Submissions Abstract Book - All Papers (Included Submissions)

0191

Does College Level the Playing Field? Impacts of Spatial Inequalities on the Gap in the Earnings of Similar Graduates

Sangwoo Lee[1]

[1]*University of Cambridge , Cambridge , United Kingdom*

Research Domain: Higher education policy (HEP)

Abstract: The questions of whether colleges mediate the effects of spatial inequalities on the earnings disparities remained largely unanswered. This paper provides new evidence on differences in graduates' earnings by socio-economic background, with a particular focus on the quality of neighbourhoods. I use data on the population of individuals graduating from UK universities in 2012/13 and find that graduates from a neighbourhood with the top-quintile college participation rate, on average, have higher wages than those from the bottom-quintile neighbourhoods even after allowing for college-related features. The earnings disparities based upon the neighbourhood remain large, and those from the bottom-quintile neighbourhoods can barely earn higher wages even with a degree from the Russell Group than their peers with a degree from less prestigious institutions but from the top-quintile neighbourhoods. These results suggest that higher education does not fully level the playing field in terms of earnings disparities among graduates from different neighbourhoods.

Paper:
Introduction

Reviewing various factors besides family backgrounds that can possibly explain earnings disparities is required for the social mobility research. Examining the neighbourhood effects and how higher education can mediate such influences is significant, particularly in countries with a high level of spatial inequalities. Using the Destination of Leavers from Higher Education (DLHE) surveys in the UK, this paper asks the following questions: a) Is there a gap in the earnings of similar graduates who grew up in neighbourhoods with a different higher education participation rate? and b) How does the wage premium from different higher education providers vary by individuals' neighbourhood background?

Much literature has focused on the magnitude of neighbourhood effects on individuals' later life outcomes, conditioning on various family backgrounds (van Ham & Manley, 2010; McDool, 2017). Little is known however, as to whether a college degree can level the playing field in labour market terms, such that where graduates grew up is no longer correlated with graduates' earnings. This paper provides empirical evidence regarding the extent to which college-related factors can mediate the influences of spatial inequalities in the UK.

Estimation

Every individual earns wages, determined jointly by a system-wide measure of human capital, e.g., community effects, and an individual's human capital level, accumulated through his/her education level (Dietz, 2002). From this perspective, family background and neighbourhood quality are complements in the human capital accumulation process (Bénabou, 1996; Dietz, 2002). I estimate an ordinary least squares regression model of the relationship between graduates' characteristics and their subsequent earnings up to 3.5 years after graduation. The annual earnings (Y) of individual *i* are hypothesised to be a function of the graduates' individual human capital (I) and system-wide measure of human capital (S): [Put Equation 1 Here]

The individual's stock of human capital (I) is measured by their parental education level, previous academic achievement, age, and college-related factors. The system-wide measure of human capital (S) is proxied by ethnicity, whether they attended a private school, and the level of a higher education participation rate (in quintiles) in the neighbourhood they lived. The main parameter of interest is the coefficient for the neighbourhood marker (embedded in), which measures the correlation between the neighbourhood and graduates' earnings. An interaction term between the neighbourhood marker and higher education institutions was also reviewed separately since the influences of colleges on graduates' earnings may be conditioned by the neighbourhood where individuals grew up.

Table 1. Conditional Relationships Between Neighbourhood and Log Wages by Gender

The main parameters of interest are the changes in coefficients for the neighbourhood in columns 4 and 8 compared to the ones in columns 1 and 5, showing the impacts of neighbourhoods on earnings disparities among similar graduates, after allowing for all the key control factors. If colleges fully level the playing field in terms of earnings of similar graduates who came from different neighbourhoods, the coefficients for the neighbourhood markers should reduce to zero. Unfortunately, the coefficients of the top-quintile of the neighbourhood marker are only roughly halved (are not reduced to zero) for both genders, with males from 16.3 to 9.6 per cent and females from 12.2 to 7.7 per cent.

Figure 1. Marginal Effects for Males   Figure 2. Marginal Effects for Females

Figures 1 and 2 present the marginal effects of the interaction term for males and females, respectively. The results imply that graduates who grew up in a neighbourhood with the top-quintile college participation rate, on average, have higher wages than those who came from a neighbourhood with the bottom-quintile college participation rate given the same mission group for both genders.

Conclusion

The neighbourhood where individuals grew up still plays a significant role in determining wages of both female and male graduates, even after allowing for key personal demographic features and college-related features. The coefficients for the neighbourhood markers are only roughly halved when college-related factors, in addition to various control variables, are added in the model for both genders. The result implies that colleges do not fully level the playing field in terms of the earnings disparities among similar graduates who came from different neighbourhoods. Male graduates from

the bottom-quintile neighbourhoods tend to earn less even with a degree from the Russell Group institutions than their peers from the top-quintile neighbourhoods who attended a less prestigious college in Guild HE. The results suggest that colleges do not fully level the playing field, and issues regarding spatial inequalities are not necessarily addressed with the current higher education system.
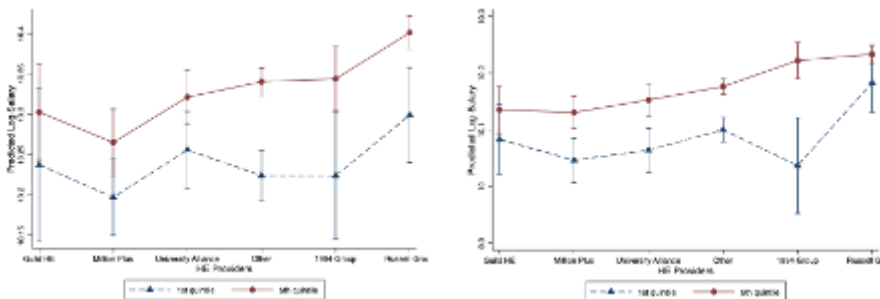
References: Equation 1: $\ln(Y_{it}) = \alpha + B_1 I_{it} + B_2 S_{it} + \mu_{it}$

Table 1:

	Males				Females			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
	Log Salary	Log Salary	Log Salary	Log Salary	Log Salary	Log Salary	Log Salary	Log Salary
	b/se/t	b/se/t	b/se/t	b/se/t	b/se/t	b/se/t	b/se/t	b/se/t
Neighbourhood HE participation rate marker								
Bottom quintile	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
2nd quintile	0.036***	0.032**	0.026*	0.020	0.012	0.013	0.007	0.004
	(0.013)	(0.013)	(0.013)	(0.014)	(0.010)	(0.010)	(0.010)	(0.010)
	2.64	2.32	1.94	1.41	1.18	1.29	0.71	0.40
3rd quintile	0.060***	0.058***	0.045***	0.035***	0.043***	0.046***	0.033***	0.028***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.010)	(0.009)	(0.009)	(0.010)
	4.46	4.48	3.58	2.75	4.54	4.87	3.60	2.93
4th quintile	0.098***	0.096***	0.075***	0.062***	0.078***	0.081***	0.058***	0.052***
	(0.013)	(0.013)	(0.012)	(0.012)	(0.010)	(0.010)	(0.010)	(0.011)
	7.44	7.38	5.93	5.07	7.65	7.96	5.58	4.81
Top quintile	0.165***	0.158***	0.111***	0.096***	0.122***	0.126***	0.086***	0.077***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.009)	(0.009)	(0.009)	(0.010)
	13.46	13.26	9.54	7.88	13.13	13.51	9.33	8.03
N	30,086	30,086	30,086	30,086	37,371	37,371	37,371	37,371

Note: Table 1 presents estimates from OLS regressions o graduates' wages on various controls. Columns [1] and [5] present the coefficients for the neighbourhood marker conditioning only on parental education level. Additional control variables are sequentially added. Columns (2) and (6) include demographic characteristics, Columns (3) and (7) include previous academic achievements. Lastly, columns (3) and (8) additionally include college-related features.

Figures 1 and 2:

Reference:

Bénabou, R. (1996). Equity and Efficiency in Human Capital Investment: The Local Connection. *Review of Economic Studies*, *63*, 237–264.

Dietz, R. D. (2002). The Estimation of Neighborhood Effects in the Social Sciences: An Interdisciplinary Approach. *Social Science Research*, *31*(4), 539–575.

McDool, E. (2017). *Neighbourhood Effects on Educational Attainment: Does Family Background Influence the Relationship?* (SERPS No.2017002; Sheffield Economic Research Paper Series). The University of Sheffield: Department of Economics.

van Ham, M., & Manley, D. (2010). The Effect of Neighbourhood Housing Tenure Mix on Labour Market Outcomes: A Longitudinal Investigation of Neighbourhood Effects. *Journal of Economic*

Geography, *10*(2), 257–282.