

EMPLOYMENT UNCERTAINTY AND EARLY CHILDHOOD DEVELOPMENT

Assessing the Patterns &
Exploring the Mechanisms

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MOTIVATION

Employment Uncertainty

- Growing turbulence in work trajectories
- The impact on educational outcomes is less explored

Child well-being

- Long-term consequences of early disadvantage
- Explore the influence of parental background before kindergarten
- Crucial abilities for school success and social adjustment
- Policy interventions at this stage can be highly beneficial and cost-effective

WHY FRANCE?

- The majority of the studies in the US, UK, Australia, Canada...
 - Higher internal validity,
 - Undermines the generalizability of the results.
- The French case
 - Employment uncertainty easier to identify,
 - Higher protection in the job market and higher public support to fertility and early childhood.

EARLY CHILDHOOD DEVELOPMENT

- **Cognitive skills**

- SES gradient → exists before school entry (Blossfeld et al., 2017, Passaretta et al. 2022)
→ doesn't shrink over time (Dammrich & Triventi 2018), but high SES children “recover” (Bernardi, 2014).
- Job loss → hinder children's cognitive development (Mari & Keizer, 2020), mothers “compensate” (Brand, 2015; Kalil and Ziol-Guest, 2008).
- Accumulation of disadvantage (Bradbury, Waldfogel, & Washbrook; 2019)

- **Soft skills**

- SES → attention, engagement and emotional regulation (Halle et al. 2009, Weinert, et al. 2017)
- Job loss → heightens problem behaviour (Mari & Keizer, 2020)
- Self-regulation → (development of) cognitive abilities (Nisbett et al., 2012)
- Soft skills → gain in educational attainment and quality of life, even when the interventions did not have a significant impact on cognitive abilities (Heckman, Pinto, and Savelyev, 2013).

MEDIATORS

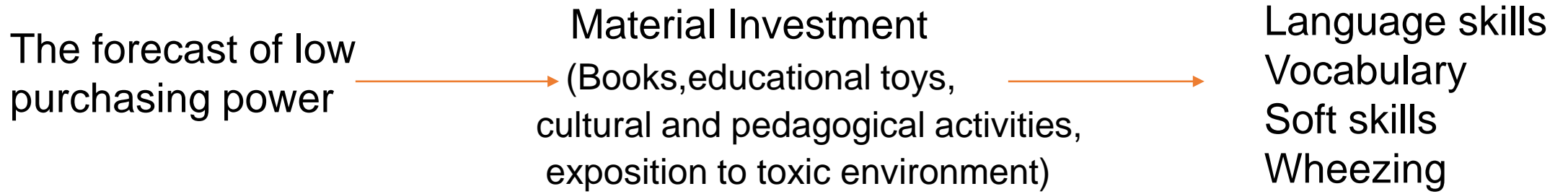
- **Cognitive skills**
 - Temporary jobs and unemployment → risk of poverty and material deprivation (Brand, 2015; Kalleberg, 2018) → (plan) educational investment (Heckman and Mosso, 2014).
 - Income → housing and neighborhoods (Cooper and Stewart, 2021)
- **Soft skills**
 - Employment uncertainty → parental psychological stress, depression and anxiety (Brand, 2015; Virtanen et al. 2004; Santin et al. 2009)
 - HEU → Parental conflict and family structure (Solaz, 2013, Brand, 2015)
 - Ecological instability (Fomby and Mollborn, 2017)

RESEARCH QUESTIONS

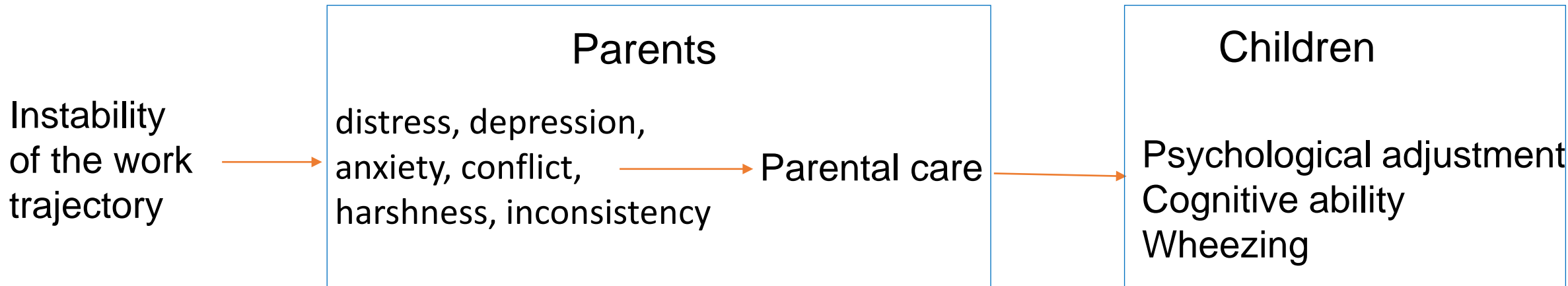
1. What is the role of employment uncertainty for early skills development?
2. Which mechanisms account for this relationship?

THEORY

Family Investment Model



Family Stress Model



HYPOTHESES

H1 A higher degree of HEU is associated with worse children's outcomes.

H2 Mothers' turbulent work trajectories could be more problematic, because they interact more often with the children.

H3 Employment uncertainty is associated with worse children's outcomes when it is persistent over time.

H4 HEU affects children cognitive skills through the reduction in income and parental investment.

H5 HEU affects children soft skills through the increase in parental stress.

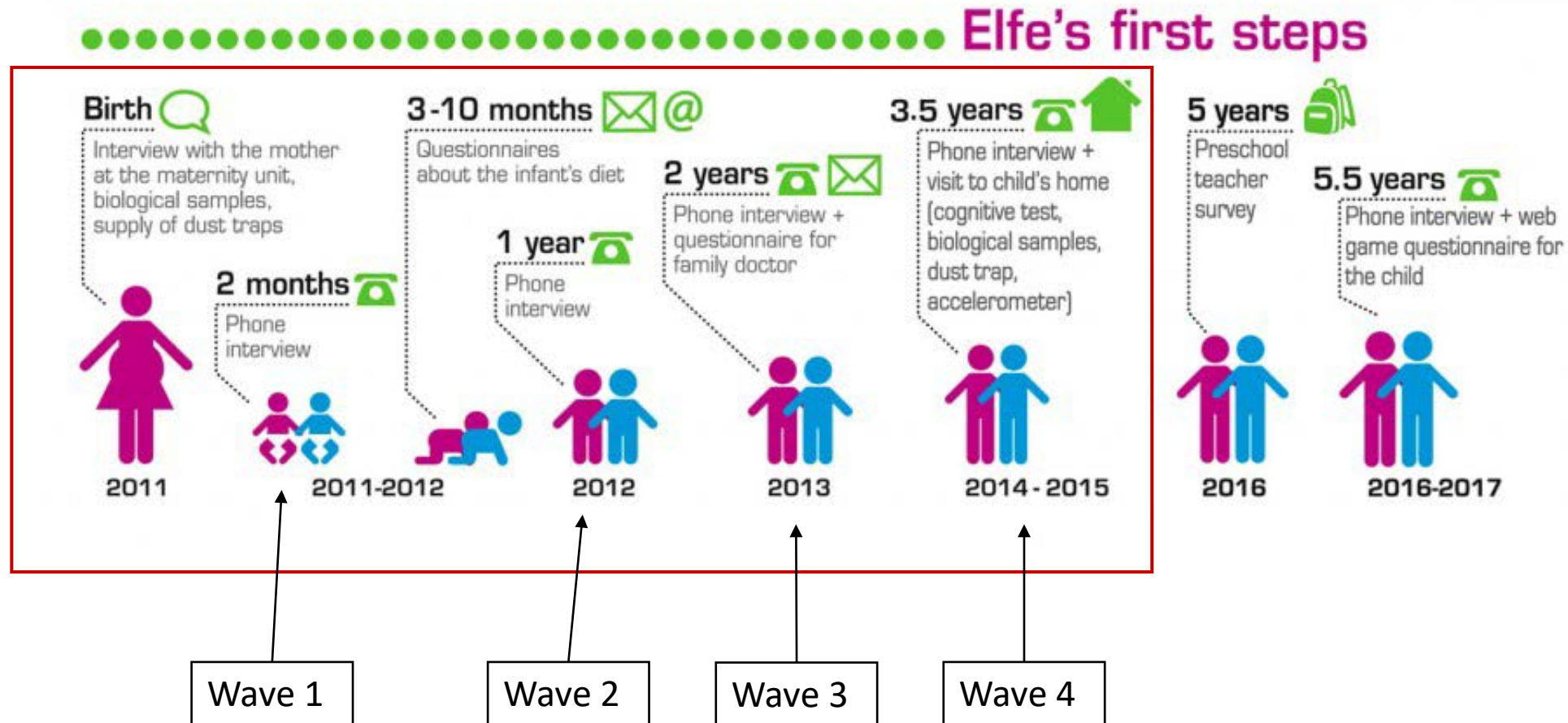
DATA

ELFE (Étude Longitudinale Française depuis l'Enfance)



- nationally representative
- rich set of validated and internationally standardized measures of child well-being and early skills
- comprehensive set of control variables
- highly detailed on the dimensions of employment uncertainty
- 18.000 children born in 2011 → N “Employees” ~ 7,000; N “All parents” ~ 10,000

DATA



PATTERNS – Analytical Strategy


Outcomes

COGNITIVE: Language skills (W3), Cognitive ability (W4)

SOFT SKILLS: Conflict (W3), Difficult behavior (W4)

Independent variable

- HEU: type of contract of both parents
- Persistent HEU: years of employment uncertainty

- 
- Both Permanent
 - Mother temporary
 - Father temporary
 - Both temporary

Control variables

M1: bivariate association

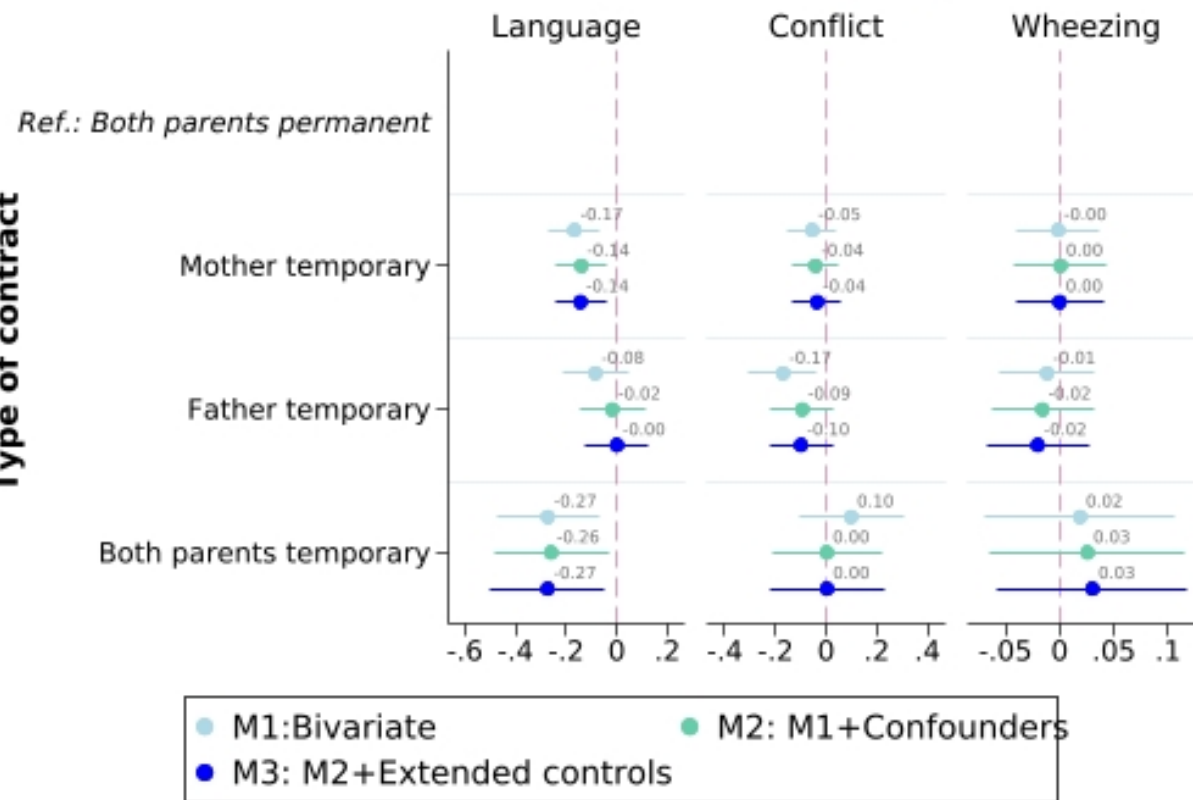
M2: parents' age and migration background, household level of education and social class.

M3: gender of the child, birth order, twin sibling.

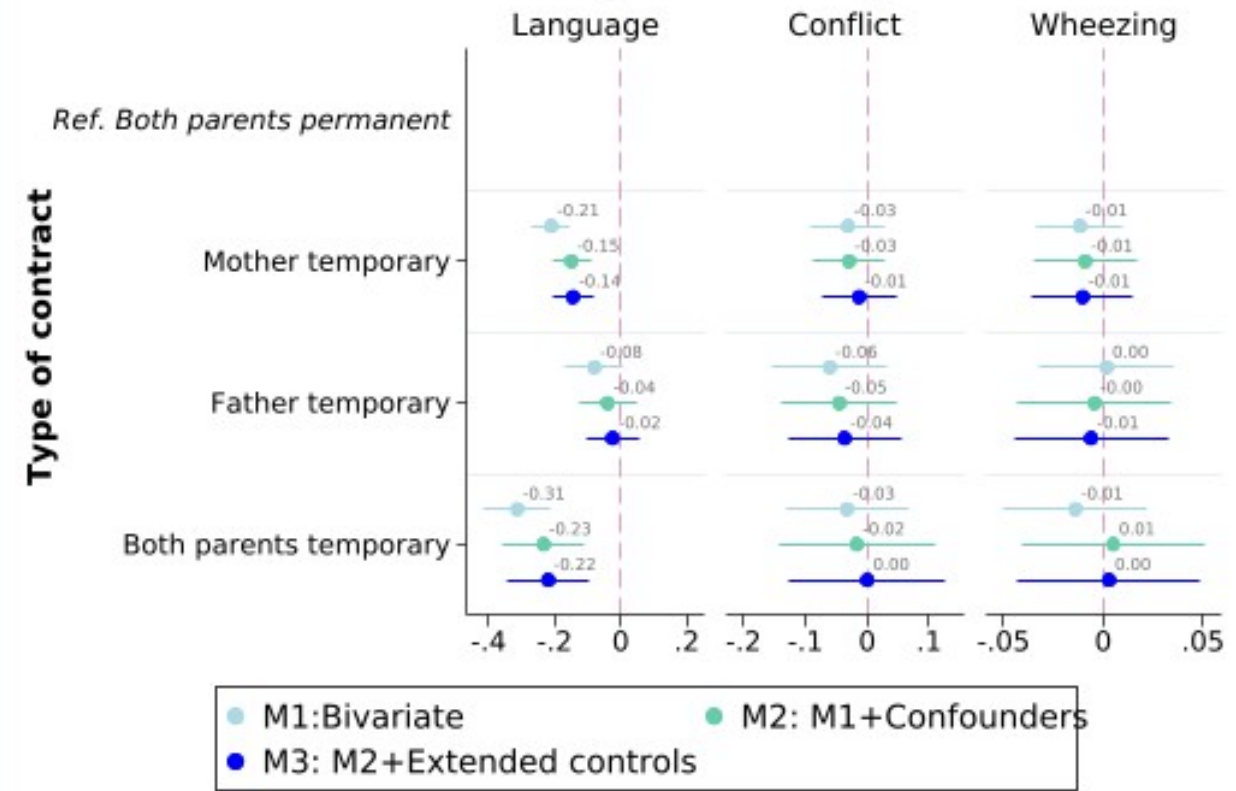
Method: OLS & LPM with fixed effects at the hospital level, weighted.

PATTERNS – Results I

Outcomes at 2 years - Employees

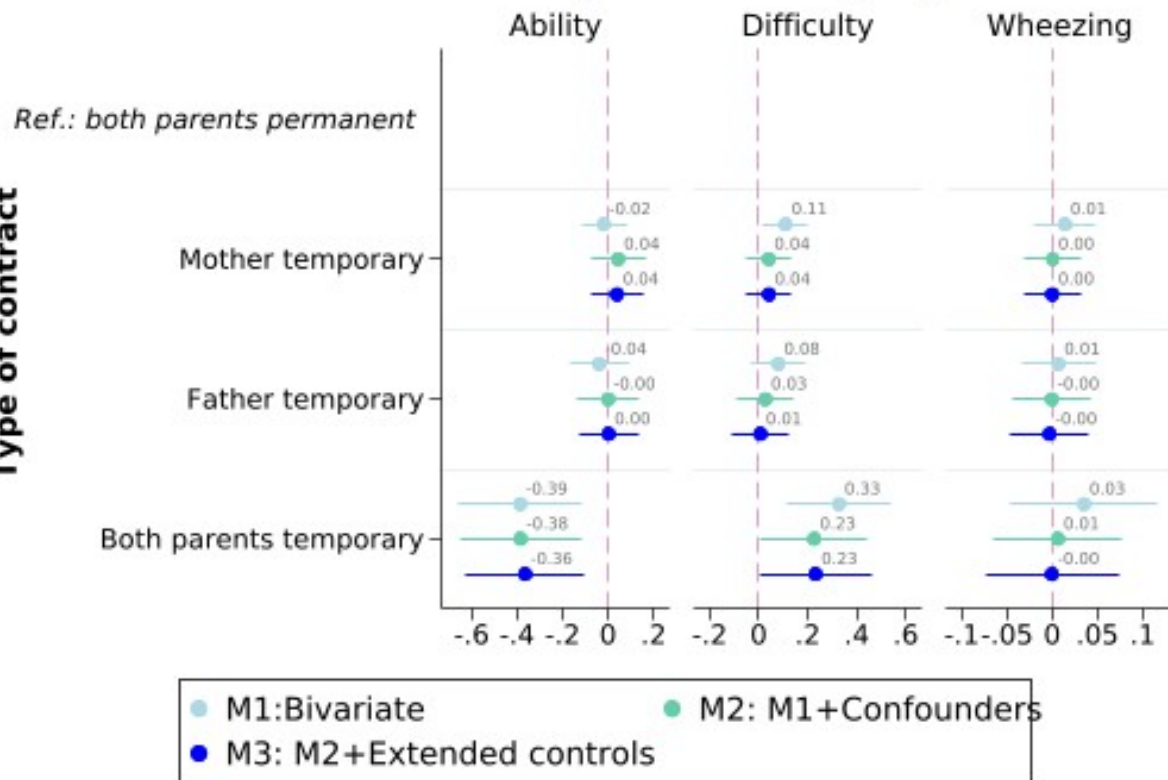


Outcomes at 2 years - All parents

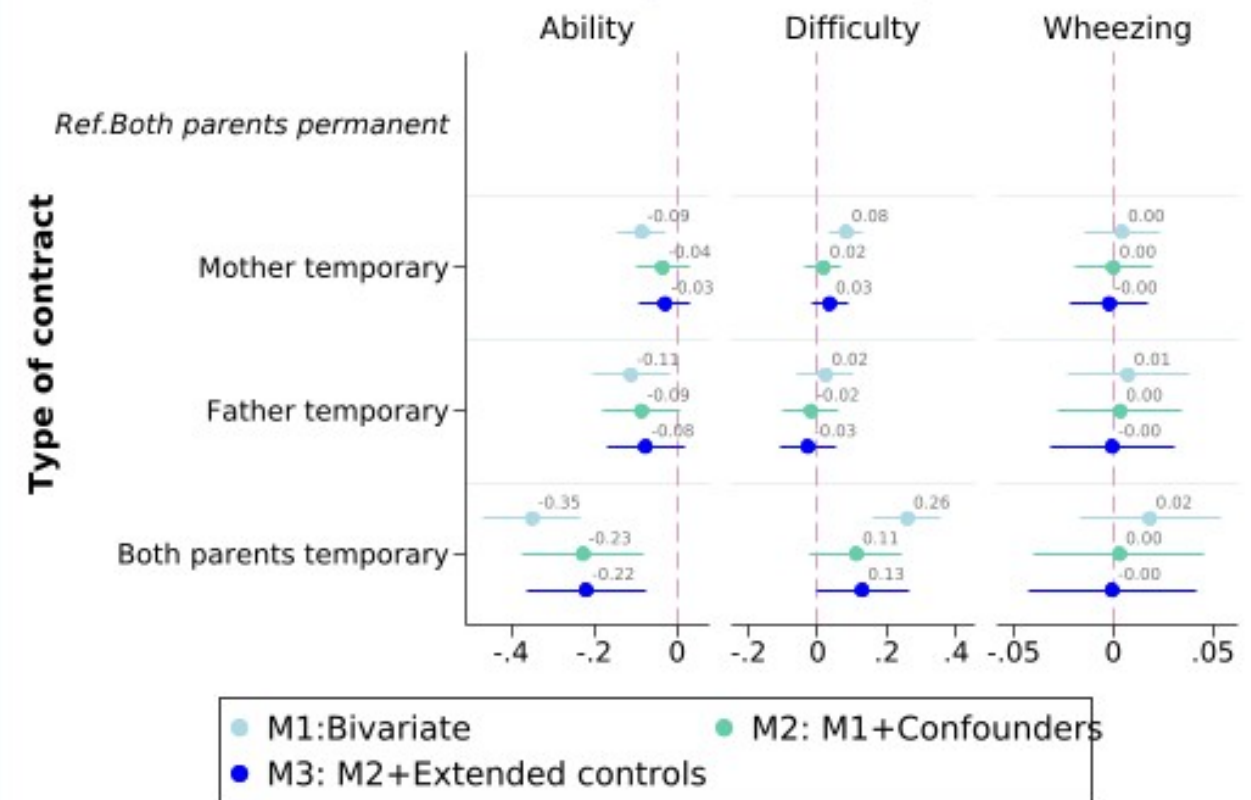


PATTERNS – Results II

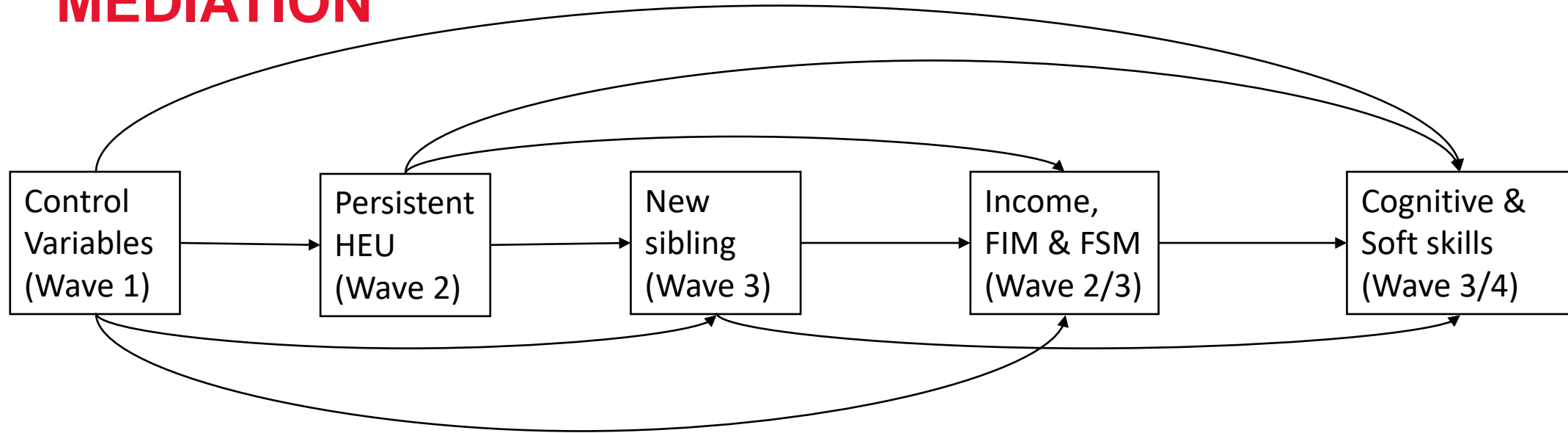
Outcomes at 3.5 years - Employees



Outcomes at 3.5 years - All parents



MEDIATION



Counterfactual framework (VanderWeele, 2015)

- Generalised Structural Equation models (pca)
- Interaction mediator-independent variable
- Regression with residuals to control for post-treatment confounders (Wodtke and Zhou, 2020): new sibling.

Scarring/critical period

STATA's package «rwrmed» (based on gsem)

MEDIATORS

Wave 2 - the child is 1 year old

Log of equivalised household income

Family Investment predictors

Number of books at home

The mother/father reads to the child

The mother/father watches TV with the child

N. hours/week spent with the mother/father

Family Stress predictors

Physical health: mother/father

Mental health: mother/father

Wave 3 : the child is 2 years old

Log of equivalised household income

Family Investment predictors

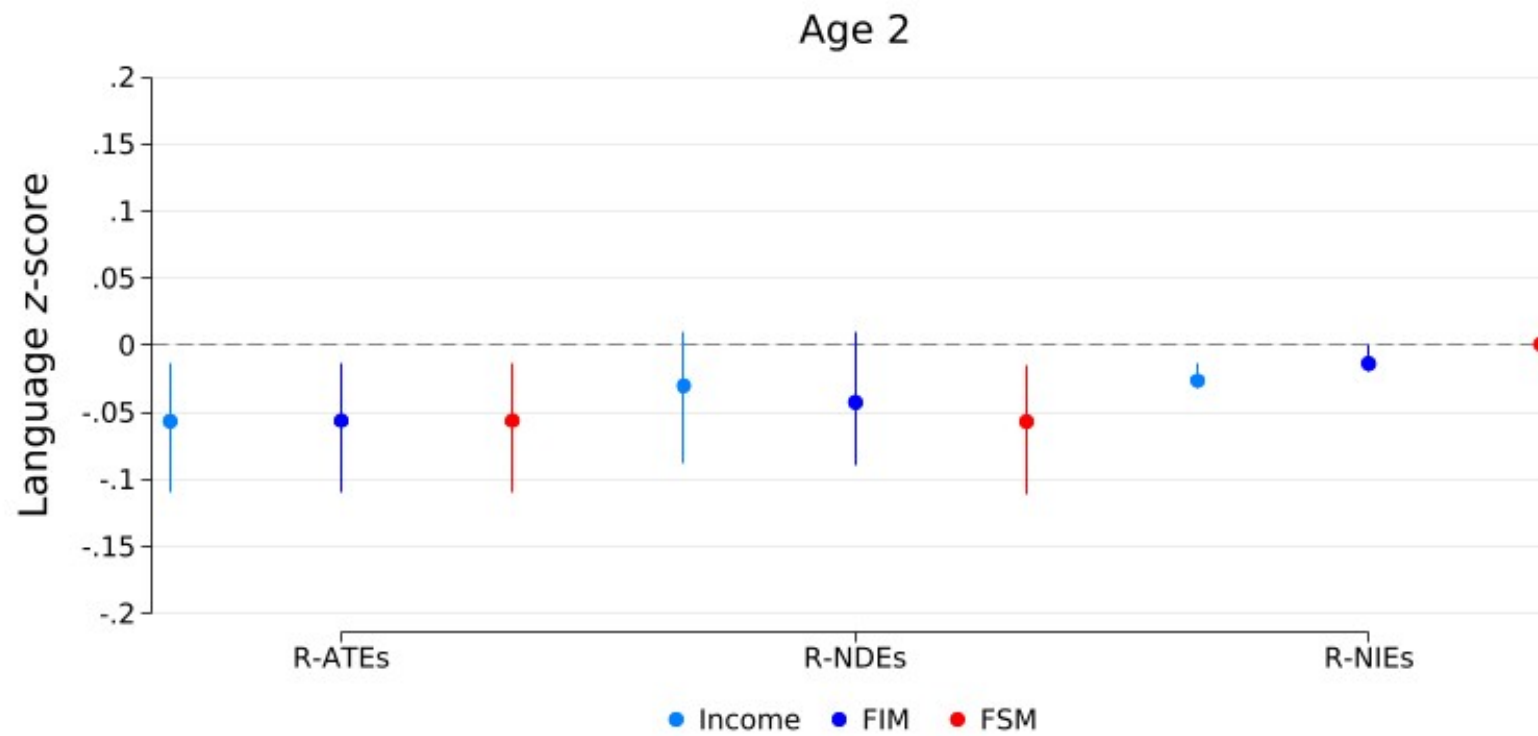
Frequency of leisure walks,
play and exercise time,
TV watching,
playing on the computer/tablet,
playing on the smartphone.

Family Stress predictors

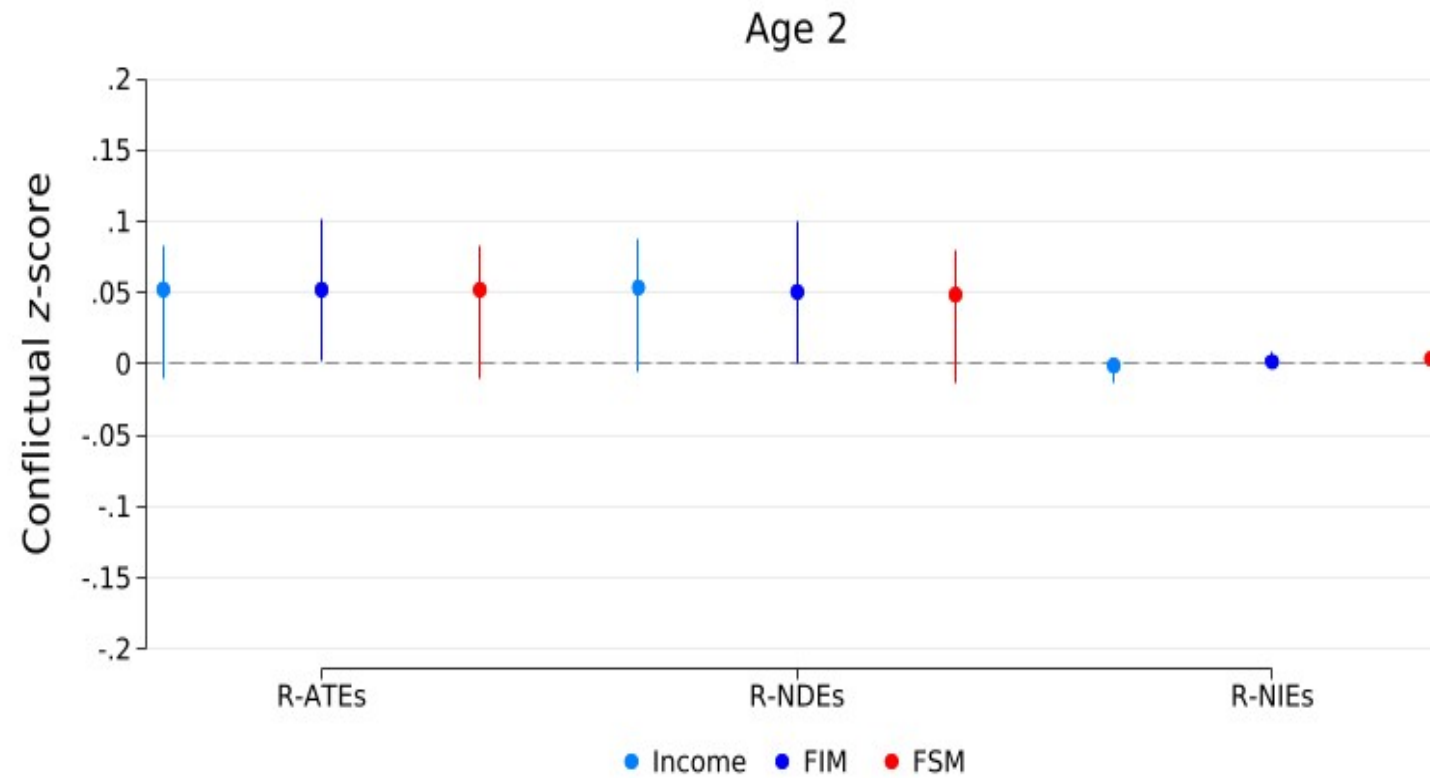
Mental health: mother/father

Parental conflict

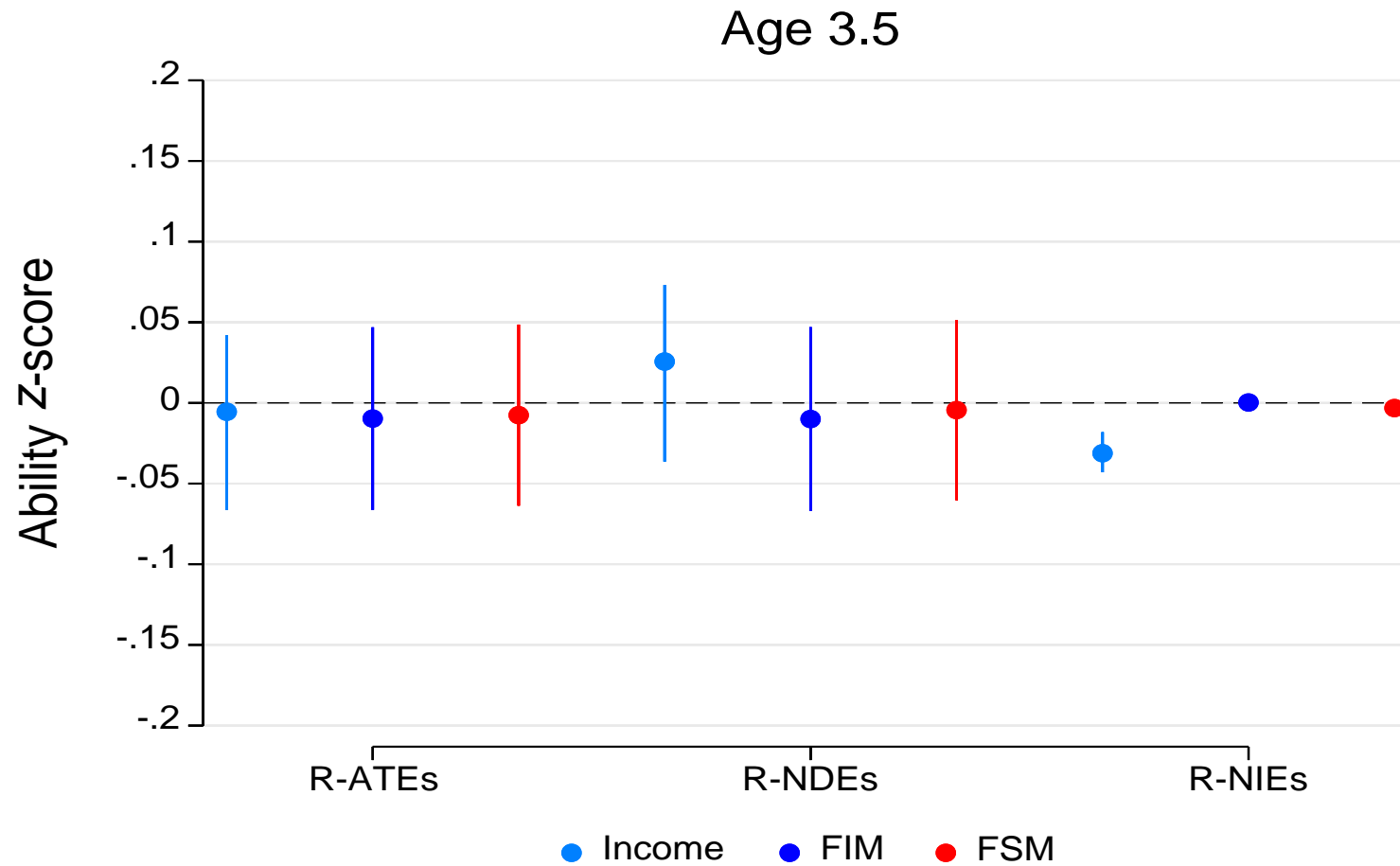
MEDIATION – Results I



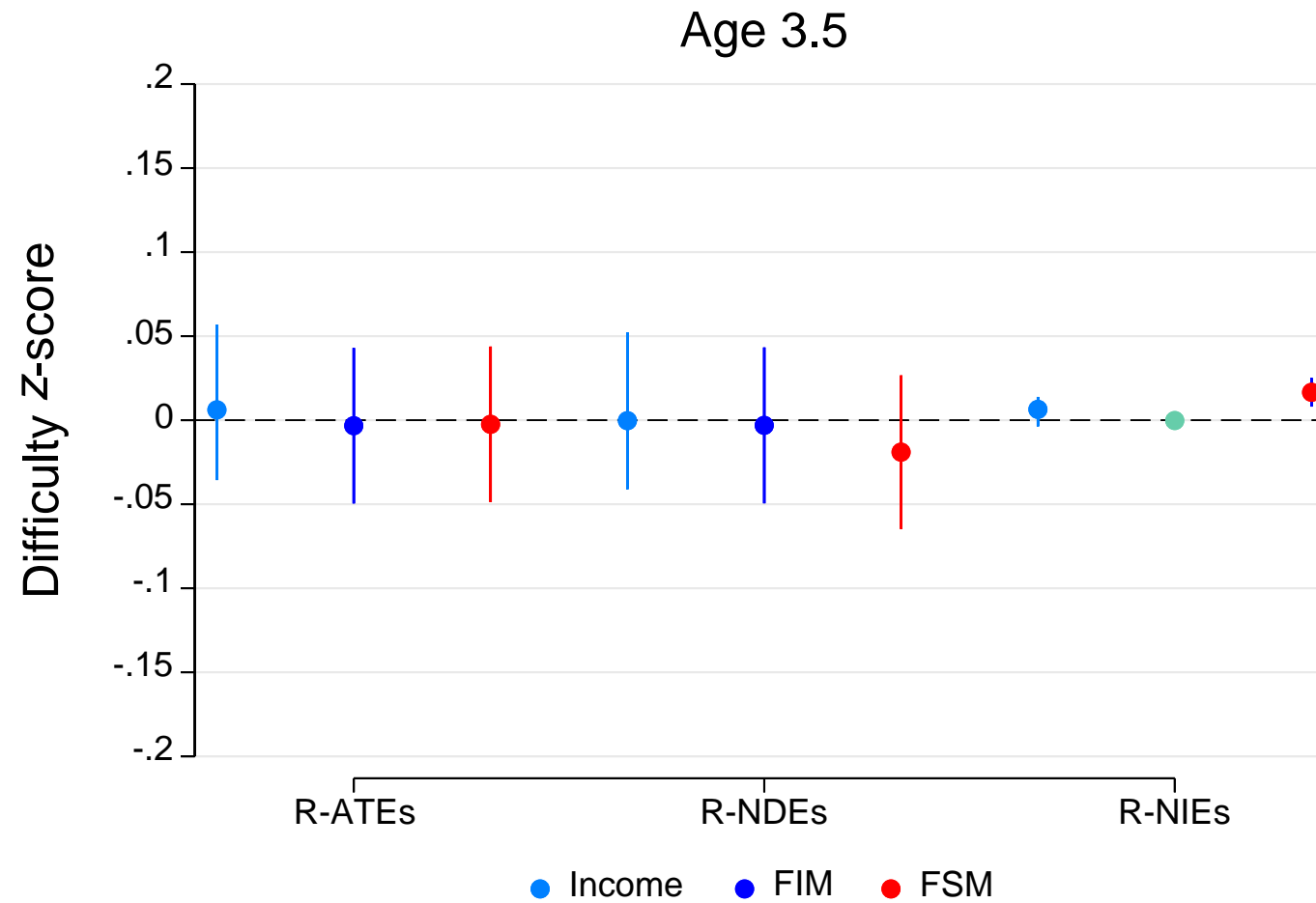
MEDIATION – Results II



MEDIATION – Results III



MEDIATION – Results IV



CONCLUSIONS

- Temporary contracts are associated with lower cognitive development, but not wheezing.
- The accumulation of employment uncertainty in the households and over time adds up to a decrease of 0,3 deviation standards in early cognitive skills development.
- (Persistent) HEU has an indirect effect on cognitive outcomes via family investment, and on difficult behavior via family stress.

**THANKS
FOR YOUR ATTENTION**

BACKGROUND SLIDES

OUTCOMES*

Health

- Respiratory conditions (wheezing)

Cognitive

- MacArthur-Bates Communicative Development Inventory (Expressive vocabulary) ~2 years
- French equivalent of the British Ability Scale ~3,5 years

Behavioural

- Conflictual behaviour ~2 years
- Difficult behaviour (Items of the Strengths and Difficulties Questionnaire) ~3,5 years

WORKING SAMPLES

Name of the sample	Unbalanced 2y	Unbalanced 3.5 y	Balanced
Initial Sample	18,329	18,329	18,329
S1a: All the parents	10,084	9,557	8,125
(S1bface to face survey)	/	7,598	6,587
S2a:both parents are employees	7,785	6,438	4,409
(S2b: face to face survey)	/	5,154	3,592

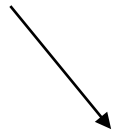
Missings profile*

- The missing *households* are in the lower income quintile, are not middle class, the parents are not married nor pacsed.
- The *mother* is employed, has sometimes or always a temporary contract. The mother is not native nor 2nd generation.
- The *father* has sometimes a cdd, his migration background is missing.

*in the balanced sample to S1a

WEIGHTING

Crossectional weight

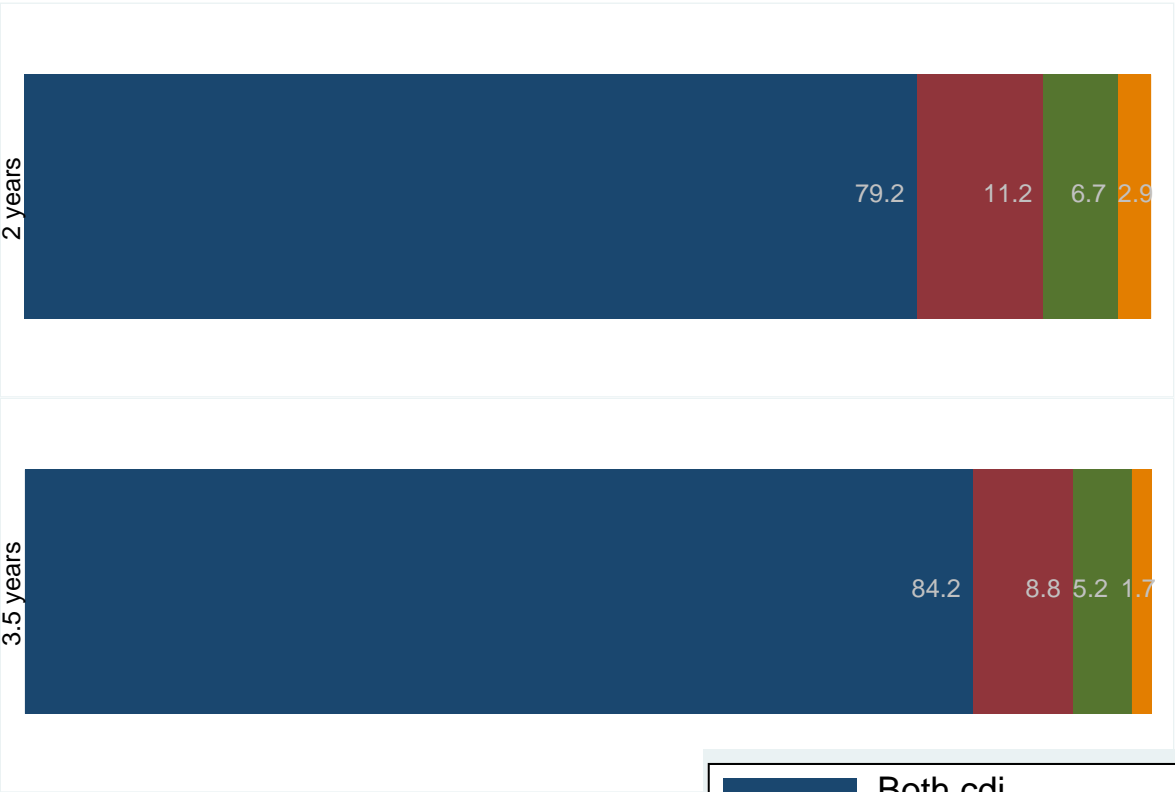


- Participation to the previous survey;
- Geographical area, mother's age, couple status, migration background of the household, maternal education, social class of the father;
- Tobacco consumption before the pregnancy, mother's BMI, participation to childbirth preparation classes, holidays during the pregnancy;

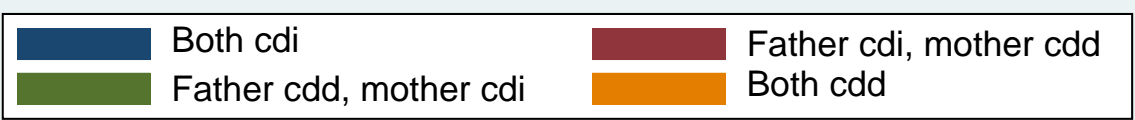
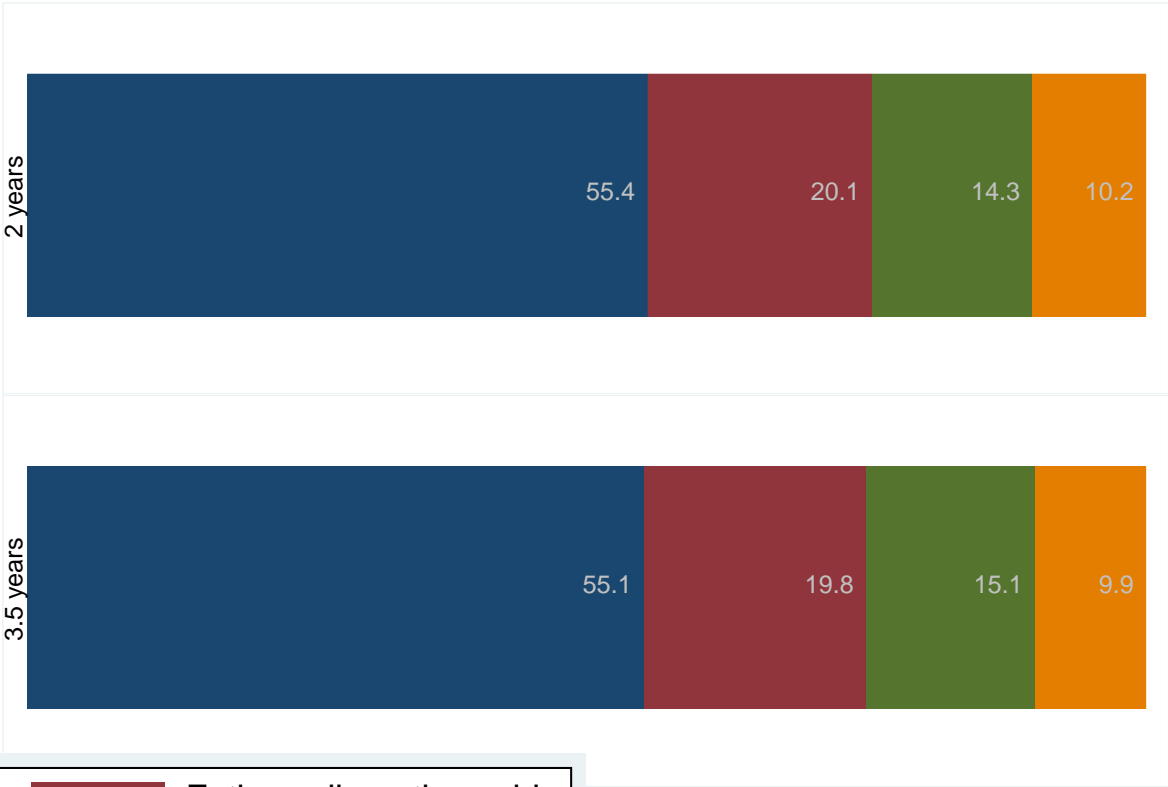
DESCRIPTIVES*

EMPLOYMENT UNCERTAINTY

Employees



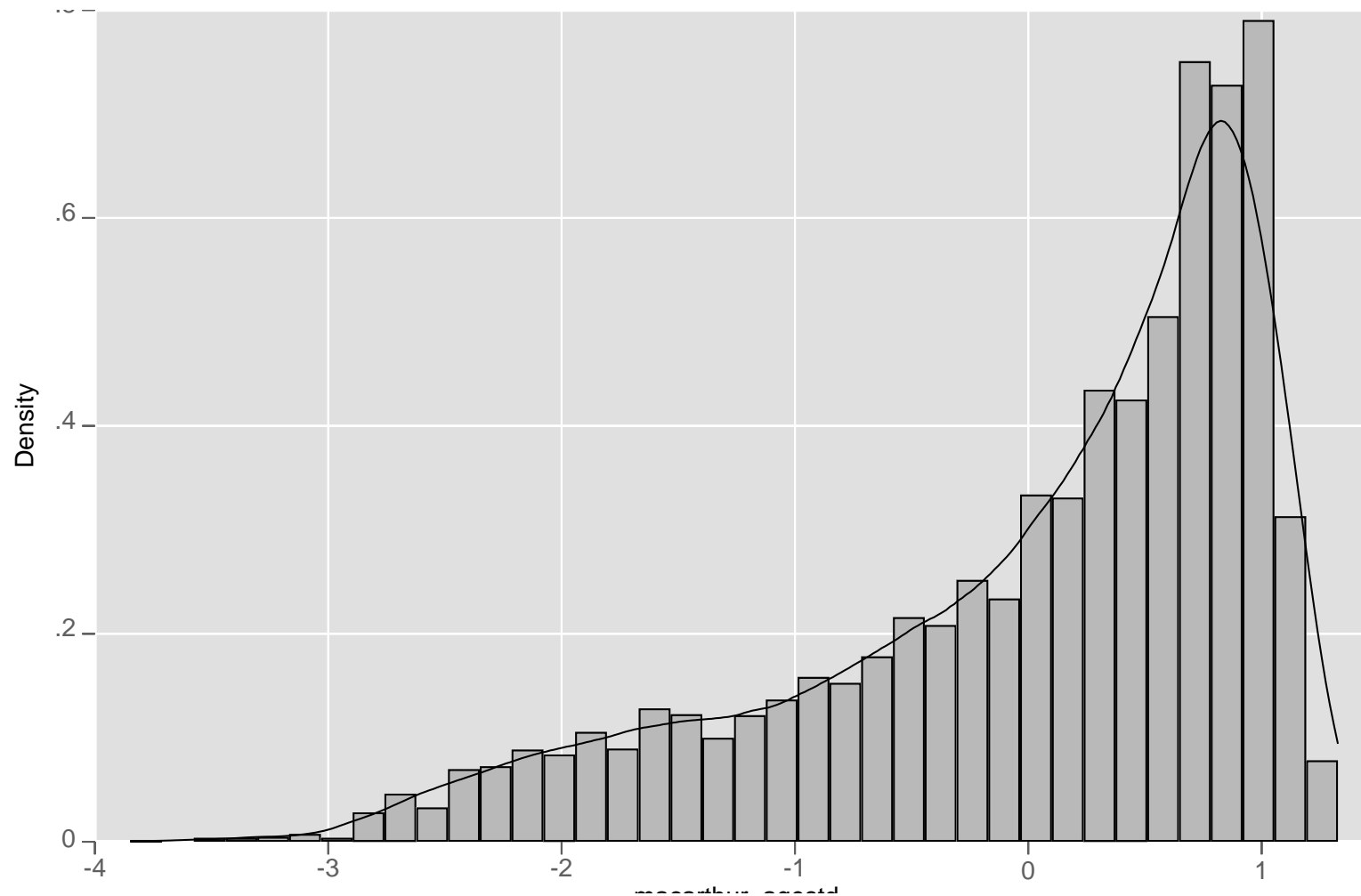
All the parents



2 YEARS – DEPENDENT VARIABLES

MEASURE OF COGNITIVE SKILLS: 2 YEARS

**Macartur-Bates
Index of Expressive
Vocabulary
(age standardized)**

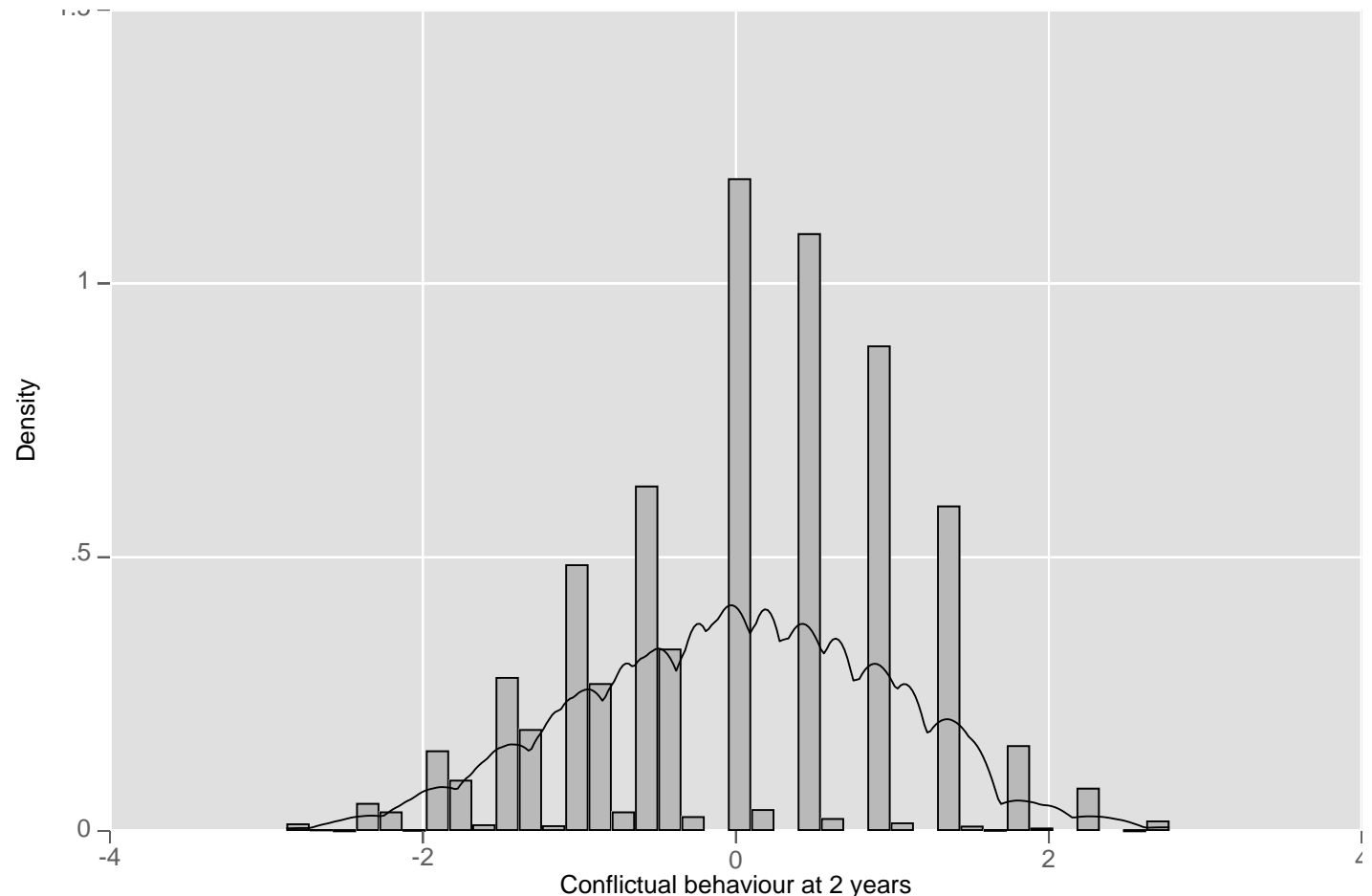


MEASURE OF SOFT SKILLS: 2 YEARS

Conflictual Behaviour, age-standardised

Items:

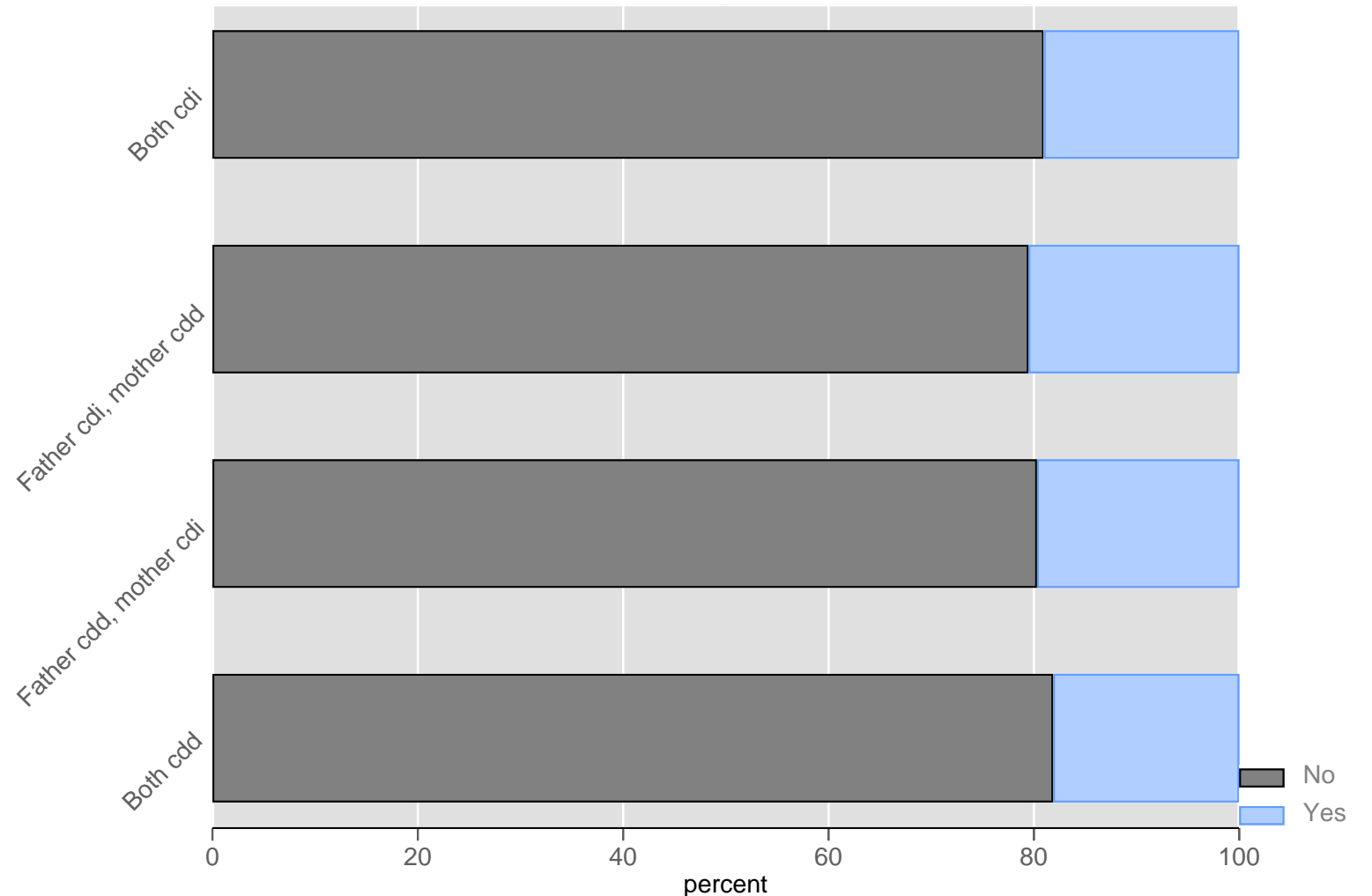
- [How often] does your child oppose your proposals?
- [How often] does your child challenge/affront you when they are scolded?
- [How often] does your child hit you or destroys things when they are angry at you?



MEASURE OF WELL-BEING: WHEEZING AT 2 YEARS

BIVARIATES:

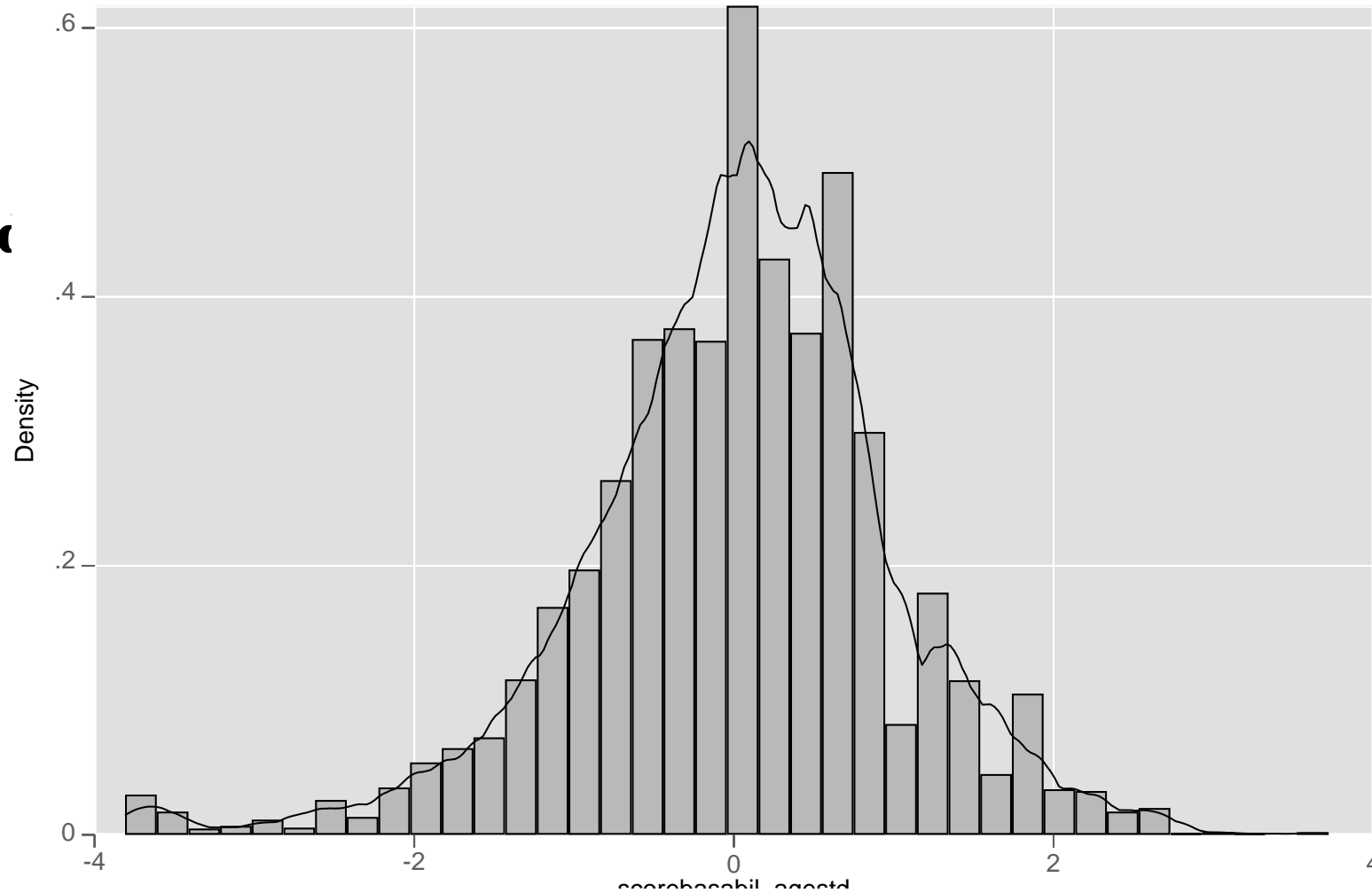
wheezing
&
Employment
uncertainty of the
household



3,5 YEARS – DEPENDENT VARIABLES

MEASURE OF COGNITIVE SKILLS: 3,5 YEARS

BAS age-standardized

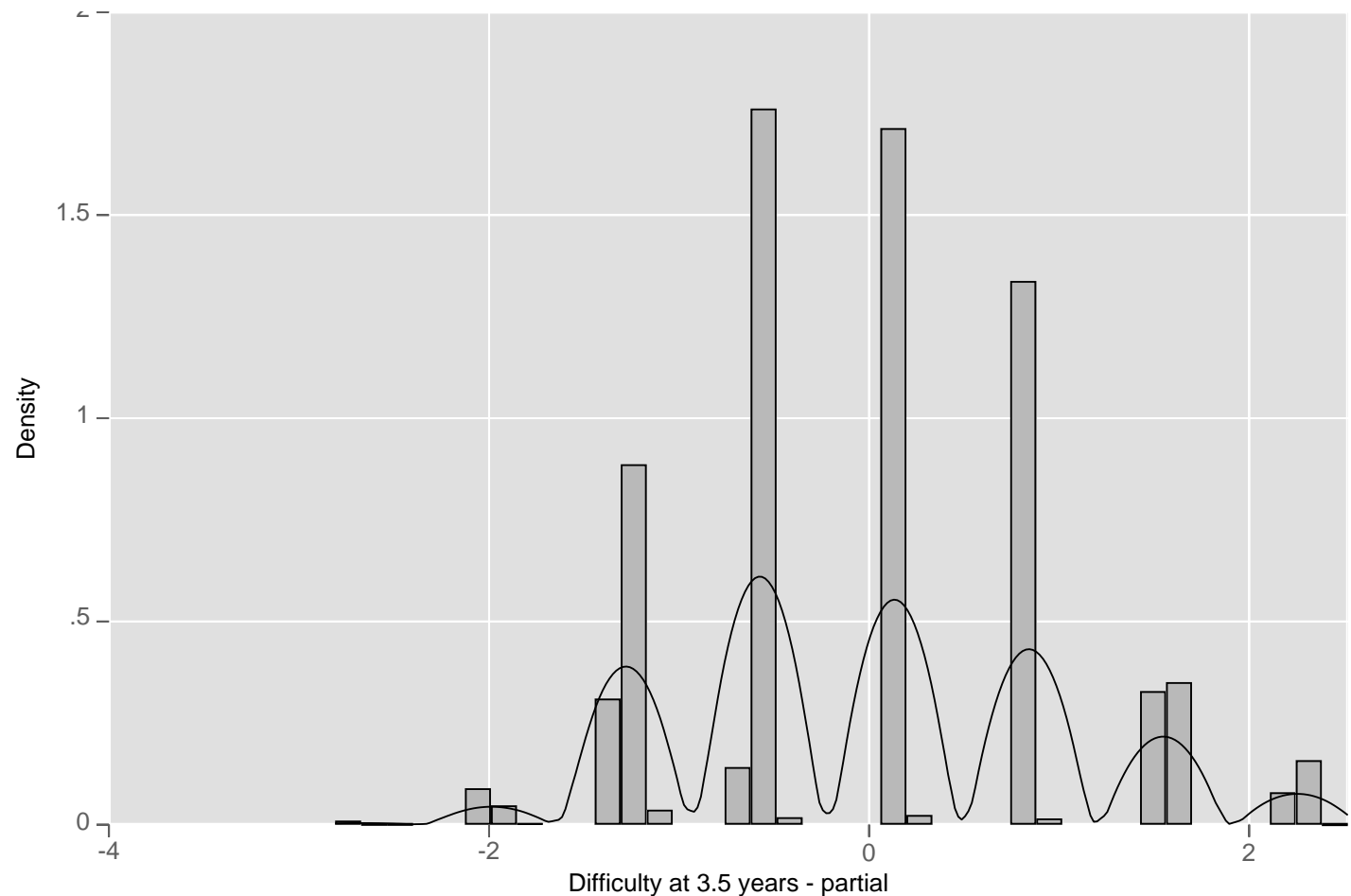


MEASURE OF SOFT SKILLS: 3,5 YEARS

**Subscale from the “Strength and difficulty questionnaire”,
Difficulty age-standardised**

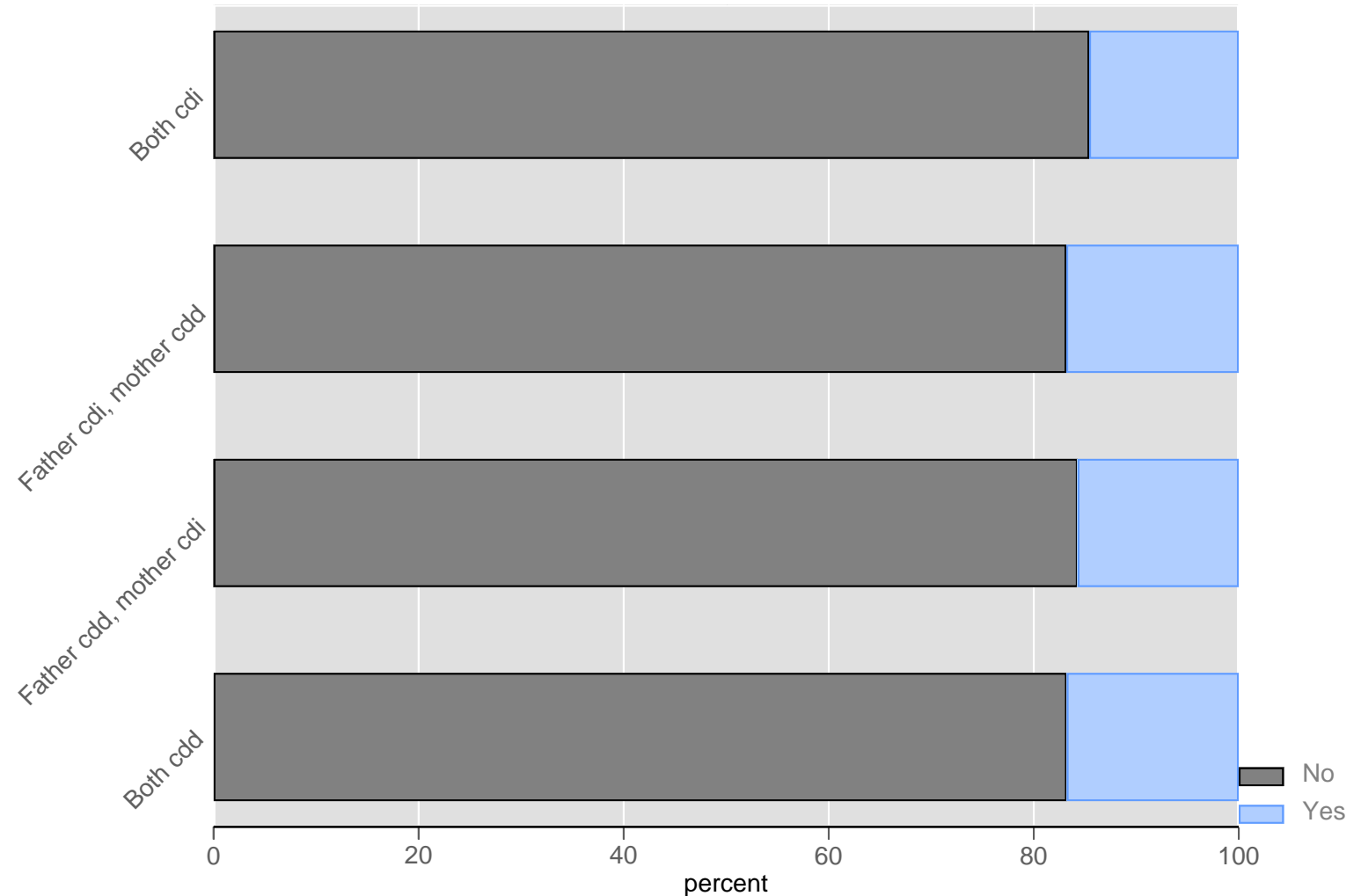
Items:

- [To what degree] does your child refuse to put away the toys after using them?
- [To what degree] is your child easily distracted/finds it difficult to concentrate?
- [To what degree] does your child fidgets, or moves constantly?



MEASURE OF WELL-BEING: WHEEZING AT 3,5 YEARS

BIVARIATES:
wheezing
&
Employment status of
the mother at 3,5 years



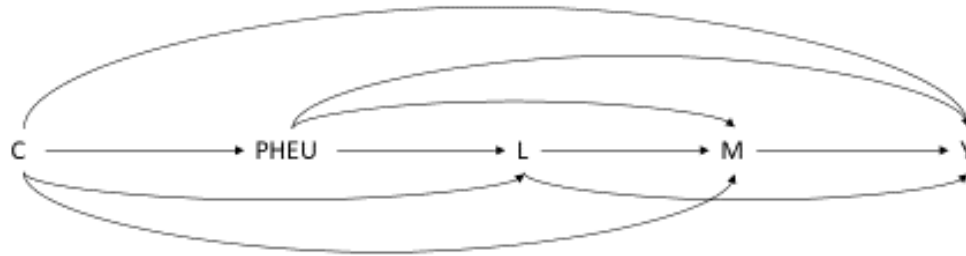
PATTERNS - MODELS

M1 $y = a + b_1 \textit{Employment Uncertainty}_t$

M2 $y = a + b_1 \textit{Employment Uncertainty}_t + c_1 Z_1$

M3 $y = a + b_1 \textit{Employment Uncertainty}_t + c_1 Z_1 + c_2 Z_2$

REGRESSION-WITH-RESIDUALS



- L is a confounder of the mediator-outcome link
- Over-control/endogenous selection → bias

$$g(E(L|C, A)) = \tau_0 + \tau_1^T C^\perp + \tau_2 A$$

$$h(E(M|C, A)) = \theta_0 + \theta_1^T C^\perp + \theta_2 A$$

$$E(Y|C, A, L, M) = \beta_0 + \beta_1^T C^\perp + \beta_2 A + \beta_3^T L^\perp + \beta_4 M + \beta_5 AM,$$

CONTROL VARIABLES

Wave 2 – The child is 2 months old

- age and migratory background of both parents
- level of education of the household
- social class of the household
- whether at least one parent does not speak French with their child
- child's gender
- birth order

INDEPENDENT VARIABLE

Persistent Household Employment Uncertainty (Wave 2)

- 0 Both parents always hold a permanent contract
- 1 At least one parent held a temporary contract

POST-TREATMENT VARIABLE*

Birth of a sibling in Wave 3 (dummy)

*only for 3,5 years old outcomes

MEDIATORS

Wave 2 - the child is 1 year old

Equivalised household income

Family Investment predictors

Number of books at home

The mother/father reads to the child

The mother/father watches TV with the child

N. hours/week spent with the mother/father

Family Stress predictors

Physical health: mother/father

Mental health: mother/father

Wave 3 : the child is 2 years old

Equivalised household income

Family Investment predictors

Leisure walks,

Play and exercise time,

TV,

Computer,

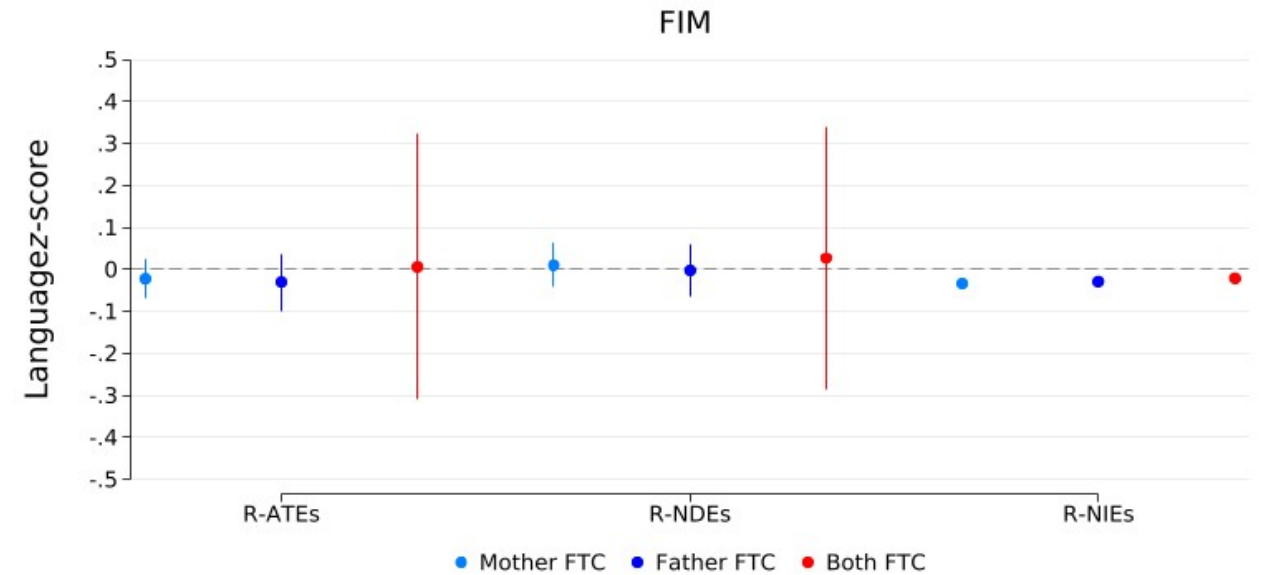
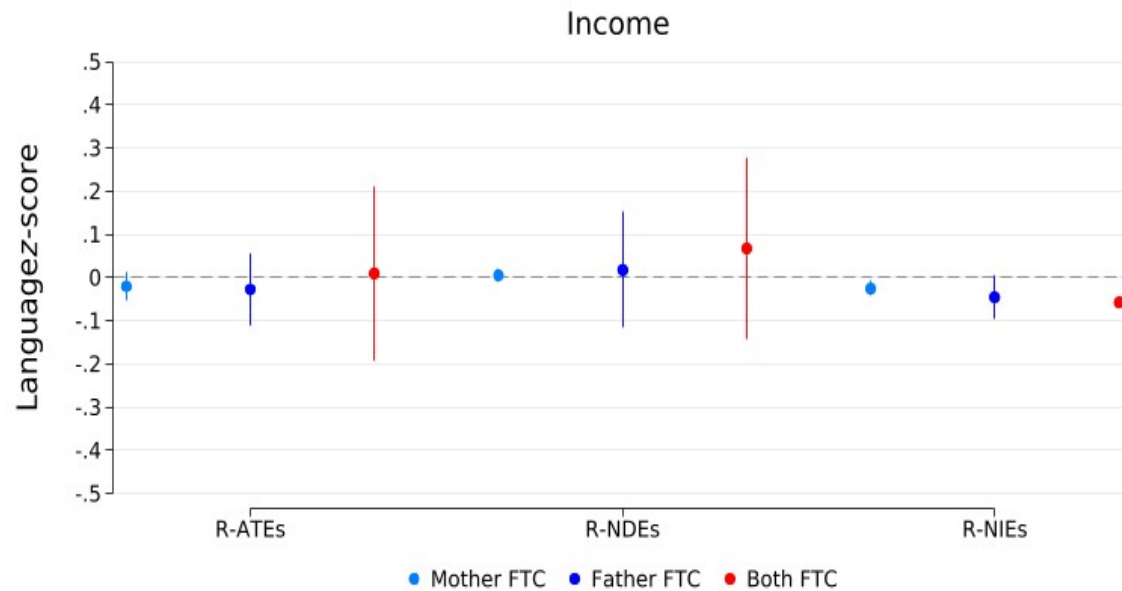
Smartphone.

Family Stress predictors

Mental health: mother/father

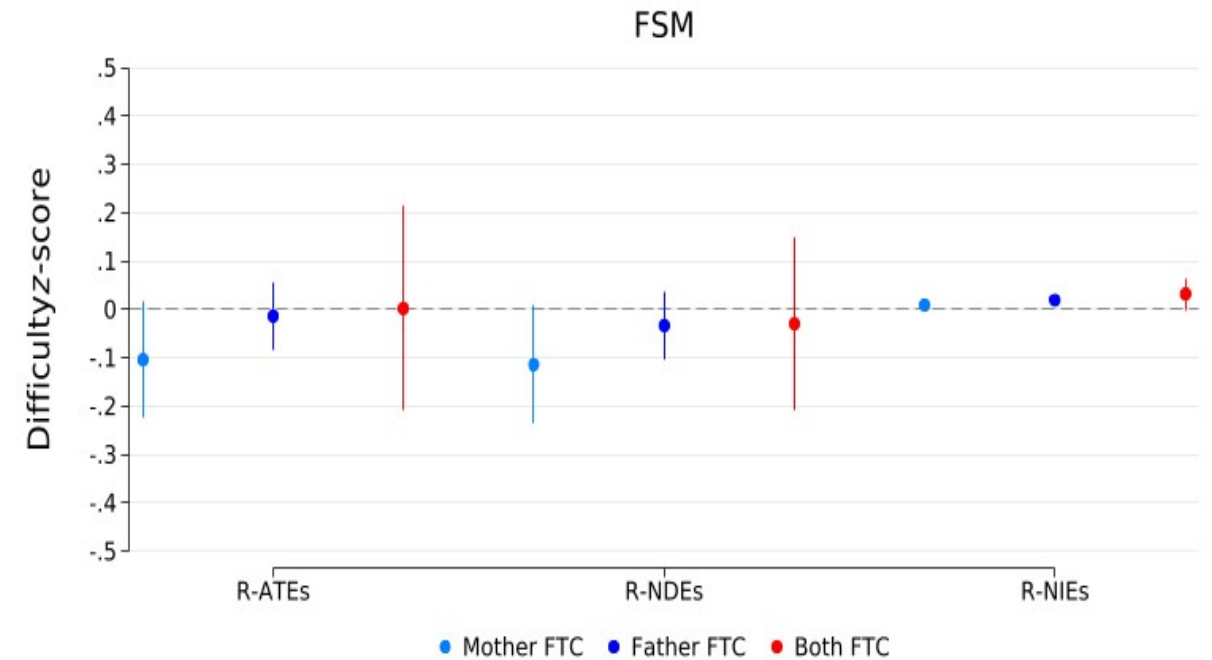
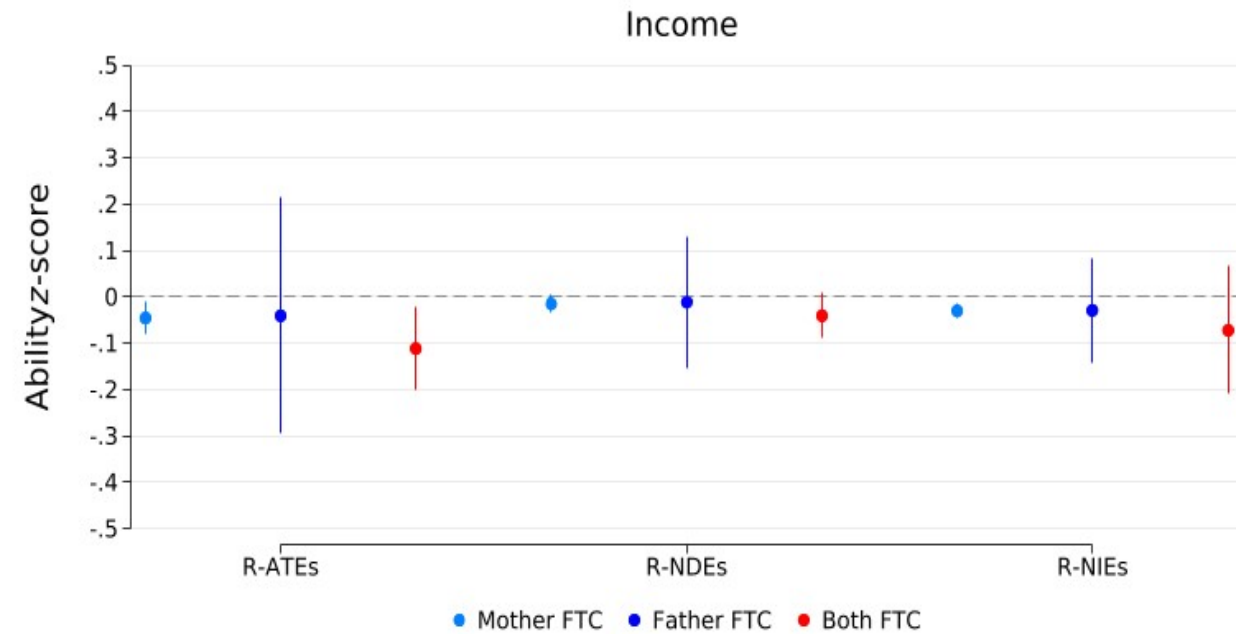
Parental conflict

MEDIATION – Results HEU*



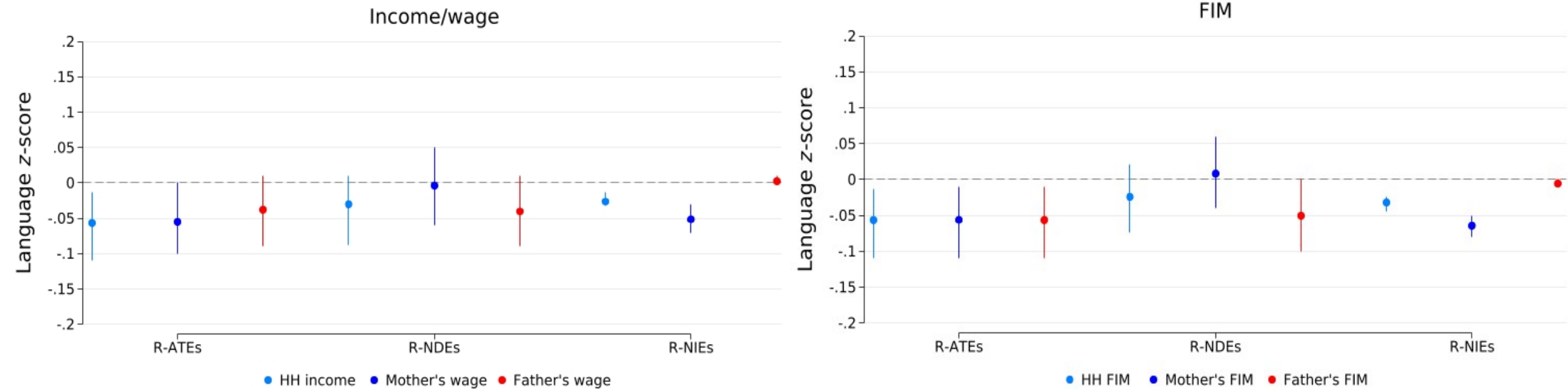
* Employees' sample

MEDIATION – Results HEU*

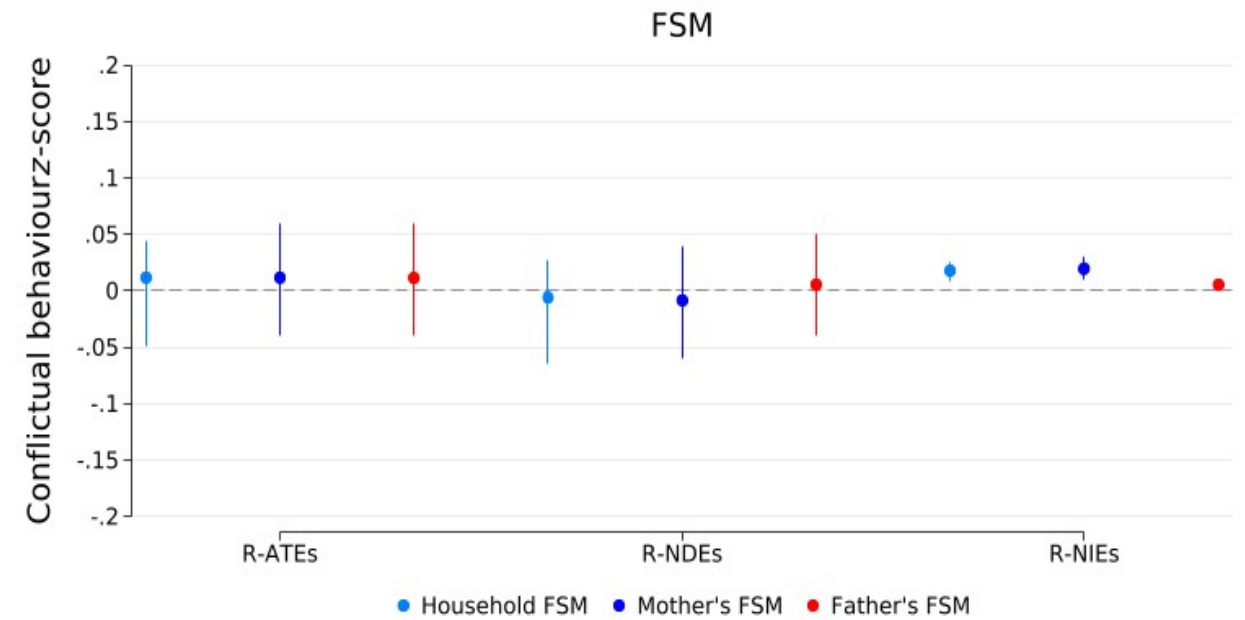
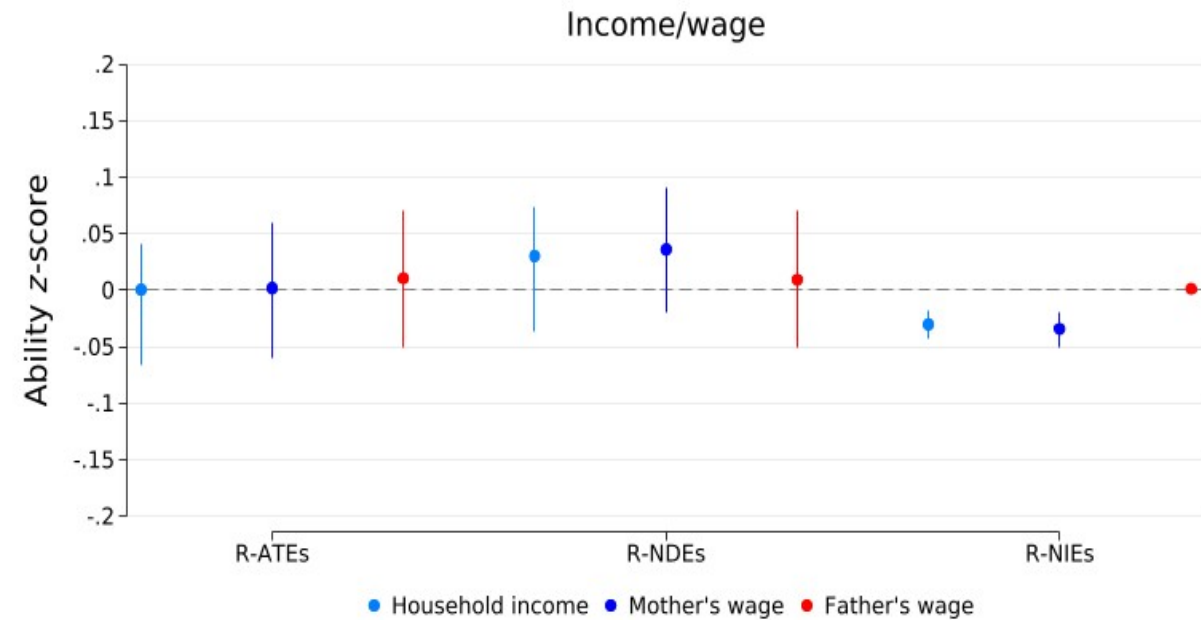


* Employees' sample

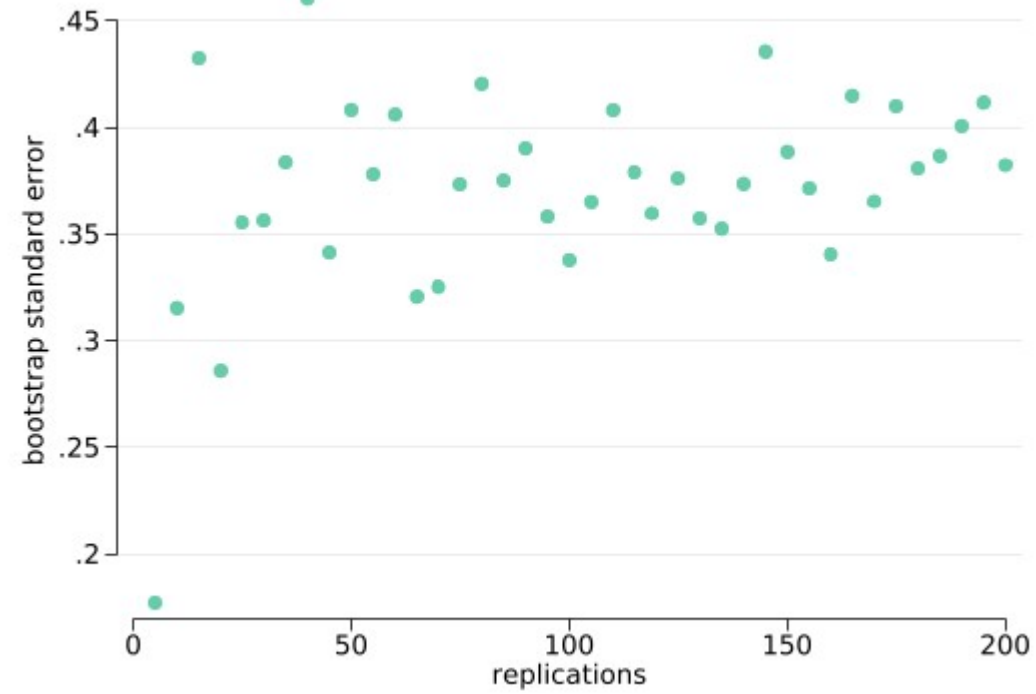
MEDIATION – Mothers & Fathers



MEDIATION – Mothers & Fathers



BOOTSTRAP CHECK



POLICY IMPLICATIONS

- Increase wages for temporary contracts.
- Limit the (persistent) use of temporary contracts.
- Incentivize hiring women and people with lower level of education with permanent contracts (accumulation of risks).
- Increase and extend unemployment benefits to reduce economic insecurity and allow long-term investments.