Can Mentoring Alleviate Family Disadvantage in Adolescence?

A Field Experiment to Improve Labor-Market Prospects

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Motivation

- Persistence of **inequality** across generations major concern worldwide
  (e.g., Black and Devereux 2011; Corak 2013; Autor 2014; Alvaredo et al. 2018)
  - Also in countries with extensive social welfare systems (high persistence in Germany)
- Defining characteristic of children from disadvantaged backgrounds
  - Lack powerful **family support** that other children receive by "accident of birth" (Heckman 2008)
- Policies face dire limitations
  - Neither schools nor family-targeted programs can fully **substitute or change parents**
- Successful interventions compensate lacking support already **early** in life
  (Cunha et al. 2006; Almond et al. 2018; Garcia et al. 2020; Kosse et al. 2020)
  - **Later** interventions in schools and labor markets much less successful (Cunha et al. 2006)
- Little attention: later interventions that provide personal support from other adults

  →**Mentoring programs:** provide support that disadvantaged family environment does not

This Paper

- Evaluate whether **mentoring** can improve **labor-market prospects** of disadvantaged **adolescents**
  - **RCT** of a nationwide German mentoring program

- **Main results**
  - **Low-SES** adolescents: mentoring significantly increases three outcome dimensions (highly predictive of later labor-market success)
    1. Math grades
    2. Patience and social skills
    3. Labor-market orientation

    → Combined outcome index increases by ½ s.d. after 1 year
  - Part of treatment effect mediated by establishing mentors as attachment figures who provide guidance for future
  - **Higher-SES** adolescents: program not effective

→ Individualized adult support that substitutes family support where it is lacking does help disadvantaged children at adolescent age

The Literature

- Mentoring as part of **comprehensive support programs**
  - Combined with financial incentives, academic tutoring, and additional educational services
  - Quantum Opportunity Program (Rodríguez-Planas 2012)
  - Pathways to Education (Oreopoulos et al. 2017; Lavecchia et al. 2020)
  - Chicago programs, e.g., Becoming a Man (Heller et al. 2017)
- **Pure mentoring programs**
  - Mostly non-experimental (reviews: DuBois et al. 2002; Rhodes 2008; Eby et al. 2008; Rodríguez-Planas 2014)
  - Main exception: **Big Brothers Big Sisters Program** (evaluated for 9- to 16-year-olds)
    - Outside school, adult mentors: effects on drug abuse, absenteeism (Grossman and Tierney 1998)
    - Within school, high-school student mentors: school achievement, not non-cognitive (Herrera et al. 2011)
    - Not particularly aimed at improving labor-market prospects
  - Two recent mentoring studies in **elementary-school** contexts
    - Effects on prosociality (Kosse et al. 2020) and truancy (Guryan et al. 2020)
- **Tutoring programs**
  - Distinct: not about relationships, but instruction of academic content (review: Nickow et al. 2020)

The Mentoring Program

- “Rock Your Life!”
  - Founded by group of university students in 2008, > 7,000 mentoring relationships
- **One-to-one mentoring:** each adolescent gets one voluntary university student
  - Adolescents (14-year-olds) in lowest-track schools in disadvantaged neighborhoods
  - 1-2 years of mentoring relationship (last years in school)
- **Main objective:** prepare for successful **transition into professional life**
  - From lower-secondary school to **apprenticeship** or upper-secondary school
  - Support adolescents to develop individual potential, personal skills, and school situation
- Core of program: regular mentor-mentee **meetings**
  - Focused on career orientation, school assistance, and leisure activities
  - Topics discussed: school issues (66%), leisure activities (57%), future in general (57%), occupational and educational future in particular (50%), personal issues (49%)
- Program organized as **social franchise**
  - Centralized concept and support structure
  - Implemented in 42 self-governing locations

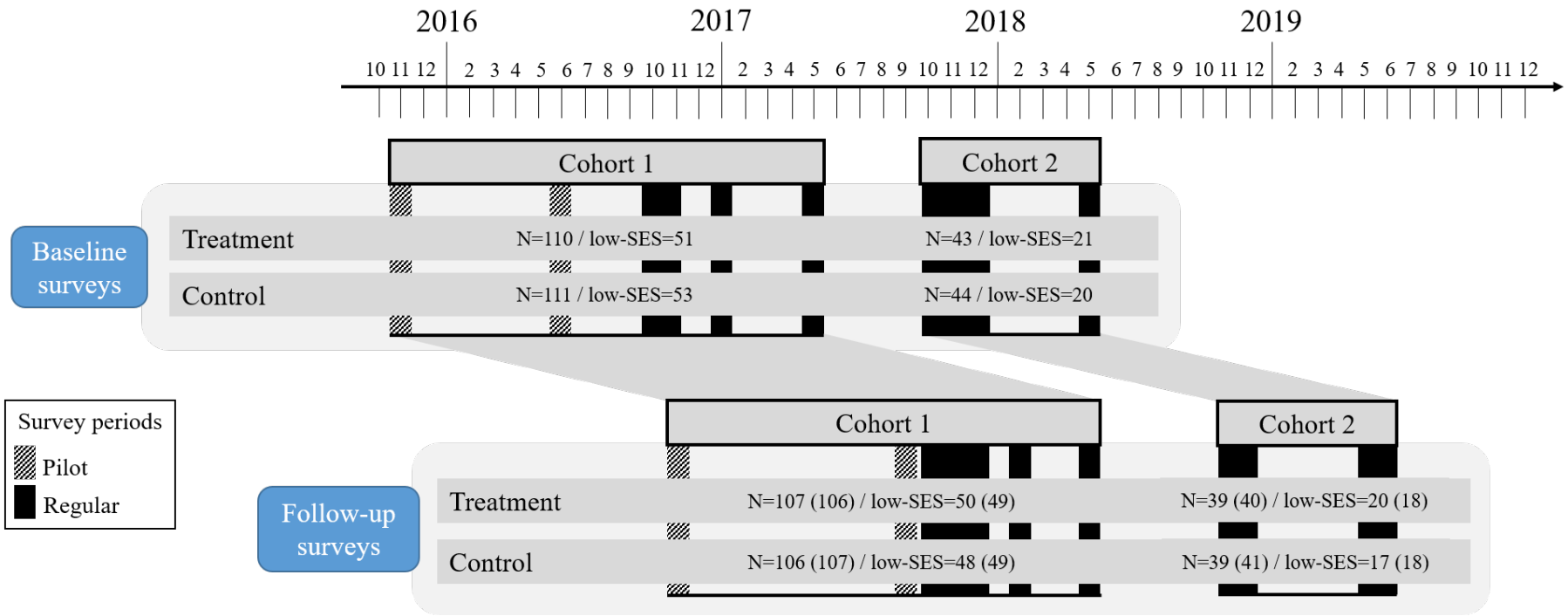
The RCT

- Data collection in 10 locations in two cohorts (plus pilots) in 2015-2020
- Randomization relied on **local program oversubscription**
  - RCT did not alter any elements of program or recruitment
- **Baseline survey** of all adolescents before program start (timing site-specific)
  - Pen-and-paper surveys administered by project team in school context
- **Random treatment assignment** within each site and cohort
  - **Pair-wise** matching design with rerandomization to ensure internal validity and increase efficiency (Bruhn and McKenzie 2009; Morgan and Rubin 2012; Imbens and Rubin 2015)

  →Treatment assignment within statistical twins
- **308 adolescents** in 10 city locations serving 19 schools in two cohorts
  - Main study periods: 1st cohort: 11/2016-5/2018; 2nd cohort: 11/2017-7/2019
- Substantial effort invested to reach participants one year after program start
  - More than 100 person-trips to participating schools for data collection

  →Recontact rate of **98.7%** (304 of 308 participants)
  - 94.5% participation in **follow-up survey**
  - 95.5% collection of **administrative grade** information from schools

Timeline of the Surveys



Notes: Figure shows data collection and sample sizes of the randomized sample of the evaluation. Sampling periods, which differ by mentoring site and cohort, are indicated by shaded bars for the pilot surveys and by solid bars for the regular surveys. Treatment started shortly after the baseline survey in each mentoring site. Dates and sample sizes by mentoring site and cohort are shown in Appendix Tables A1 and A2 for the baseline and follow-up surveys, respectively.

Balancing

	Control Mean (1)	Treatment Mean (2)	Difference *p*-value (3)	Difference by SES *p*-value (4)	Observations (5)
A. Outcome variables at baseline					
Overall index	0.00	-0.09	0.433	0.831	308
Components					
Math grade (administrative)	0.00	0.02	0.889	0.092	218
Math grade (admin.) missing dummy	0.28	0.30	0.747	0.885	308
Patience and social skills index	0.00	-0.07	0.548	0.793	308
Labor-market orientation index	0.00	-0.09	0.424	0.415	307
B. Components of outcome variables at baseline					
Patience and social skills index					
Patience	0.00	-0.02	0.891	0.449	308
Social skills index	0.00	-0.09	0.402	0.680	308
Prosociality	0.00	0.01	0.897	0.845	308
Trust	0.00	-0.05	0.665	0.917	307
Self-efficacy	0.00	-0.15	0.158	0.592	308
Labor-market orientation index					
Wants apprenticeship after school	0.36	0.37	0.889	0.836	267
Knows future career	0.00	-0.16	0.156	0.282	307
C. Matching and balancing variables for randomization at baseline					
Male	0.43	0.44	0.921	0.634	308
Age	13.99	13.97	0.851	0.705	308
Migrant	0.59	0.57	0.744	0.710	308
Books at home	1.73	1.67	0.461	0.104	308
Math grade (survey)	1.71	1.73	0.806	0.742	261
Math grade (survey) missing dummy	0.14	0.16	0.602	0.436	308
German grade (survey)	1.73	1.71	0.751	0.431	258
German grade (survey) missing dummy	0.15	0.17	0.721	0.376	308
English grade (survey)	1.79	1.83	0.626	0.093	258
English grade (survey) missing dummy	0.15	0.17	0.721	0.397	308
Received paid private teaching	0.18	0.21	0.529	0.745	308
Parental homework support	2.81	2.71	0.368	0.776	307
Big-5: Conscientiousness	3.35	3.26	0.327	0.132	308
Big-5: Neuroticism	2.91	2.98	0.413	0.729	308
D. Further control variables at baseline					
Big-5: Openness	3.41	3.51	0.337	0.421	308
Big-5: Extraversion	3.31	3.35	0.610	0.704	308
Big-5: Agreeableness	3.50	3.46	0.704	0.859	307
Higher-SES (>25 books at home)	0.53	0.53	0.995	–	308

Notes: Table shows group means after randomization for control group (column 1) and treatment group (column 2) in the baseline survey. Sample consists of all respondents in the matched pairs. Column 3 shows the *p*-value of the coefficient on the treatment indicator in a regression of the specific variable on the treatment indicator. Column 4 shows the *p*-value of an *F*-test of joint significance of the coefficients on the treatment indicator and the treatment indicator interacted with the higher-SES dummy in a regression of the specific variable on the treatment indicator, the higher-SES dummy, and their interaction.

Measuring Labor-Market Prospects

- **3 outcome dimensions** highly predictive of adolescents' later labor-market success
  - Shown in German PIAAC data

1. Cognitive component: **Math grades** in school
   - Administrative data; standardized, reversed order

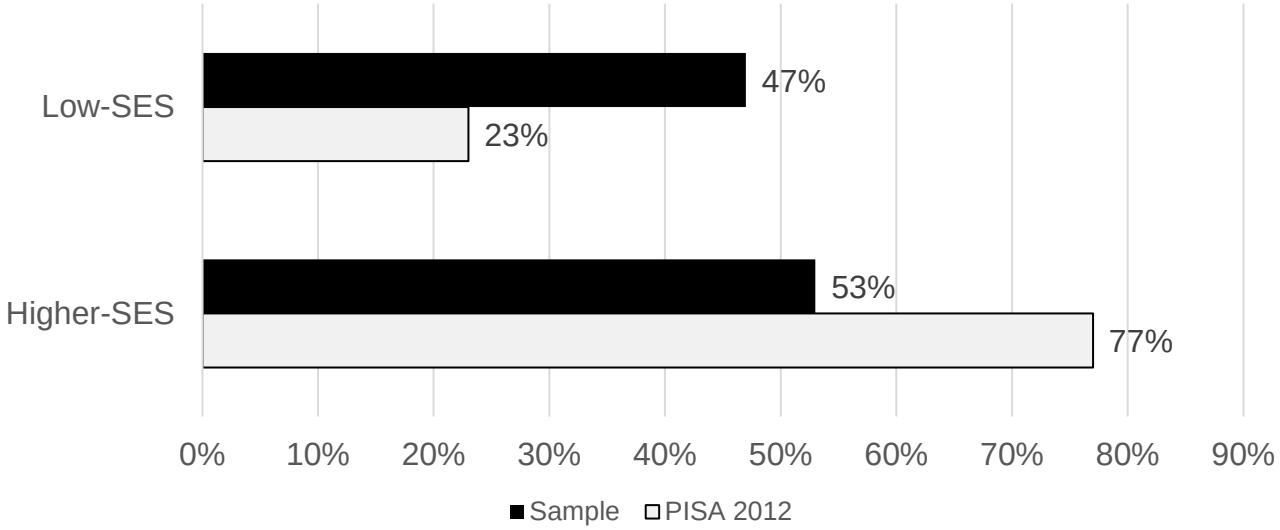
2. Behavioral component: **Patience and social skills**
   - Patience: future orientation (3 items)
   - Social skills: index
     - Prosociality: other-regarding behavior from SDQ (5 items)
     - Trust: general trust in others (1 item)
     - Self-efficacy: trust in own skills and abilities (4 items)

3. Volitional component: **Labor-market orientation**
   - Would like to do an apprenticeship after school
   - Know exactly which occupation to work in later in life

- Combined into one **index of labor-market prospects**
  - Equally weighted average of *z*-scores (Kling et al. 2007; Anderson 2008; Heller et al. 2017)
  - To capture overall program effect and alleviate concerns of multiple hypothesis testing

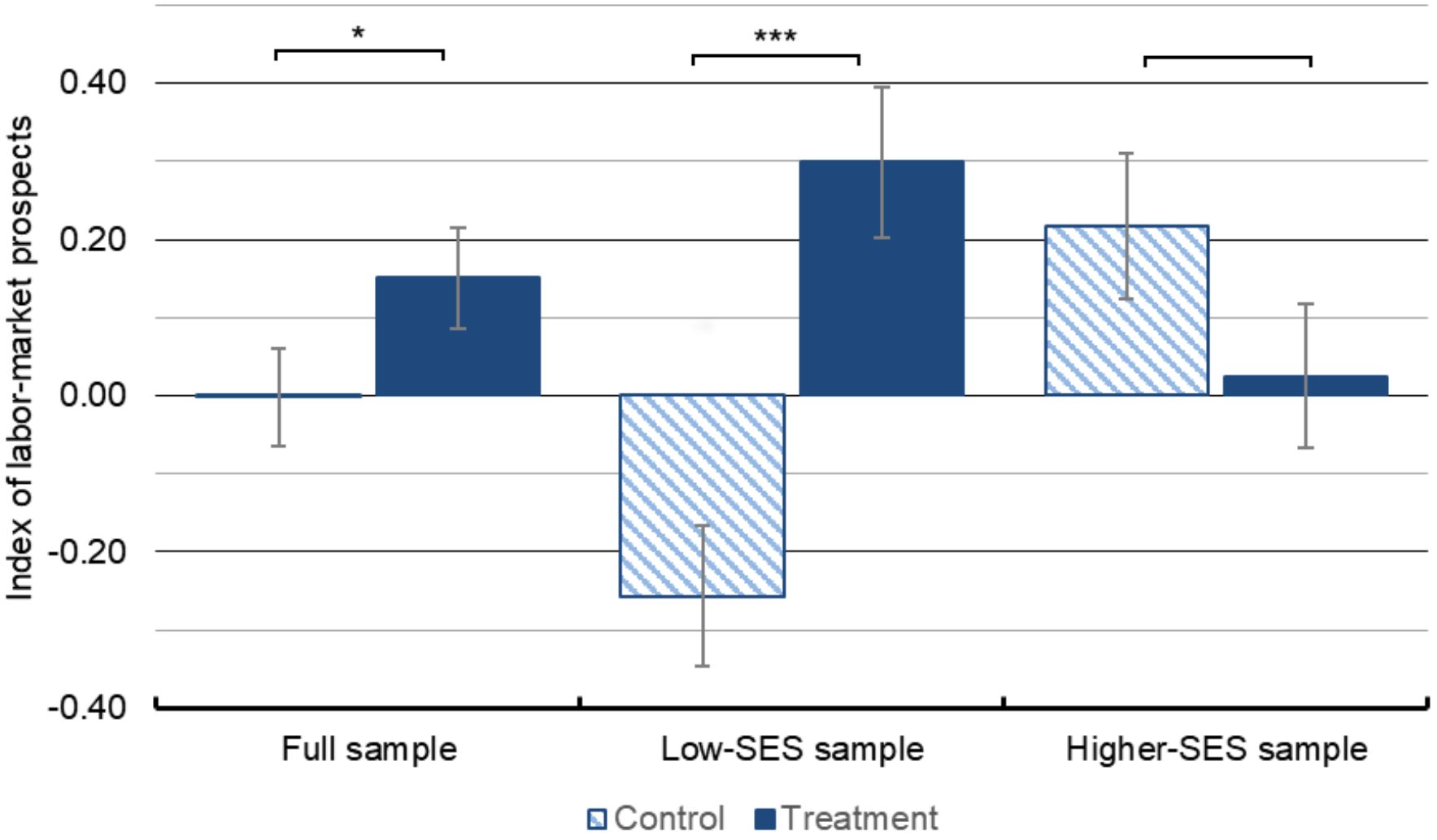
Characterizing Socioeconomic Background

- Heterogeneous effects by **SES**
  - Low-SES: main target group of program
  - Higher-SES: less lack of family support; potential crowd-out of other useful inputs
- Measuring SES: **books at home** (6 categories) (e.g., Schuetz et al. 2008)
  - **Low-SES:** ≤ 25 books at home (lowest 2 categories) = 47% of sample



  - Similar results for broader SES index based on books, parental education, and parental employment status

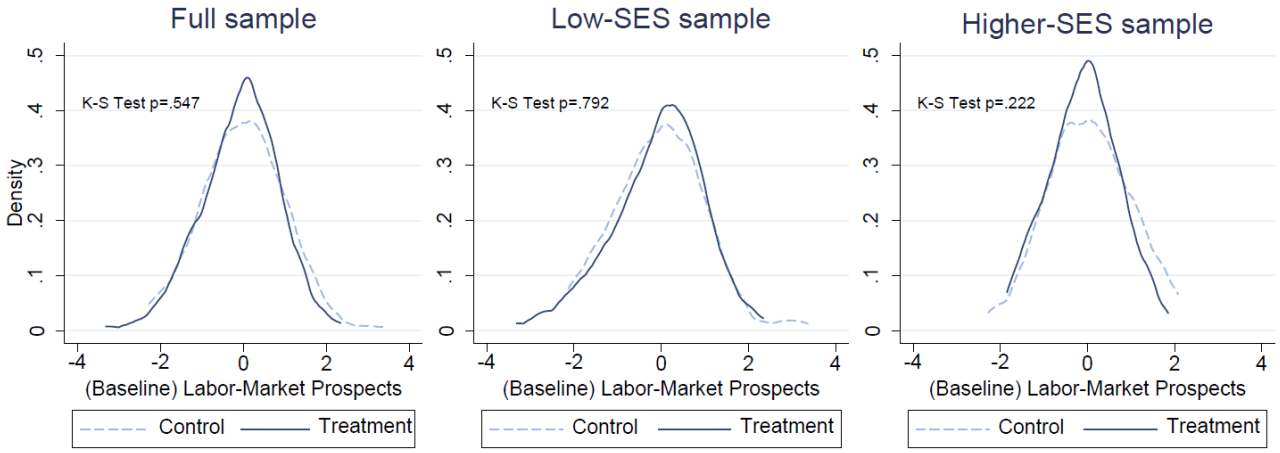
Effect of the Mentoring Program on Labor-Market Prospects



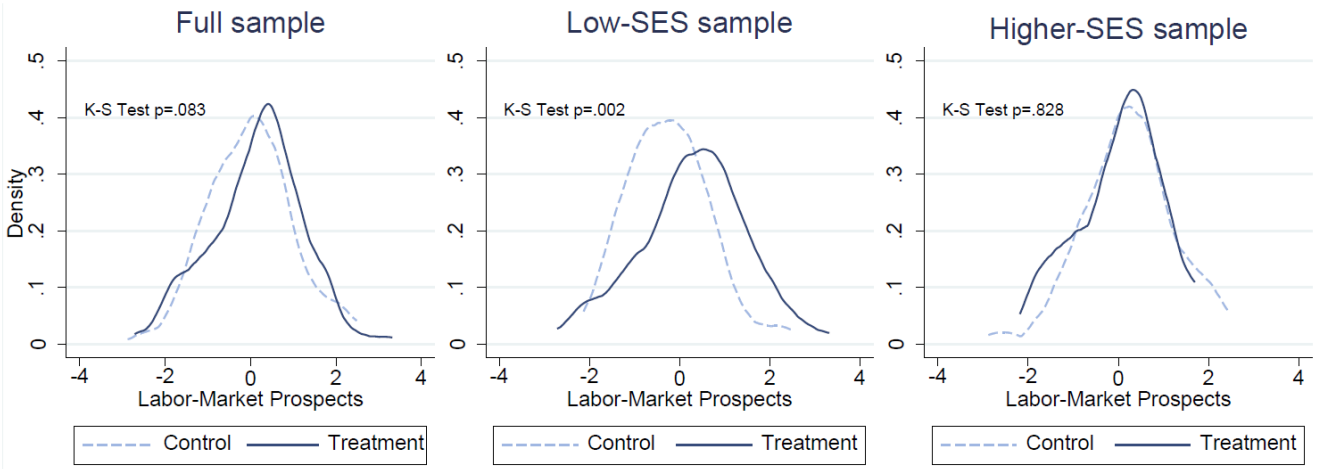
Notes: Figure shows the intention-to-treat effects (ITT) of the mentoring program on the index of labor-market prospects, separately for all respondents (left panel), low-SES respondents (those with at most 25 books at home at baseline) (middle panel), and higher-SES respondents (those with more than 25 books at home) (right panel). See specification in column 4 of Table 2 for details. The index of labor-market prospects is an equally weighted average of *z*-scores of three components: administrative math grade (reversed), patience and social skills index, and labor-market orientation index. Calculation of each *z*-score subtracts the score's control-group mean and divides by the control-group standard deviation. Error bars show robust standard errors. Significance levels of differences: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Program Effect on Distribution of Labor-Market Prospects

Panel A: Distribution of labor-market prospects in baseline survey



Panel B: Distribution of labor-market prospects in follow-up survey



Notes: Panel A shows the entire distribution of the index of labor-market prospects for the treatment and control groups in the baseline (pre-treatment) survey. Panel B shows the unconditional treatment effect on the entire distribution of the index of labor-market prospects in the follow-up survey. Samples: all respondents (left), low-SES respondents (those with at most 25 books at home at baseline) (middle), higher-SES respondents (those with more than 25 books at home) (right). The probability density functions are computed with an Epanechnikov kernel with bandwidth h derived from the Silverman (1986, pp. 47-48) rule) with $h = 0.9An^{-1/5}$, where *n* is the number of observations and $A = min(standard\ deviation, interquartile\ range/1.349)$. K-S Test: *p*-values for a Kolmogorov-Smirnov test of the equality of distributions of labor-market prospects of treatment and control groups.

Effect of the Mentoring Program on Index of Labor-Market Prospects

	ITT				TOT
	(1)	(2)	(3)	(4)	(5)
Treatment	0.549***	0.573***	0.545***	0.556***	0.684***
	(0.180)	*(0.144)*	*(0.136)*	*(0.143)*	*(0.170)*
	[0.000]	*[0.000]*	*[0.000]*	*[0.000]*	–
Treatment x Higher-SES	-0.751***	-0.701***	-0.659***	-0.748***	-0.895***
	(0.237)	*(0.197)*	*(0.209)*	*(0.220)*	*(0.251)*
	[0.001]	*[0.001]*	*[0.004]*	*[0.002]*	–
Higher-SES	0.476***	0.431***	0.113	0.182	0.201
	(0.158)	*(0.140)*	*(0.184)*	*(0.195)*	*(0.196)*
Outcome in t_0		0.580***	0.501***	0.459***	0.439***
		(0.053)	*(0.065)*	*(0.078)*	*(0.078)*
Randomization-pair fixed effects	No	No	Yes	Yes	Yes
Covariates	No	No	No	Yes	Yes
Observations	304	304	304	304	304
R^2	0.040	0.325	0.723	0.753	0.754
Kleibergen-Paap F statistic					141.50
Treatment effect for Higher-SES	-0.202	-0.128	-0.114	-0.192	-0.211
	(0.154)	*(0.135)*	*(0.137)*	*(0.137)*	*(0.151)*
SES gap			0.476		

Notes: Table shows intention-to-treat (ITT) effects and treatment-on-treated (TOT) effects of the mentoring program on the index of labor-market prospects. The index is an equally weighted average of *z*-scores of three components: administrative math grade (reversed), patience and social skills index, and labor-market orientation index. Calculation of each *z*-score subtracts the score's control-group mean and divides by the control-group standard deviation. Columns 1-4: ordinary least squares estimates; column 5: two-stage least squares estimates. In the TOT estimation in column 5, *Treatment* indicates program take-up (one if mentor and mentee have met at least once, zero otherwise), which is instrumented by the random treatment assignment. *SES gap* is calculated as the coefficient on higher-SES background in a regression of the outcome on the higher-SES indicator in the control-group sample in the follow-up survey (see column 1). Covariates are from the baseline survey and include: gender, age, migrant, received paid private teaching, parental homework support, and Big-5 personality traits. Dummies for missing values in t_0 are included. Robust standard errors in parentheses. Randomization inference (RI) *p*-values in square brackets, obtained from RI with 1,000 permutations, assigning the treatment status randomly within randomization pairs. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Effect of the Mentoring Program on Math Achievement

	Math grade	Dummies of specific math grades			
		"very good"	"good" or better	"satisfied" or better	"pass" or better
	(1)	(2)	(3)	(4)	(5)
Treatment	0.294**	0.129*	0.150*	0.153**	0.042
	(0.142)	*(0.076)*	*(0.083)*	*(0.073)*	*(0.057)*
	[0.034]	*[0.103]*	*[0.088]*	*[0.035]*	*[0.498]*
Treatment x Higher-SES	-0.467**	-0.222*	-0.263*	-0.136	-0.051
	(0.230)	*(0.119)*	*(0.139)*	*(0.121)*	*(0.076)*
	[0.036]	*[0.061]*	*[0.057]*	*[0.217]*	*[0.516]*
Higher-SES	0.283	0.168*	0.156	0.094	-0.014
	(0.196)	*(0.095)*	*(0.101)*	*(0.104)*	*(0.070)*
Outcome in t_0	0.488***	0.580***	0.371***	0.261**	0.135
	(0.100)	*(0.125)*	*(0.114)*	*(0.127)*	*(0.168)*
Randomization-pair fixed effects	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes
Observations	294	294	294	294	294
R^2	0.775	0.653	0.694	0.697	0.680
Treatment effect for Higher-SES	-0.172	-0.093	-0.113	0.017	-0.010
	(0.145)	*(0.071)*	*(0.089)*	*(0.080)*	*(0.042)*
SES gap	0.553	0.222	0.217	0.211	0.080
Control-group mean in follow-up	0.000	0.195	0.432	0.608	0.865

Notes: Table shows ITT effects of the mentoring program on administrative math grades. Column 1: grades are standardized by subtracting the control-group mean and dividing by the control-group standard deviation; order of grades is reversed so that higher values indicate better outcomes. Columns 2-5: dummies indicating achievement of at least the specified grade. Ordinary least squares estimates. *SES gap* is calculated as the coefficient on higher-SES background in a regression of the respective outcome on the higher-SES indicator in the control-group sample in the follow-up survey. *Control-group mean* indicates the mean of the respective outcome in the control-group sample in the follow-up survey. Covariates are from the baseline survey and include: gender, age, migrant, received paid private teaching, parental homework support, and Big-5 personality traits. Dummies for missing values in t_0 are included. Robust standard errors in parentheses. Randomization inference (RI) *p*-values in square brackets, obtained from RI with 1,000 bootstrap replications, assigning the treatment status randomly within randomization pairs. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Effect of the Mentoring Program on Patience and Social Skills

	Patience and social skills	Patience	Social skills			
	Index	Index	Index	Components		
				Prosociality	Trust	Self-efficacy
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.439***	0.441**	0.217	0.179	0.095	0.151
	(0.152)	*(0.175)*	*(0.177)*	*(0.181)*	*(0.211)*	*(0.181)*
	[0.003]	*[0.019]*	*[0.240]*	*[0.310]*	*[0.628]*	*[0.408]*
Treatment x Higher-SES	-0.587**	-0.536*	-0.321	-0.296	-0.082	-0.285
	(0.255)	*(0.279)*	*(0.240)*	*(0.266)*	*(0.288)*	*(0.250)*
	[0.018]	*[0.061]*	*[0.207]*	*[0.273]*	*[0.780]*	*[0.266]*
Higher-SES	0.164	0.181	0.070	0.151	-0.187	0.119
	(0.227)	*(0.226)*	*(0.224)*	*(0.212)*	*(0.270)*	*(0.224)*
Outcome in t_0	0.261**	0.262***	0.459***	0.419***	0.373***	0.447***
	(0.103)	*(0.086)*	*(0.117)*	*(0.126)*	*(0.112)*	*(0.094)*
Randomization-pair fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes	Yes	Yes
Observations	291	291	291	290	290	291
R^2	0.695	0.648	0.701	0.730	0.601	0.679
Treatment effect for Higher-SES	-0.148	-0.095	-0.104	-0.118	0.013	-0.134
	(0.174)	*(0.181)*	*(0.140)*	*(0.161)*	*(0.166)*	*(0.142)*
SES gap	0.389	0.270	0.320	0.254	0.077	0.313

Notes: Table shows ITT effects of the mentoring program on patience and social skills. Variables and indices are standardized by subtracting the control-group mean and dividing by the control-group standard deviation. Ordinary least squares estimates. *SES gap* is calculated as the coefficient on higher-SES background in a regression of the respective outcome on the higher-SES indicator in the control-group sample in the follow-up survey. Covariates are from the baseline survey and include: gender, age, migrant, received paid private teaching, parental homework support, and Big-5 personality traits. Dummies for missing values in t_0 are included. Robust standard errors in parentheses. Randomization inference (RI) *p*-values in square brackets, obtained from RI with 1,000 bootstrap replications, assigning the treatment status randomly within randomization pairs. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Effect of the Mentoring Program on Labor-Market Orientation

	Index	Wants apprenticeship after school	Knows future career
	(1)	(2)	(3)
Treatment	0.291*	0.216***	0.007
	(0.167)	*(0.083)*	*(0.162)*
	[0.066]	*[0.019]*	*[0.968]*
Treatment x Higher-SES	-0.299	-0.280**	0.105
	(0.275)	*(0.137)*	*(0.269)*
	[0.268]	*[0.041]*	*[0.684]*
Higher-SES	-0.086	0.116	-0.350
	(0.220)	*(0.109)*	*(0.223)*
Outcome in t_0	0.382***	0.490***	0.319***
	(0.089)	*(0.084)*	*(0.081)*
Randomization-pair fixed effects	Yes	Yes	Yes
Covariates	Yes	Yes	Yes
Observations	291	290	291
R^2	0.696	0.667	0.693
Treatment effect for Higher-SES	-0.008	-0.065	0.111
	(0.173)	*(0.091)*	*(0.169)*
SES gap	-0.077	-0.031	-0.059
Control-group mean in follow-up	0.000	0.444	0.000

Notes: Table shows ITT effects of the mentoring program on labor-market orientation. Variables and indices are standardized by subtracting the control-group mean and dividing by the control-group standard deviation. Ordinary least squares estimates. *SES gap* is calculated as the coefficient on higher-SES background in a regression of the respective outcome on the higher-SES indicator in the control-group sample in the follow-up survey. *Control-group mean* indicates the mean of the respective outcome in the control-group sample in the follow-up survey. Covariates are from the baseline survey and include: gender, age, migrant, received paid private teaching, parental homework support, and Big-5 personality traits. Dummies for missing values in t_0 are included. Robust standard errors in parentheses. Randomization inference (RI) *p*-values in square brackets, obtained from RI with 1,000 bootstrap replications, assigning the treatment status randomly within randomization pairs. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Additional Results

- Additional analysis of **effect heterogeneity**
  - By migrant status (58% adolescents with migrant background)
  - By single-parenthood status
  - By gender
  - By three SES groups: low, medium, high
- Tests for **spillover** effects on non-participating peers
  - No effect heterogeneity by number of treated adolescents in school or class
- **Robustness**
  - Attrition analysis
  - Broader SES index (incl. parental background and employment)
  - Broader index of labor-market orientation
  - Leave-one-site-out estimation
  - Site-specific (low-SES) treatment effects: positive for *each* individual site
  - Restriction to sample of matched pairs (¾) where both pupils attend same classroom

Analysis of Mechanisms

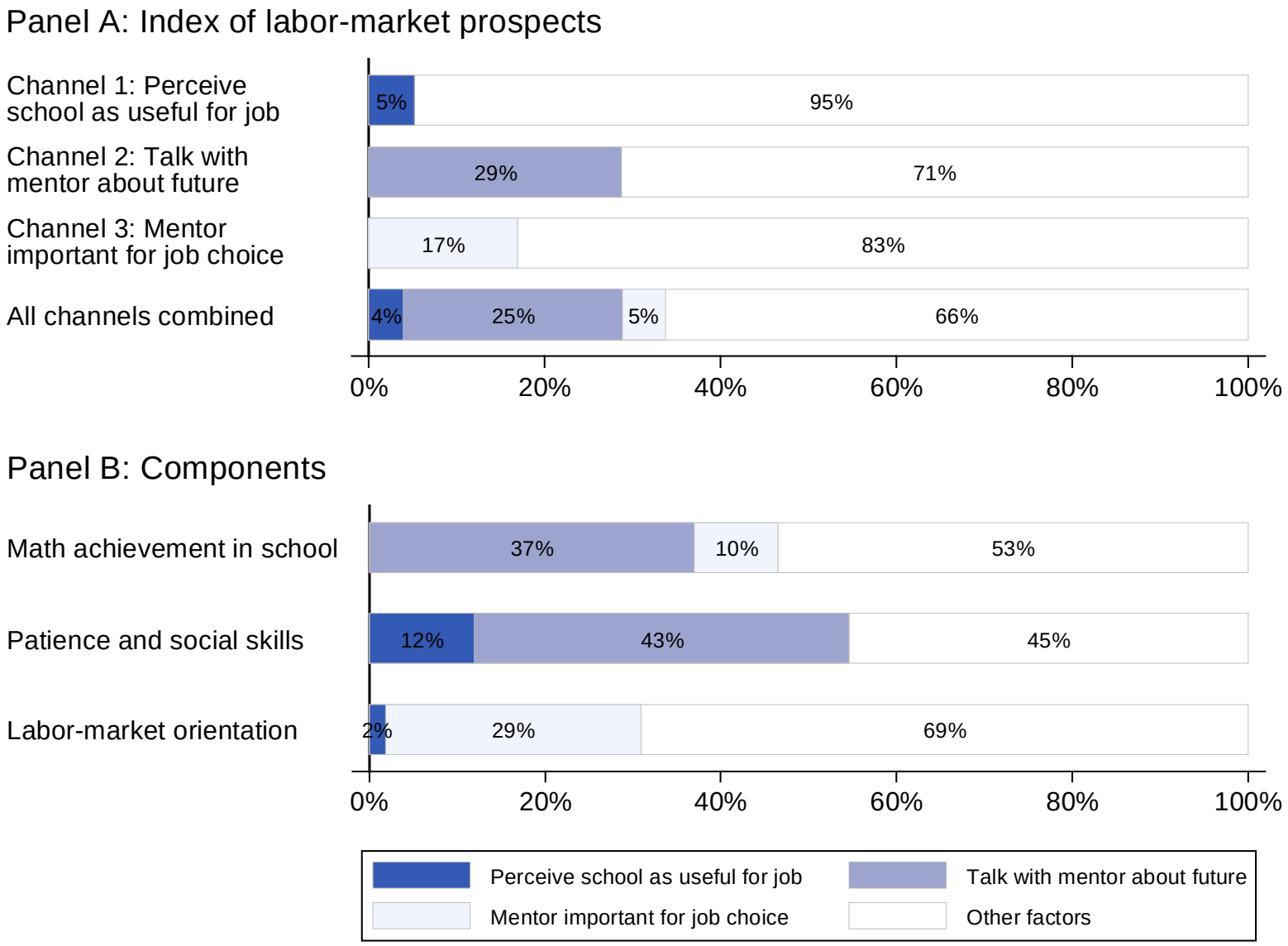
- **Mediation analysis**
  - Following approach of Heckman and Pinto (2015)
  - Low-SES sample
    - Aspects of mentor-mentee relationship that may facilitate transition into professional life
      1. Perceive **school** as useful for job
      2. Talk with mentor about **future**
      3. Mentor important for **job** choice
  - Higher-SES sample
    - Crowding-out effects of participation in social school activities and of parental attachment
    - Account for half of (small and insignificant) negative treatment effect

- Descriptive analysis of **mentoring relationships** of treated adolescents
  - No SES differences in frequency, duration, or content of meetings
  - Low-SES adolescents more likely than higher-SES to view mentor as helpful for improving school performance and for solving non-school-related problems

- Take-aways on mechanisms
  - Mentoring successful only if adolescents lack adult support

  →Successfully establishing additional attachment figure with whom to can talk about future
  - Qualitative factors of relationships matter more than mere program intensity

Share of Low-SES Treatment Effect Attributed to Mediators



Notes: Figure shows the share of the intention-to-treat effects (ITT) on the index of labor-market prospects (panel A) and on its three components (panel B) in the low-SES sample attributed to the respective mediator in a mediation analysis. Panel B includes all channels combined (mediators with insignificant negative contributions excluded). See Appendix G for details.

Evidence on the Mentoring Relationships

	All	Low-SES	Higher-SES	Difference	
				(2)-(3)	*p*-value
	(1)	(2)	(3)	(4)	(5)
A. Qualitative factors of relationship					
Mentee better at school because of mentor	0.20	0.28	0.14	0.14	0.035
Mentor helped solve non-school-related problems	0.30	0.38	0.23	0.16	0.044
Mentor is role model	0.27	0.32	0.22	0.11	0.153
Parents like that their child has mentor	0.54	0.46	0.61	-0.16	0.060
Mentee had a say in which mentor he/she got	0.47	0.43	0.50	-0.07	0.418
Friends support mentee having a mentor	0.26	0.25	0.27	-0.02	0.822
Mentee and mentor are good friends	0.49	0.51	0.47	0.04	0.622
Mentee satisfied with mentoring relationship	0.58	0.56	0.61	-0.05	0.555
B. Initiation and continuation of relationship					
Mentee has met mentor at least once	0.86	0.82	0.90	-0.08	0.150
Mentoring relationship still exists	0.63	0.56	0.70	-0.15	0.059
Mentoring relationship still exists (conditional on mentor/mentee ever met)	0.73	0.68	0.77	-0.09	0.261
C. Meeting frequency and duration					
Meet at least once per month (in person)	0.50	0.50	0.50	0.00	1.00
Meet at least once per month (all channels)	0.61	0.57	0.66	-0.09	0.256
Duration of meetings (hours)	3.13	2.93	3.31	-0.37	0.386
D. Topics discussed during meetings					
School	0.66	0.64	0.67	-0.03	0.676
Leisure activities	0.57	0.46	0.67	-0.21	0.012
Future in general	0.57	0.57	0.57	0.00	0.995
Occupational and educational future	0.50	0.49	0.51	-0.02	0.808
Personal issues	0.49	0.48	0.50	-0.02	0.795
Family issues	0.25	0.26	0.24	0.02	0.741
Other topics	0.13	0.10	0.16	-0.06	0.313
Don't know	0.20	0.23	0.17	0.06	0.367
Mentee can decide what is done in meetings	0.62	0.59	0.64	-0.05	0.529

Notes: Table shows group means of variables characterizing the mentoring relationships, based on the follow-up questionnaires of adolescents in the treatment group. Sample: column 1: all respondents (n=153); column 2: low-SES respondents (n=72); column 3: higher-SES respondents (n=81). Column 5 shows the p-value of the coefficient on the higher-SES indicator in a regression of the specific variable on a higher-SES indicator.

Contribution to the Literature

- Literature on **mentoring** interventions to help disadvantaged youths
  - Surprisingly little evidence on causal effects on **labor-market** prospects
- Recent RCTs: interventions with mentoring as part of **comprehensive support program** (Rodríguez-Planas 2012; Heller et al. 2017; Oreopoulos et al. 2017; Lavecchia et al. 2020)
  - Combined with financial incentives, academic tutoring, and additional educational services
  - Hard to assign treatment effects to any specific component
  - Here: pure mentoring program → effectiveness of relatively low-intensity, low-cost program
- Most available studies on **pure mentoring programs** are non-experimental (overviews: DuBois et al. 2002; Rhodes 2008; Eby et al. 2008; Rodríguez-Planas 2014)
  - Main exception: **Big Brothers Big Sisters Program** (evaluated for 9- to 16-year-olds)
    - Outside-school delivery with adult mentors: effects on drug abuse, school absenteeism, and family relationships (Grossman and Tierney 1998)
    - Within-school delivery with mostly high-school student mentors: effects on academic performance, but not on effort, self-worth, family relationships, or problem behavior (Herrera et al. 2011)
    - Program had no particular aim to improve labor-market prospects
      - Outcome of core interest in economics that is goal of our studied mentoring program and subject of our evaluation
  - Two recent mentoring studies in **elementary-school** contexts
    - Effects on prosociality (Kosse et al. 2020) and truancy (Guryan et al. 2020)

Conclusions

- **Labor-market prospects** of highly **disadvantaged youths** are malleable
  - Low-SES adolescents: mentoring program increases labor-market prospects by > ½ s.d.
    - 3 components capturing cognitive, behavioral, and volitional aspects
  - Apparently, mentors able to substitute for some elements of parental support that many disadvantaged youths are lacking
  - Mediation analysis: aspects of mentor-mentee relationship that help develop career vision, esp. establishing mentors as attachment figures who provide guidance for future
- Program not effective for **higher-SES** adolescents
  - Lack of adult support not a major handicap for relatively less disadvantaged youths
  - Program participation may even crowd out social school activities and parental attachment
- **Benefit-cost ratio** (projected lifetime labor-market returns to better school grades)
  - 15-to-1 for untargeted program to 31-to-1 for program targeted at low-SES adolescents
- **Scalability** of successful mentoring programs
  - Strong heterogeneity by SES → importance of **targeting** those who lack family support
  - Nationwide franchise grew from 1 to over 40 sites, RCT not focused on selected site → scalability **beyond one specific location** (but restricted to cities with universities)

Thank you for your attention!

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