INVESTIGATING INSTRUMENT VARIABLES: INCOME AND ABILITY

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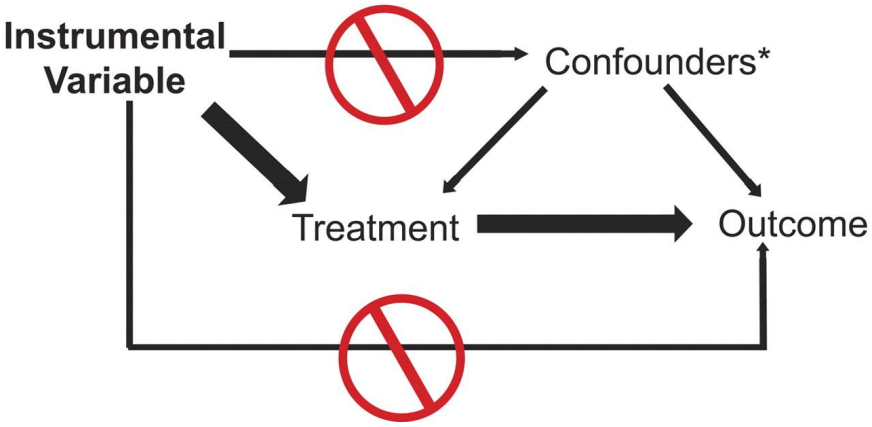

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Econometrics 871: Cross Section Project

Stellenbosch University

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Table of Contents

1. Introduction

This essay[1] is structured as follows: section 2 details the data set used and discusses the descriptive statistics. Section 3 outlines the methodology and argues that the LATE assumptions for the instrumental variables hold. Following this, section 4 presents the regression results, including alternative specifications, and evaluates robustness of the estimators used to obtain a causal effect.

Lang (1993) You may suggest any application using one or a combination of techniques that we have learnt in this course. You should NOT write an extensive essay about the topic of interest, nor should you conduct an extensive literature review behind it: you should only reference articles that support the motivation for your econometric strategy (in the quest of finding a causal interpretation of a relationship that you are modeling). Provide descriptive statistics and graphs to aid in your discussion. The assignment should be between 3-6 pages, including your tables and figures.

You are required to go beyond simply estimating and presenting your results, but to convince the reader of their robustness by presenting alternative specifications. You should apply different estimators and specifications where possible. Discuss the shortcomings of the estimators in obtaining a causal effect and argue why your strategy is the best available to obtain a causal effect that satisfies relevant assumptions.

Determine an effect of interest and find instrumental variables to estimate it causally. If possible, use more than one instrument. Given the LATE assumptions, try and explain why your results differ and which is likely to represent the causal effect you are looking for. Conduct sufficient specification tests to establish whether you are overidentifying your instrument set or whether the IVs shift the estimates enough to indicate that OLS would be inconsistent.

2. Data

mention survey design for NIDS

[1] This essay was written using the package by Katzke (2017)

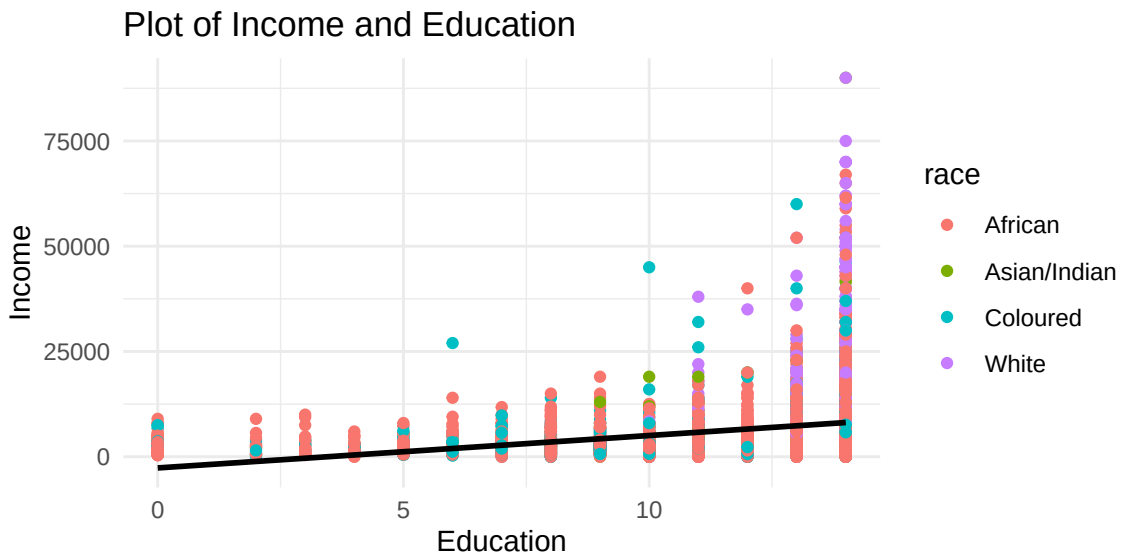


Figure 2.1: Income and Education Relationship

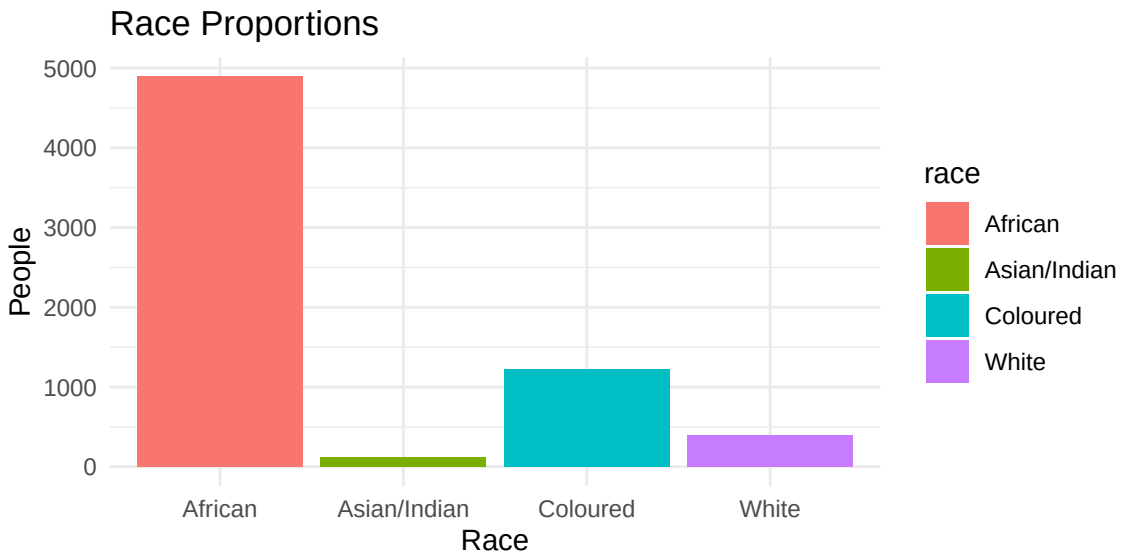


Figure 2.2: Income and Education Relationship

3. Methodology

This project makes use of 4 different instrument variables: fathers occupation, mothers occupation, mothers education and fathers education

4. Results

4.1. Specification Tests

Table 4.1: Regression Output

	OLS 1	OLS 2	2SLS 1	2SLS 2
(Intercept)	5.642 ***	5.093 ***	6.697 ***	6.117 ***
	(0.230)	(0.214)	(0.968)	(0.806)
age	0.009	0.035 ***	-0.029 *	0.003
	(0.009)	(0.009)	(0.015)	(0.012)
age2	0.000	-0.000 *	0.000 ***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
school	0.159 ***	0.139 ***	0.092	0.077
	(0.007)	(0.007)	(0.069)	(0.058)
tertiary	0.728 ***	0.679 ***	2.297 ***	1.849 ***
	(0.033)	(0.031)	(0.341)	(0.263)
raceAsian/Indian		0.451 ***		0.426 ***
		(0.094)		(0.122)
raceColoured		0.065		0.104 *
		(0.039)		(0.048)
raceWhite		0.803 ***		0.525 ***
		(0.049)		(0.083)
genderMale		0.460 ***		0.466 ***
		(0.027)		(0.033)
N	3402	3402	3402	3402
R2	0.355	0.453	-0.104	0.211

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

To reference the plot above, add a "\label'' after the caption in the chunk heading, as done above. Then reference the plot as such: As can be seen, Figures 2.2 and **??** are excellent, with Figure **??** being particularly aesthetically pleasing due to its device setting of Tikz. The nice thing now is that it correctly numbers all your figures (and sections or tables) and will update if it moves. The links are also dynamic.

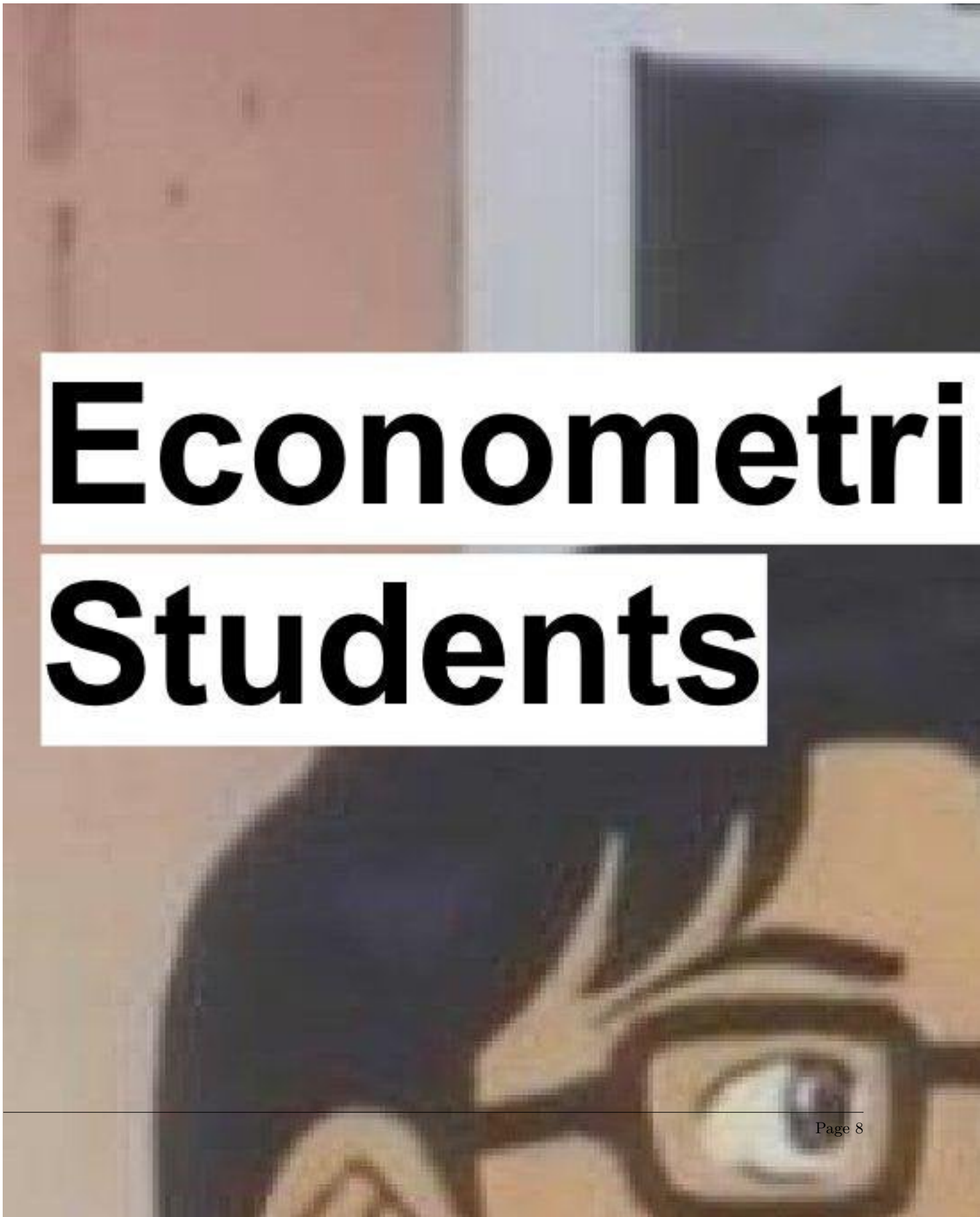
5. Results

To reference calculations **in text**, *do this:* From table **??** we see the average value of mpg is 20.98.

Including tables that span across pages, use the following (note that I add below the table: "continue on the next page''). This is a neat way of splitting your table across a page.

Use the following default settings to build your own possibly long tables. Note that the following will fit on one page if it can, but cleanly spreads over multiple pages:

6. Conclusion



References

10 Katzke, N.F. 2017. *Texevier: Package to create elsevier templates for rmarkdown.* Stellenbosch, South Africa: Bureau for Economic Research.

Lang, K. 1993. *Ability bias, discount rate bias and the return to education.* (MPRA Paper). University Library of Munich, Germany. [Online], Available: https://EconPapers.repec.org/RePEc:pra:mprapa:24651.

Appendix

Appendix A

Some appendix information here

Appendix B