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The role of the university environment in shaping education and employment inequalities

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ABSTRACT

Life course theory posits that social, structural, and cultural contexts shape individuals' life outcomes. Using this theory, we investigated whether inequalities in education and employment outcomes for young people with marginalised identities are shaped by the university environment they attended. Based on UK national statistics, universities with similar social, cultural, economic, and physical environments were clustered. These clusters were linked to the Longitudinal Study of Young People in England (LSYPE) cohort dataset to determine whether different university environments predicted differences in outcomes. We observed a mixed picture with no definitive pattern for any marginalised identity. Social and economic environments played a role in predicting education outcomes of young people. Social, cultural, and economic environments were important in predicting employment outcomes. The physical environment did not have any impact. This research emphasises a need for more creative policies within certain universities that address education and employment inequalities.

KEYWORDS


Transitions; marginalised identities; educational ecosystem of wellbeing; cluster analysis; life course theory; panel data

Introduction

Societal systems of marginalisation often mean that individuals are treated differently based on their social and background factors which can lead to education and employment inequalities (Anders, 2012; Archer et al., 2012; Hosein, 2019; Klawitter, 2015; Schoon, 2014). Higher education (HE) is positioned as a pathway to reducing these inequalities (Garvey, Taylor, & Rankin, 2015; Harper, 2015; Zwysen & Longhi, 2018), however, some university environments may reproduce these structural and systemic inequalities because of their recruitment practices (Kelly, 2019; Thiele, Singleton, Pope, & Stanistreet, 2016).

In this paper, through using life course theory (Elder, 1998), we investigate whether different university environments can produce differential employment and education outcomes based on marginalised identities in an age cohort of young people at specific

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time points in their life. Their marginalised identities, such as being female, from an ethnic minority, a lower socioeconomic background, a sexual minority or having poorer mental health, represent the structural marginalisation of societal systems (Powell, 2013). We further conceptualise university environments as an educational ecosystem of well-being (Bandyopadhyay, Bardhan, Dey, & Bhattacharyya, 2021) that forms part of the wellbeing economy (Fioramonti et al., 2022). Wellbeing is a multidimensional social construct that affects quality of life (Kaya & Erdem, 2021). Young people's wellbeing is closely associated with their education and employment outcomes (Hale & Viner, 2018; Kaya & Erdem, 2021). Hence, some university environments may be more supportive of a marginalised young person's wellbeing, and this can then impact on their employment and education outcomes. Our research question is thus:

How do the education and employment outcomes differ for young people with marginalised identities depending on their university environment?

Life course theory

Life course theory is based on the concept that what happens early in a young person's life shapes their subsequent behaviour, and their future life outcomes during their main life transitions, such as entering school, university and the employment market (Elder, Johnson, & Crosnoe, 2003). The theory is used mainly in longitudinal cohort studies to compare pathways of young people. We employ life course theory to explore how a young person's marginalised identities, that represent structural and systemic disadvantages (Dhamoon & Hankivsky, 2011), shape their life outcomes. It is important to acknowledge that an intersectional perspective posits that this disadvantage does not take place within a 'single-axis framework' (Crenshaw, 1989, p. 140), whereby marginalised identities have independent negative impacts on outcomes (Crenshaw, 1991). Instead, combinations of social characteristics may amplify each other to cause compounded and multiplicative disadvantage (Kern et al., 2020). However, our earlier research on mental wellbeing inequalities of young people in the university context did not reveal strong support for a multiplicative intersectional model (Balloo, Hosein, Byrom, & Essau, 2022). Therefore, for the current research we chose to focus on social characteristics individually. Further, in this study we focus on two specific transitions in a young person's life that correspond to their education outcomes (i.e., entering and exiting university) and their employment outcomes (i.e., exiting university/school and becoming employed). Finally, we anticipate that a young person's pathway may be affected by their university environment, depending on how their social characteristics have shaped their outlook and behaviours in life.

University environments and education and employment outcomes

We borrow from the socioecological model of health determinants by Dahlgren and Whitehead (1991), and the forms of social and cultural capital from Bourdieu (1986, 1988) to propose an educational ecosystem of wellbeing socioecological model. Socioecological systems are often used to understand the dynamic relationships between different factors in the course of human development (Bronfenbrenner, 2005). Drawing on Dahlgren and Whitehead (1991) and Bourdieu (1986, 1988), and making use of

available university data, we constructed the educational ecosystem of wellbeing to consist of four university environments: social, cultural, economic, and physical. These will now be explicated further.

Social environment and expected outcomes

The social environment represents the demographics of a university. Students whose demographic backgrounds are distinct from the majority may have different feelings of belonging, or they might experience differential treatment that could impact on their outcomes. For example, Garvey, Taylor, and Rankin (2015) suggested that an inclusive campus climate for sexual minorities (i.e., those on the LGBTQ+ spectrum), may have a positive effect on their academic outcomes. However, the picture may be more complex. For example, Harper (2015) noted that although the microaggressions faced by Black men in predominantly White universities in the USA could affect their performance, high achieving Black men who engaged in a range of campus activities (e.g., academic clubs), were found to be less likely to experience a negative impact of these microaggressions on their academic outcomes. Hence, it is possible that the social environment of the university may affect a young person's employment and education outcomes, but these impacts may be experienced differently based on the individual's social characteristics.

Cultural environment and expected outcomes

The cultural environment conveys an understanding of a university's priorities and focus. For example, whether a university is a teaching-focused or research-intensive institution might dictate how much time staff have available to support students' learning. Measures of teaching quality, research activity, and academic selectivity make up some of the dimensions of status differentiation of universities (Boliver, 2015). Students' satisfaction with teaching may imply that students may achieve better education outcomes, however, research suggests there is no or a relatively weak link between students' satisfaction and their education outcomes (Bachan, 2017; Jephcote, Medland, & Lygo-Baker, 2021). Hence, we may not expect any differences in education outcomes based on the cultural environment of the university attended. Further, work by Ramsden (1999) and Zwysen and Longhi (2018) noted that young people attending more academically selective universities which undertake high quality research were more likely to have better employment outcomes than those from less academically selective universities with lower status research outputs. Zwysen and Longhi (2018) also found that any differences in earnings amongst ethnic minorities may be more structural rather than dependent on the university environment.

Economic environment and expected outcomes

The economic environment relates to the resources of the university. Student-to-staff ratios (SSRs) and university expenditure may indicate the level of economic resources available for students. High SSRs could have a direct negative impact on students' education outcomes (García-Estevéz & Duch-Brown, 2014) and employability

(Ramsden, 1999) as there will be fewer staff and resources available to support students with their learning, or to help them seek out opportunities for placements, employment, or understand how to seek out graduate-level jobs. There may also be less support for students' wellbeing, such as less availability of counselling services and extra-curricular activities. This could then indirectly have a negative impact on students' subsequent education and employment outcomes (Hale & Viner, 2018; Kaya & Erdem, 2021).

Physical environment and expected outcomes

The physical environment is conceptualised as access to green and blue spaces, and opportunities for engagement with heritage, in the built and natural spaces of the university grounds, as well as availability of facilities for physical activity. Positive associations have been found between exposures to green and blue spaces and mental health and wellbeing (White et al., 2021). Since poorer mental health and wellbeing during adolescence predicts academic success and employment status (Kaya & Erdem, 2021), we anticipated that aspects of the physical environment that support wellbeing might indirectly impact on young people's education and employment outcomes. Sports and dance could support students' wellbeing by cultivating the social connections needed to reduce loneliness (Mansfield et al., 2018). Therefore, access to these facilities at university might additionally play a role in students' education and employment outcomes. Furthermore, evidence shows that access to green and blue spaces, and heritage sites, can be especially salubrious for people who are from lower socioeconomic status backgrounds (Abdallah, Wheatley, & Quick, 2017; Bagnall et al., 2018; Pennington, Jones, Bagnall, South, & Corcoran, 2019). This is because these spaces may increase community cohesion between groups who would not normally interact with each other, as well as improve social relationships and create a sense of belonging (Abdallah, Wheatley, & Quick, 2017; Bagnall et al., 2018; Pennington, Jones, Bagnall, South, & Corcoran, 2019). In the university context, a greater sense of belonging to the institution may improve retention (Pedler, Willis, & Nieuwoudt, 2022), resulting in improved education and employment outcomes.

The current study

In the current research, we constructed the social, cultural, economic, and physical university environments of the educational ecosystem of wellbeing by extending Boliver's (2015) cluster analysis technique in which she used publically available university statistics. These cluster constructions are sometimes referred to as synthetic environments (Clarke & Wheaton, 2007). Whilst Boliver's (2015) used cluster analysis to simply differentiate between different statuses of universities, in the current study we used university statistics data to create synthetic university environment profiles that were then linked to a longitudinal data set (Longitudinal Study of Young People in England; LSYPE) containing the education and employment outcomes of a cohort of young people. Through logistic regressions, we investigated how the synthetic university environments predicted the education and employment outcomes of young people with marginalised identities.

Methodology

The longitudinal dataset

The LSYPE ($N = 15,770$ at Wave 1) is a longitudinal cohort study (University College London, UCL Institute of Education, Centre for Longitudinal Studies, 2020), which started in 2004 when participants were 13–14 years old. The most recent available wave was in 2015 when respondents were 25 years old. Hence, the LSYPE covers the age range when young people in England normally undertake a higher education qualification (i.e., at age of 18 usually for three years). Using a secure access version of the LSYPE (see Supplementary Materials B), we drew on variables related to young persons' demographics (sex, ethnicity, sexual identity, parental education and adolescent mental distress), education outcomes by age 25 (degree classification and degree completion), and employment outcomes at age 25 (whether respondents had ever been employed, were in a professional occupation, and whether their gross weekly pay was above the median for their age group). The university identifier variable was used to link LSYPE responses to the synthetic university environments.

Cluster analysis and creation of the four synthetic university environments

To create the synthetic university environments, we used k -means cluster analyses to categorise universities based on similarities in their university statistics. We selected $k = 4$, to generate four clusters, for each of the four synthetic university environments; social, cultural, economic and physical, as Boliver's (2015) exploratory hierarchical cluster analysis found four distinct clusters of British universities. We, thus, constructed 16 university clusters (4 environments \times 4 clusters). Only clusters with more than five universities were used as part of the statistical disclosure control (Griffiths et al., 2019). Hence, three clusters from the social and cultural environments and two clusters from the economic and physical environment were included (see Supplementary Materials A).

The university statistics were based on universities ($N = 159$) that offered undergraduate (UG) courses/programmes. The university statistics included 53 variables drawn from a range of sources (see Balloo & Hosein, 2022 for more information). Variables were grouped based on whether they related to social, cultural, economic, or physical aspects of universities, and separate cluster analyses were performed for each of these groups of variables. Variables were selected for each environment based on whether it was perceived that they could have a direct or indirect impact on wellbeing, education and/or employment outcomes. Detailed explanations about how each variable was constructed, along with rationales for their inclusion in the cluster analyses, are available in Balloo and Hosein (2022). The main characteristics of the clusters included in the analysis for the four synthetic environments are presented in Table 1. The cluster analysis mean raw scores for each variable within the four synthetic environments are provided in Supplementary Materials A.

The social environment of each university covered the social demographics of students and academic staff (see Table SA1). This cluster analysis included 16 variables related to gender, disability and ethnicity of students and academic staff, and socio-economic mix, age, domicile status and mobility type of students. Although it would also have been relevant to include the sexuality or sexual identity of students, these data are

Table 1. Key Characteristics of the clusters for the four synthetic university environments.

Social	N	Key Characteristics	
		Highest Values	Lowest Values
Cluster S1	44	<ul style="list-style-type: none"> • Staff with no known disabilities • Students not from a low participation neighbourhood • Students from a more advantaged background • Students under the age of 20 • Students who do not live at home 	<ul style="list-style-type: none"> • Female staff and students • Black staff • Students attending state schools • UK domiciled students
Cluster S2	32	<ul style="list-style-type: none"> • Students with no known disabilities • Students with Black, Asian and mixed ethnicities • Staff with Black, Asian and mixed ethnicities 	<ul style="list-style-type: none"> • White students and staff • Students from a more advantaged background • Students under the age of 20 • Students who do not live at home
Cluster S3	82	<ul style="list-style-type: none"> • Female staff and students • White students and staff • Students attending state schools • UK domiciled students 	<ul style="list-style-type: none"> • Students not from a low participation neighbourhood • Students with Black, Asian and mixed ethnicities • Staff with Asian and mixed ethnicities • Staff and students with no known disabilities
Cultural			
Cluster C2	51	<ul style="list-style-type: none"> • Value-added score • Teaching-only staff 	<ul style="list-style-type: none"> • Further Education students • Total number of students • Staff turnover
Cluster C3	62	<ul style="list-style-type: none"> • Assessment and feedback quality score • Further Education students 	<ul style="list-style-type: none"> • Overall teaching quality score • Value-added score • Research activity score • Doctorate and postgraduate students • Student employability • Entry tariff • Good degree and degree completions • Staff with doctorate
Cluster C4	45	<ul style="list-style-type: none"> • Overall teaching quality score • Research activity score • Undergraduate, doctorate and postgraduate students • Student employability • Entry tariff • Good degree and degree completions • Staff with doctorate • Staff turnover 	<ul style="list-style-type: none"> • Assessment and feedback quality score • Teaching-only staff • Further Education students
Economic			
Cluster E1	17	<ul style="list-style-type: none"> • Expenditure on academic services, grants, student facilities and premises 	<ul style="list-style-type: none"> • Student to staff ratio for academic and professional services
Cluster E4	139	<ul style="list-style-type: none"> • Student to staff ratio for academic and professional services 	<ul style="list-style-type: none"> • Expenditure on academic services, grants, student facilities and premises
Physical			
Cluster P2	112		<ul style="list-style-type: none"> • Area of grounds, water and heritage sights • Number of sports facilities, cycle spaces and sports clubs
Cluster P3	43	<ul style="list-style-type: none"> • Area of grounds, water and heritage sights • Number of sports facilities, cycle spaces and sports clubs 	

Note. N = Number of universities in cluster. Only clusters with more than five universities were included in the analysis.

not recorded by the Higher Education Statistical Agency (HESA). Cluster S1 is distinct from S2 and S3 mainly because it tends to include universities with a greater proportion of students from more advantaged socioeconomic backgrounds. Universities in Clusters S2 and S3 tend to differ by ethnicity, with S2 universities having proportionately more ethnic minority students and staff.

The cultural environment of each university was focused on the research and teaching culture (see Table SA2). This cluster analysis included 15 variables related to research activity, teaching quality, academic selectivity and student success, and institution type (e.g., proportion of postgraduates and size). In general, universities in Clusters C2 and C4 tend to include universities with better overall teaching quality scores than those in Cluster C3. However, universities in Cluster C4 have greater research activity, are more academically selective, and have better outcomes for student success, than universities in the other two clusters. Cluster C2 universities also tend to have smaller student numbers compared to universities in C3 and C4.

The economic environment of each university related to the economic support available (see Table SA3). This cluster analysis included 14 variables related to SSRs (for a range of staff groups), expenditure across different university functions, and endowment income for the university overall. Cluster E1 is the opposite of E4, encompassing universities with higher expenditure/income and lower SSRs.

The physical environment of each university related to green and blue space, sports, and grounds (see Table SA4). This cluster analysis included eight variables related to the number of university sites, sports facilities, and the area covered by grounds, water, heritage sites and playing fields. Cluster P2 is the opposite of P3, encompassing physically smaller universities and less availability of sporting facilities.

Logistic regression analyses

Using logistic regressions on the weighted LSYPE data, we determined how young peoples' life outcomes of education and employment were predicted by the different clusters within each of the four university environments. Based on life course theory, these logistic regressions were constructed separately for five social characteristics that represents the structural and systemic inequalities that can affect a young person's life outcomes: sex (male or female); sexual identity (identifying as a sexual minority/LGBTQ+ or as heterosexual/straight); ethnicity (Other/Mixed, Asian, Black African/Caribbean or White); parental education (parent has a degree or parent does not have a degree); and adolescent mental distress (presence of any adolescent mental distress and absence of mental distress at ages 15 and/or 17, based on cut-off values applied to responses to the General Health Questionnaire (GHQ-12) (Goldberg & Williams, 1988; Lundin et al., 2016) that indicate the respondent has a probable diagnosable mental health problem). Parental education was used to represent if a young person was the first-in-family (FiF) to attend university. To control for ability (which would play a confounding role in respondents' education and employment outcomes), English, mathematics, ICT and science self-concept scores were included based on Hosein (2019). For employment outcomes, an additional environment category was included: young people who did not attend university.

Detailed descriptions of each outcome variable are included in Supplementary Materials B, but they are also summarised briefly below.

The two education outcomes used were:

- (1) Good degree (0 = Upper second-class honours and above degree classification; 1 = Below upper second-class honours degree classification). An upper second-class honours (and above) degree is considered a 'good degree' in the British higher education system.
- (2) Completed HE qualification (0 = Started and completed HE qualification by age 25; 1 = Started but did not complete HE qualification by age 25).

The three employment outcomes used were:

- (1) Occupation based on the National Statistics Socio-economic classification, NS-SEC (0 = Higher NS-SEC classes 1-3; 1 = Lower NS-SEC classes 4-7). NS-SEC classes 1-3 represent higher managerial, lower managerial and intermediate occupations. NS-SEC classes 4-7 represent small employers to routine occupations.
- (2) Ever been employed (0 = Has been employed by age 25; 1 = Has not been employed by age 25).
- (3) Gross weekly pay being above the median at age 25 (0 = Above median wage; 1 = Below median wage).

Results and discussion

The results are presented and discussed based on the four synthetic environments and the additional 'environment' of not attending university. For each environment, the results are used to demonstrate how young people's social and background characteristics may predict life outcomes depending on their university cluster. A summary of the logistic regressions can be found in [Table 2](#) for sex, [Table 3](#) for parental degree, [Table 4](#) for sexual identity, [Tables 5 and 6](#) for ethnicity and [Table 7](#) for adolescent mental distress. These tables only provide the odds ratios, but the full results can be found in Supplementary Materials B. The 'No University' odd ratios represent the benefit of attending university, relative to not attending university for individual identities. For each of the four synthetic environments, the odd ratios represent the benefit of attending a university cluster in comparison to the reference university cluster for the individual identities.

Did not attend university

Only employment outcomes were investigated for young people who did not attend university. Similar to findings from previous research (for example, [Daly & Bengali, 2014](#)), young people who did not attend university by age 25 had poorer employment outcomes than those who did go to university, particularly in relation to the NS-SEC of their occupation and their gross weekly pay. Young men who had not been to university were almost twice as likely as equivalent young women to be in a lower NS-SEC occupation (12.72 vs. 6.48) when compared to their same sex who had attended

Table 2. Odds-Ratios for University Environments and Education and Employment Outcomes by Sex.

Environments	Education Outcomes				Employment Outcomes					
	Not a Good Degree		Did not complete HE Qualification		Lower NS-SEC		Not Ever Employed		Below Median Gross Weekly Pay	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
No University	-	-	-	-	12.72	6.48	2.23	14.63	5.38	9.69
Social										
Cluster S1	0.64	0.69	4.11	0.68	0.59	0.72	1.79	3.49	0.91	0.99
Cluster S2	0.62	0.88	1.47	0.88	0.91	0.53	1.87	4.62	0.67	0.73
Cluster S3 (ref)										
Cultural										
Cluster C2	1.85	0.57	2.48	0.99	1.80	1.00	1.05	0.72	1.72	2.50
Cluster C3	2.46	0.73	3.19	0.68	2.94	1.19	1.08	1.03	3.70	3.08
Cluster C4 (ref)										
Economic										
Cluster E1	0.57	0.35	0.37	1.53	1.89	0.85	1.95	2.09	1.29	1.06
Cluster E4 (ref)										
Physical										
Cluster P2	0.75	1.02	1.31	1.16	1.16	1.22	0.69	0.72	1.36	1.20
Cluster P3 (ref)										
N	379	416	667	733	2294	2007	2667	2598	1714	1412

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$. English self-concept, mathematics self-concept, science self-concept and ICT self-concept were included as covariates.

Table 3. Odds-Ratios for University Environments and Education and Employment Outcomes by Parental Degree (i.e., FiF).

Environments	Education Outcomes				Employment Outcomes					
	Not a Good Degree		Did not complete HE Qualification		Lower NS-SEC		Not Ever Employed		Below Median Gross Weekly Pay	
	No Deg	Deg	No Deg	Deg	No Deg	Deg	No Deg	Deg	No Deg	Deg
No University	-	-	-	-	6.44	16.05	4.23	13.75	4.24	9.68
Social										
Cluster S1	0.85	0.67	1.13	3.14	0.47	1.49	2.47	1.84	0.68	1.31
Cluster S2	0.64	1.68	0.98	1.43	0.66	1.05	3.00	2.26	0.71	0.67
Cluster S3 (ref)										
Cultural										
Cluster C2	0.94	1.63	2.00	0.90	0.89	3.61	0.50	4.16	1.49	3.23
Cluster C3	1.51	0.92	1.63	0.77	1.39	3.65	0.63	5.06	2.40	4.37
Cluster C4 (ref)										
Economic										
Cluster E1	0.38	0.51	1.61	0.39	1.37	1.48	1.84	4.32	1.34	1.15
Cluster E4 (ref)										
Physical										
Cluster P2	0.90	0.85	1.26	0.96	1.16	1.36	0.75	0.81	1.29	1.13
Cluster P3 (ref)										
N	522	272	928	469	3499	736	4388	862	2528	594

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$. No Deg. = No parental degree (or FiF); Deg = Parental Degree. English self-concept, mathematics self-concept, science self-concept and ICT self-concept were included as covariates.

university. This indicates that men may face a larger NS-SEC disadvantage gap within their sex if they did not attend university (see Stahl, 2015). However, young women who did not attend university were more likely than equivalent young men to have not been employed by age 25 (14.63 vs. 2.23), when compared to those of their same sex who had attended university. It is possible that the sex difference in NS-SEC occupation may be explained in part by sex differences in employment. Young women who attended

Table 4. Odds-Ratios for University Environments and Education and Employment Outcomes by Sexual Identity (sexual minority or heterosexual).

Environments	Education Outcomes				Employment Outcomes					
	Not a Good Degree		Did not complete HE Qualification		Lower NS-SEC		Not Ever Employed		Below Median Gross Weekly Pay	
	Sex Min.	Het.	Sex Min.	Het.	Sex Min.	Het.	Sex Min.	Het.	Sex Min.	Het.
No University	-	-	-	-	1.01	11.38	4.73	4.79	95.41	5.17
Social										
Cluster S1	0.47	0.79	0.02	2.28	0.39	0.68	1.59	2.04	9.27	0.78
Cluster S2	1.10	0.78	0.36	1.35	0.45	0.75	5.52	2.62	2.65	0.67
Cluster S3 (ref)										
Cultural										
Cluster C2	1.30	1.06	0.02	2.10	0.64	1.49	0.93	0.83	9.14	1.95
Cluster C3	1.22	1.38	0.21	1.57	1.07	2.06	0.57	0.99	18.98	2.99
Cluster C4 (ref)										
Economic										
Cluster E1	0.14	0.46	0.12	0.99	0.71	1.36	3.09	1.91	1.18	1.17
Cluster E4 (ref)										
Physical										
Cluster P2	0.35	0.97	0.19	1.35	0.43	1.26	1.14	0.62	3.08	1.17
Cluster P3 (ref)										
N	59	734	107	1292	225	4005	322	4927	174	2945

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$. Sex Min. = Sexual minority; Het. = Heterosexual. English self-concept, mathematics self-concept, science self-concept and ICT self-concept were included as covariates.

Table 5. Odds-Ratios for University Environments and Education Outcomes by Ethnicity.

Environments	Not a Good Degree				Did not complete HE Qualification			
	Other	Asian	Black	White	Other	Asian	Black	White
No University	-	-	-	-	-	-	-	-
Social								
Cluster S1	0.01	0.73	0.08	0.92	164.58	1.42	1.5E + 08	1.50
Cluster S2	0.27	0.72	0.11	0.66	4.35	1.54	3.68	0.70
Cluster S3 (ref)								
Cultural								
Cluster C2	0.53	0.43	4.04	1.23	9.97	2.31	1.5E + 15	1.34
Cluster C3	0.25	0.49	3.49	1.70	33.31	4.47	3.1E + 14	1.20
Cluster C4 (ref)								
Economic								
Cluster E1	6.37	0.22	0.00	0.47	0.33	5.68	1.8E + 14	0.71
Cluster E4 (ref)								
Physical								
Cluster P2	0.78	1.13	1.62	0.90	2.46	2.11	4E + 07	1.15
Cluster P3 (ref)								
N	24	77	26	668	56	161	57	1126

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$. English self-concept, mathematics self-concept, science self-concept and ICT self-concept were included as covariates.

university may have better employment opportunities than young women who had not. These results are reflected in young women who did not attend university being almost twice as likely as equivalent young men to earn lower than the median gross weekly pay (9.69 vs. 5.38) (in comparison to those who had been to university). These findings are in line with other analysis showing that the financial advantage of attending university is significantly greater for men than women; while women are more likely to attend university, more likely to complete their studies and achieve a good degree, men are

Table 6. Odds-Ratios for University Environments and Employment Outcomes by Ethnicity.

Environments	Lower NS-SEC				Not Ever Employed				Below Median Gross Weekly Pay			
	Other	Asian	Black	White	Other	Asian	Black	White	Other	Asian	Black	White
No University	112.0	8.47	4.40	10.14	1.7E + 07	26.32	4.05	3.66	0.42	12.96	0.09	5.54
Social												
Cluster S1	7.48	0.20	0.44	0.71	0.02	34.75	1.53	1.23	0.03	1.23	0.01	0.88
Cluster S2	1.03	0.71	0.39	0.74	2.50	3.55	0.81	1.76	0.79	0.91	0.03	0.61
Cluster S3 (ref)												
Cultural												
Cluster C2	36.05	0.98	0.69	1.32	2.2E + 08	0.36	0.33	0.67	6.90	1.71	0.07	1.88
Cluster C3	14.13	3.47	0.64	1.74	1.5E + 07	2.08	0.95	0.66	1.43	4.57	0.16	2.83
Cluster C4 (ref)												
Economic												
Cluster E1	0.50	4.26	0.36	1.28	2.4E + 08	0.29	0.00	2.90	1.60	1.17	0.15	1.16
Cluster E4 (ref)												
Physical												
Cluster P2	0.71	0.78	2.14	1.39	0.08	0.76	6.96	0.53	0.15	1.02	0.36	1.33
Cluster P3 (ref)												
N	146	299	108	3690	193	392	148	4531	98	199	71	2759

Note: $p < 0.1$; $p < 0.05$; $p < 0.01$. English self-concept, mathematics self-concept, science self-concept and ICT self-concept were included as covariates.



Table 7. Odds-Ratios for University Environments and Education and Employment Outcomes by Adolescent Mental Distress (presence or absence).

Environments	Education Outcomes				Employment Outcomes					
	Not a Good Degree		Did not complete HE Qualification		Lower NS-SEC		Not Ever Employed		Below Median Gross Weekly Pay	
	Presence	Absence	Presence	Absence	Presence	Absence	Presence	Absence	Presence	Absence
No University	-	-	-	-	5.65	9.56	2.63	4.63	6.20	4.36
Social										
Cluster S1	0.61	0.74	1.22	1.55	0.70	0.45	1.86	2.50	0.97	0.71
Cluster S2	0.68	0.83	1.29	0.65	0.67	0.80	2.96	2.65	0.91	0.59
Cluster S3 (ref)										
Cultural										
Cluster C2	0.65	1.96	2.41	1.23	0.72	1.48	0.59	1.24	1.96	1.84
Cluster C3	0.68	2.17	2.02	0.88	0.92	1.97	0.86	1.07	3.06	3.13
Cluster C4 (ref)										
Economic										
Cluster E1	0.39	0.55	1.70	0.50	0.87	2.21	1.48	3.63	1.04	1.29
Cluster E4 (ref)										
Physical										
Cluster P2	0.94	0.95	0.73	1.73	1.55	1.27	0.39	1.05	1.28	1.24
Cluster P3 (ref)										
N	354	379	609	546	1510	1672	1865	1923	1124	1300

Note: $p < 0.05$, $p < 0.01$. Sex Min. = Sexual minority; Het. = Heterosexual. English self-concept, mathematics self-concept, science self-concept and ICT self-concept were included as covariates.

more likely to move into ‘highly skilled’ employment and earn more (Britton, Dearden, van der Erve, & Waltmann, 2020; Hewitt, 2020; Hubble, Bolton, & Lewis, 2021).

By age 25, young people who were FiF had better employment outcomes than those from their same social characteristic grouping who did not attend university (higher NS-SEC: 6.44; higher median gross pay: 4.24). In comparison, young people who had a parent with a degree had over twice as better likelihoods of having higher NS-SEC (16.05) and median gross pay (9.68), when compared to those in their same social characteristic grouping. This possibly points to FiF being unable to access better employment opportunities (Tomaszewski, Perales, Xiang, & Kubler, 2021).

Interestingly, young people who identified as a sexual minority, whether they went to university or not, had a similar NS-SEC level occupation (1.01), but for young people identifying as heterosexual there was a distinct advantage of going to university (11.38). When looking at those young people identifying as a sexual minority who did attend university, they were 95 times more likely than young people who identified as a sexual minority and did not go to university to have a gross weekly pay above the median, in comparison this was only 5 times for those identifying as heterosexual. This may suggest that universities could be inclusive spaces that provide an opportunity for those identifying as a sexual minority to thrive (Balloo, Hosein, Byrom, & Essau, 2022).

The employment advantage, in terms of NS-SEC level of occupation, of attending university was weaker for young adults who experienced mental distress as adolescents, relative to those who did not (5.65 vs. 9.56). However, this does not translate into a difference in pay; if anything, attending university improves pay for young adults who experienced mental distress as adolescents, relative to those who did not experience mental distress. This analysis supports the broader argument that attending university can be beneficial for adolescents with experience of mental distress (Balloo, Hosein, Byrom, & Essau, 2022).

Social environment

Both education and employment outcomes were investigated for the social environment clusters. In terms of education outcomes, there was no difference in Good Degree outcomes between the social environments, but there was a significant difference in Completed HE qualification outcomes between Clusters S1 and S3. We found that male students (4.11) and heterosexual students (2.28) were more likely to not complete their HE qualification if they went to a Cluster S1 university environment in comparison to an S3 environment. A similar finding was found for Black students, but the overall model was non-significant possibly because of small sample sizes. Conversely, respondents who were sexual minorities were at least 50 times (inverse of 0.02) more likely to complete their HE qualification at Cluster S1 universities than Cluster S3 universities. Cluster S1 and S3 social environments are fairly similar, particularly in terms of student and staff ethnicities, except that Cluster S1 tended to have a higher proportion of respondents from more socially advantaged backgrounds. For employment outcomes, Clusters S1 and S3 universities appeared to provide similar outcomes for respondents regardless of their social characteristics, as there were no significant differences between them. There were significant differences between Clusters S2 and S3 on employment outcomes, most notably that young people who were FiF, heterosexual, White or had no adolescent

mental distress were more likely to have a gross weekly pay above the median if they went to a Cluster S2 university. However, Cluster S2 universities were also more likely to have young people who were not employed if they were female, FiF or heterosexual. Hence, certain types of universities can possibly provide an upwardly social pathway for those who are FiF if they can get employed (Jury et al., 2017). Cluster S2 universities are characterised by relatively higher proportions of staff and students from Black, Asian and mixed ethnicities, indicating that diversity in the staff and student community may have advantages for FiF students.

Cultural environment

As expected, the cultural environment did not explain education outcomes for any of the social characteristics, but it did explain employment outcomes. For example, regardless of their sex, FiF status, sexual identity, adolescent mental distress or ethnicity (except for Black young people), young people were more likely to have a gross weekly pay below the median if they attended a Cluster C2 or C3 university in comparison to a Cluster C4 university. In line with Zwysen and Longhi (2018), Cluster C3's young people had the worst odds of having good employment outcomes. Notably, there were no significant differences between the clusters for Black young people in terms of their gross weekly pay and it appeared to be no different than if they had not attended university. This is perhaps because some young Black people may prefer being unemployed to being in a non-professional occupation (see Lessard-Phillips, Swain, Pampaka, & Nwabuzo, 2014, for a more nuanced argument). The global difference between Clusters C3 and C4 universities is consistent with the differences in the HESA data constructing these clusters; C3 universities had the lowest values for student employability and value-added score. It is, however, interesting to acknowledge the universality of this difference for students; individual characteristics are not endowing employment advantages.

Economic environment

The economic environment appeared to impact on the outcomes of a good degree but not on whether young people completed their HE qualification. Education outcomes were better at Cluster E1 universities than at those in Cluster E4, but this difference was only significant for young people who were female, FiF, heterosexual, White or had adolescent mental distress. Cluster E1 universities had better economic resources than Cluster E4 universities, with more expenditure on student facilities and premises and lower SSRs. It is positive that greater expenditure has an advantage for FiF students and those with adolescent mental distress; possibly it acts as a leveller for those students who do not have as much social, cultural and health capital. It is notable that the differences in economic environment are the only point at which we find White students showing a clear advantage in education outcomes. Universities should be deeply concerned that better economic resources are not currently yielding benefits for students from minoritized ethnicities (Lessard-Phillips, Swain, Pampaka, & Nwabuzo, 2014). This data adds to increasing calls for more research to understand the factors contributing to attainment gaps for students from minoritized ethnicities (Richardson, 2015).

The economic environment did not appear to be related to employment outcomes for the social characteristics except for ethnicity. White respondents were 2.9 times more likely to have never been employed by age 25 if they went to a Cluster E1 university than if they went to a Cluster E4 university. It is possible that these young people may have still been pursuing further studies, and at this point did not need to engage in any type of employment.

Physical environment

The different physical environments had no impact on the education and employment outcomes of respondents across all of their social and background characteristics.

Limitations

This research focused on young people transitioning to university at age 18 using the LSYPE cohort study that currently goes up to age 25. However, some young people with marginalised identities are probably more likely to enter higher education later in life and may have differing entry points (Busher & James, 2020). Wave 9 of the LSYPE study which has data at age 30 may be able to provide more insights on the different pathways into university for those with marginalised identities.

The approach to conceptualising and constructing the four university environments was limited by the publicly available data on higher education. For further research on the wellbeing economy, better data needs to be collected by national statistical agencies that measure determinants of human and ecological wellbeing that represent both Western and indigenous perspectives of wellbeing.

Finally, the study used a single-axis approach to the analysis rather than an intersectional approach (Crenshaw, 1989) primarily because our previous research on wellbeing outcomes did not provide strong support for a multiplicative intersectional model (Balloo, Hosein, Byrom, & Essau, 2022). However, if there are datasets with large sample sizes, it may be worthwhile confirming whether this assumption can be applied to education and employment outcomes too.

Conclusion

In this paper, we sought to understand, through life course theory, how education and employment outcomes differ for young people with marginalised identities, depending on synthetic university environments: social, cultural, economic and physical. These synthetic university environments were developed by extending Boliver's (2015) cluster analysis approach to situate universities within an educational ecosystem of wellbeing. This is new work, a new way of looking at the university experience. Consideration of these kinds of synthetic environments have not been conducted previously and we need more work, working with synthetic environments, to try to understand how the social, cultural and economic context of universities impacts on student outcomes. The blunt differentiation between research intensive or teaching intensive universities simply does not cut it for understanding differences in student experience.

Further, we extended previous studies such as Zwysen and Longhi (2018) and Harper (2015) by also exploring how comparable the employment outcomes of young people who did not attend university are for more than one social characteristic. We observed a mixed picture with no definitive pattern for any marginalised identity. Social and economic environments were important in predicting education outcomes of young people, whereas social, cultural, and to a lesser extent, economic environments were important in predicting employment outcomes. Interestingly, the physical environment did not have an effect on education or employment outcomes even though the natural environment affects wellbeing. Perhaps, young people are not taking advantage of the physical environment and using it effectively to support their wellbeing (see, for example, Boyd, 2022) which can possibly result in better life outcomes. Although our research confirms previous studies (see, for example, Bachan, 2017; Carroll, Heaton, & Tani, 2019; Jephcote, Medland, & Lygo-Baker, 2021), it is still surprising that the cultural environment, which takes into account teaching and research quality, does not drive education outcomes, even when comparing the most academically selective environment. Instead, for example, FiF students or those with adolescent mental distress had better education outcomes in environments where there was more expenditure on support.

Similar to findings by Ramsden (1999) and Zwysen and Longhi (2018), young people (regardless of their social characteristics) who attended more research intensive and more academically selective universities (i.e., related to the university's cultural environment) were more likely to have higher salaries. There appears to be a prestige premium for these universities that allows graduates to attract a larger income (Carroll, Heaton, & Tani, 2019). Finally, and unsurprisingly, young people who did not attend university had worse employment outcomes across all social characteristics, except for Black students, who had similar odds of receiving a similar gross weekly pay, regardless of whether they attended university or not.

One explanation for all of our results is that certain university environments are more likely to recruit students from particular backgrounds. Hence, the effects found may instead be representations of the structural or systemic marginalisation of identities (Dhamoon & Hankivsky, 2011; Powell, 2013), rather than being directly shaped by the university environment itself. Nevertheless, this research emphasises a need for new policies within certain universities to address education and employment inequalities in more creative ways to counteract the structural and systemic marginalisation, such as, providing better pathways for Black students into higher income employment.

Availability of data

The LSYPE data that support the findings of this study are available via the UK Data Service at <https://doi.org/10.5255/UKDA-SN-5545-7>. The university statistics data that were used to construct the synthetic university environments are available at the UK Data Service's online data repository, ReShare, at <https://doi.org/10.5255/UKDA-SN-856056>.

Declarations

The authors report there are no competing interests to declare.

Disclosure statement

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