Inequality in Educational Attainment
Peruvian case study

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Outline

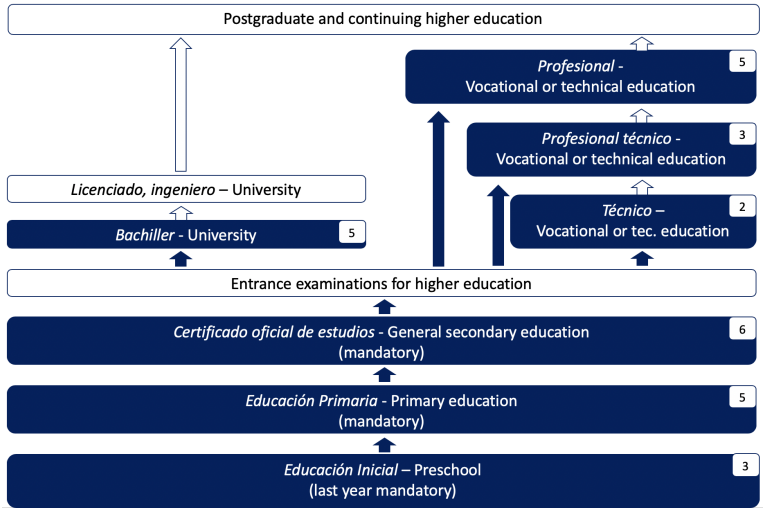
Why is educational inequality important?

- Education is the most relevant factor that promotes social mobility.
- Boudon (1974): less-resources individuals are the ones that do not achieve higher education levels. He proposes two main mechanisms to explain this phenomenon, also known as educational inequality:
  - Performance (indirect) and choice (direct) effects are important features of educations inequality.
  - Choice effects may be less costly to reduce through public policies (Jackson, 2013).

Research question

1. **How socioeconomic background, measured as parental education, affects educational attainment of their offspring in an emerging economy like Peru?**
2. Is the effect driven by ... ?
   - Performance: academic ability and performance
   - Choice: educational decisions
3. Under what conditions does the effect of socioeconomic background is stronger: ethnic, gender or geographical differences?

Regular education system in Peru



Nuffic (2015). Education system: Peru.

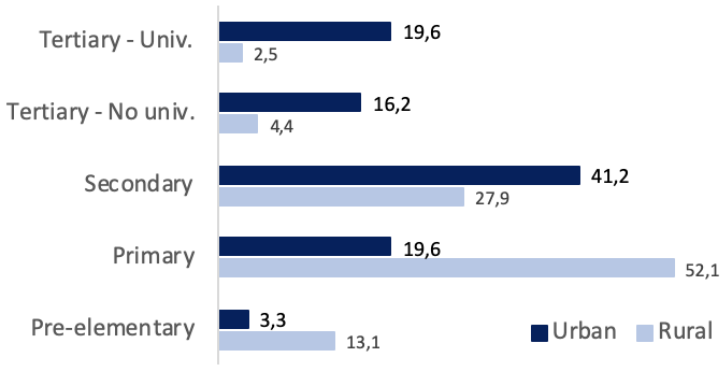
Why Peru?

- Has been developing in economic terms.
- Increase the national expenditure in education accesability and performance.
- There is still evidence of inequalities: geographical and social.

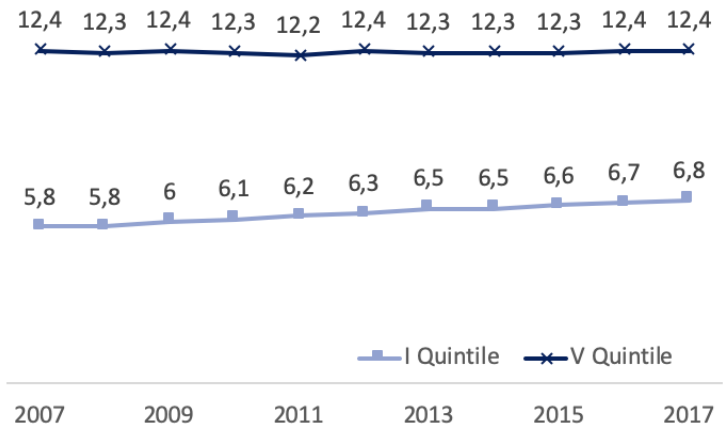
Population over 25 years old

Inequality in education: 93% of adult rural population only achieves secondary level at most, and the average year of education reached by the riches quintile almost doubles the poorest.

Inequality by geographical location

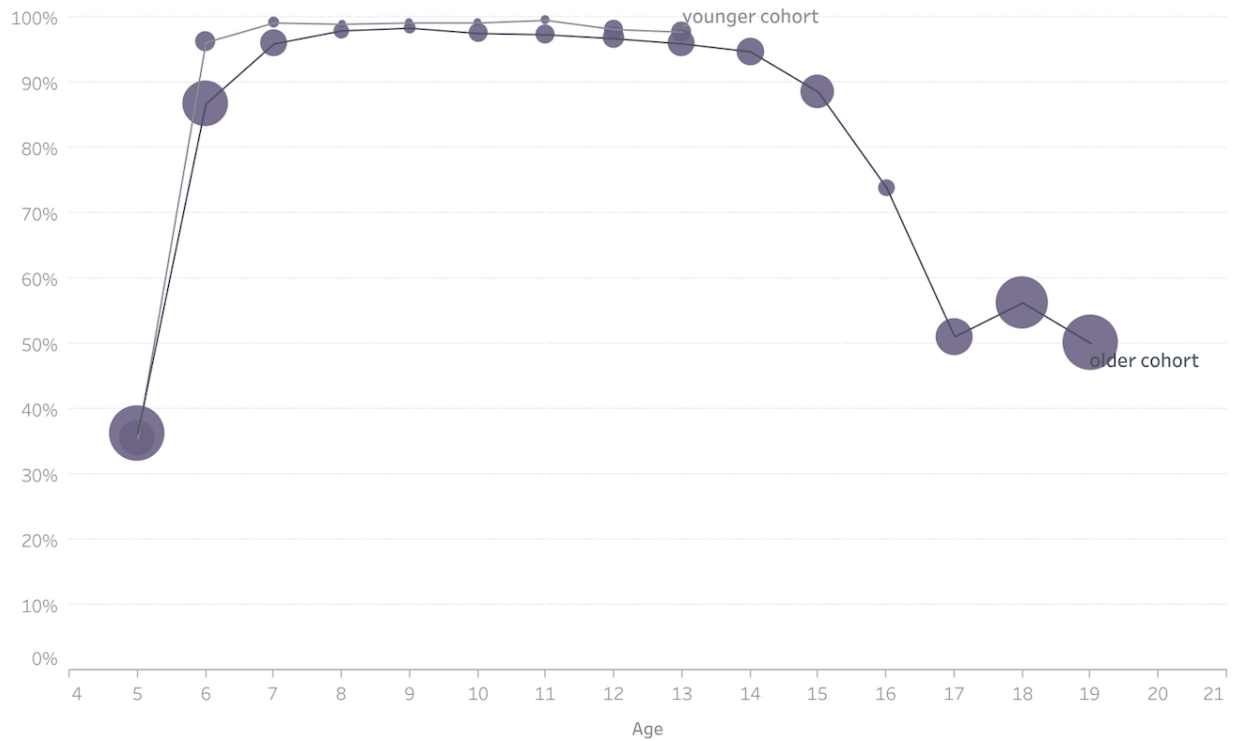


Inequality by income level



Source: INEI(2018). *Perú: Indicadores de educación por departamento, 2007-2017.*

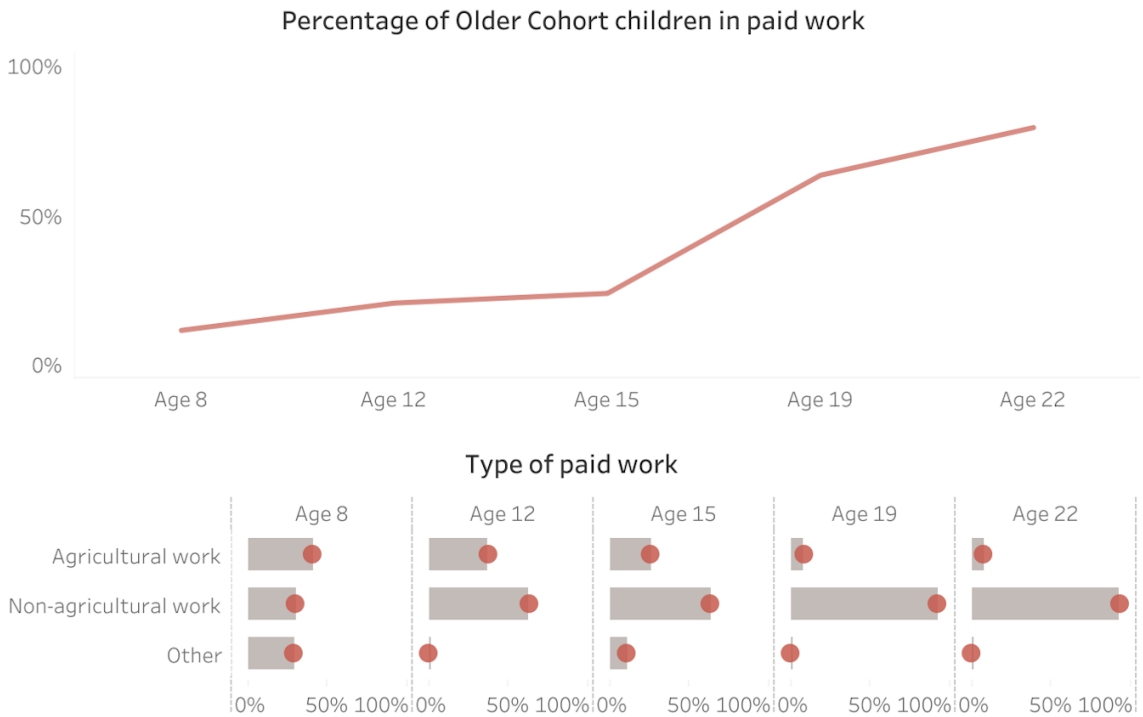
Enrollment rates and gaps in formal education



* Area of circle is proportional to the size of gap.
* Wealth gap is difference in enrolment between individuals in top and bottom wealth tercile.

Data for this visualisation is taken from Older and Younger Cohort individuals present in all rounds of the Young Lives survey.

Incidence and type of paid work across time



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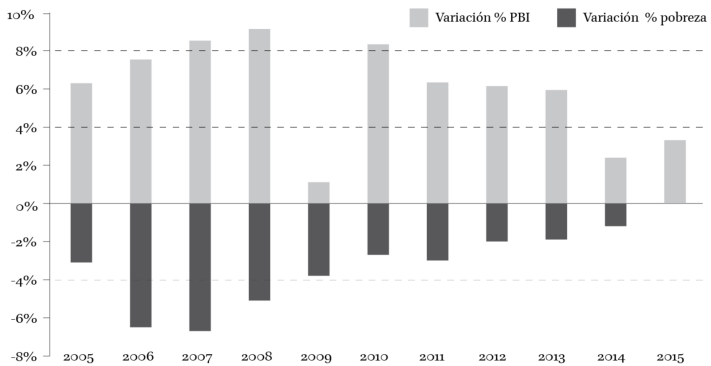
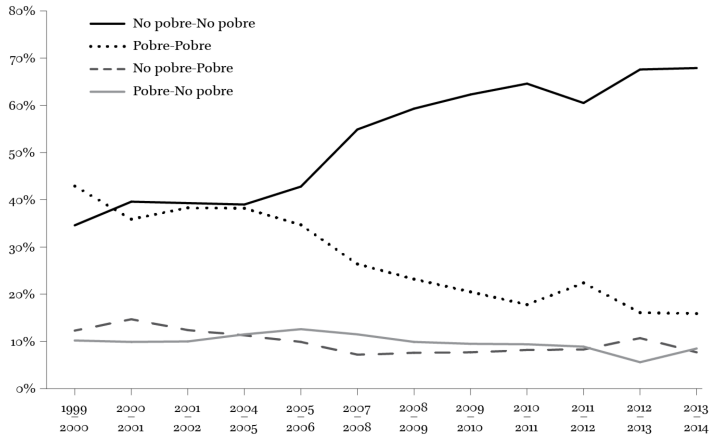
Economic

Evolution of GDP and poverty rate



Source: Herrera (2017)

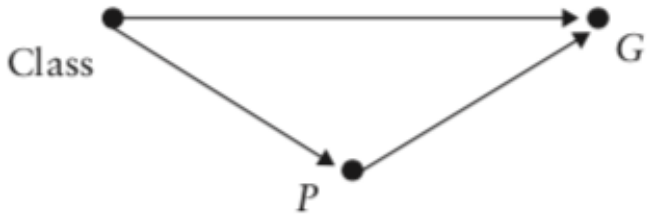
Poverty transitions



Primary and secondary effects of class

- Performance and choice effects are important features of educations inequality.
- Inequalities in educational attainment should be reduced if the effects of choice are counteracted through public policies.

Simple "potentially causal model"



Source: Erikson et al. (2005)

- Applied research in developed countries find that the importance of each mechanism is heterogeneous and depends on the initial socio-economic conditions, timing of educational reform, and institutional characteristics of educational systems and labor market (Jackson, 2013).
- Some studies focusing on the indirect mechanism :
  - Morgan and Sorensen (1999): Positive effect of parental involvement on academic performance.
  - Sullivan et al. (2013): School teachers reward social capital transmitted by parents.
  - Cunha and Heckman (2007): High returns of early investment in non-cognitive skills.
- Unfortunately, not much studies have been done for emerging economies.

International mobility and Inequality in Latin America

Intergenerational

First generation of research (Torche, 2014):

- Only by sociologist.
- Long-term panels or administrative records are not available. Mostly restricted to cities in Brazil, Chile, Mexico, and Argentina
- Findings:
  - Much heterogeneity across countries.
  - High levels of upward mobility driven by urbanization and industrialization.
  - Larger returns to education in urban Latin America.
  - Social origins tend to display a stronger influence in developing countries.

International mobility and Inequality in Latin America

Second generation of research in Brazil, Chile and Mexico:

By sociologists using EGP schema.

- Evidence for common fluidity hypothesis across countries. Driven by a decline in skill premium and weaker direct association between the net association of origins and destinations.
- No evidence for constant fluidity hypothesis. In Brazil increase, in Mexico decrease. Immobility at the top in Chile and Argentina.

By economists:

- Using two 2SIV strategy. Find weak economic mobility: strong reproduction at the top, fluidity across middle and lower segments.
- Using bivariate analysis. Strong effect of circumstances in income inequality.
- Small-scale experiments to determine the impact of various educational policies on dimensions of educational or cognitive achievement.

H1. Strong effects of social background in educational attainment.

H2. Alternative explanation: ethnicity.

H3. Mediator factor: gender.

H4. Mediator factor: geography.

Or

H1. Both mechanisms explaining social background effects educational attainment are relevant.

H1.1. Choice effects (direct effect) would be higher than performance effect (indirect effect).

H2. Heterogeneous effects by ethnicity, gender, and geographical location.

Young Lives Study: Survey design

- Young Lives has followed two cohorts of children born seven years apart.
- The older cohort consists of about 750 children who were between 7 and 8 years old in 2002.

Other applied works using YL Study

- Cueto et al. (2019): migration to an urban area improves educational outcomes at 15 years old.
- Sanchez and Singh (2018): access to higher education depends on parental background, household wealth, location and gender.
- Guerrero et al. (2016): young people's aspiration to continue with higher education is influenced by their caregivers' educational history, lack of information and school preparation to continue studying.

Young Lives study: Peruvian data

Variables:

- Dependent variable: Transition to the next level of education
- Independent variables: Parent's education
- Independent variables: Performance scores
- Control variables:
  - Child characteristics: gender, ethnicity, height, weight, the order of birth, and age at which he started first grade
  - Family characteristics: household size and wealth index
  - Community characteristics: rural/urban and region (coast, mountain, jungles)

References

Jackson, M. (2013)

Determined to succeed? Performance versus choice in educational attainment.

Stanford University Press.

Torche, F. (2014)

Intergenerational mobility and inequality: The Latin American case.

Annual Review of Sociology, 40, 619-642.

Duflo, E. and Glennerster, R. and Kremer, M. (2007)

Chapter 61: Using Randomization in Development Economics Research: A Toolkit.

Handbook of Development Economics, 4, 3895–3962

References

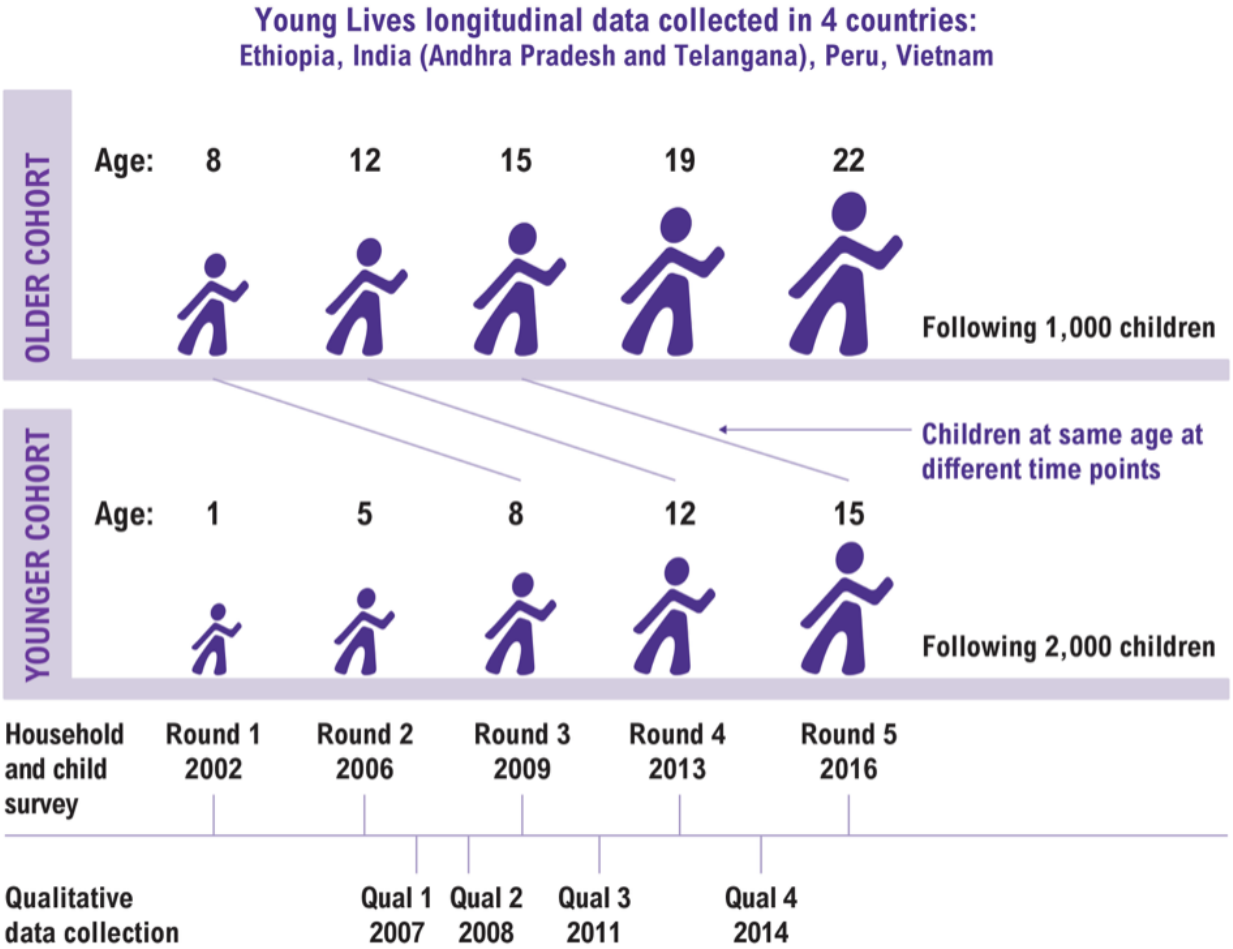
Herrera, J. (2077)

Pobreza y desigualdad económica en el Perú durante el boom de crecimiento: 2004-2014.

International Development Policy. Revue internationale de politique de développement, 9.

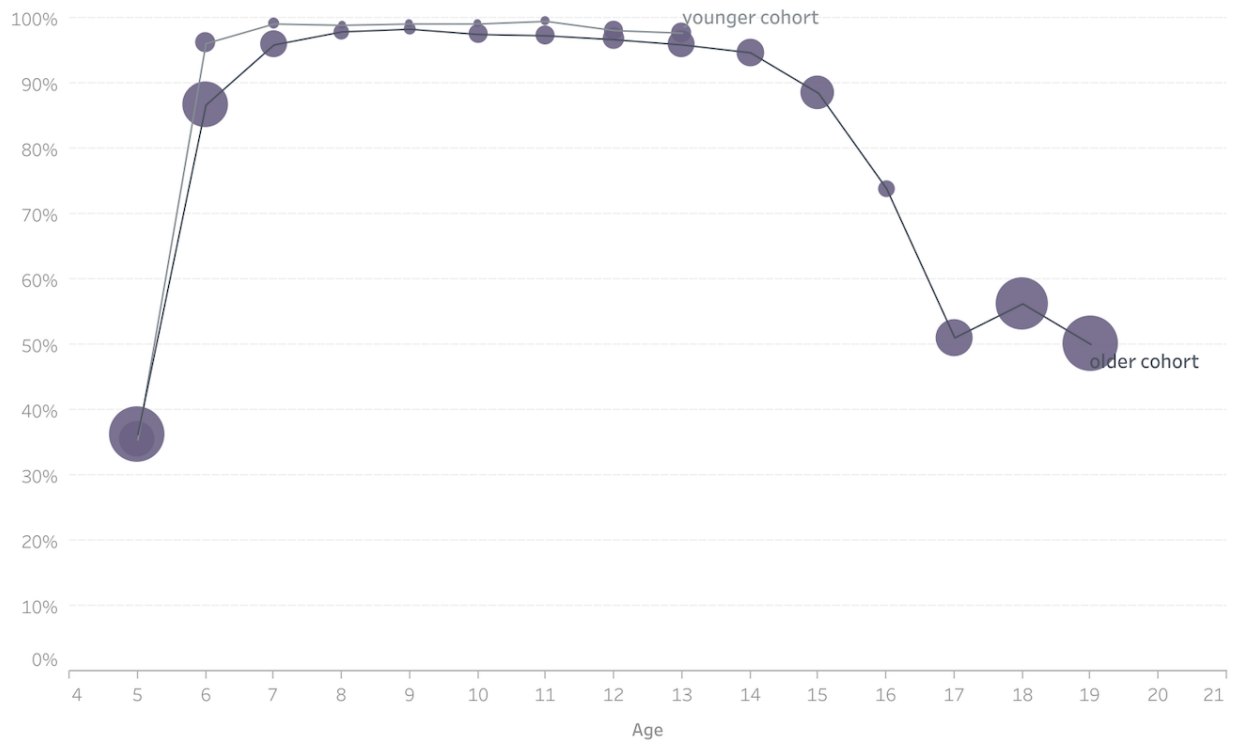
Education in Peru

Young Lives longitudinal data collected in 4 countries



Education in Peru

Enrolment rates and gaps in formal education



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Education in Peru: Young Lives Study

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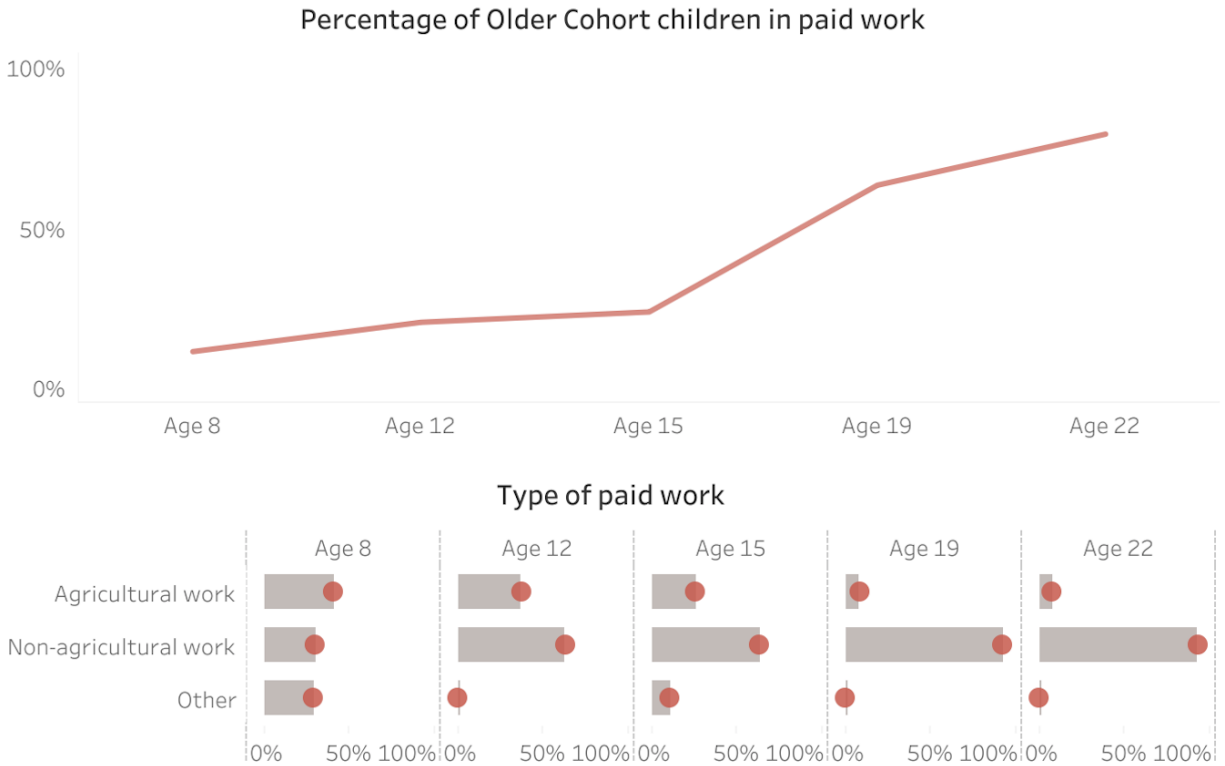

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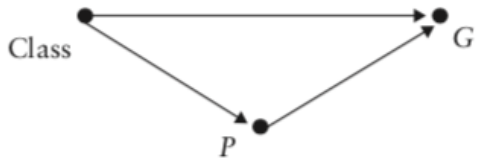
Alternative causal graphs of primary and secondary effects



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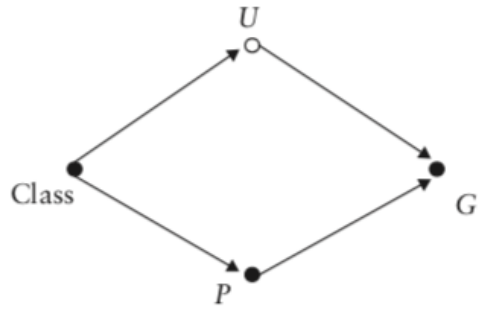
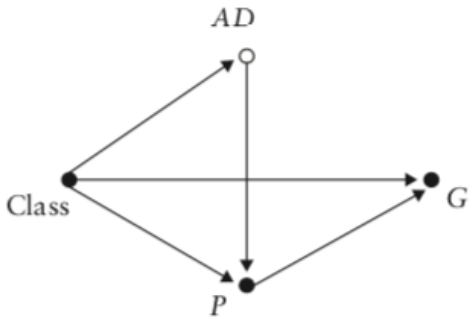
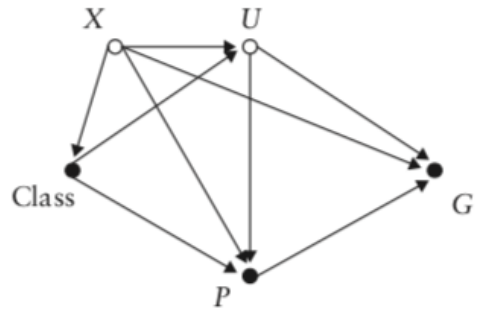


(b)



(c)



(d)