



Disparities in Early Life Investments and Children's Time Use

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Motivation

- Ways in which children spend their time have important implications for cognitive and non-cognitive development
 - Sports and pro-social activities build skills and promote positive development (focusing on tasks, working with others, sense of belonging)
 - Activities in one context (sports) can foster competency in another context (school)
 - Activities can provide both direct and indirect learning opportunities
- Time use important for future outcomes
 - Cog & non-cog skills affect health, social, education, labor outcomes
 - Disparities in time use at young ages contribute to widening gaps at adolescence and adulthood



Contribution

- Goal: Describe SES differences in time use among children in Ireland
 - Use detailed time diary data (more accurate than stylized)
 - Investigate how SES is associated with participation in activities as well as length of time spent in activities
 - Use longitudinal nature of data to analyse trajectories in time use
 - examine changes from wave 1 to wave 2
 - Concentration curves to quantify extent of income-related inequality in time use and decomposition analysis to investigate factors that contribute to inequality



How time use impacts outcomes

- High quality after school activities, particularly sports and academic clubs, increase test scores, educ attainment, & wages (Lipscomb 2006, Barron et al. 2000, Stevenson 2010)
- Sports participation impacts physical activity, fitness (Telama et al. 2005, Perkins et al 2004)
- Stimulating early environment lowers prevalence of risk factors for CVD in mid-30s (Campbell et al. 2014)
- Unstructured time may be beneficial (increases physical activity, promotes self-discovery, social competence, resilience) (Wen et al. 2009, Page et al. 2010, Malone 2007, Coatsworth et al. 2010)



Why differences by SES in time use?

- **Theory**

- Lack of resources
- Marital instability (single moms)
- Neighbourhood effects (Doyle et al. 2012, Kling et al. 2007)
- Differing values/beliefs (Lareau theory of "Concerted Cultivation" vs "Accomplishment of Natural Growth")

- **Empirical Evidence**

- SES differences in time preferences (Delaney and Doyle 2011)
- Type of activity varies with parental education (Bianchi et al. 2006)
 - "Developmental gradient" (Kalil et al. 2012)
- Amount of time spent with children varies by SES within and across countries (Guryan 2008, Sayer 2004)
- Parental time with children responds to changes in income (Kalenkowski 2009)



Data – GUI Child Cohort Time Diaries

- **Nationally representative, longitudinal, ages 9 and 13**
- **Time diary structure**
 - One 24-hour period in 15-min intervals
 - Respondents instructed as to what day of week to complete
 - 22 (21) pre-coded activities in wave 1 (2)
 - Up to 5 (3) activities simultaneously
 - Wave 1, parents complete with child's help; in wave 2, child completes with parent's help
- **73% and 67% of respondents returned usable diaries in waves 1 and 2**
 - Differential by HH characteristics (PCG education, employment)
 - Sample is re-weighted



Analytical Methods

- **Presentation will focus on results for girls only**
- **Difference in participation by SES**
 - OLS RE and logit with RE
- **Difference in time spent in activities by SES**
 - OLS RE and negative binomial with clustered standard errors
- **Chord diagram to visualize time flows from wave 1 to wave 2**
- **Concentration curves & Decomposition analysis**
 - Provide means of assessing the degree of income-related inequality in the distribution of children's time use
 - Understand factors underpinning observed inequalities

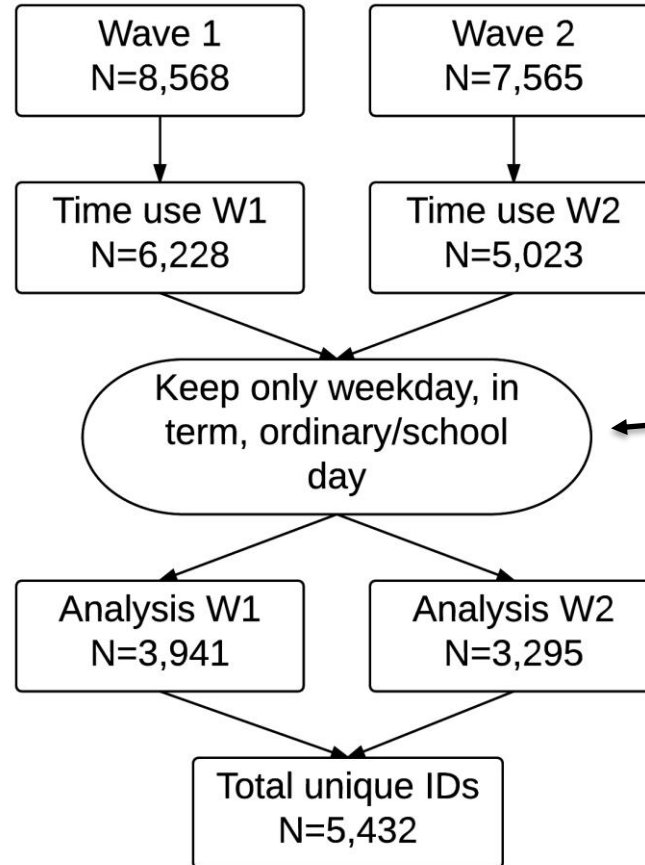


Categorizing Activities

Wave 1	Category	Wave 2
Sleeping	Sleeping	Sleeping/Resting
Resting/relaxing		
Personal care	Care	Personal care or getting ready Eating Traveling
Eating/drinking/having a meal		
Traveling to and from school		
Other traveling		
At school	School	At school
Homework	Homework	Doing homework or study
Physical play/exercise/sports	Sport	Playing sport or doing physical exercise
Playing board games, cards, etc	Unstructured time	Just hanging around with friends Playing with or exercising a pet
General play		
Hobbies and other leisure activities	Leisure	Music Lessons, drama, classes Hobbies and other leisure activities
Computer/internet/playstation/xbox etc.	Media	Using the internet/emailing Playing computer games Talking on the phone or texting Watching tv, films, videos, or dvds
Email/bebo/msn/texting/on the phone		
Watching tv and videos/dvds etc		
Reading books, comics, magazines, etc	Reading	Reading for pleasure or interest
Household chores/housework	Housework	Housework
Visits to relative's house	Family	Spending time with family On an outing Out shopping to buy things
On a family outing		
On a shopping trip		
Religious activity	Other	Other Don't know/missing
Not sure/missing		



Analysis Dataset



Concentrate on after-school hours here, but analysis using all data is very similar



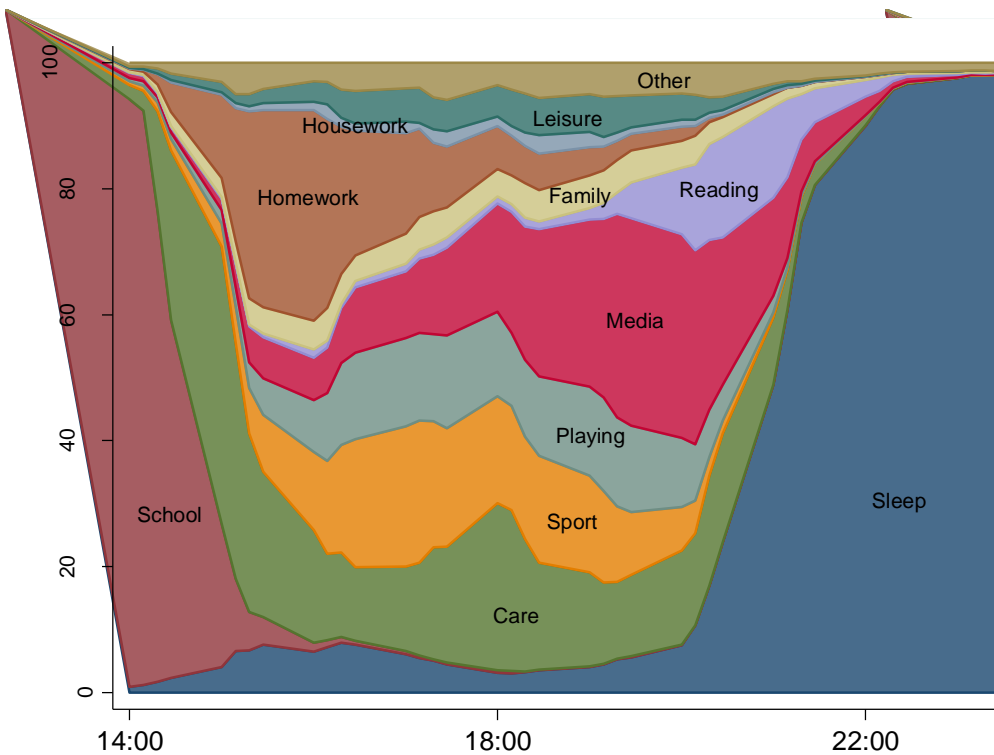
Wave 1

Characteristics

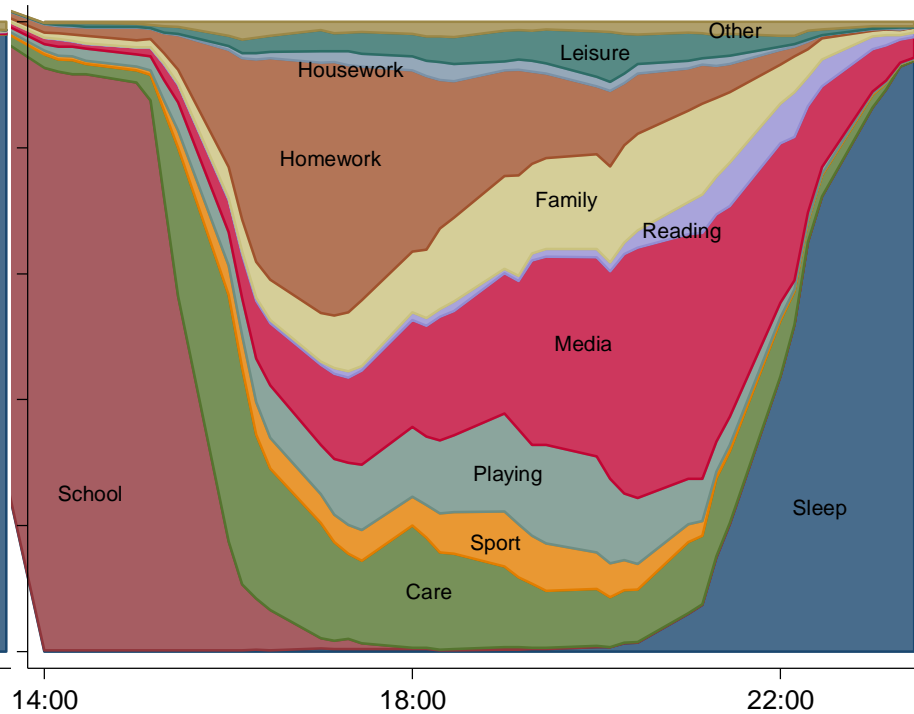
		All N=8,568 (sample wghts)	Analysis sample N=5,432 (time use wghts)
HH Income Quintile (%)	Lowest	19	17
	2 nd	19	19
	3 rd	19	19
	4 th	19	19
	Highest	19	19
Mother's Education (%)	Less than secondary	30	29
	Secondary	36	37
	More than secondary	32	32
Mother's marital status (%)	Not married	22	21
	Married	75	77
PCG Employed (%)	Not employed	47	46
	Employed/Self-employed	54	54



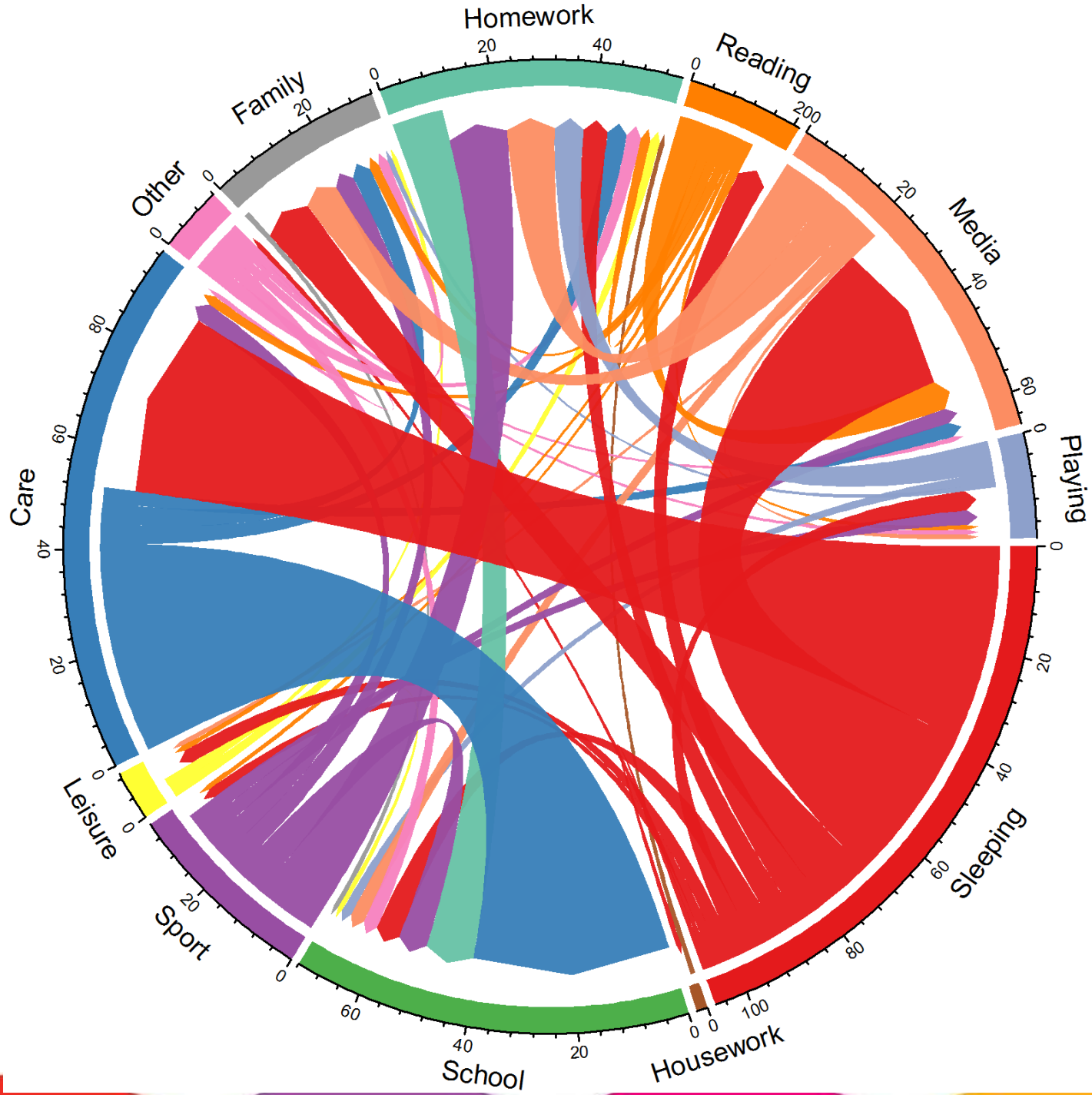
Change in after school activities



Girls aged 9



Girls aged 13





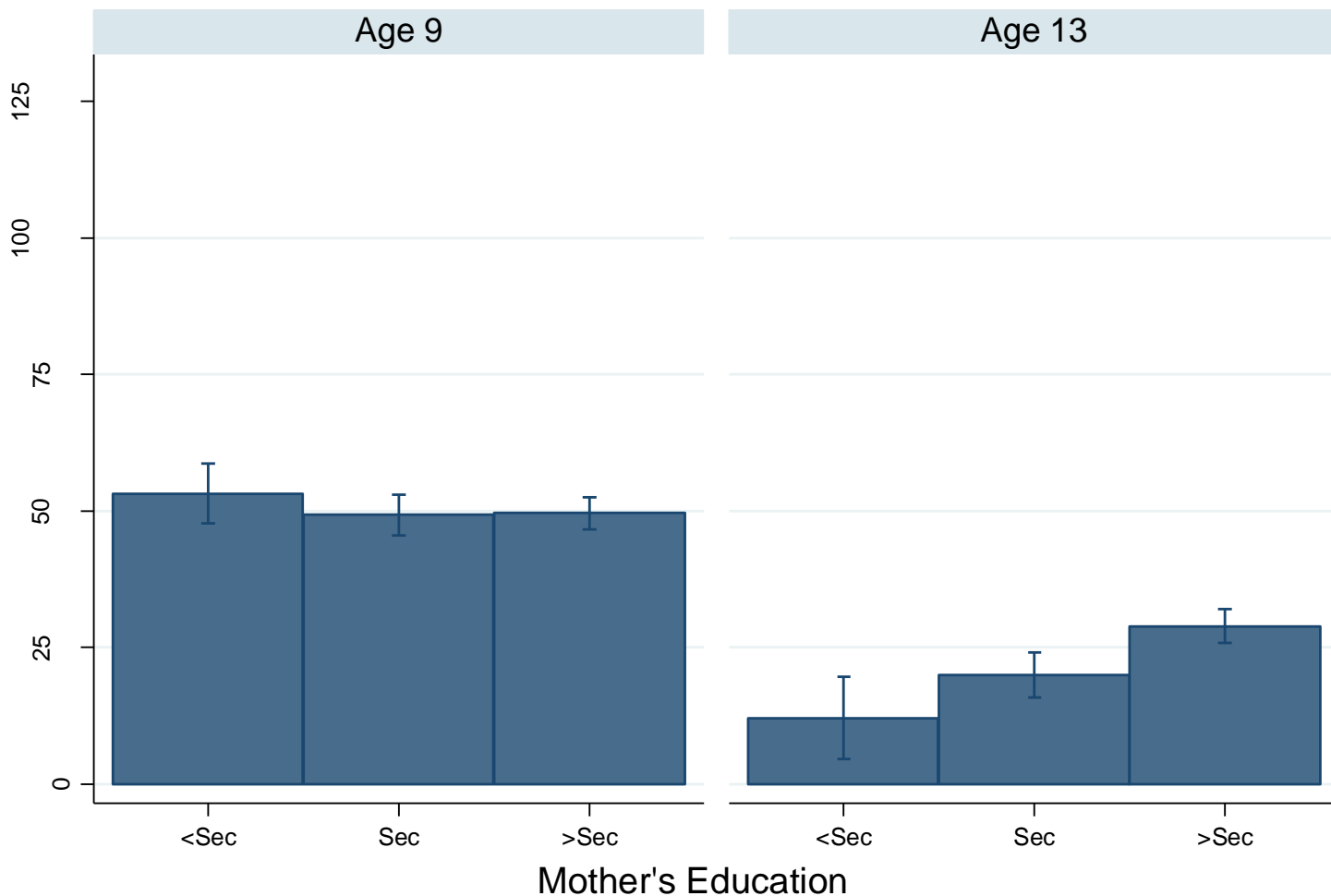
Results: Participation in activities

	Any Sport	Any Reading	Any Playing	Any Media	Any Homework
Secondary	0 (0.03)	0.12*** (0.03)	0.05 (0.03)	0.05** (0.03)	0.01 (0.02)
More than Secondary	0.01 (0.03)	0.19*** (0.03)	0.08** (0.03)	0.01 (0.02)	0 (0.02)
Wave 2	-0.38*** (0.05)	-0.24*** (0.05)	0.01 (0.05)	0.04 (0.04)	0.07** (0.03)
Secondary * Wave 2	0.06 (0.05)	-0.05 (0.05)	-0.13** (0.06)	-0.05 (0.04)	-0.05 (0.04)
More than secondary * Wave 2	0.13** (0.05)	-0.03 (0.05)	-0.18*** (0.05)	-0.05 (0.04)	-0.03 (0.03)
Wave 1 mean	0.61	0.39	0.50	0.81	0.83



Results: time spent in sport

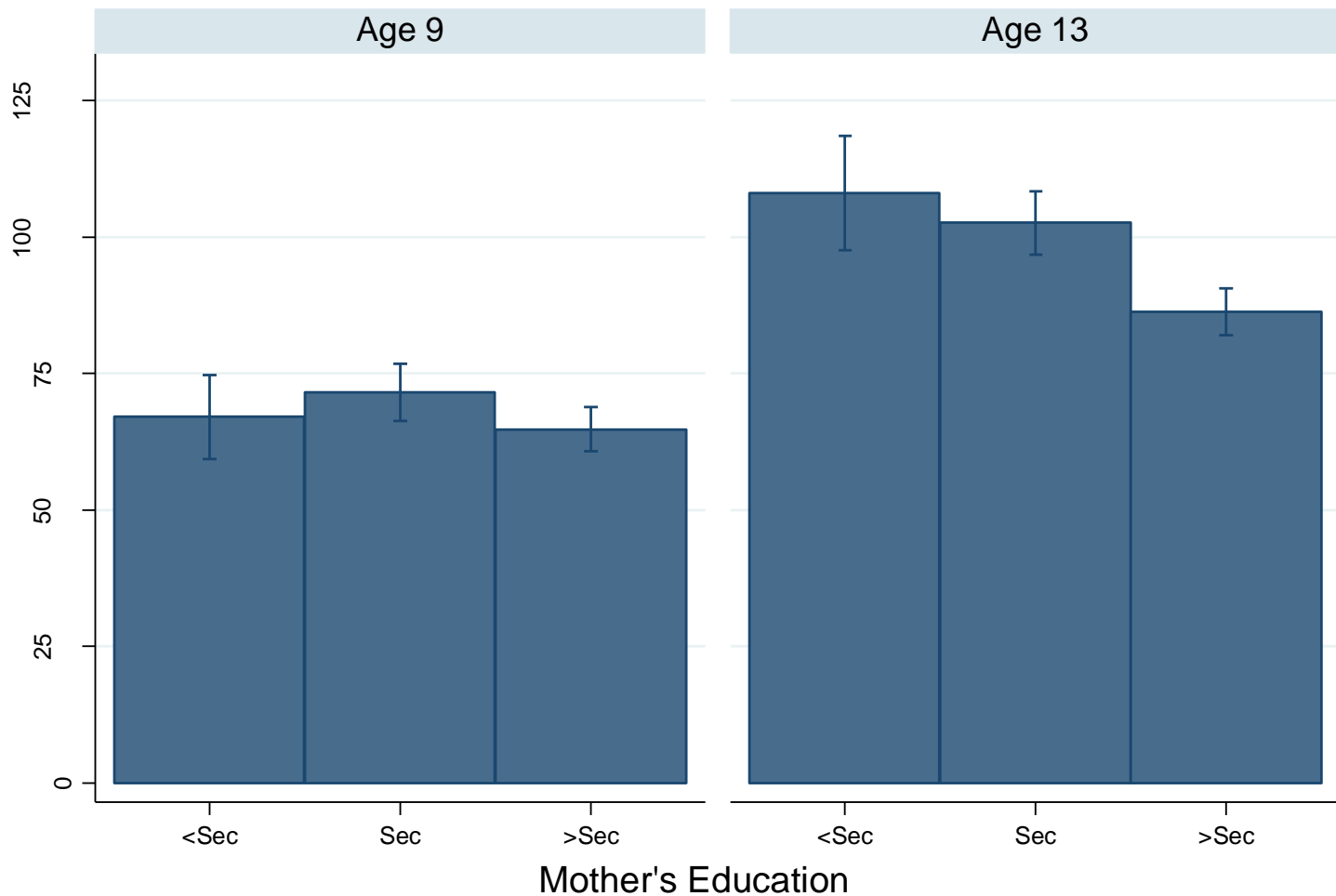
Minutes Spent on Sport: Girls





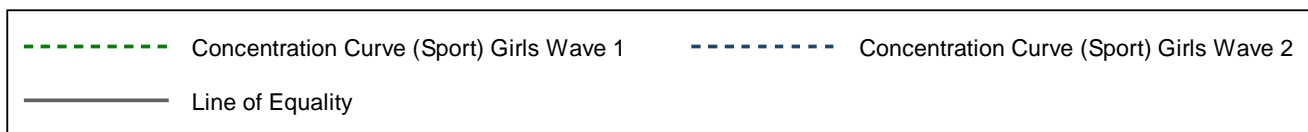
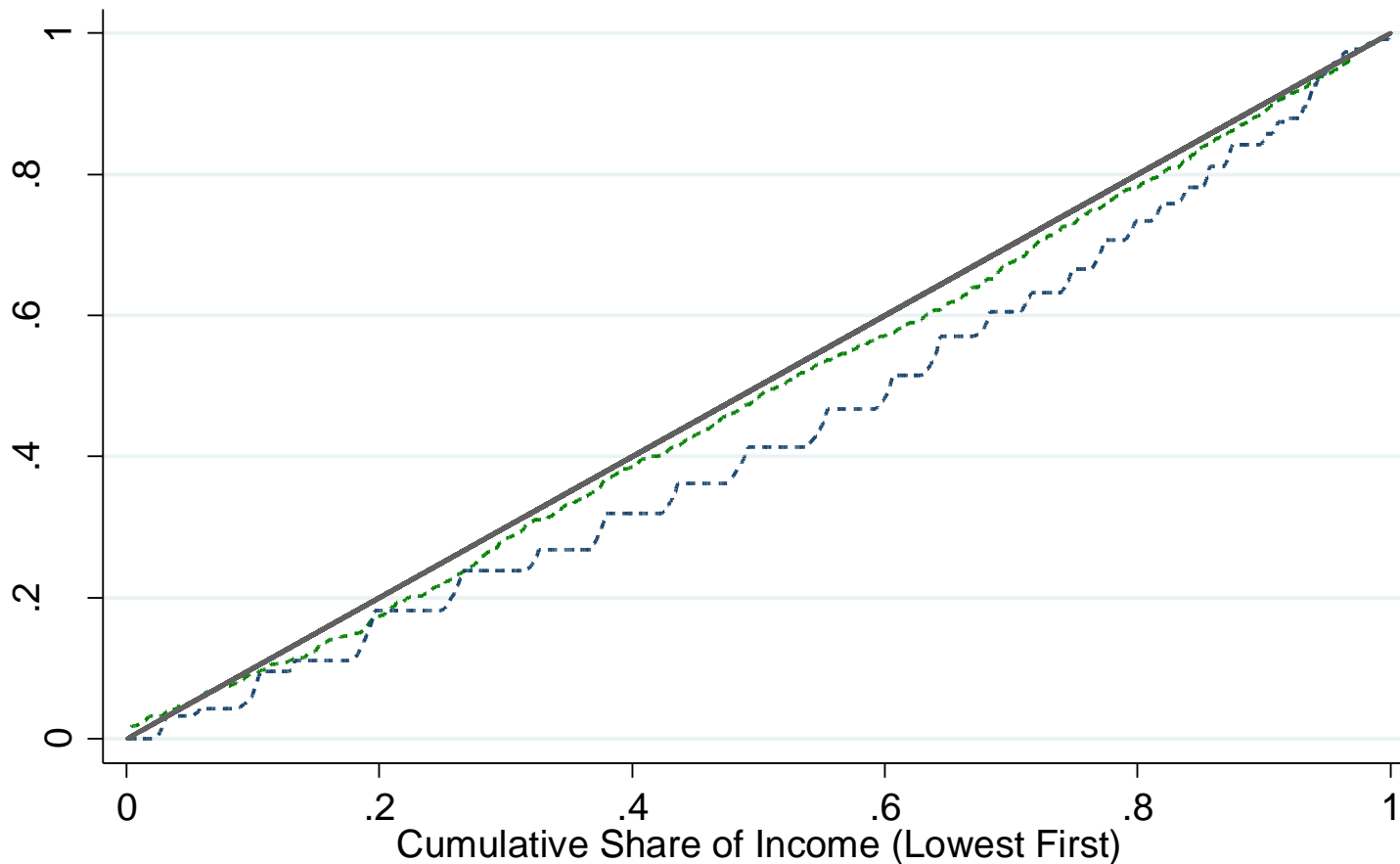
Results: time spent using media

Minutes Spent on Media: Girls



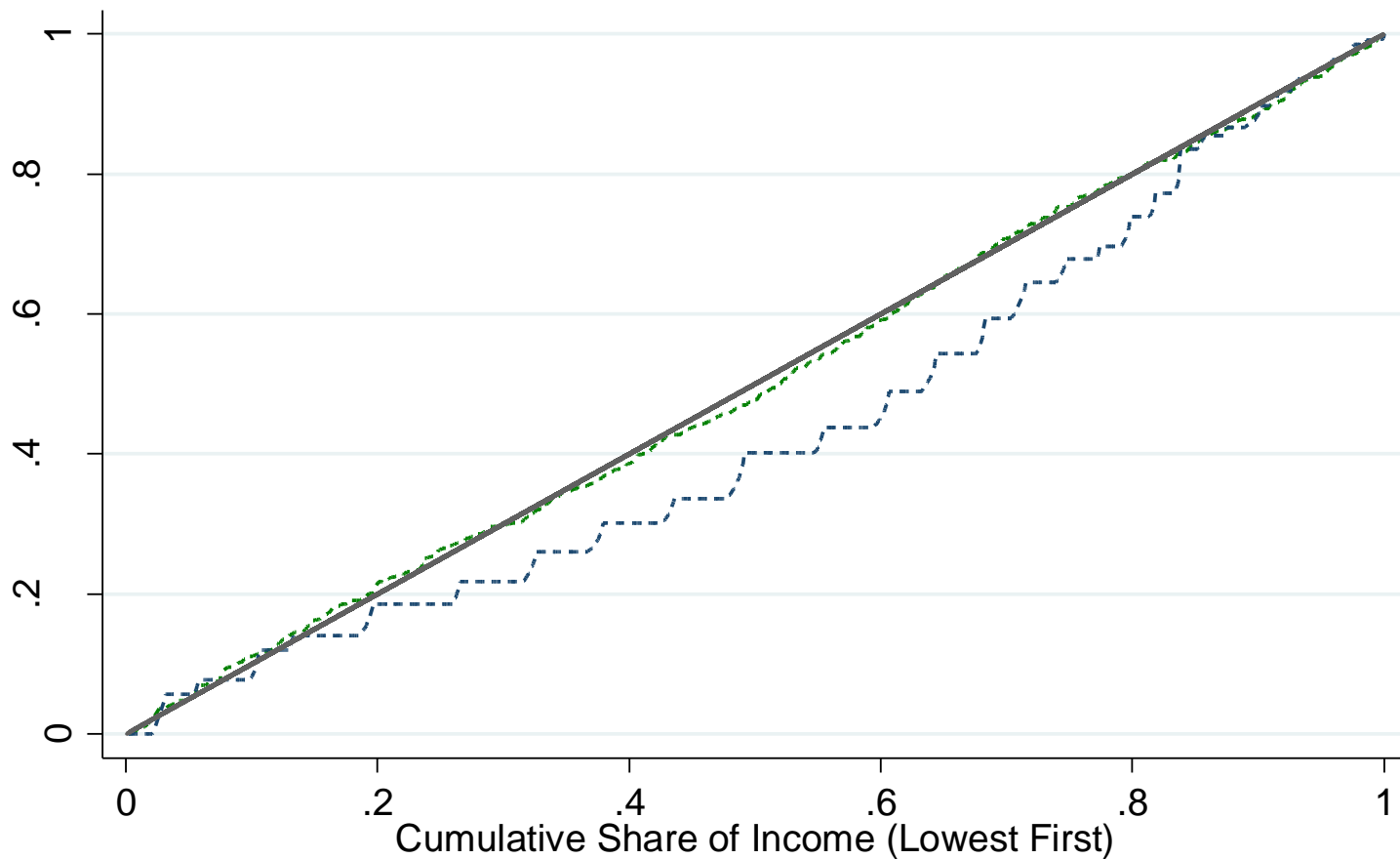


Concentration curves - sport





Concentration Curves - reading



--- Concentration Curve (Reading) Girls Wave 1 - - - Concentration Curve (Reading) Girls Wave 2
— Line of Equality



Decomposition analysis

	Boys Age 13		Girls Age 13	
	Sport	Reading	Sport	Reading
Concentration Index	0.145***	0.080**	0.097***	0.096***
Log HH Income	108%	104%	-3%	7%
Mother's Ed – More than secondary	-1%	54%	58%	95%

- For boys, inequality related to income, while for girls, inequality is much more related to mother's education
- Conditional on marital status, household size, region, employment, diary characteristics



Discussion

- **Differences in girls' time use by SES**
 - No differences in sport at age 9; large diffs by age 13
 - Reading differences already present by age 9
 - High SES are more likely to have unstructured (playing) time at age 9, but much less likely by age 13
 - All girls participate in media; but low SES spend more time on it
 - Few differences in homework
- **Concentration Curves**
 - Inequality in boys' sport attributed to income while inequality in girls' sport attributed to mother's education
- **If differences persist, may have implications for later life outcomes**



Thank you!

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