

Can upper secondary education make a difference for political participation?

The effect of general or vocational education on turnout

Marcus Österman

marcus.osterman@statsvet.uu.se

Department of Government

Uppsala University

Jonas Larsson Taghizadeh

jonas.larsson@statsvet.uu.se

Department of Government

Uppsala University

Swedish Register-Based Research Summit, Stockholm,
9 November 2022

Introduction

- The link between education and political participation is one of the most well-researched subjects in political science / political sociology. But mostly focused on the length of education—not on how curriculum and type may matter.
- General and vocational tracks at the secondary level represents a fundamental educational division in most educational systems, affecting curricula, peers and opportunities for further education.
- Research on how these tracks affect political participation is relatively sparse. Difficult to identify causal effects.

Introduction

- The link between education and political participation is one of the most well-researched subjects in political science / political sociology. But mostly focused on the length of education—not on how curriculum and type may matter.
- General and vocational tracks at the secondary level represents a fundamental educational division in most educational systems, affecting curricula, peers and opportunities for further education.
- Research on how these tracks affect political participation is relatively sparse. Difficult to identify causal effects.
- RQ: *Does general or vocational secondary education make a difference for political participation?*
- Leverage a regression discontinuity design using Swedish register data of the effects on voter turnout.

Theory

- General tracks expected to be positive for political participation:
 - A theoretical curriculum that stimulates cognitive development. More social science. Spurs political knowledge, interest and efficacy.
 - Peers with more highly educated and politically engaged parents. More political discussions. Recruitment.
 - Further education and labour market effects.

Theory

- General tracks expected to be positive for political participation:
 - A theoretical curriculum that stimulates cognitive development. More social science. Spurs political knowledge, interest and efficacy.
 - Peers with more highly educated and politically engaged parents. More political discussions. Recruitment.
 - Further education and labour market effects.
- But also possible negative effects:
 - A theoretical curriculum may be too demanding and result in that students drop out (cf. Hall 2012).
 - High-performing peers may be negative for the self efficacy of low-performing students. The Big-Fish-Small-Pond-effect.

Theory

- General tracks expected to be positive for political participation:
 - A theoretical curriculum that stimulates cognitive development. More social science. Spurs political knowledge, interest and efficacy.
 - Peers with more highly educated and politically engaged parents. More political discussions. Recruitment.
 - Further education and labour market effects.
- But also possible negative effects:
 - A theoretical curriculum may be too demanding and result in that students drop out (cf. Hall 2012).
 - High-performing peers may be negative for the self efficacy of low-performing students. The Big-Fish-Small-Pond-effect.
- Education-as-a-proxy: “Effects” of secondary track only capture the importance of students’ background and growing-up conditions (Persson 2015; Willeck & Mendelberg 2022).

Previous empirical research

- Most empirical studies support that general education is positive for political participation (Van de Werfhorst 2007; Witschge et al. 2019; Janmaat et al 2014).
 - Limitations: correlational evidence (cross-sectional or panel data). May overestimate the effects of educational track on turnout by capturing student selection effects.

Previous empirical research

- Most empirical studies support that general education is positive for political participation (Van de Werfhorst 2007; Witschge et al. 2019; Janmaat et al 2014).
 - Limitations: correlational evidence (cross-sectional or panel data). May overestimate the effects of educational track on turnout by capturing student selection effects.
- Two Swedish quasi-experimental studies on extending vocational tracks by one year and increasing the general content (Persson and Oscarsson 2010; Lindgren et al. 2019).
 - No average effect but the latter found a positive effect for students from weak SE backgrounds.
 - However, not a test of the difference between attending a full general or vocational programme.

Upper secondary education in Sweden

- 9 years of compulsory schooling. 3 years of non-compulsory upper secondary, which almost all students start (>98 %).
- Students can choose among six general programmes (e.g. natural science; social science) and a large number of vocational programmes (e.g. construction, health-care).
- The general programmes all result in basic eligibility for higher education and contain much more general subjects, e.g. math, social science.
- Students with parents with higher (tertiary) education are overrepresented on general programmes (53 vs. 27 percent).
- Students choose programme and school during ninth grade. If a programme on a school is oversubscribed, slots are allocated based on the grades from lower secondary school.

Design

- Regression discontinuity design, exploiting the admission process to upper secondary school in Sweden.
- Focus on students who apply to a general programme as their first (or higher-ranked option) and a vocational programme as their next lower-ranked option.
- Only oversubscribed/competitive general programmes.
- Student grade-point average (GPA) decides whether admitted or not. Exogenous (quasi-random) variation in programme type close to GPA cutoff for general programme admission.
- Strong support for causal inference.

Data and model

- Swedish administrative population data.
- Applications to upper secondary 2008–2015.
 - Ranking of programmes, Student GPA, results of admission.
- Dependent variables
 - Turnout in the general election 2018 and the EP election 2019.
- Add socio-economic data on students and parents.

RD setup

- Admission (treatment assignment) does not necessarily imply starting a general prog (treatment).
 - A student can choose to not start upper secondary.
 - A student can become admitted through reserve admission. (for which we lack data).
 - A student may switch programme. Should follow GPA-ranking.

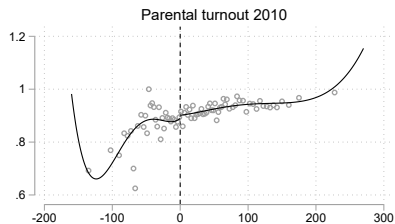
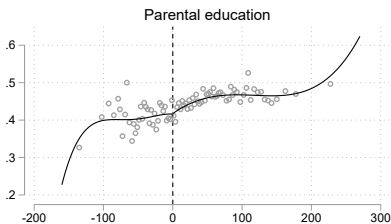
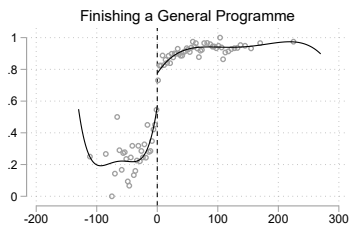
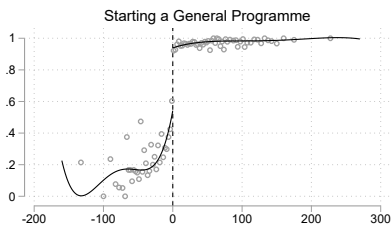
RD setup

- Admission (treatment assignment) does not necessarily imply starting a general prog (treatment).
 - A student can choose to not start upper secondary.
 - A student can become admitted through reserve admission. (for which we lack data).
 - A student may switch programme. Should follow GPA-ranking.
- Fuzzy RD: instrument starting a general programme with being admitted to a general programme (rather than a vocational programme). Estimating the effect on compliers.

RD setup

- Admission (treatment assignment) does not necessarily imply starting a general prog (treatment).
 - A student can choose to not start upper secondary.
 - A student can become admitted through reserve admission. (for which we lack data).
 - A student may switch programme. Should follow GPA-ranking.
- Fuzzy RD: instrument starting a general programme with being admitted to a general programme (rather than a vocational programme). Estimating the effect on compliers.
- Running variable, $c = GPA_{student} - GPA_{cutoff}$.
 - $c \geq 0$ admitted to general prog.
 - $c < 0$ admitted to vocational prog.
- Local-linear RD estimator, triangular kernel weighting, data-driven MSE-optimal bandwidth (Cattaneo et al 2019) .
Pre-determined covariates: county and year FEs.

Validating RD



○ Sample average within bin

— Polynomial fit of order 4

Validating RD

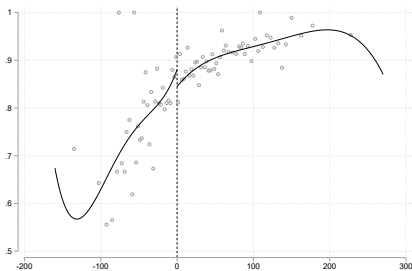
Table: Fuzzy RD estimates on education and placebo outcomes

| | (1) Start Gen Prog 1st stage | (2) Grad Gen Prog Fuzzy RD | (3) Par HE Fuzzy RD | (4) Par turnout Fuzzy RD |
|-----------------|------------------------------------|----------------------------------|---------------------------|--------------------------------|
| RD Est | 0.290*** (0.0438) | 0.717*** (0.0388) | -0.000872 (0.0284) | 0.0588 (0.0495) |
| Observations | 14,219 | 11,626 | 14,017 | 12,888 |
| Conventional CI | [.204; .376] | [.641; .793] | [-.0565; .0548] | [-.0382; .156] |
| Robust CI | [.156; .353] | [.585; .777] | [-.075; .063] | [-.0588; .177] |
| Robust P-value | 4.48e-07 | 5.02e-44 | .865 | .325 |

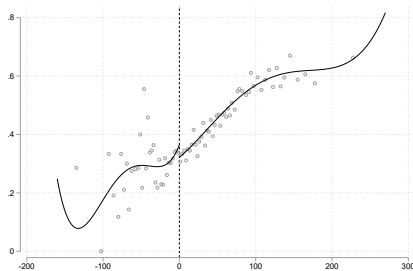
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Conventional SEs in parentheses. Robust bias-corrected CIs and P-values (Calonico et al 2020).

RD results

Figure: RD plots on turnout



(a) General National Election in 2018



(b) European Election in 2019

RD results

Table: Fuzzy RD estimates of the effect of starting a general programme (in contrast to a vocational programme) on turnout

| | (1) National elec 2018 | (2) EP elec 2019 | (3) Nat 2018 & EP 2019 |
|-----------------|---------------------------|---------------------|---------------------------|
| RD Estimate | -0.0877* (0.0455) | -0.106 (0.0678) | -0.111** (0.0468) |
| Observations | 14,056 | 13,985 | 14,090 |
| Conventional CI | [-.177; .00152] | [-.238; .0273] | [-.202; -.0188] |
| Robust CI | [-.208; -.00684] | [-.34; -.00315] | [-.281; -.0565] |
| Robust P-value | .0363 | .0459 | .00321 |

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Conventional SEs in parentheses. Robust bias-corrected CIs and P-values (Calonico et al 2020).

RD results: Mechanisms

Table: Fuzzy RD estimates of the effect of starting a general programme on secondary education outcomes

| | (1) Grad 3y | (2) Grad 5y | (3) GPA rel yr | (4) GPA rel prog |
|---------|-----------------------|----------------------|------------------------|-----------------------|
| RD Est | -0.151*** (0.0537) | -0.133** (0.0626) | -0.0948*** (0.0338) | -0.181*** (0.0408) |
| Obs | 14,219 | 12,292 | 13,267 | 13,267 |
| Conv CI | [-.26; -.046] | [-.26; -.01] | [-.16; -.028] | [-.26; -.1] |
| Rob CI | [-.34; -.081] | [-.29; -.0078] | [-.18; -.011] | [-.28; -.074] |
| Rob P-v | .0015 | .038 | .027 | .00075 |

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Conventional SEs in parentheses. Robust bias-corrected CIs and P-values (Calonico et al 2020).

Conclusion & Discussion

- No positive effect of starting a general programme on turnout. Indications of a negative effect.
- Negative effect possibly a result of that students on the margin between general and vocational programmes perform poorly on general programmes.

Conclusion & Discussion

- No positive effect of starting a general programme on turnout. Indications of a negative effect.
- Negative effect possibly a result of that students on the margin between general and vocational programmes perform poorly on general programmes.
- Effects of general education might very well be negative.
- Tracking may not reinforce political inequalities.

Conclusion & Discussion

- No positive effect of starting a general programme on turnout. Indications of a negative effect.
- Negative effect possibly a result of that students on the margin between general and vocational programmes perform poorly on general programmes.
- Effects of general education might very well be negative.
- Tracking may not reinforce political inequalities.
- Generalization: a local effect?
 - Among vocational students, the students applying to both general and vocational programmes are positively selected. Possibly more negative effects among other vocational students.
 - The Swedish upper secondary level has a medium-level of tracking.