Main Findings
Barbados Survey of Living Conditions
2016-2017

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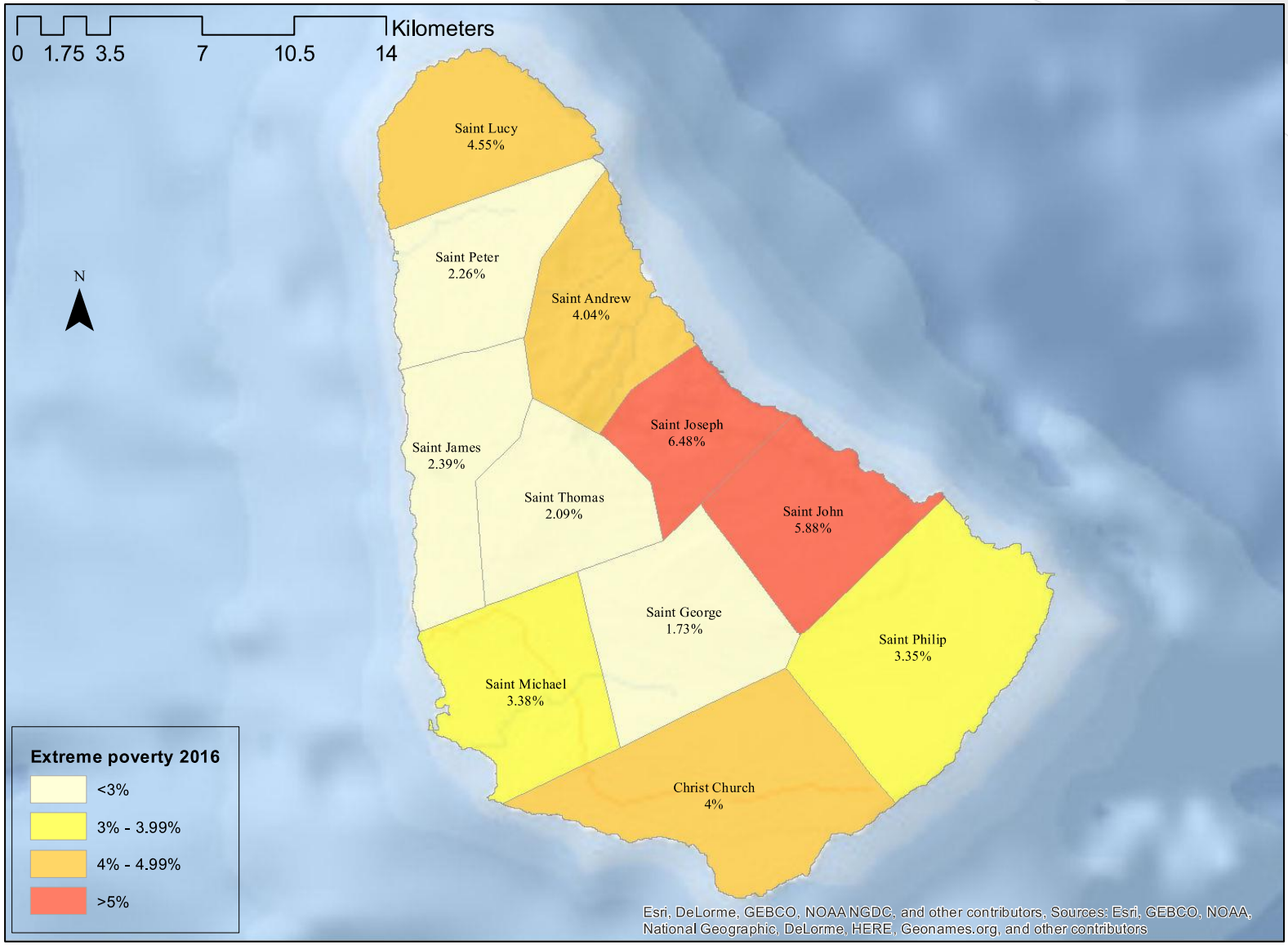
September 2017

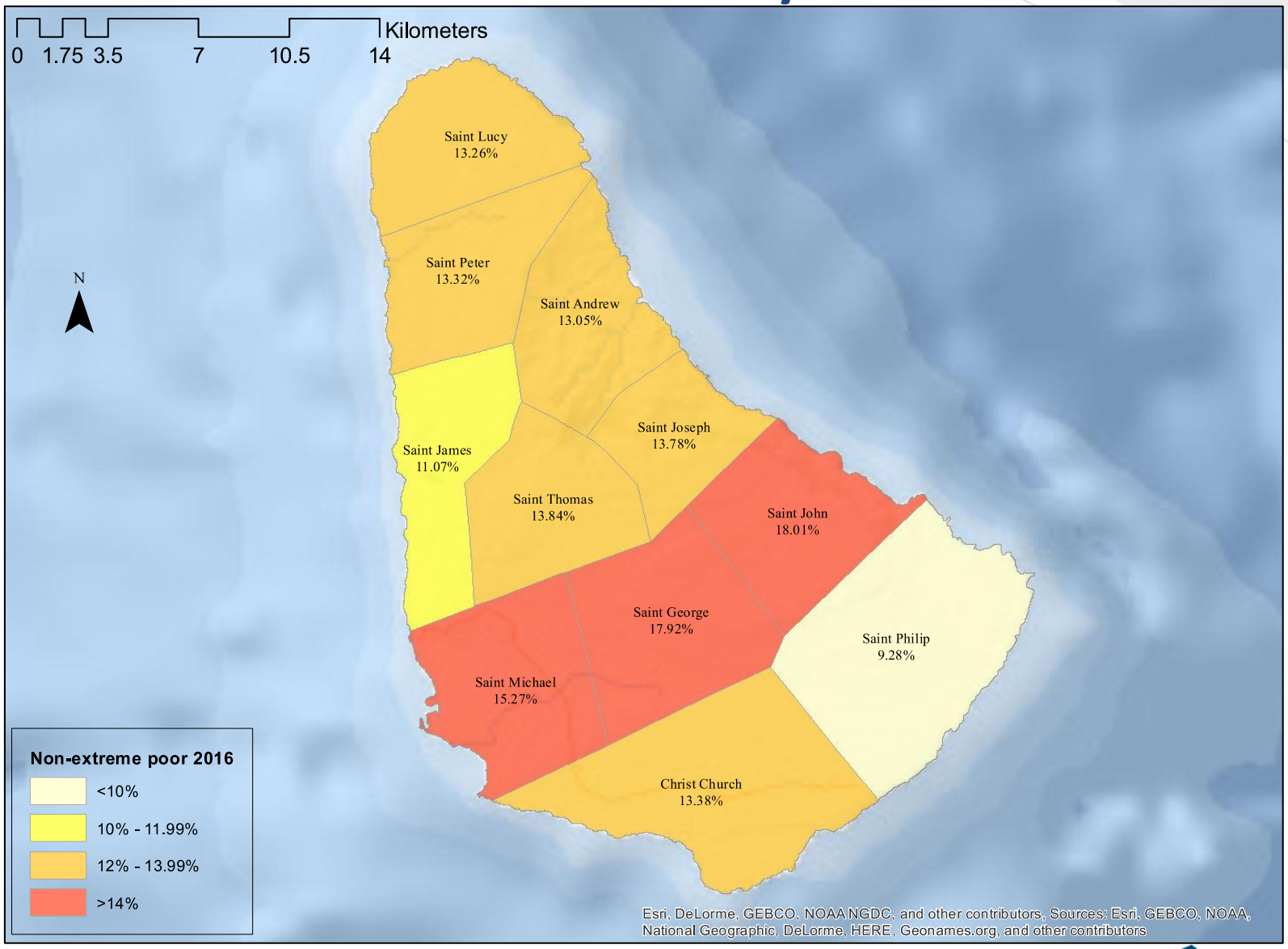
Poverty Estimations

- Main statistics derived from the data
  - Consumption per capita
  - Consumption based poverty lines
- Extreme Poor (or Indigent Poor)
  - Not able to meet WHO minimum caloric requirement
  - Considering age, sex and pregnancy incidence distributions in Barbados: 2,104 kilocalories per day (average person)
  - Valued at BDS$297.28 per month per person (extreme poverty line)
  - Households with with monthly per capita consumption below BDS$297.28 = extreme poor → **3.65%**
- Non-Extreme Poor (or Non-Indigent Poor)
  - Non-extreme poverty line = extreme poverty line + basic non-food consumption
  - Valued at BDS$642.52 per month per person
  - Households with with monthly per capita consumption above BDS$297.28, but below BDS$642.52 = non-extreme poor → **13.83%**

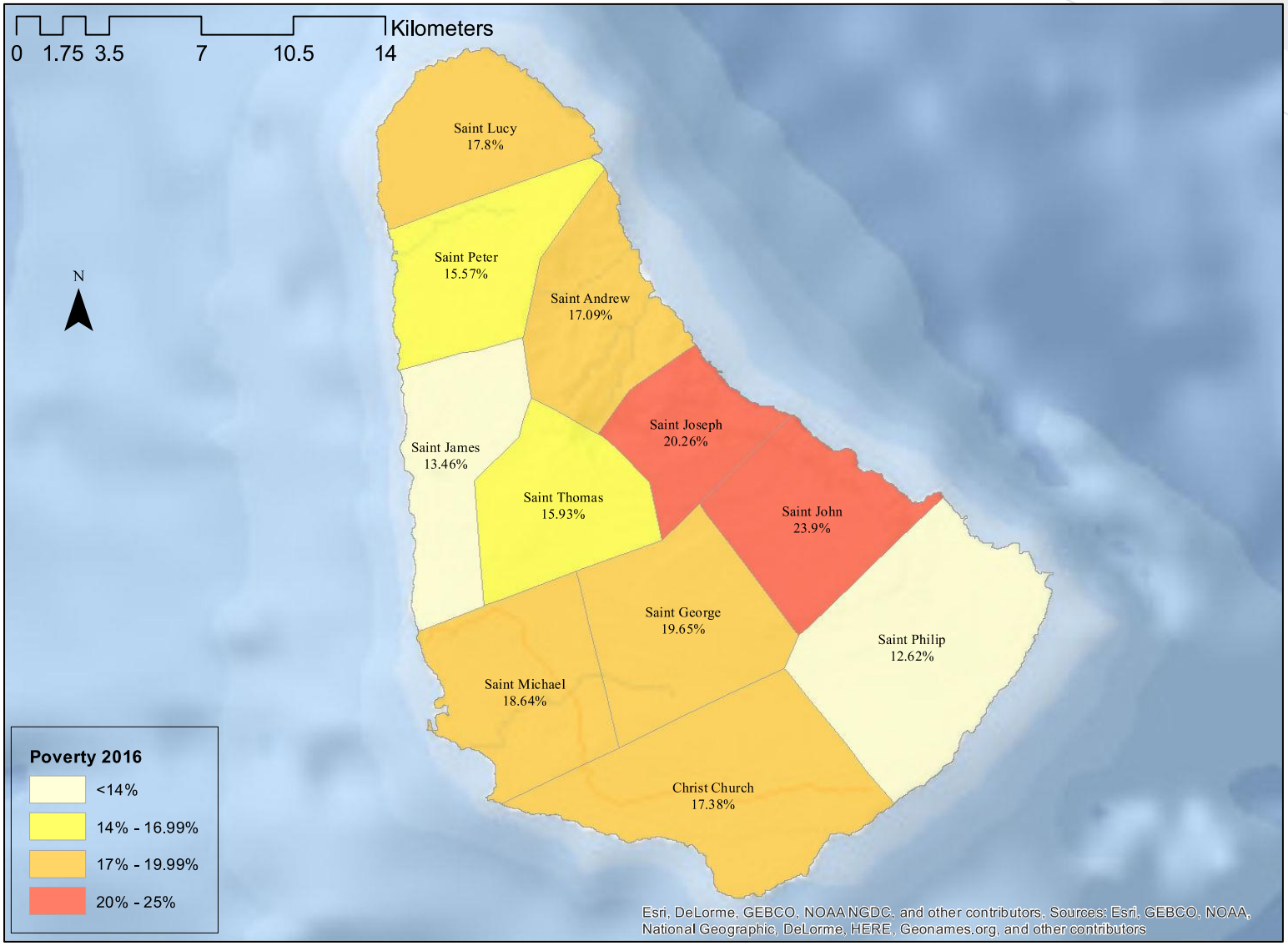
Extreme Poor by Parish 2016



Non-Extreme Poor by Parish 2016



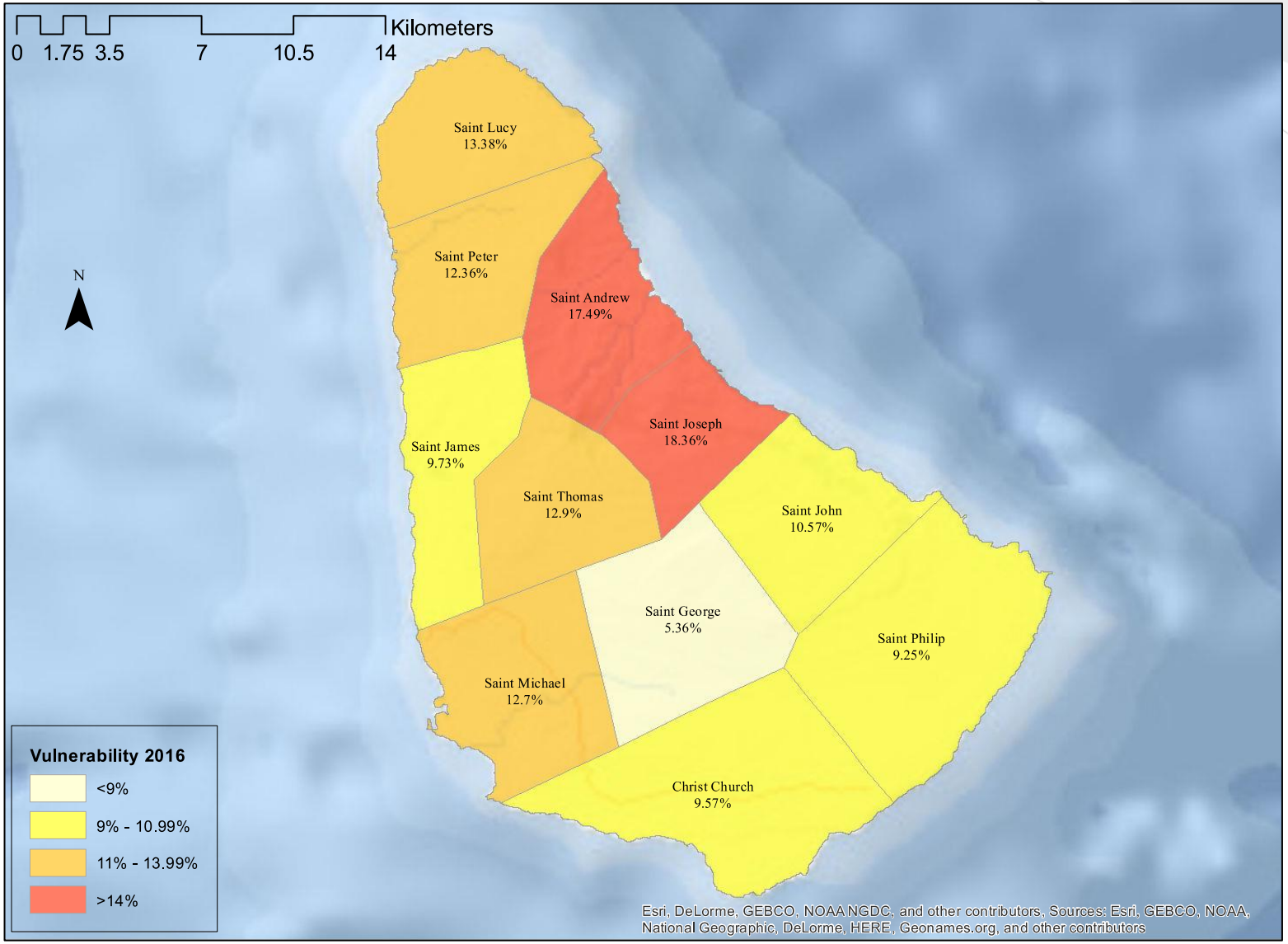
Overall Poverty by Parish 2016



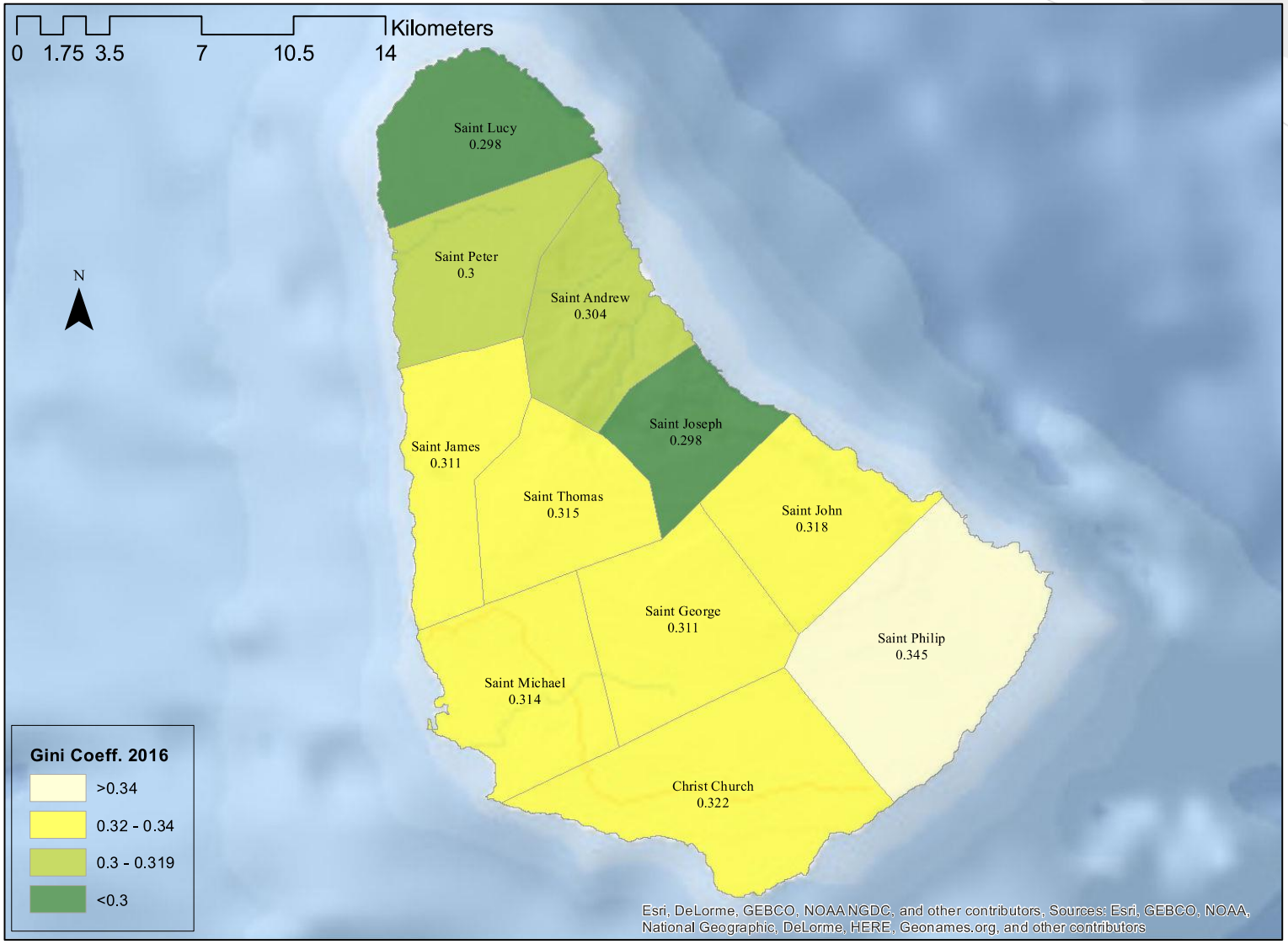
Vulnerability and Inequality

- Vulnerable
  - Households with with monthly per capita consumption above the non-extreme poverty line but below 1.25 times such line
  - Non-poor but at risk of poverty → **11.05%**
- Non-Vulnerable
  - Households with with monthly per capita consumption above 1.25 times the non-extreme poverty line → **71.47%**
- Inequality
  - Gini coefficient: ranges between 0 and 1
  - Extreme inequality (Gini=1): single household consumes all available goods and services in the country
  - Total equality (Gini=0): every household consumes the same in per capita terms
  - Barbados 2016 → **0.32**

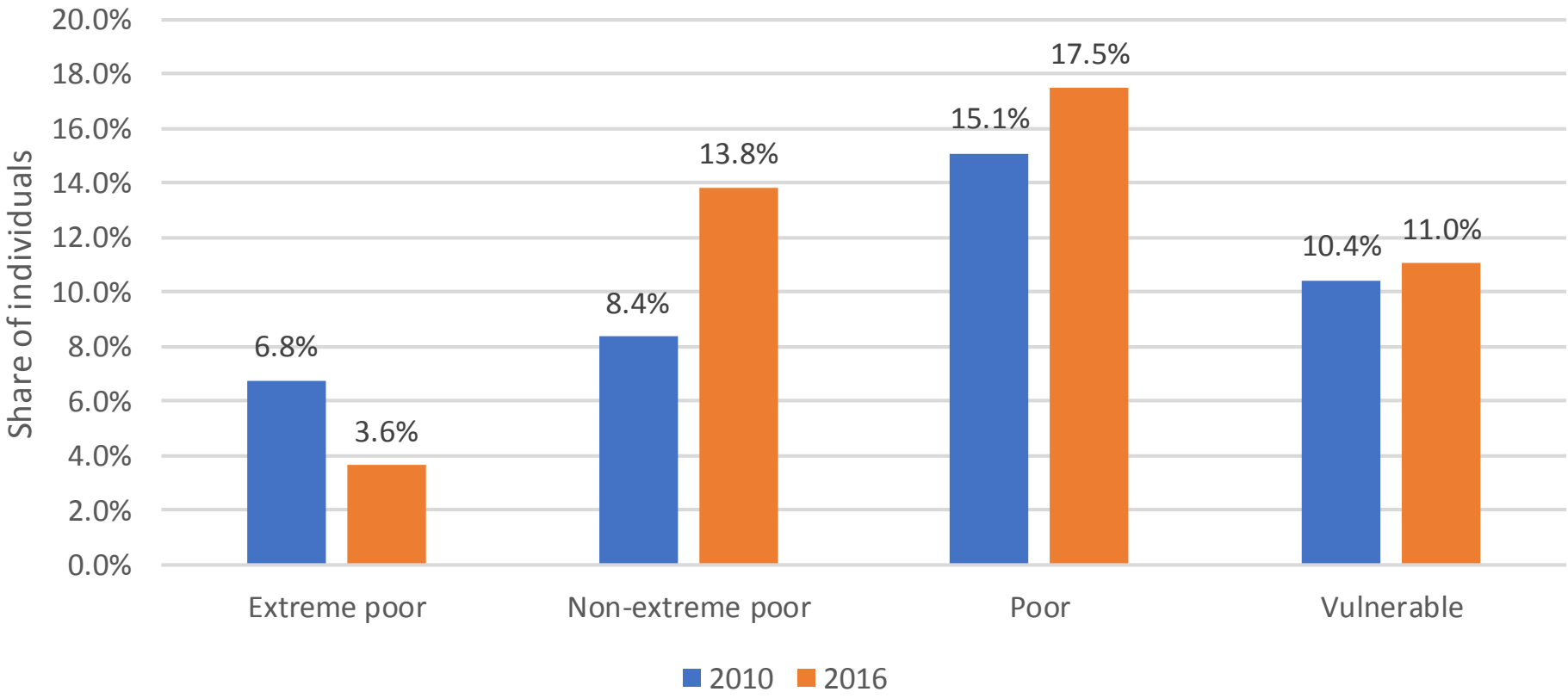
Vulnerability by Parish 2016



Gini by Parish 2016

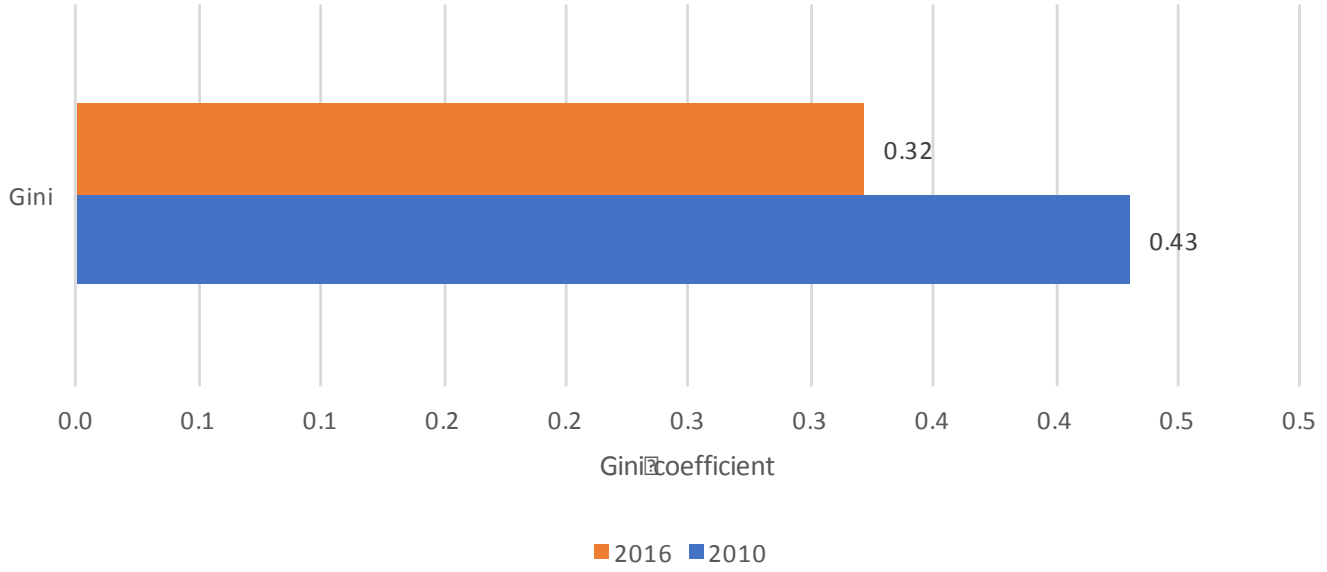


Poverty and Vulnerability over Time



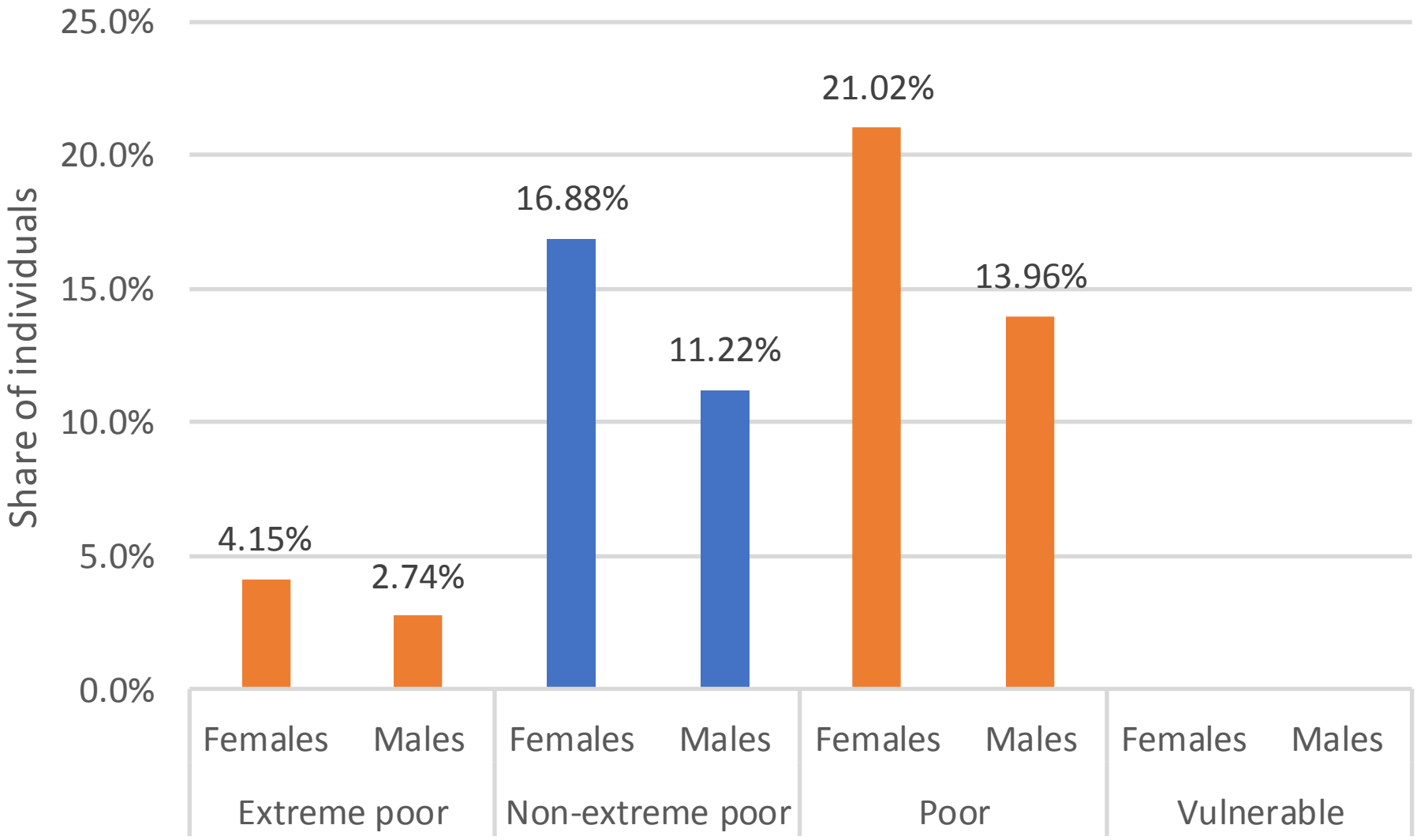
- Extreme Poverty has significantly decreased
- Former extreme poor have migrated to be non-extreme poor → rise in non-extreme poverty
- But also some vulnerable have fallen in poverty → rise in overall poverty
- Vulnerability rate mainly stable → some non-vulnerable have fallen into vulnerability

Inequality over Time – Gini Coefficient

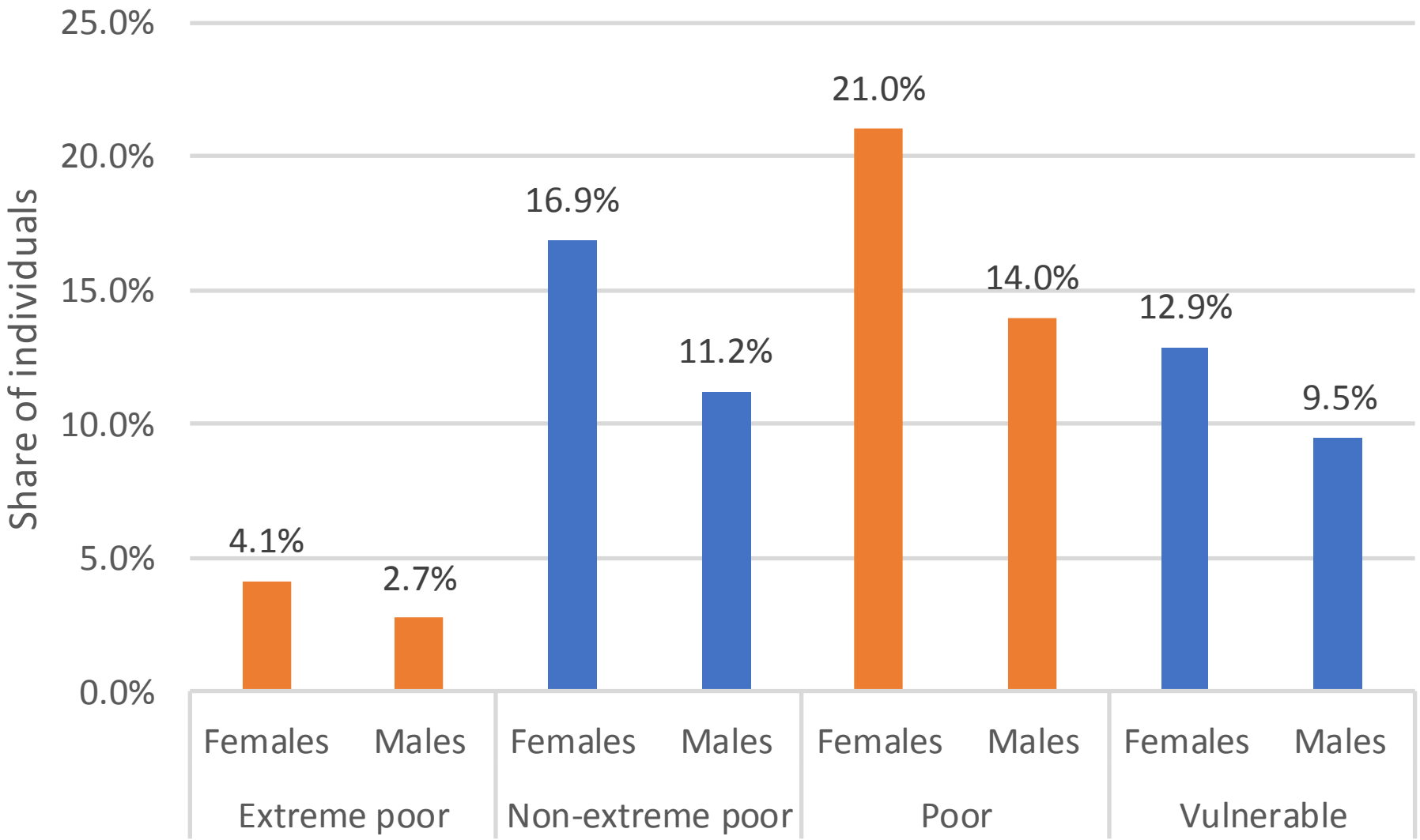


- Inequality has decreased but…
- Shifting consumption distribution to the non-extreme poor/vulnerable segment
- Almost the entirety of the first quintile of the consumption distribution is under poverty
- What are the determinants of this?

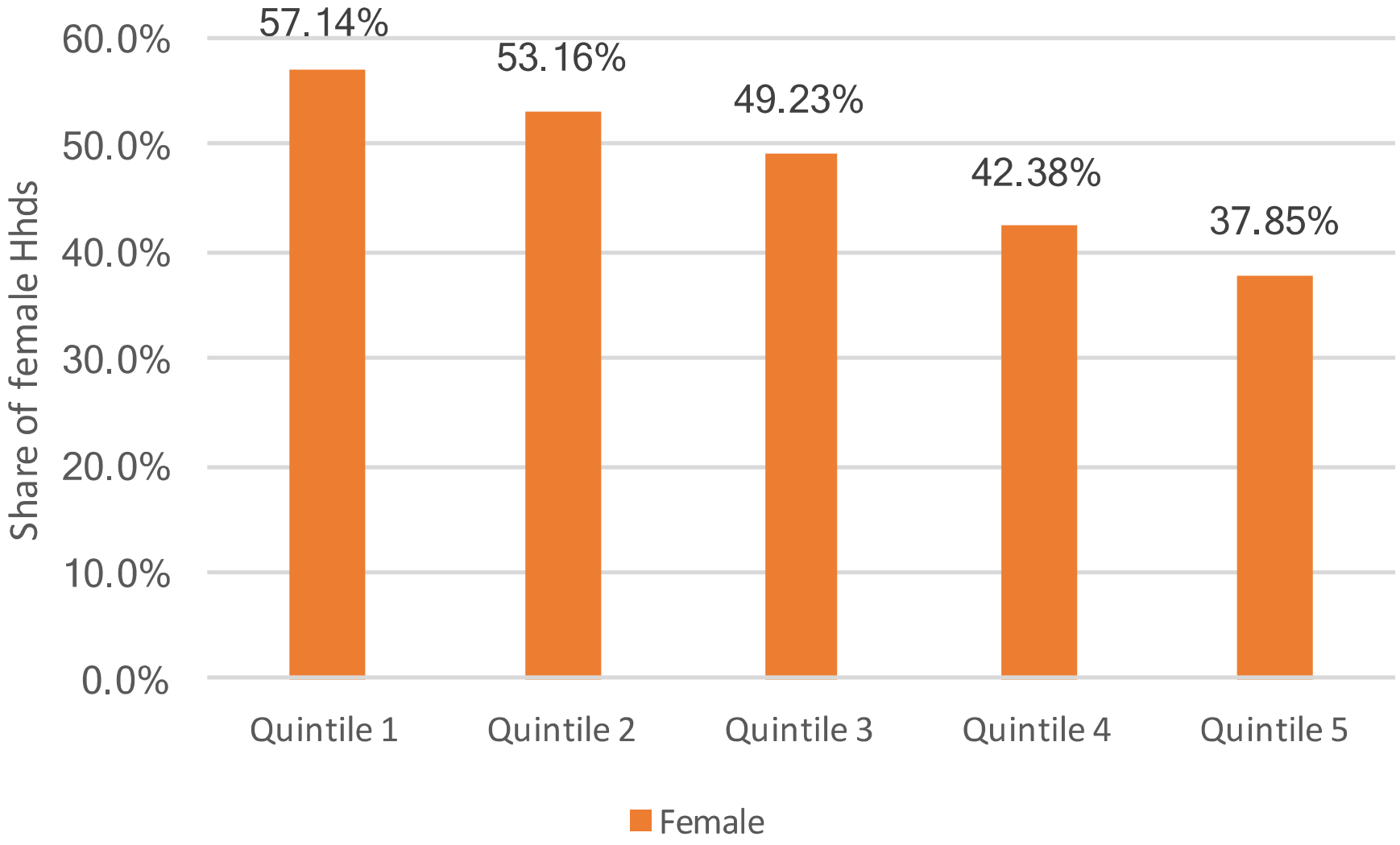
Poverty has a Gender Component



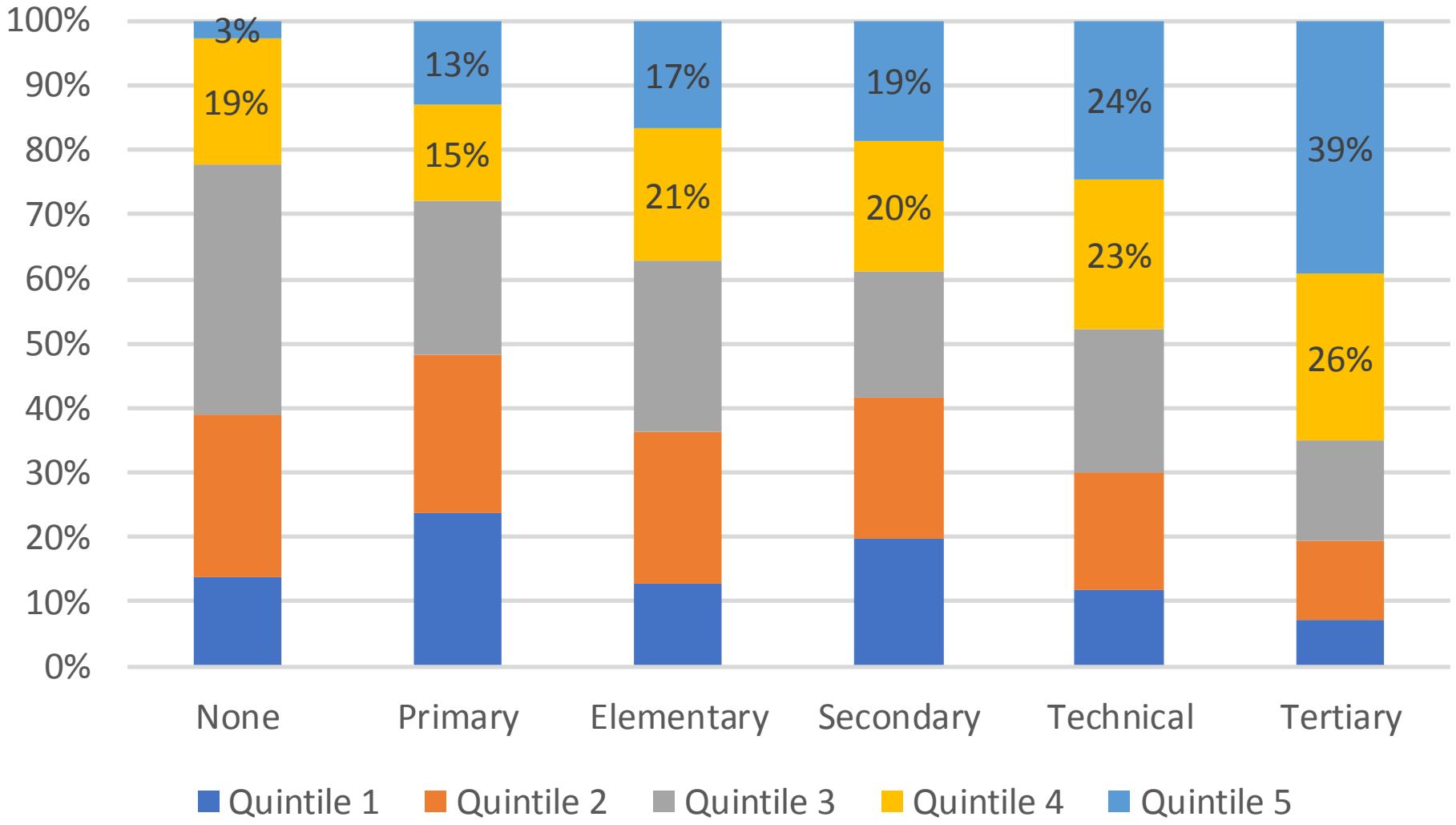
Vulnerability as well…



Female headed households – left tail of consumption

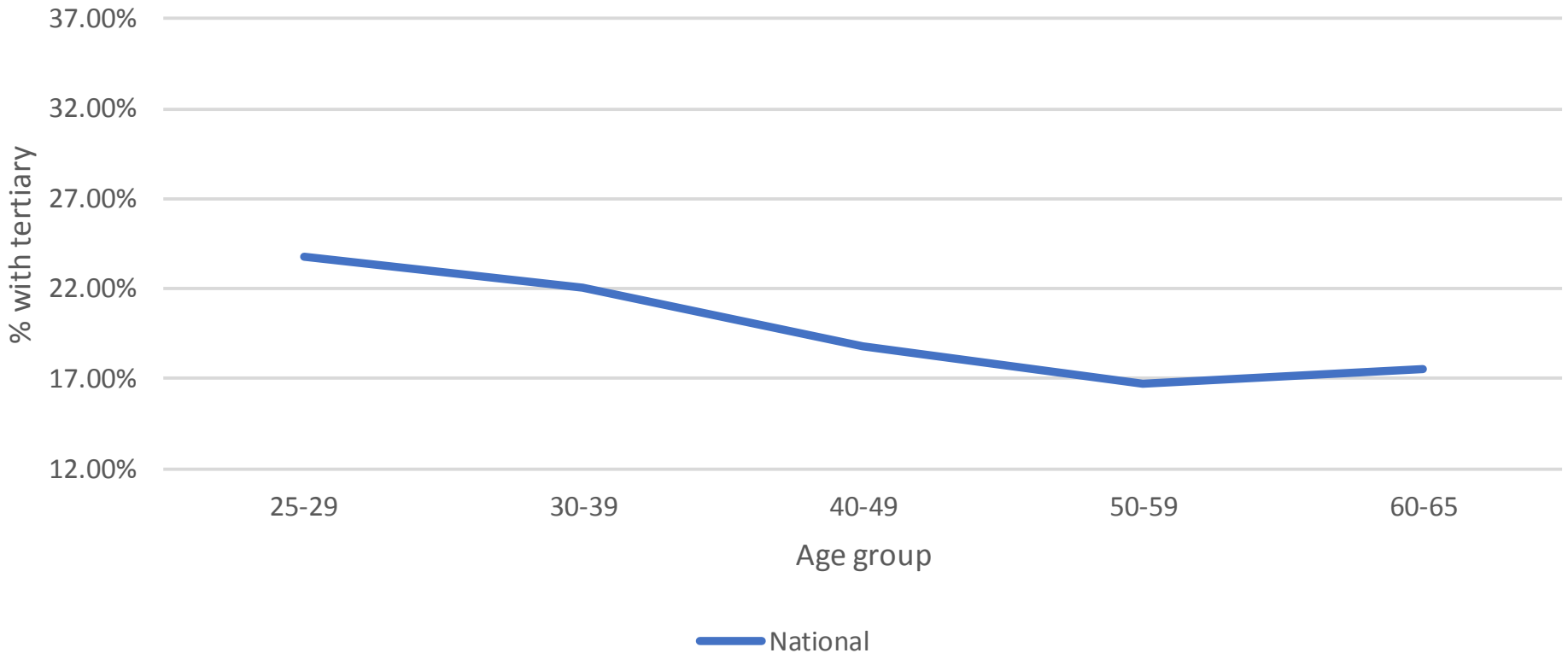


Female disadvantage likely to revert? – Role of Education



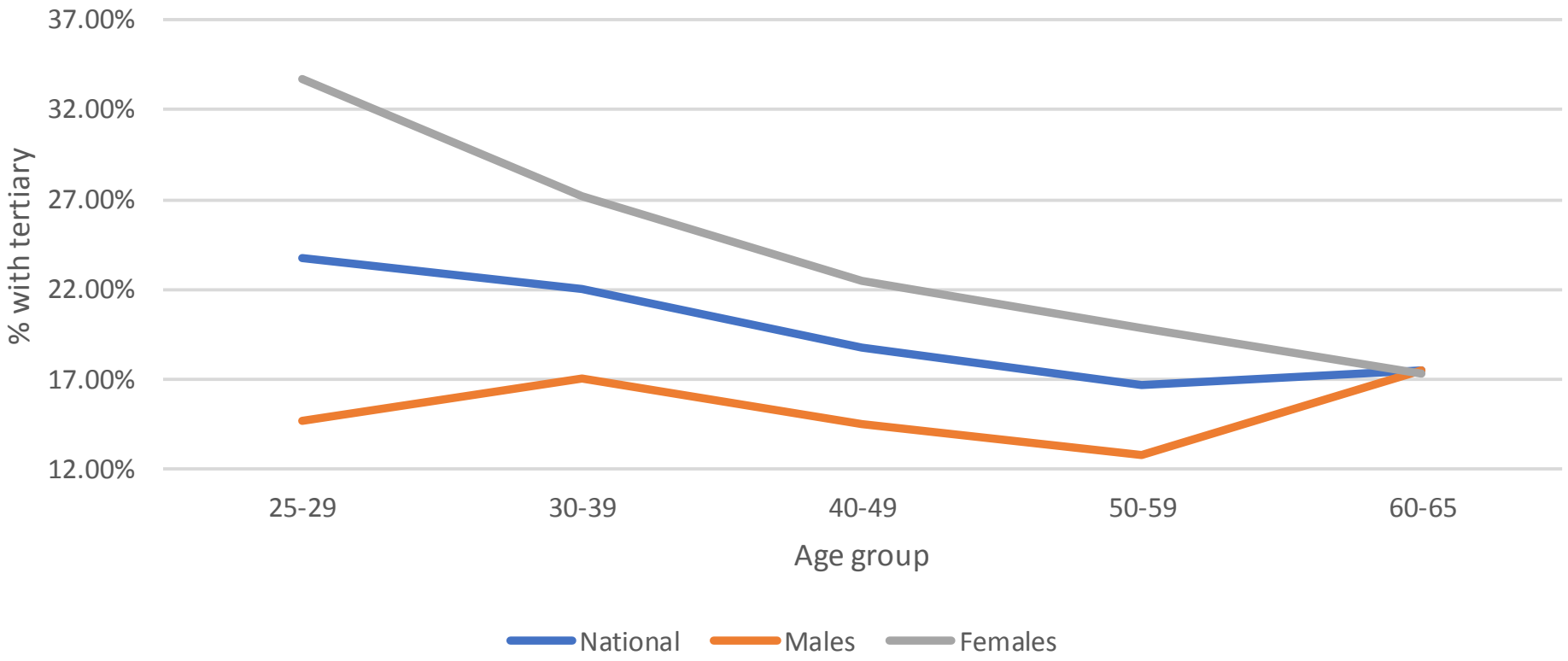
- Significant returns to education
- How are younger women doing with respect to males?

Tertiary education by Cohorts



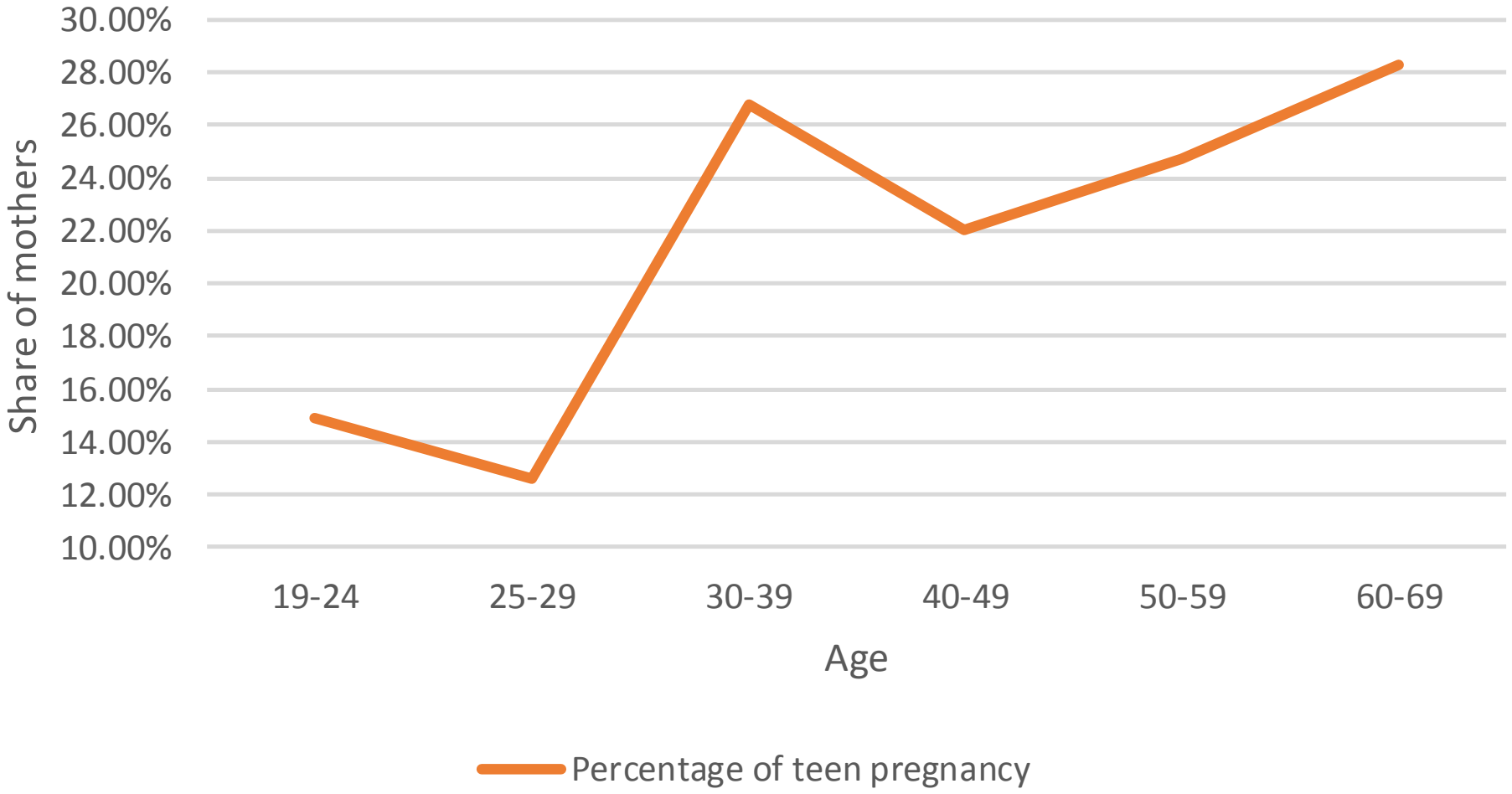
- Younger cohorts (below 40) are more educated
- Are there any gender differences?

Tertiary education by Cohorts and Gender



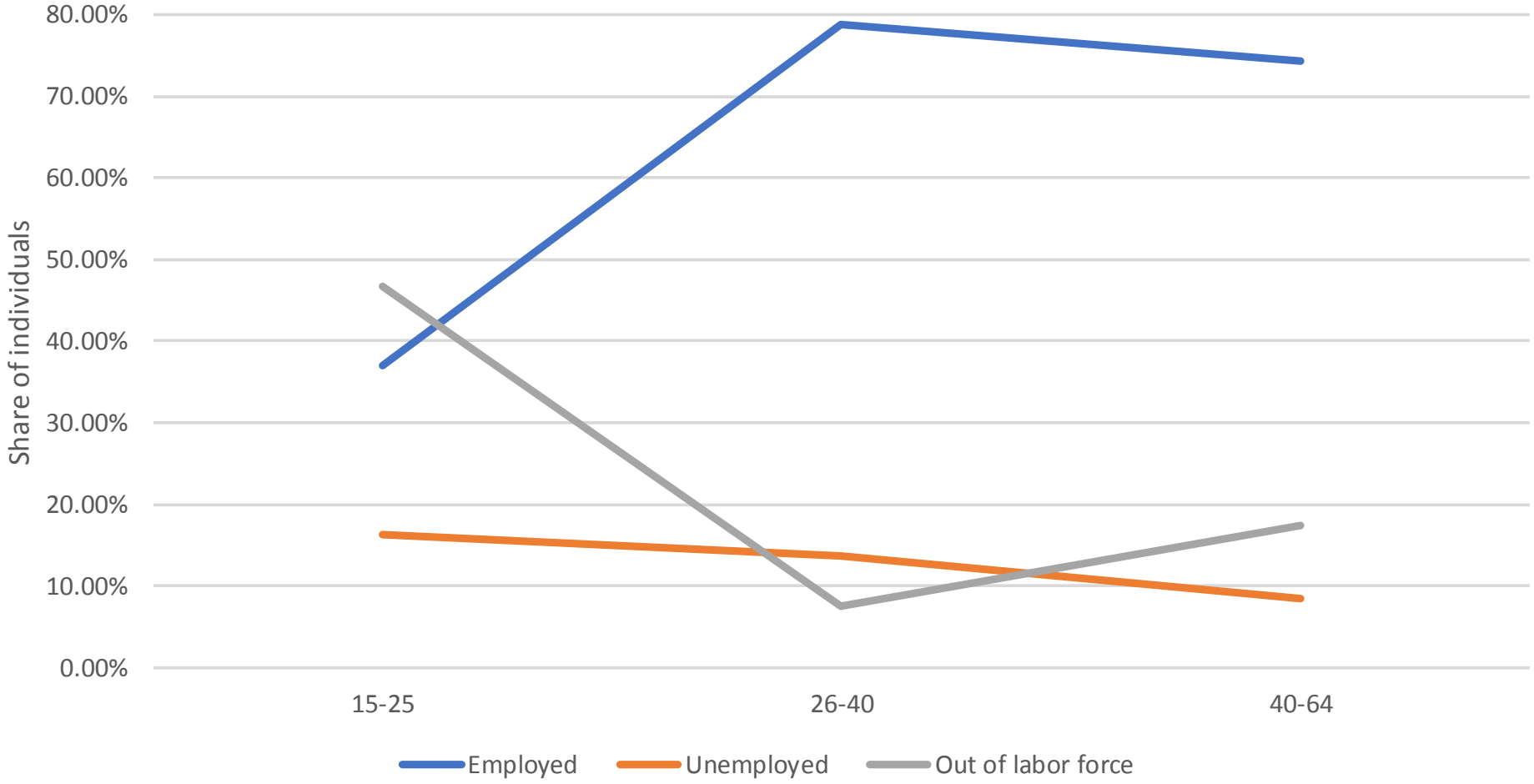
- Males mostly stable
- Younger Females are driving the curve

Teen pregnancy has declined as well



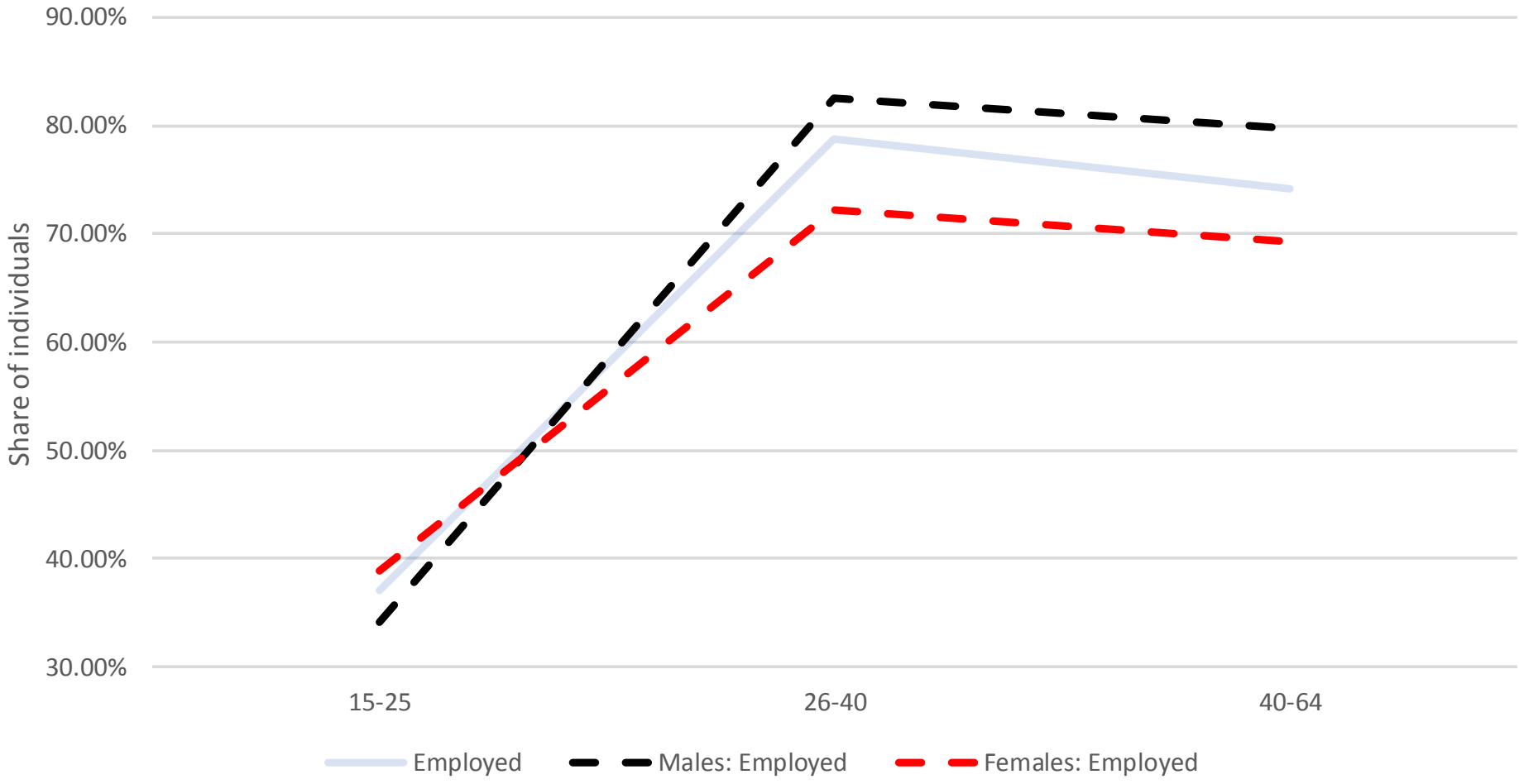
- Perfectly consistent with increased educational attainment
- Poverty gender bias likely to revert in the medium term

Labour Market Participation



- Flattens out at 26 years old and beyond
- Younger segment still significantly out of labor force: continued education

Younger Females and Males have even employment

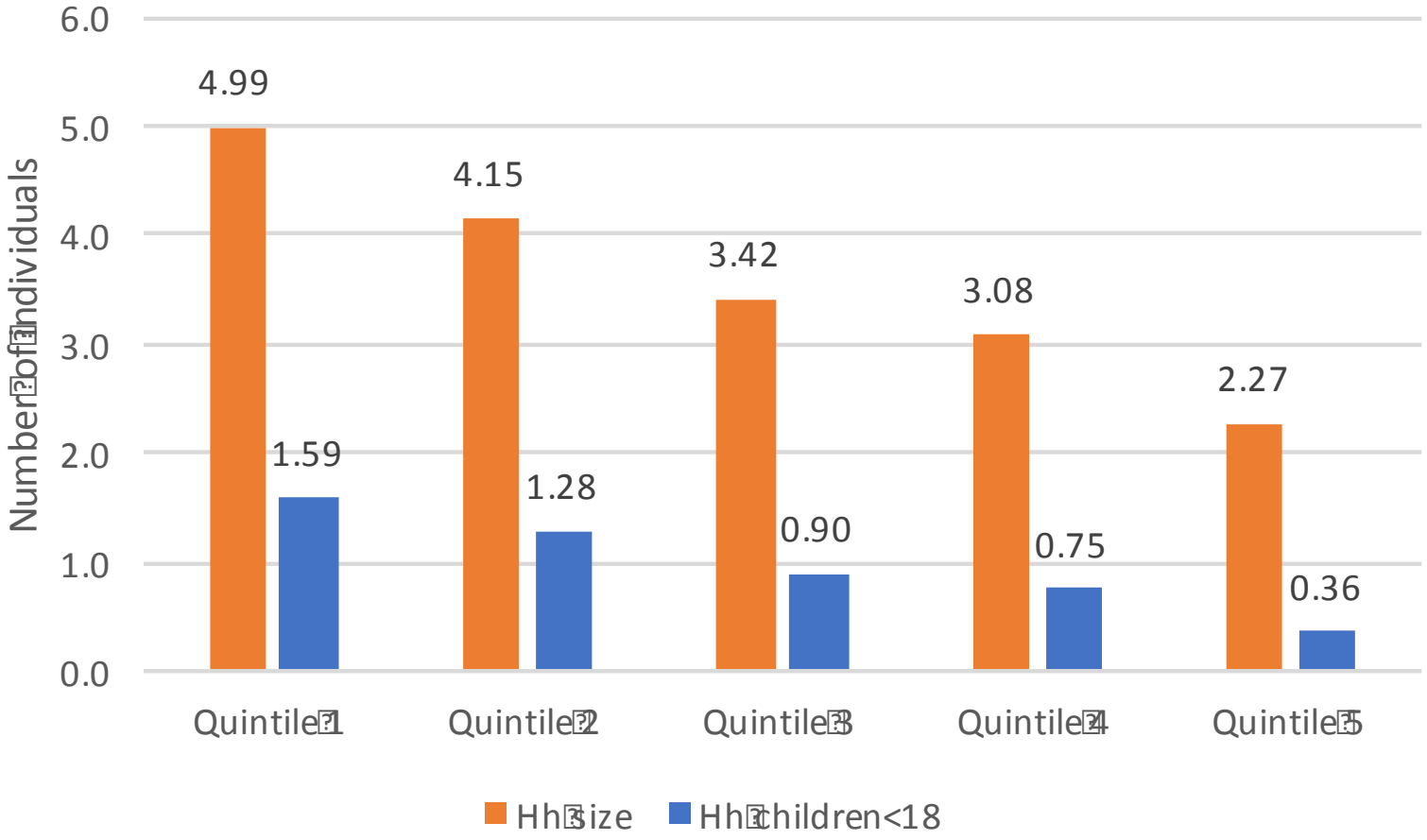


- Even employment levels in 15-25 age range
- However, still to see if it will continue as persons still out of labour force join it

Beyond Gender: What observable characteristics are prevalent among poor?

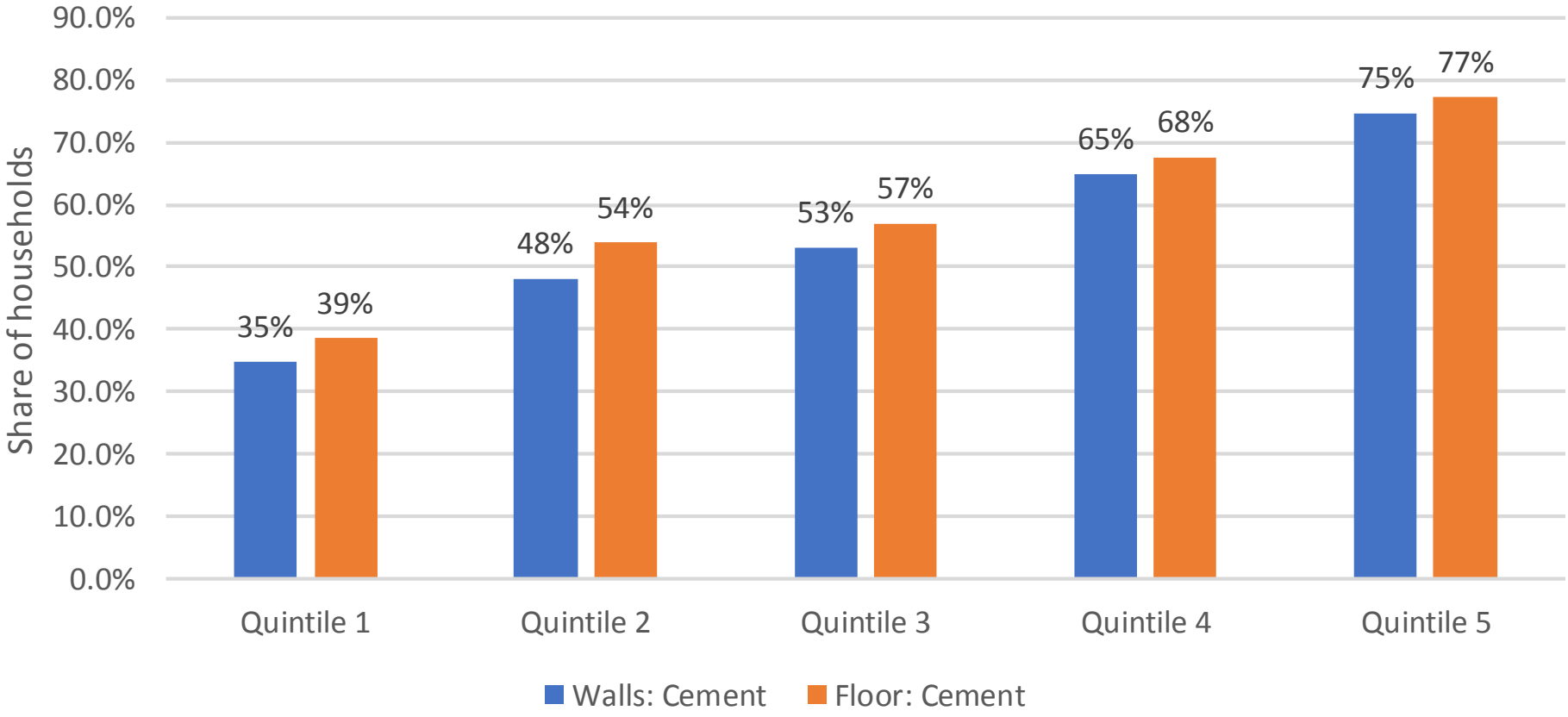
- Relevant to develop potential targeting mechanisms
- Can we identify an easily observable and verifiable indicator highly associated with poverty?

Lower consumption but more crowded…



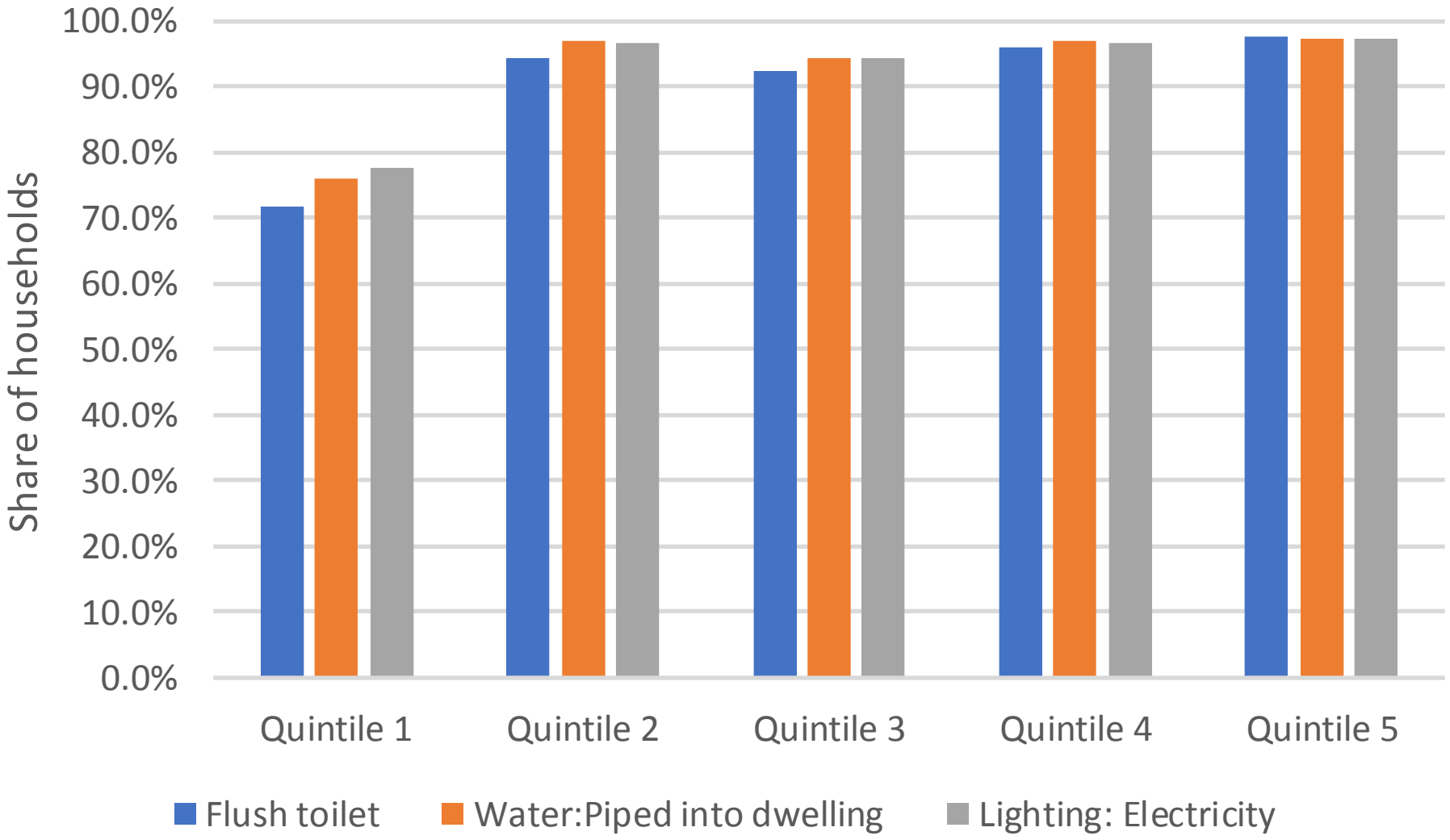
- Consistent larger households with lower consumption

Lower consumption and low quality dwellings…



- Good predictor of disadvantaged households
- Observable characteristic useful for targeting social safety nets

In Barbados → No utilities = Poor

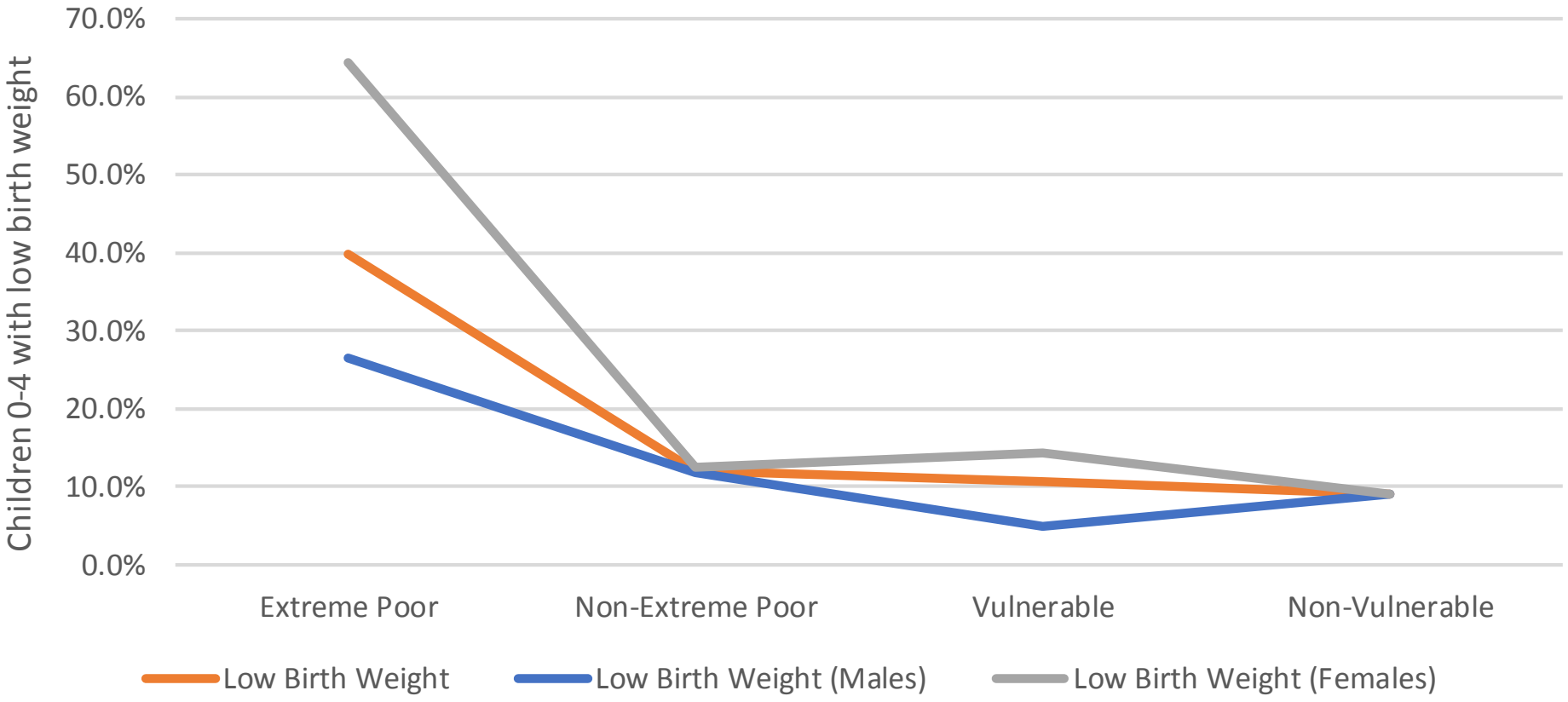


- Powerful observable characteristic to identify poor households

Intergenerational Transmission of Poverty?

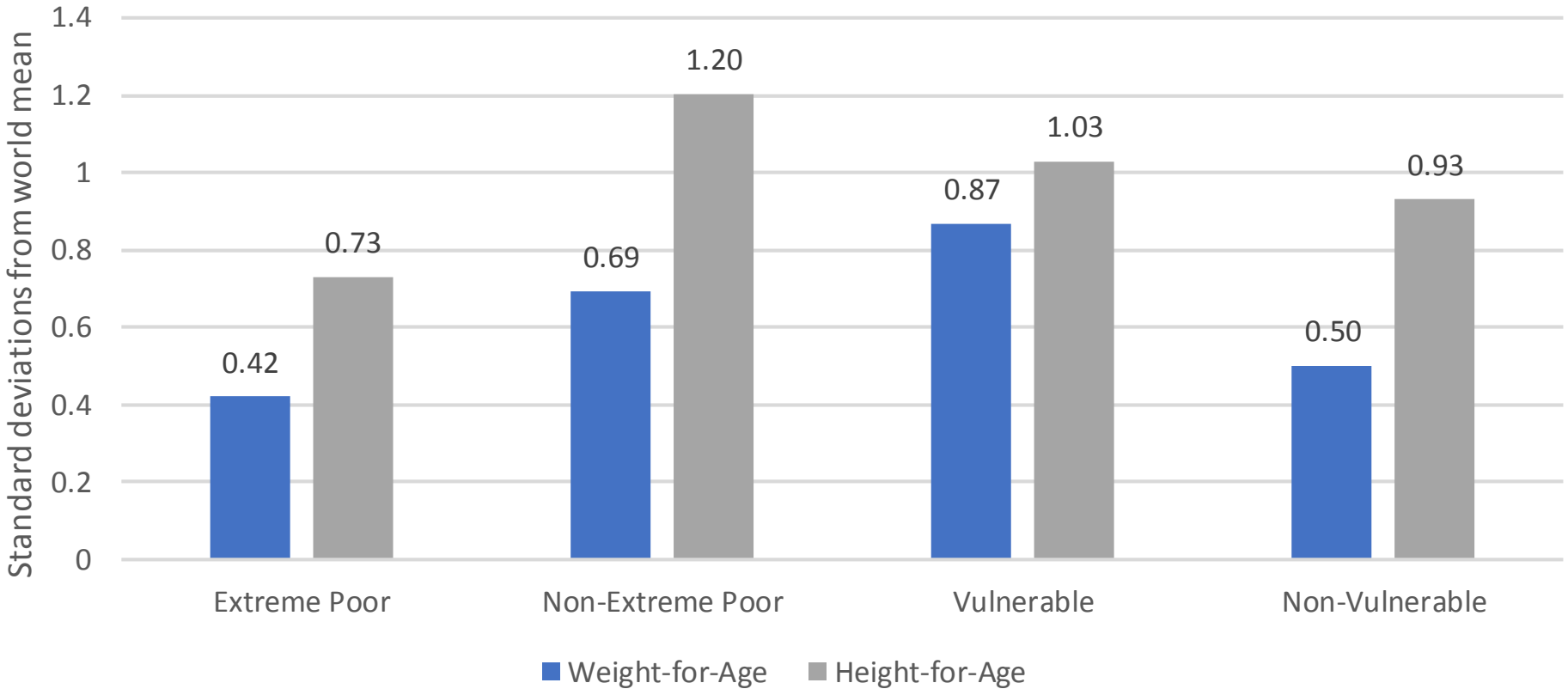
- What are the chances of a child born to a poor household to scape poverty in the future?
- We can look at Early Childhood Development indicators that have been shown to be associated with long-term productivity

Low Birthweight (below 2.5 Kg)



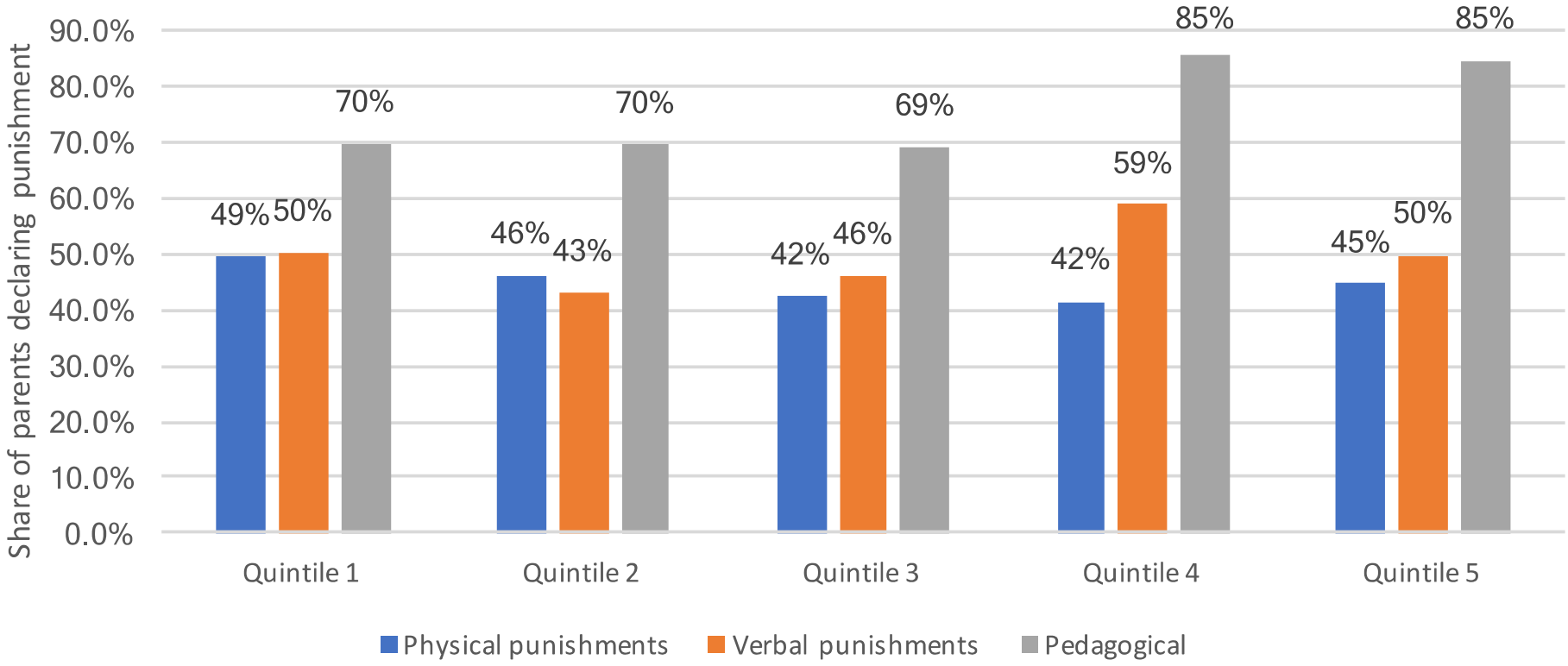
- Extreme poor in clear disadvantage and with a gender bias against females
- Pregnancy: Important period for public policy intervention

Physical Development within Early Years (0-5)



- Above world average
- But extreme poor still relatively disadvantaged within Barbados

How do we “discipline” our children?

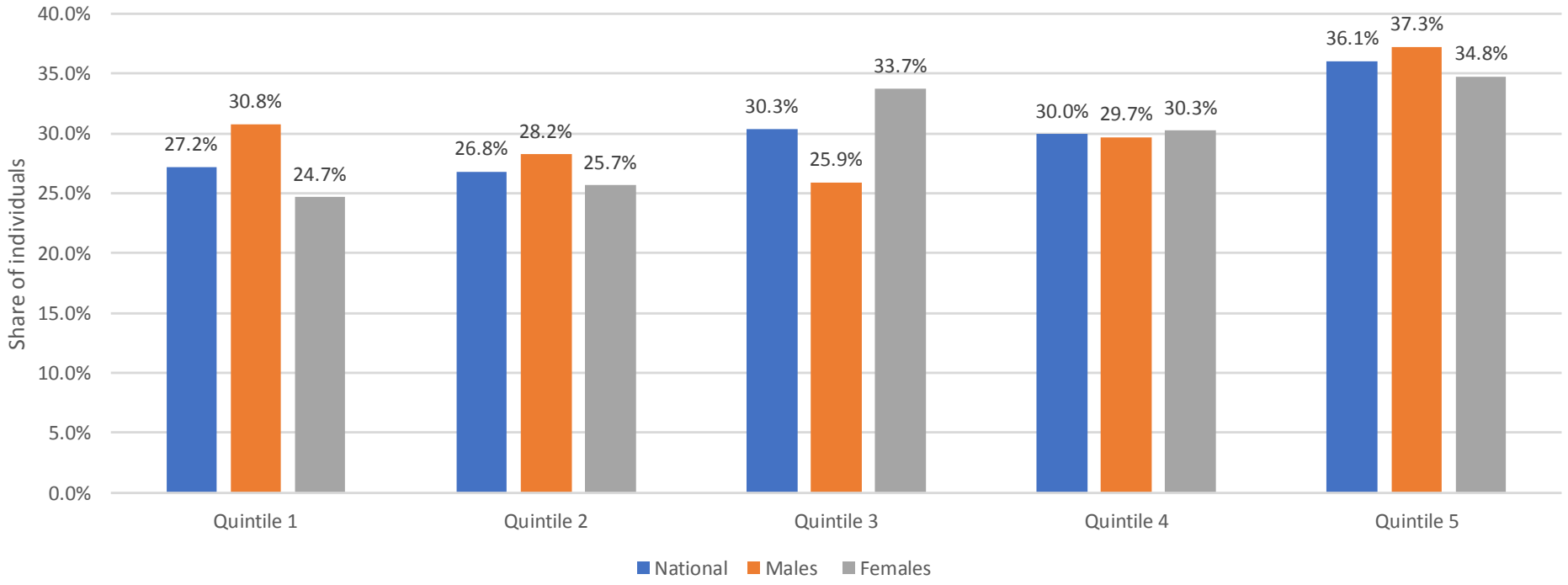


- Even incidence of physical and verbal punishment of children 0-8 years old
- But pedagogical practices more likely among relatively more advantaged

How are we doing in terms of objective Health Status?

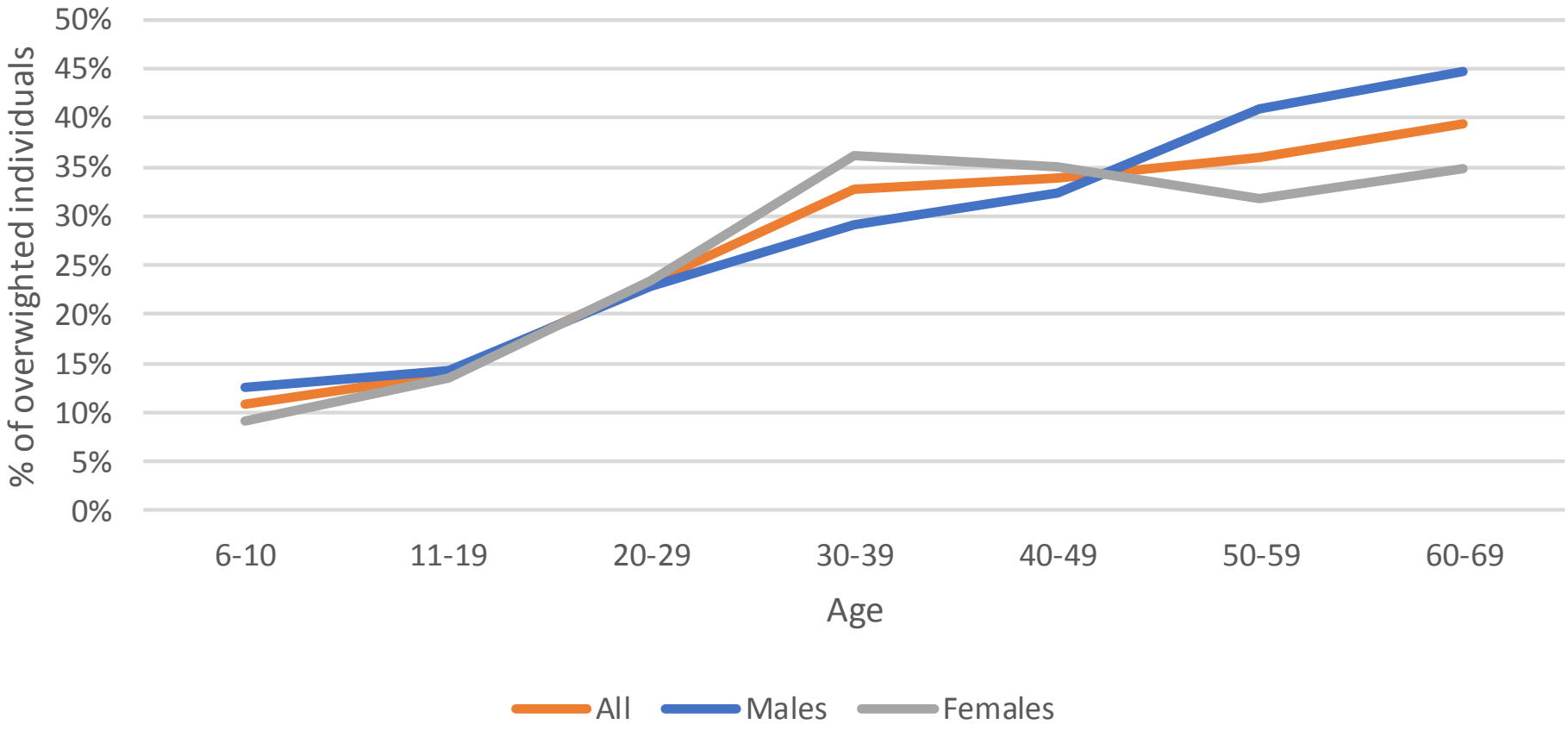
- We measured objective health by calculating individual level Body Mass Indexes (BMI)
- We then assess the incidence and dynamics of Overweight and Obesity

Overweight is Everybody's Problem



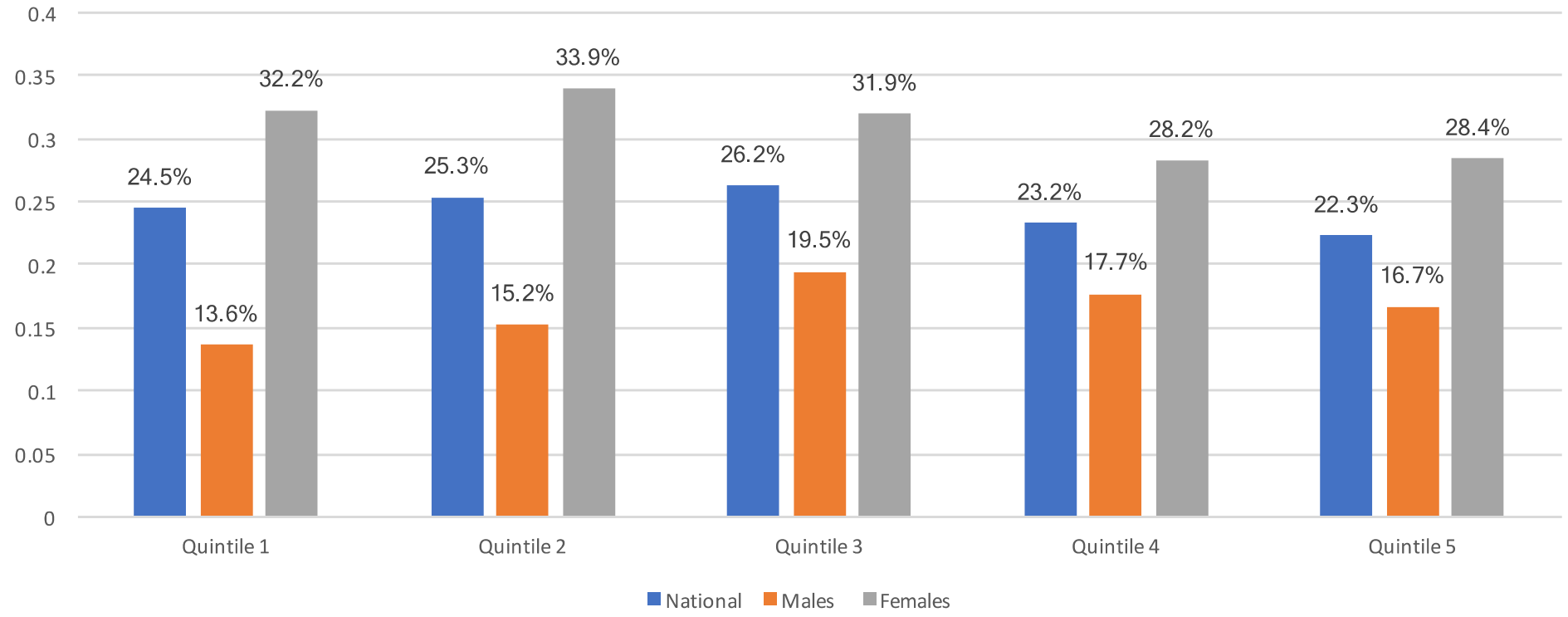
- Measured objectively with BMI [25, 30] → **Overall 30.8%**
- But relatively more serious for more advantaged households
- Even between genders across the consumption distribution

Overweight: increasing in age



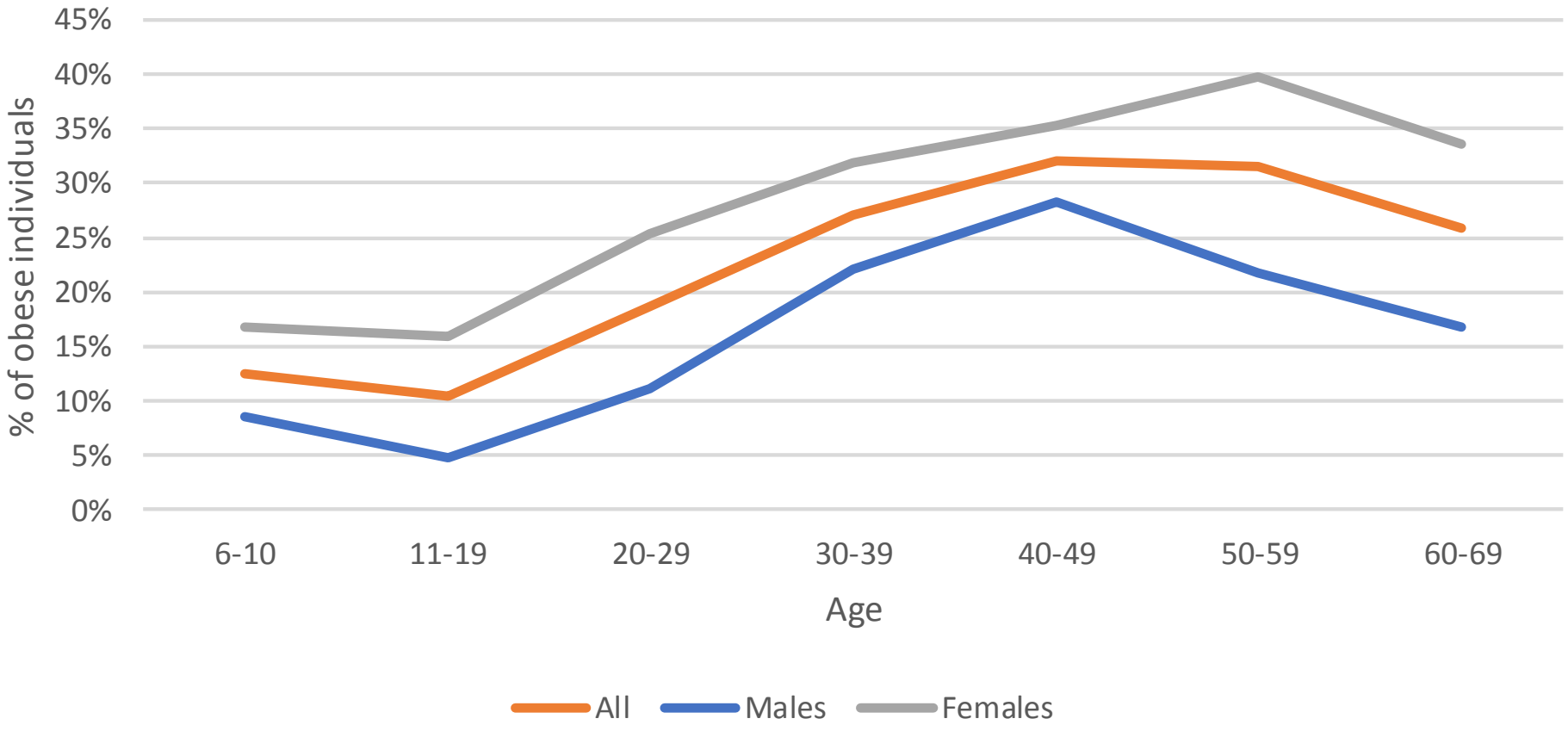
- Even between genders along the life cycle

But Obesity is Higher for Females



- Measured objectively with BMI > 30 → **Overall 24.3%**
- Even obesity incidence across the consumption distribution
- But always significantly higher for females (30.6% vs 17.05%)

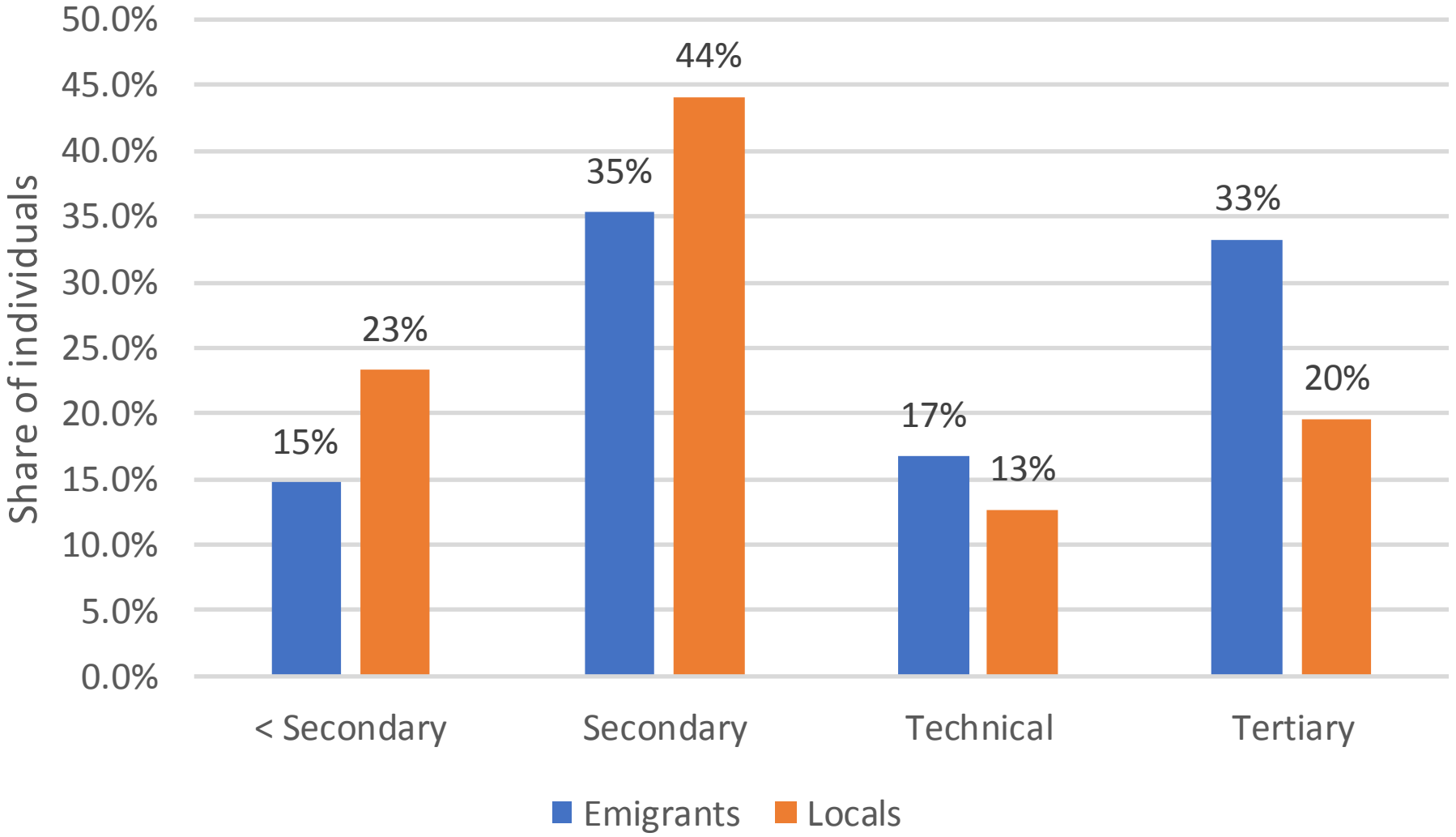
Obesity: higher for females at all ages



How different are emigrants from peers who currently live in Barbados?

- When a household reported at least one former member who emigrated
- We asked for the educational attainment of each emigrant
- We then compared the educational attainment distribution of emigrants vis-à-vis the distribution of Barbados residents

Brain Drain? Emigrants are more educated



- 50% of Emigrants with post-secondary education (compared to 33% of local counterparts)

IDB

Summarizing

- BSLC is a powerful tool to understand several aspects of welfare in Barbados
- Today we have seen a snapshot of the results that can be obtained
- Objective data on poverty along with observable characteristics → input for targeting mechanisms based on observable characteristics
- Scarce public resources can now be objectively targeted to appropriate segments of the Barbados population
- Rich microdata to answer several policy relevant research questions

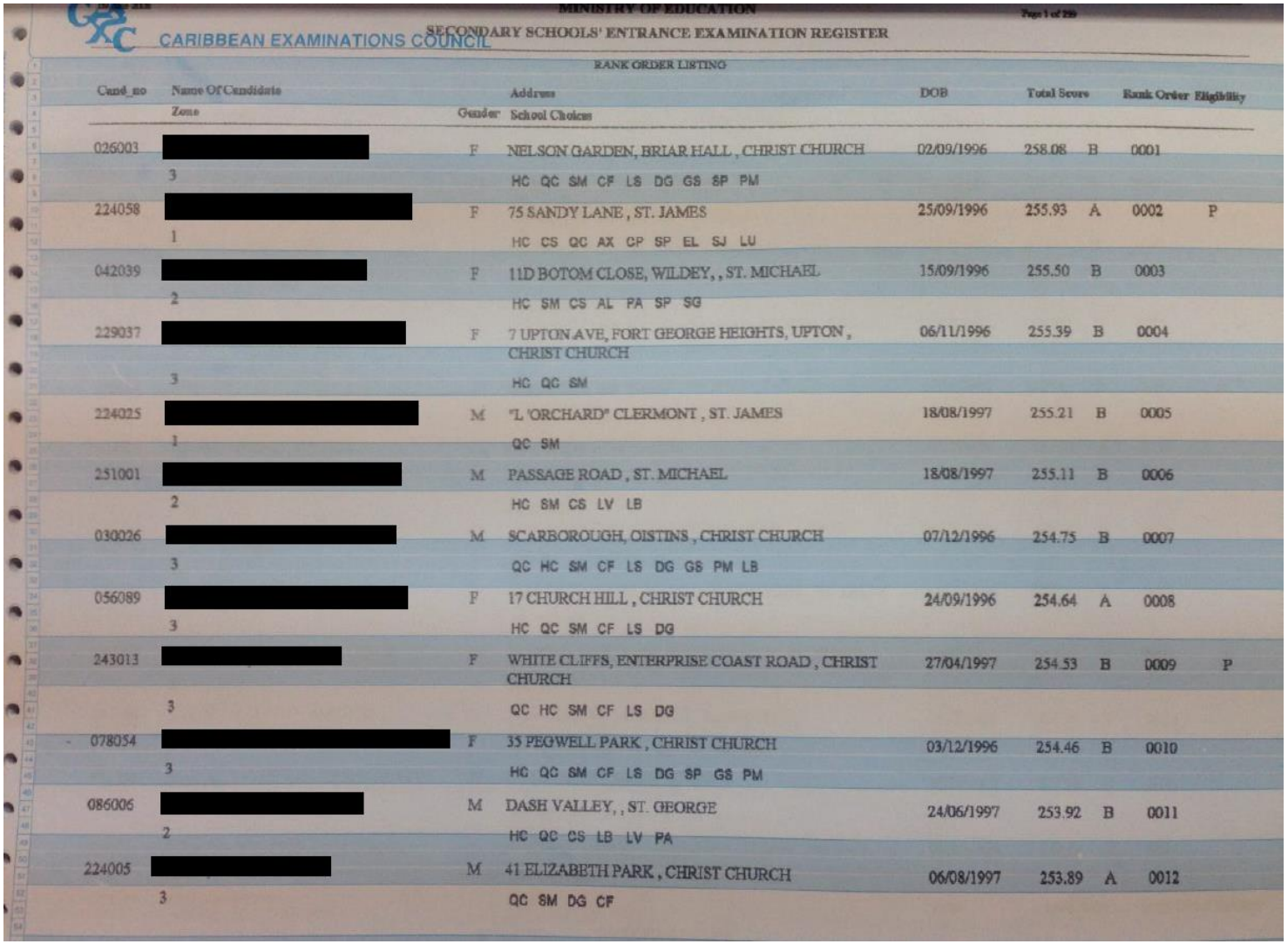
One Example: Long-Term Effects of Education?

- Tracer studies: difficult, costly, and rare
- But achievable combining administrative and survey data

	BSSEE	CSEC	CAPE
Formats	Hard Copies, PDF, Excel	Excel, CSV, Text file, Stata	Excel, Text, Access
Years	1987 – 2011	1993 – 2016	2005 – 2016
Observations	91,252	62,391	7,711
Variables	✓ Student's last name, first name and middle names ✓ Primary school ✓ Sex ✓ Date of Birth ✓ School choices ✓ School allocation ✓ BSSEE score ✓ Parish of residency	✓ Student's last name, first name and middle names Sex ✓ Date of Birth ✓ Subjects' grades ✓ School attended	✓ Student's last name, first name and middle names ✓ Sex ✓ Date of Birth ✓ Subjects' grades

Some records only in hard copies….

Not useful for analyses



MINISTRY OF EDUCATION

CARIBBEAN EXAMINATIONS COUNCIL

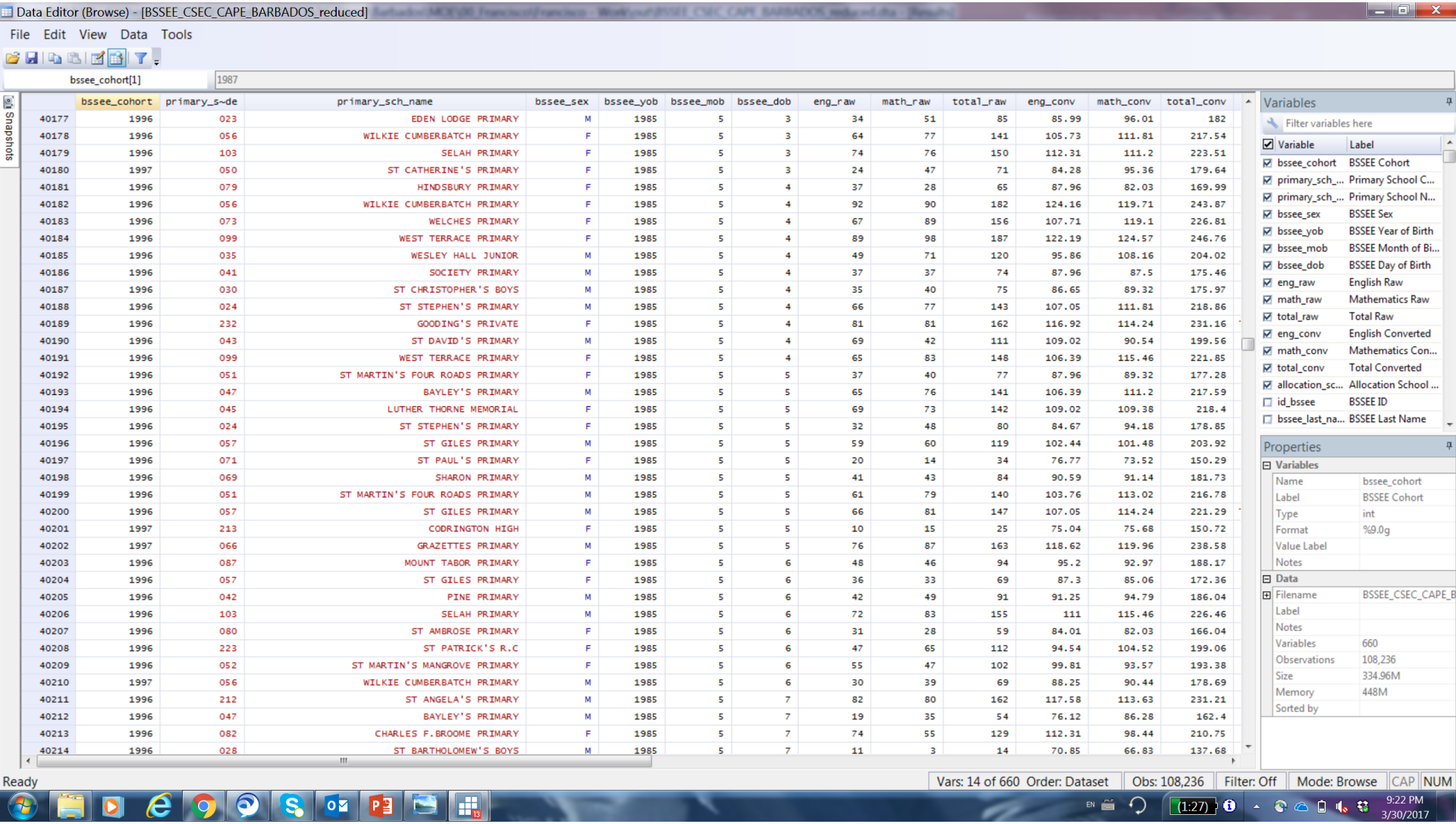
SECONDARY SCHOOLS' ENTRANCE EXAMINATION REGISTER

RANK ORDER LISTING

Cand_no	Name Of Candidate	Gender	Address	DOB	Total Score	Rank Order	Eligibility
	Zone		School Choices				
026003	[redacted]	F	NELSON GARDEN, BRIAR HALL , CHRIST CHURCH	02/09/1996	258.08 B	0001	
	3		HC QC SM CF LS DG GS SP PM				
224058	[redacted]	F	75 SANDY LANE , ST. JAMES	25/09/1996	255.93 A	0002	P
	1		HC CS QC AX CP SP EL SJ LU				
042039	[redacted]	F	11D BOTOM CLOSE, WILDEY, , ST. MICHAEL	15/09/1996	255.50 B	0003	
	2		HC SM CS AL PA SP SG				
229037	[redacted]	F	7 UPTON AVE, FORT GEORGE HEIGHTS, UPTON , CHRIST CHURCH	06/11/1996	255.39 B	0004	
	3		HC QC SM				
224025	[redacted]	M	"L 'ORCHARD" CLERMONT , ST. JAMES	18/08/1997	255.21 B	0005	
	1		QC SM				
251001	[redacted]	M	PASSAGE ROAD , ST. MICHAEL	18/08/1997	255.11 B	0006	
	2		HC SM CS LV LB				
030026	[redacted]	M	SCARBOROUGH, OISTINS , CHRIST CHURCH	07/12/1996	254.75 B	0007	
	3		QC HC SM CF LS DG GS PM LB				
056089	[redacted]	F	17 CHURCH HILL , CHRIST CHURCH	24/09/1996	254.64 A	0008	
	3		HC QC SM CF LS DG				
243013	[redacted]	F	WHITE CLIFFS, ENTERPRISE COAST ROAD , CHRIST CHURCH	27/04/1997	254.53 B	0009	P
	3		QC HC SM CF LS DG				
078054	[redacted]	F	35 PEGWELL PARK , CHRIST CHURCH	03/12/1996	254.46 B	0010	
	3		HC QC SM CF LS DG SP GS PM				
086006	[redacted]	M	DASH VALLEY, , ST. GEORGE	24/06/1997	253.92 B	0011	
	2		HC QC CS LB LV PA				
224005	[redacted]	M	41 ELIZABETH PARK , CHRIST CHURCH	06/08/1997	253.89 A	0012	
	3		QC SM DG CF				

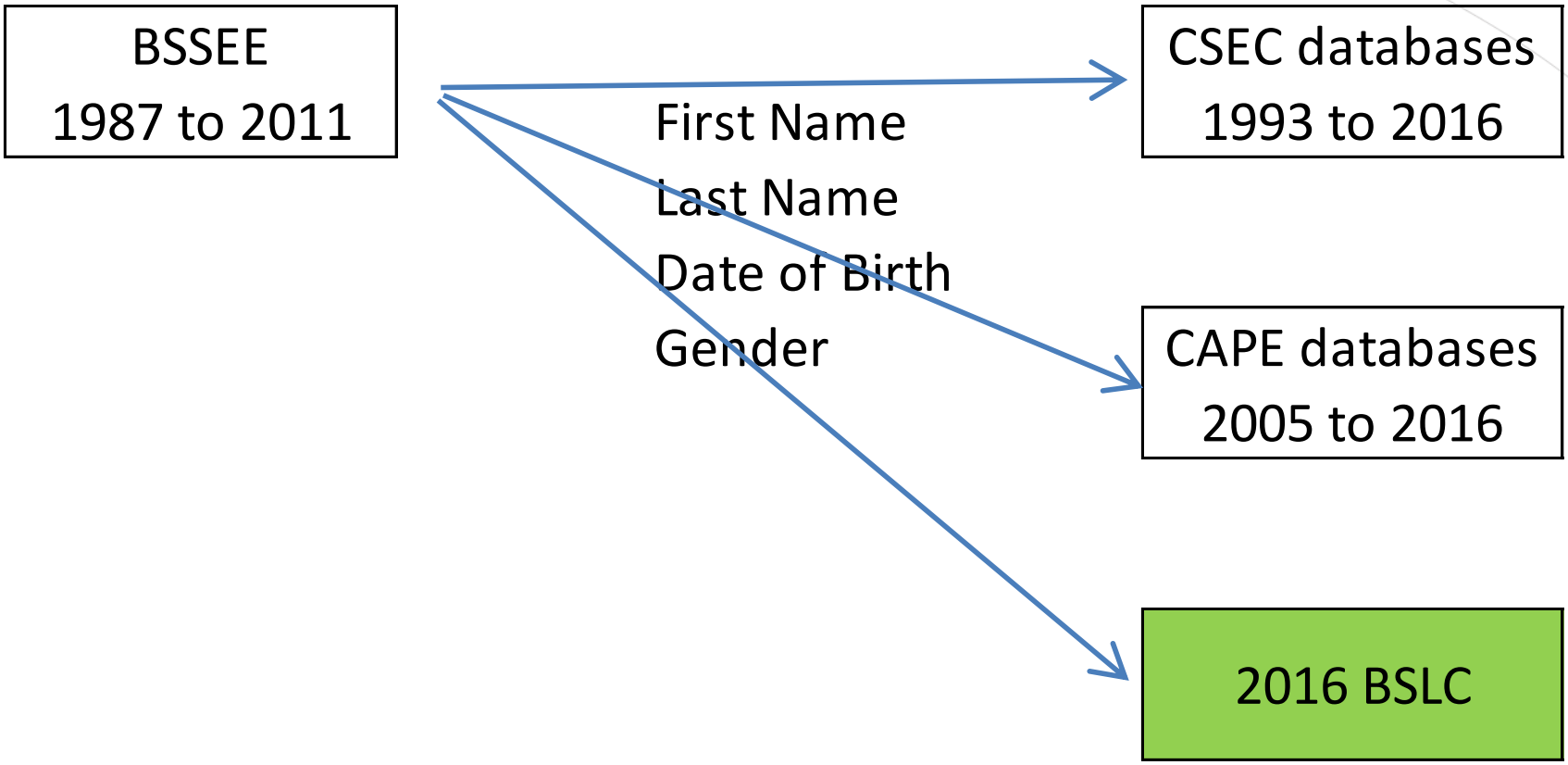
Scanning hard copies at METI

Resulting PDF files were digitalized by an specialized firm into spreadsheets ready for analyses



	bssee_cohort	primary_s~de	primary_sch_name	bssee_sex	bssee_yob	bssee_mob	bssee_dob	eng_raw	math_raw	total_raw	eng_conv	math_conv	total_conv
40177	1996	023	EDEN LODGE PRIMARY	M	1985	5	3	34	51	85	85.99	96.01	182
40178	1996	056	WILKIE CUMBERBATCH PRIMARY	F	1985	5	3	64	77	141	105.73	111.81	217.54
40179	1996	103	SELAH PRIMARY	F	1985	5	3	74	76	150	112.31	111.2	223.51
40180	1997	050	ST CATHERINE'S PRIMARY	F	1985	5	3	24	47	71	84.28	95.36	179.64
40181	1996	079	HINDSBURY PRIMARY	F	1985	5	4	37	28	65	87.96	82.03	169.99
40182	1996	056	WILKIE CUMBERBATCH PRIMARY	F	1985	5	4	92	90	182	124.16	119.71	243.87
40183	1996	073	WELCHES PRIMARY	F	1985	5	4	67	89	156	107.71	119.1	226.81
40184	1996	099	WEST TERRACE PRIMARY	F	1985	5	4	89	98	187	122.19	124.57	246.76
40185	1996	035	WESLEY HALL JUNIOR	M	1985	5	4	49	71	120	95.86	108.16	204.02
40186	1996	041	SOCIETY PRIMARY	M	1985	5	4	37	37	74	87.96	87.5	175.46
40187	1996	030	ST CHRISTOPHER'S BOYS	M	1985	5	4	35	40	75	86.65	89.32	175.97
40188	1996	024	ST STEPHEN'S PRIMARY	M	1985	5	4	66	77	143	107.05	111.81	218.86
40189	1996	232	GOODING'S PRIVATE	F	1985	5	4	81	81	162	116.92	114.24	231.16
40190	1996	043	ST DAVID'S PRIMARY	M	1985	5	4	69	42	111	109.02	90.54	199.56
40191	1996	099	WEST TERRACE PRIMARY	F	1985	5	4	65	83	148	106.39	115.46	221.85
40192	1996	051	ST MARTIN'S FOUR ROADS PRIMARY	F	1985	5	5	37	40	77	87.96	89.32	177.28
40193	1996	047	BAYLEY'S PRIMARY	M	1985	5	5	65	76	141	106.39	111.2	217.59
40194	1996	045	LUTHER THORNE MEMORIAL	F	1985	5	5	69	73	142	109.02	109.38	218.4
40195	1996	024	ST STEPHEN'S PRIMARY	F	1985	5	5	32	48	80	84.67	94.18	178.85
40196	1996	057	ST GILES PRIMARY	M	1985	5	5	59	60	119	102.44	101.48	203.92
40197	1996	071	ST PAUL'S PRIMARY	F	1985	5	5	20	14	34	76.77	73.52	150.29
40198	1996	069	SHARON PRIMARY	M	1985	5	5	41	43	84	90.59	91.14	181.73
40199	1996	051	ST MARTIN'S FOUR ROADS PRIMARY	M	1985	5	5	61	79	140	103.76	113.02	216.78
40200	1996	057	ST GILES PRIMARY	M	1985	5	5	66	81	147	107.05	114.24	221.29
40201	1997	213	CODRINGTON HIGH	F	1985	5	5	10	15	25	75.04	75.68	150.72
40202	1997	066	GRAZETTES PRIMARY	M	1985	5	5	76	87	163	118.62	119.96	238.58
40203	1996	087	MOUNT TABOR PRIMARY	F	1985	5	6	48	46	94	95.2	92.97	188.17
40204	1996	057	ST GILES PRIMARY	F	1985	5	6	36	33	69	87.3	85.06	172.36
40205	1996	042	PINE PRIMARY	M	1985	5	6	42	49	91	91.25	94.79	186.04
40206	1996	103	SELAH PRIMARY	M	1985	5	6	72	83	155	111	115.46	226.46
40207	1996	080	ST AMBROSE PRIMARY	F	1985	5	6	31	28	59	84.01	82.03	166.04
40208	1996	223	ST PATRICK'S R.C	F	1985	5	6	47	65	112	94.54	104.52	199.06
40209	1996	052	ST MARTIN'S MANGROVE PRIMARY	F	1985	5	6	55	47	102	99.81	93.57	193.38
40210	1997	056	WILKIE CUMBERBATCH PRIMARY	M	1985	5	6	30	39	69	88.25	90.44	178.69
40211	1996	212	ST ANGELA'S PRIMARY	M	1985	5	7	82	80	162	117.58	113.63	231.21
40212	1996	047	BAYLEY'S PRIMARY	M	1985	5	7	19	35	54	76.12	86.28	162.4
40213	1996	082	CHARLES F.BROOME PRIMARY	F	1985	5	7	74	55	129	112.31	98.44	210.75
40214	1996	028	ST BARTHOLOMEW'S BOYS	M	1985	5	7	11	3	14	70.85	66.83	137.68

Homogenized dataset tracking individuals from BSSEE to Adulthood



- In one single individual **anonymized** registry: BSSEE, CSEC, CAPE, Fertility, Adult Employment, Adult Earnings, etc.

Barbados Setting: Ideal to explore effects of better school environments

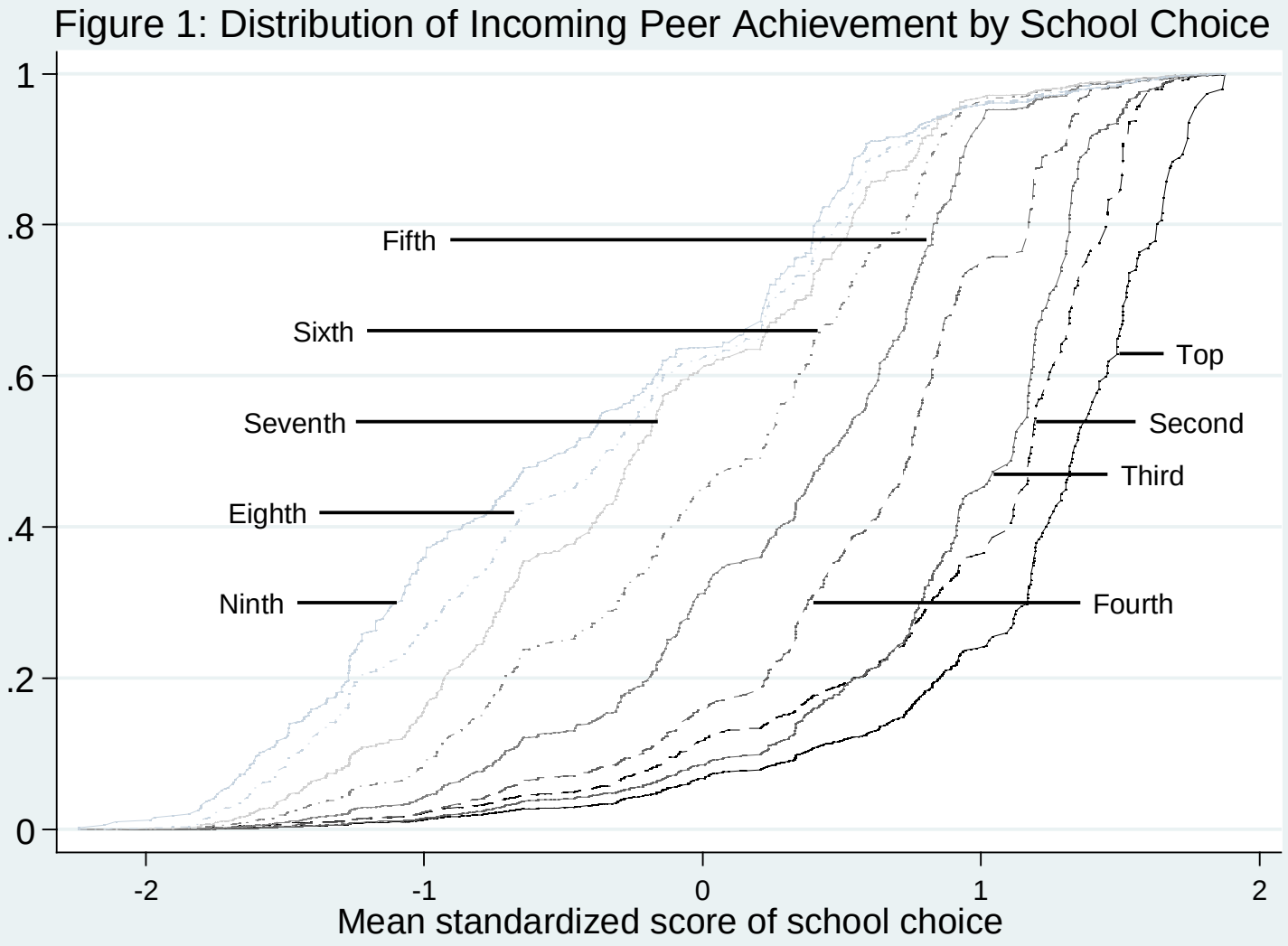


Figure 2: Likelihood of Attending a Preferred Secondary School

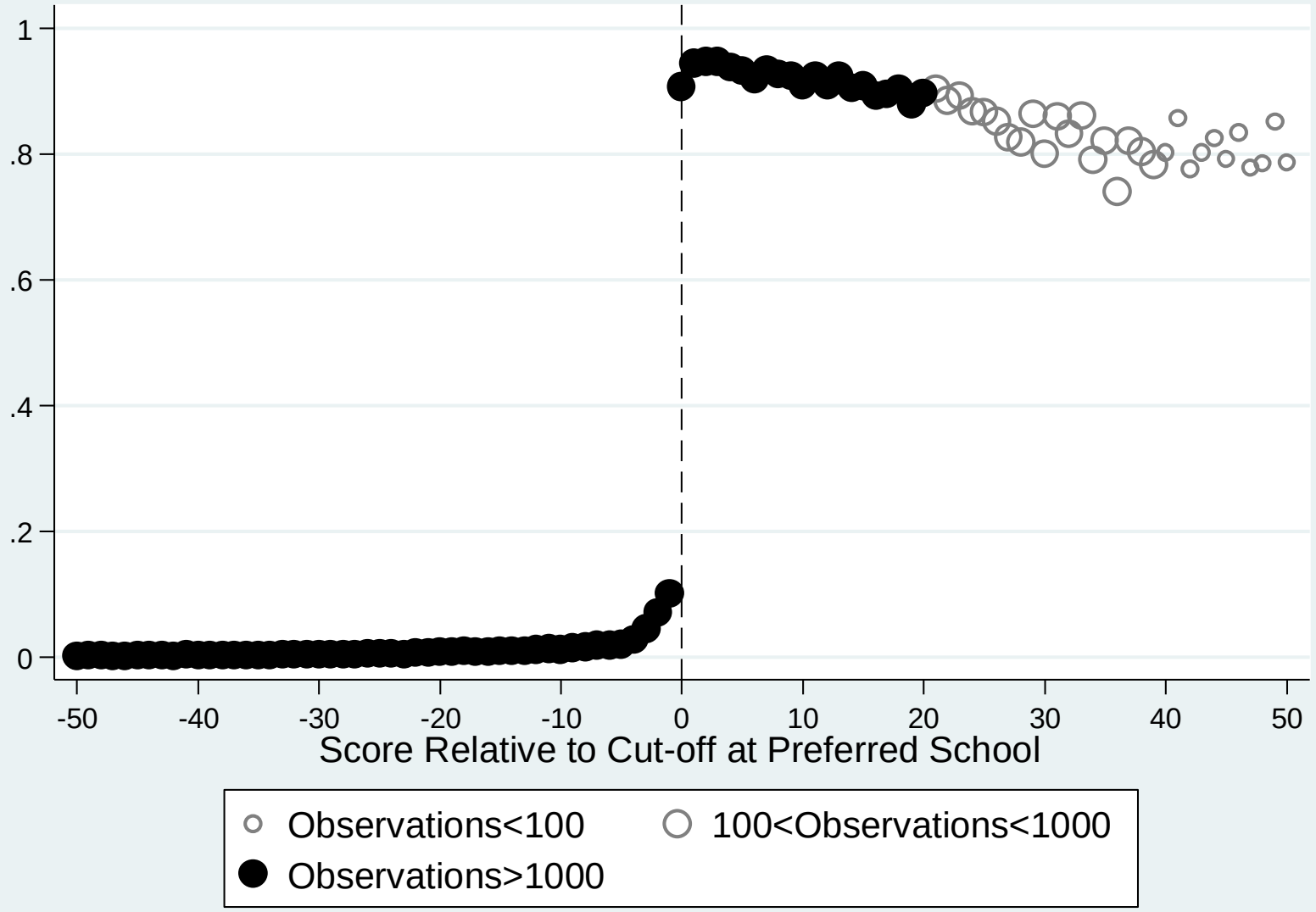
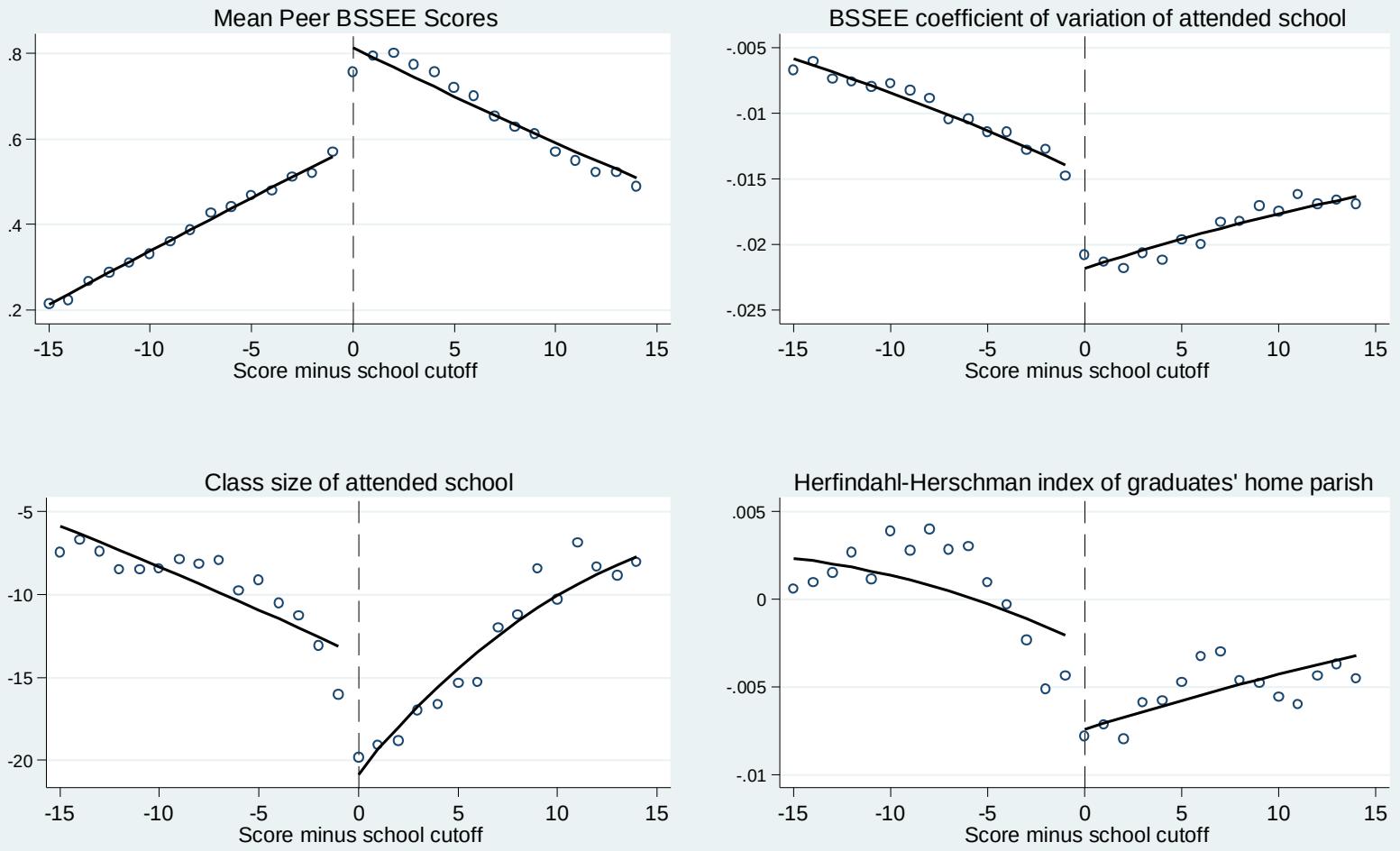


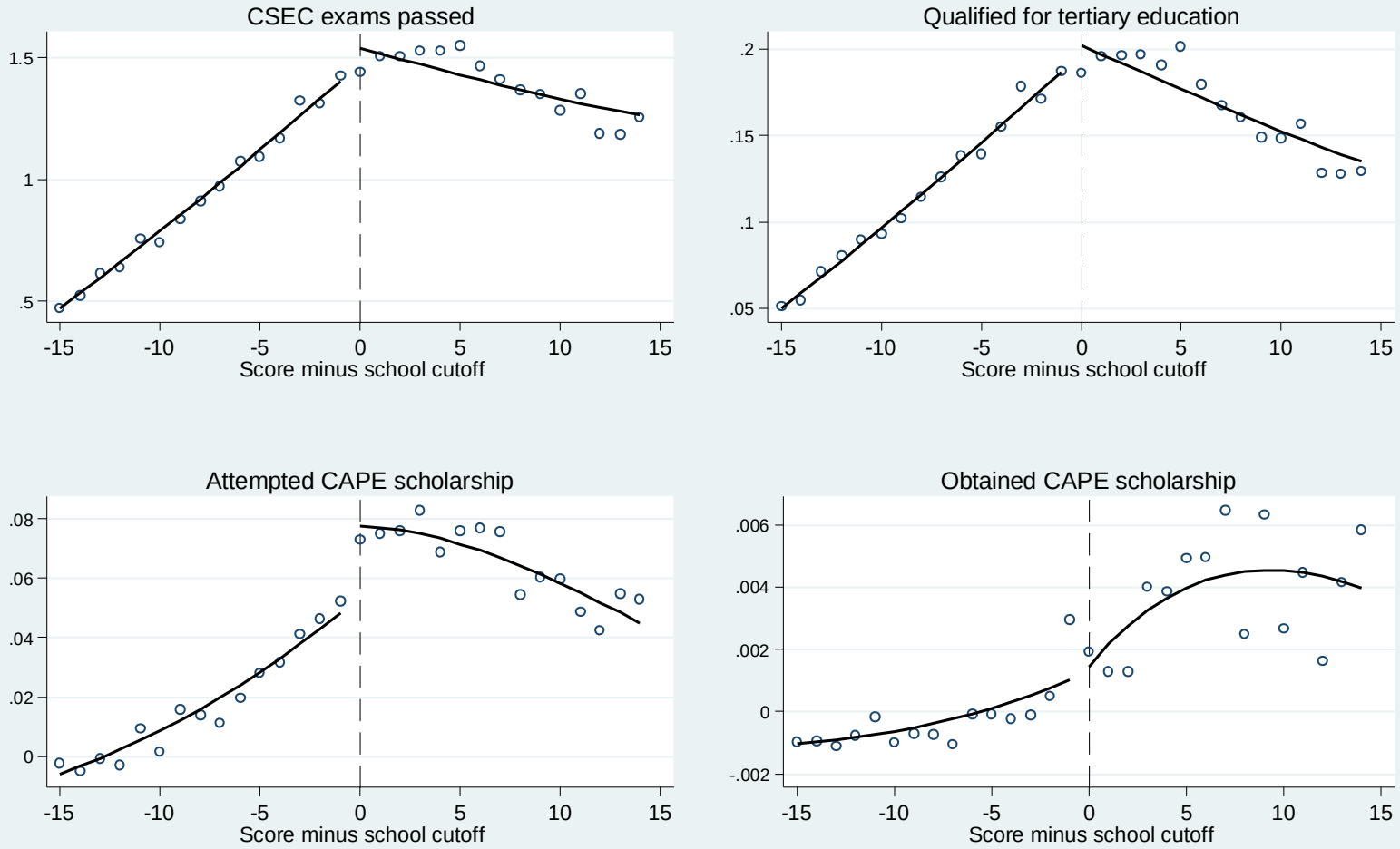
Figure 4: Change in School Characteristics Through Cutoffs



Note: The X-axis is the score relative to the cutoff. The Y-axis is the mean outcome for each relative score (net of the mean for the cutoff)

- Very different school environments across cutoffs

Figure 5: Change in Outcomes Through Cutoffs



Note: The X-axis is the score relative to the cutoff. The Y-axis is the mean outcome for each relative score (net of the mean for the cutoff)

- No significant academic effects across curoffs

Teen Motherhood?

Baby by 17	-0.058***
	(0.021)
Baby by 18	-0.070**
	(0.028)
Baby by 19	-0.025
	(0.034)
Sociodemographics	Yes
BSSEE cubic spline	Yes
Cutoff fixed effects	Yes
Preferences fixed effects	Yes
Observations	2,268

- Less likely to get pregnant by age 18 or before!

Educational Attainment? 26-41 Years old at Survey

	All	Women	Men
Years of education	0.715*	1.556***	-0.314
	(0.407)	(0.591)	(0.574)
University degree	0.061+	0.180***	-0.053
	(0.041)	(0.064)	(0.056)
Sociodemographics	Yes	Yes	Yes
BSSEE cubic spline	Yes	Yes	Yes
Cutoff fixed effects	Yes	Yes	Yes
Preferences fixed effects	Yes	Yes	Yes
Observations	4,933	2,368	2,565

- Higher educational attainment
- But benefits concentrated among women

Employment and Earnings? 26-41 Years old at Survey

	All	Women	Men
Referred to current job by	0.040**	0.045*	0.036+
school network	(0.018)	(0.027)	(0.024)
Manager or professional	0.043	0.207***	-0.094+
	(0.045)	(0.078)	(0.058)
Log monthly wage	0.142+	0.322**	-0.016
	(0.098)	(0.154)	(0.117)
Sociodemographics	Yes	Yes	Yes
BSSEE cubic spline	Yes	Yes	Yes
Cutoff fixed effects	Yes	Yes	Yes
Preferences fixed effects	Yes	Yes	Yes
Observations	3,771	1,681	2,090

- Networks matter for all
- But only women increase employment quality and earnings

IDB

Healthy Behaviors and Health Status? 26-41 Years old at Survey

	All	Women	Men
	(2)	(4)	(6)
Attends gym at least once per week	0.141***	0.153***	0.112*
	(0.041)	(0.052)	(0.058)
Normal weight	0.151**	0.152+	0.128+
	(0.066)	(0.094)	(0.085)
Overweight or Obese	-0.121*	-0.141+	-0.073
	(0.065)	(0.090)	(0.083)
Sociodemographics	Yes	Yes	Yes
BSSEE cubic spline	Yes	Yes	Yes
Cutoff fixed effects	Yes	Yes	Yes
Preferences fixed effects	Yes	Yes	Yes
Observations	4,105	2,042	2,063

- Healthy behaviors improved for all
- Health outcomes as well

Concluding

- Although secondary school environments might not affect test scores, they do matter in the medium and long term
- Powerful evidence to shape policies
- Underexploited administrative records could give more answers: immigration records, police arrests, NIS records → Could also be matched
- Scarce public resources can use existing data to guide better decisions at very low cost
- We are happy to help, Thanks!!