0.00819	-0.00160
	(0.0259)	(0.0260)	(0.0471)	(0.0470)
Income	-0.0387***	-0.0392***	-0.218***	-0.215***
	(0.0116)	(0.0115)	(0.0197)	(0.0197)
Treatment	0.0757***		-0.0156	
	(0.0183)		(0.0323)	
Individual-Level Treatment		0.0915***		0.115*
		(0.0265)		(0.0490)
Village-Level Treatment		-0.0508		-0.140*
		(0.0380)		(0.0632)
Control	0.449***	0.662***	2.419***	2.461***
	(0.0526)	(0.0504)	(0.0927)	(0.0762)
Observations	2604	2604	2604	2604

Standard Errors in Parentheses

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table A5 – Effect of Upward or Downward Mobility on Risk Aversion, Mental Health, Self-reliance, and Work Ethic using Restricted Sample of Children from Income Group 2

VARIABLES	(7) Mental Health	(8) Mental Health	(9) Self-Reliance	(10) Self-Reliance	(11) Cynicism	(12) Cynicism	(13) Work Ethic	(14) Work Ethic
Up/Downward								
Mobility	0.0441	0.0569	-0.543**	-0.567**	-0.828***	-0.834***	-0.280	-0.309
	(0.0845)	(0.0857)	(0.189)	(0.184)	(0.139)	(0.138)	(0.170)	(0.177)
Gender	0.0820	0.0648	0.00404	0.0367	-0.0155	-0.00765	-0.354**	-0.314*
	(0.0620)	(0.0615)	(0.135)	(0.135)	(0.114)	(0.114)	(0.123)	(0.122)
Income	0.0307	0.0189	-0.0426	-0.0202	-0.175*	-0.170*	0.146	0.174*
	(0.0480)	(0.0484)	(0.0976)	(0.0981)	(0.0811)	(0.0814)	(0.0889)	(0.0852)
Treatment	0.116*		-0.0525		-0.0411		-0.0673	
	(0.0496)		(0.0971)		(0.0896)		(0.0966)	
Individual-Level								
Treatment		-0.238***		0.287*		0.0971		0.352**
		(0.0640)		(0.141)		(0.123)		(0.133)
Village-Level								
Treatment		0.145		-0.444*		-0.0776		-0.537**
		(0.115)		(0.195)		(0.183)		(0.178)
Control	0.0812	0.280	6.192***	6.318***	2.763***	2.707***	3.801***	3.944***
	(0.217)	(0.195)	(0.426)	(0.378)	(0.360)	(0.322)	(0.432)	(0.368)
Observations	384	384	384	384	384	384	384	384

Standard errors in parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Note: Mobility equals 1 if child from income group 2 had parents in income group 3 and 0 if the child's parents were in income group 1.

Matrices tables and ordered logit tables

Table A6

VARIABLES	Dependent Variable			
	0	1	2	3
Second generation Wealth Scale	-0.257***	0.0994***	0.132***	0.0255***
	(0.00816)	(0.00718)	(0.00598)	(0.00198)
Observations	2,797	2,797	2,797	2,797

Standard Errors in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Table A7 – First to Second Generation Marginal Effects for Education

VARIABLES	Category			
	0	1	2	3
Second generation Wealth Scale	-0.238***	0.0958***	0.120***	0.0222***
	(-0.00836)	(-0.00691)	(-0.00591)	(-0.00178)
Individual-level treatment	-0.0999***	0.0365***	0.0532***	0.0102***
	(-0.0218)	(-0.00767)	(-0.0123)	(-0.00251)
Village-level treatment	-0.136***	0.0604***	0.0638***	0.0114***
	(-0.0258)	(-0.013)	(-0.0114)	(-0.00218)
Observations	2498	2498	2498	2498

Standard Errors in Parentheses
* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table A8

VARIABLES	(1) Odds-Ratio	(2) Odds-Ratio	(3) Odds-Ratio	(4) Odds-Ratio	(5) Odds-Ratio	(6) Odds-Ratio	(7) Odds-Ratio
Second generation Wealth Scale							
First generation Wealth Scale	1.377***	1.037	1.037	0.968	0.968	1.037	1.037
	(0.0394)	(0.0330)	(0.0330)	(0.0341)	(0.0341)	(0.0330)	(0.0330)
Second generation Wealth Scale		4.051***	4.051***	3.764***	3.764***	4.051***	4.051***
		(0.190)	(0.190)	(0.180)	(0.180)	(0.190)	(0.190)
Individual-level treatment				1.456***	1.456***		
				(0.143)	(0.143)		
Village-level treatment				1.977***	1.977***		
				(0.196)	(0.196)		
Constant cut1	1.268***	1.422***	1.422***	2.047***	2.047***	1.422***	1.422***
	(0.104)	(0.126)	(0.126)	(0.225)	(0.225)	(0.126)	(0.126)
Constant cut2	3.844***	5.901***	5.901***	8.878***	8.878***	5.901***	5.901***
	(0.330)	(0.545)	(0.545)	(1.015)	(1.015)	(0.545)	(0.545)
Constant cut3	7.667***	15.45***	15.45***	23.81***	23.81***	15.45***	15.45***
	(0.702)	(1.541)	(1.541)	(2.902)	(2.902)	(1.541)	(1.541)
Constant cut4	30.12***	92.39***	92.39***	145.4***	145.4***	92.39***	92.39***
	(3.389)	(11.92)	(11.92)	(21.24)	(21.24)	(11.92)	(11.92)
Observations	2,516	2,498	2,498	2,498	2,498	2,498	2,498

Standard Seeform in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Table A9

VARIABLES	Dependent Variable				
	1	2	3	4	5
First generation Wealth Scale	-0.0725***	-0.00308**	0.0177***	0.0362***	0.0218***
	(-0.00639)	(-0.00156)	(-0.00196)	(-0.00361)	(-0.00229)
Observations	2516	2516	2516	2516	2516

Standard Errors in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Table A10

VARIABLES	Dependent Variable				
	1	2	3	4	5
First generation Wealth Scale	-0.00739	-0.00112	0.00299	0.00422	0.0013
	(-0.00649)	(-0.00102)	(-0.00263)	(-0.00372)	(-0.00115)
Education	-0.285***	-0.0432***	0.115***	0.163***	0.0500***
	(-0.0098)	(-0.0091)7	(-0.00767)	(-0.00871)	(-0.0037)
Observations	2498	2498	2498	2498	2498

Standard Errors in Parentheses

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

Table A11

VARIABLES	Dependent Variable				
	1	2	3	4	5
First generation Wealth Scale	0.00649	0.00102	-0.00275	-0.00368	-0.00108
	(-0.00712)	(-0.00113)	(-0.00302)	(-0.00403)	(-0.00118)
Education	-0.267***	-0.0420***	0.113***	0.152***	0.0446***
	(-0.01)	(-0.00896)	(-0.00758)	(-0.00841)	(-0.00336)
Individual-level treatment	-0.0737***	-0.0152***	0.0310***	0.0444***	0.0134***
	(-0.0188)	(-0.00528)	(-0.00798)	(-0.0121)	(-0.00383)
Village-level treatment	-0.146***	-0.00412	0.0599***	0.0707***	0.0199***
	(-0.0224)	(-0.00466)	(-0.00925)	(-0.00962)	(-0.00299)
Observations	2498	2498	2498	2498	2498

Standard Errors in Parentheses
* p< 0.05 ** p< 0.01 *** p< 0.001

Table A12 – Dependent Variable: Third Generation Wealth Scale. Ordered Logit Model

VARIABLES	(1)	(2)	(3)
Second Generation Wealth Scale	0.351***	0.395***	-0.00387
	(0.0518)	(0.0554)	(0.0622)
Third Generation Education	1.031***	1.019***	0.780***
	(0.0420)	(0.0429)	(0.0455)
Standardized values of (income)		-0.0645	-0.146***
		(0.0456)	(0.0480)
First * Second Generation Wealth			0.926***
			(0.0388)
Individual-level treatment	0.0380	0.0753	-0.588***
	(0.0918)	(0.0969)	(0.107)
Village-level treatment	0.189	0.193	0.551***
	(0.121)	(0.125)	(0.133)
Constant cut1	2.852***	2.938***	3.468***
	(0.177)	(0.193)	(0.200)
Constant cut2	4.600***	4.673***	5.638***
	(0.196)	(0.211)	(0.223)
Constant cut3	6.170***	6.248***	7.915***
	(0.219)	(0.232)	(0.274)
Constant cut4	7.927***	8.029***	10.10***
	(0.282)	(0.297)	(0.347)
Observations	2,139	2,025	2,025

Robust Standard Errors in Parentheses

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

Table A13

VARIABLES	(1) 1	(2) 2	(3) 3	(4) 4	(5) 5
Second Generation Wealth Scale	-0.0965***	0.0347***	0.0439***	0.0146***	0.00326***
	(0.0135)	(0.00571)	(0.00645)	(0.00234)	(0.000728)
Third Generation Education	-0.249***	0.0896***	0.113***	0.0376***	0.00840***
	(0.0104)	(0.00857)	(0.00705)	(0.00324)	(0.00144)
Standardized values of (income)	0.0158	-0.00567	-0.00717	-0.00238	-0.000532
	(0.0111)	(0.00403)	(0.00507)	(0.00171)	(0.000388)
Individual-level treatment	-0.0183	0.00650	0.00841	0.00280	0.000627
	(0.0236)	(0.00827)	(0.0109)	(0.00364)	(0.000819)
Village-level treatment	-0.0476	0.0186	0.0208	0.00674	0.00150
	(0.0309)	(0.0129)	(0.0130)	(0.00419)	(0.000966)
Observations	2,025	2,025	2,025	2,025	2,025

Robust Standard Errors in Parentheses

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

Table A14

VARIABLES	(1) 1	(2) 2	(3) 3	(4) 4	(5) 5
Second Generation Wealth Scale	0.000896	-0.000359	-0.000461	-6.72e-05	-8.89e-06
	(0.0144)	(0.00577)	(0.00740)	(0.00108)	(0.000143)
Third Generation Education	-0.181***	0.0724***	0.0928***	0.0135***	0.00179***
	(0.0106)	(0.00765)	(0.00618)	(0.00189)	(0.000384)
Standardized values of (income)	0.0337***	-0.0135***	-0.0173***	-0.00253***	-0.000335**
	(0.0111)	(0.00458)	(0.00577)	(0.000904)	(0.000133)
First * Second Generation Wealth	-0.214***	0.0859***	0.110***	0.0161***	0.00212***
	(0.00897)	(0.00780)	(0.00693)	(0.00203)	(0.000462)
Individual-level treatment	0.138***	-0.0611***	-0.0664***	-0.00953***	-0.00126***
	(0.0252)	(0.0123)	(0.0120)	(0.00212)	(0.000366)
Village-level treatment	-0.132***	0.0648***	0.0584***	0.00812***	0.00107***
	(0.0326)	(0.0186)	(0.0127)	(0.00201)	(0.000329)
Observations	2,025	2,025	2,025	2,025	2,025

Robust Standard Errors in Parentheses

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

Table A15

First to Second Generation Predicted Probabilities

Income Transition Matrix

First Generation Income Category		Second Generation Income Category		
		1	2	3
	1	65.95%	21.43%	12.62%
	2	52.51%	27.30%	20.19%
	3	38.69%	30.60%	30.72%

Income Transition Matrix

First Generation Income Category		Second Generation Income Category				
		1	2	3	4	5
	1	47.94%	25.68%	11.15%	10.85%	4.37%
	2	40.07%	26.89%	13.21%	13.91%	5.92%
	3	32.69%	26.86%	15.05%	17.43%	7.98%
	4	26.07%	25.59%	16.41%	21.27%	10.67%

Proportions

Income Transition Matrix

First Generation Income Category		Second Generation Income Category		
		1	2	3
	1	64.0	25.4	10.6
	2	56.0	23.5	20.5
	3	38.3	28.3	33.4

Income Transition Matrix

First Generation Income Category		Second Generation Income Category				
		1	2	3	4	5
	1	40.0	34.3	12.1	10.6	3.0
	2	41.5	27.4	13.1	12.5	5.4
	3	33.8	27.4	15.7	13.9	9.3
	4	32.5	22.1	12.3	21.9	11.2
	5	18.5	12.9	20.5	33.3	14.9

Note: Probabilities computed with an Ordered Probit Model

First to Second Generation Predicted Probabilities									
Education Transition Matrix						**Education Transition Matrix**			

		Second Generation Education						Third Generation Education				
		0	1	2	3			1	2	3	4	5
First Generation Education	0	56.37%	25.13%	14.54%	3.96%	Second Generation Education	0	56.54%	34.80%	6.26%	2.24%	0.16%
	1	31.24%	29.54%	28.74%	10.48%		1	11.68%	40.05%	28.77%	17.94%	1.57%
							2	1.33%	8.49%	19.72%	56.91%	13.54%
							3	0.14%	0.96%	2.99%	35.26%	60.65%

Proportions												
Education Transition Matrix						**Education Transition Matrix**						

		Second Generation Education						Third Generation Education				
		0	1	2	3			1	2	3	4	5
First Generation Education	0	61.49	30.99	6.81	0.71	Second Generation Education	0	58.23	25.39	15.71	0.00	0.68
	1	59.06	30.10	9.28	1.56		1	3.74	62.33	13.77	20.17	0.00
							2	0.00	0.74	20.96	58.82	19.49
							3	0.00	0.00	0.00	57.14	42.86

Note: Probabilities computed with an Ordered Probit Model

Table A17

Education = 1

VARIABLES	(1) Primary or Secondary	(2) Primary or Secondary	(3) Primary or Secondary
Private Sector	0.00446	0.00446	0.00852
	(-0.0563)	(-0.0563)	(-0.0547)
Child Education Scale = o		-	-
Individual-level treatment			-0.589***
			(-0.0581)
Village-level treatment			0.332***
			(-0,0726)
Constant	-0.584***	-0.584***	-0.646***
	(-0.0352)	(-0.0352)	(-0.067)
Observations	789	789	789
R-squared	0	0	0.11

Robust Standard Errors in Parentheses

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