

School curriculum and social inequalities in access to selective higher education institutions: Scotland and the US in comparison

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- This work is part of a larger project within the AQMeN centre funded by the ESRC on **School subject choices and social inequalities in higher education entry and labour market outcomes**
- Main aim: to assess whether and the extent to which social class differences in HE entry (and labour market outcomes) are explained by subject choices in secondary education
- Published article: Duta, A., An, B. & Iannelli, C. (2017) 'Social origins, academic strength of school curriculum and access to selective higher education institutions: Evidence from Scotland and the USA', *Higher Education*, pp. 1-16. DOI: 10.1007/s10734-017-0166-5_(open access)

Background to the study

- Two established findings in the literature:
 - Persistence of social inequalities in entry to higher education (e.g., Shavit et al., 2007)
 - Expansion in HE participation often accompanied by diversion of new entrants into less prestigious institutions (Arum, Gamoran and Shavit, 2007; Iannelli, Gamoran & Paterson, 2011)
- New emerging finding:
 - The role of curriculum studied in secondary school in the reproduction of social inequalities in access to HE institutions, in particular prestigious universities (Alon, 2009; Triventi, 2011; Boliver, 2011, 2013; Sullivan et al., 2014; Iannelli et al., 2016)

Background to the study

- Measured academic ability (i.e. grades obtained in secondary school) is an important factor for entering selective HE institutions. However, it does not fully explain the existing inequalities in access to selective universities (e.g. Alon, 2009; Triventi, 2011)
- Academic strength of the curriculum studied in secondary school is another important criterion for entering prestigious institutions in Scotland/UK and the US (Russell Group, 2011; NACAC, 2015)
- The take-up of an academic curriculum is highly dependent on students' family background factors in both Scotland and the US and this affects the individual's chances of entering prestigious universities (Iannelli et al., 2016; Klugman, 2013)

- To study the relative importance of different dimensions measuring the academic strength of secondary school curricula - that is the *number* and *type* of academic courses taken, and *performance* in these courses - in reproducing social-class inequalities in entry into selective HE institutions
- Why is the comparison between Scotland and the US interesting?
 - Instructive in uncovering different internal mechanisms of social reproduction of inequalities in two countries which share many societal aspects
 - The aspects which are most relevant to our work are those related to the structure and content of the education system

Educational systems in Scotland and the US

- Similarities between Scotland and the US:
 - low stratification of curriculum in secondary education (Allmendinger, 1989)
 - pronounced hierarchy of tertiary institutions (Shavit et al., 2007)
 - high importance of curriculum studied in secondary school for entry into selective universities (Russell Group, 2011; NACAC, 2015)
- Differences (US as opposed to Scotland):
 - a fee is charged for assessment of performance in college-preparatory courses (Advanced Placement courses)
 - tertiary education institutions charge tuition fees
 - for HE entry no selection of college major is needed

- (1) To what extent is parental social class associated with access to more selective universities in Scotland and the US?
- (2) Do the *number, types, and grades* of advanced academic courses explain social-class differences in access to selective universities in ways that vary between Scotland the US?
- (3) Does the academic strength of curriculum taken in secondary school fully explain these social-class differences in the two countries?

Scotland

Scottish School-Leavers' Survey, a nationally representative longitudinal survey of young people enrolled in S4 in 2002 and followed up two years after leaving high school (S5/S6)

Total No. of cases=1499

US

Education Longitudinal Study of 2002 (ELS:2002), a nationally representative study of 10th grade students in 2002 and followed up two years after leaving high school

Total No. of cases=8350



Entry into different types of HE institution

Scotland

- 1) Ancient Universities
- 2) Old Universities
- 3) New Universities (post 1992)
- 4) Further Education (FE) Colleges

US

- 1) Highly Competitive and Most Competitive
- 2) Competitive and Very Competitive
- 3) Noncompetitive and Less Competitive
- 4) Two-year Colleges

(based on College Admissions Selector-Barron's Profiles of American Colleges)

Social class of origin

(1) service class; (2) intermediate class; (3) working class.

Academic strength of school curriculum

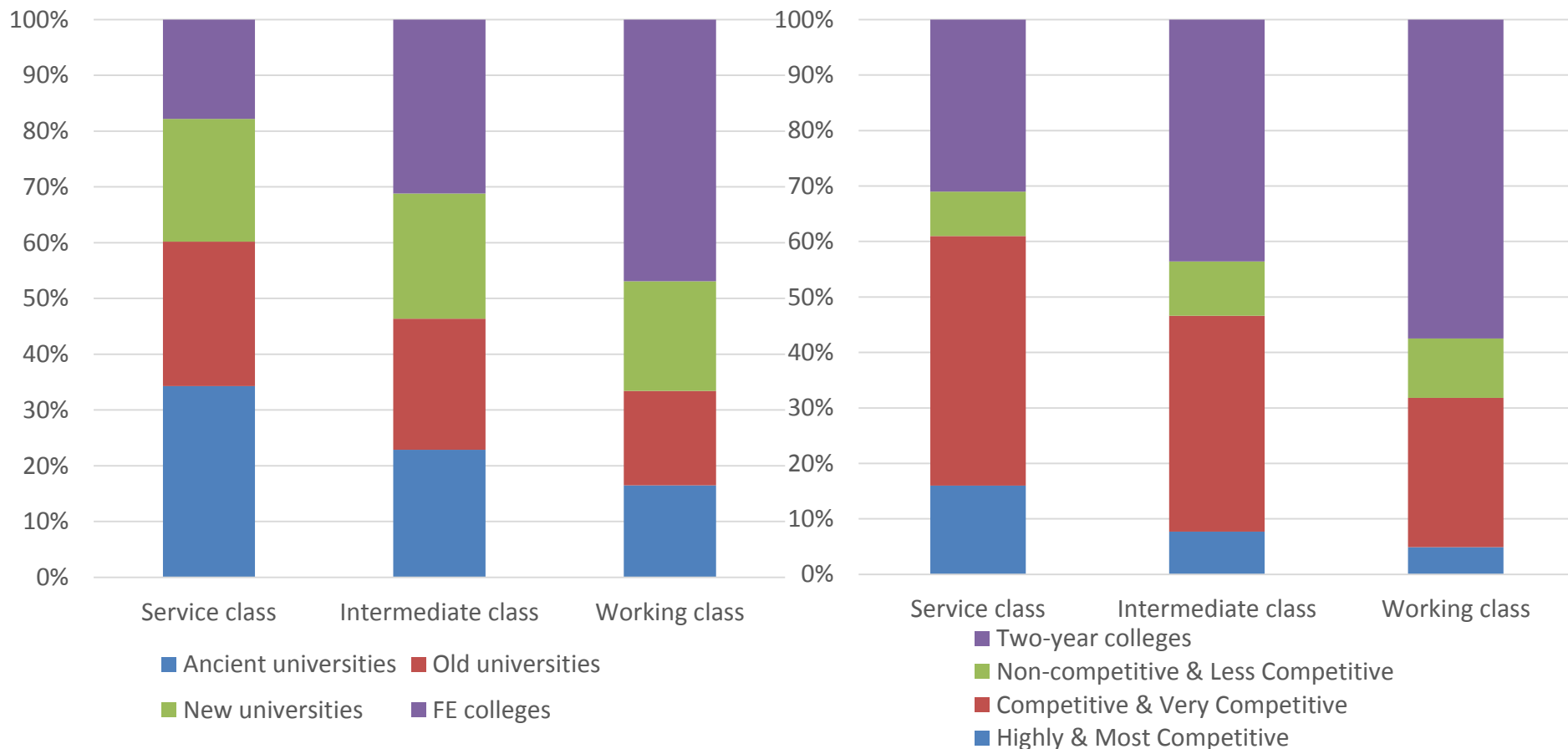
- *number of academic subjects taken at advanced level* (Highers and Advanced Highers in Scotland and AP/IB/Hons in the US)
- *type of academic subjects taken at advanced level* (English, Foreign languages, Mathematics, Biology, Chemistry, Physics, Geography, History, Other sciences, Arts, and Social sciences)
- *grades achieved in academic courses*

Other variables: gender, race, family structure, number of siblings

Parental social class and type of HE institution attended

Scotland

US



Parental social class and mean number of advanced-level courses and average grades obtained, Scotland and the US

	Service class	Intermediate class	Working class
Scotland			
Number of academic Highers	3.61 (0.07)	3.18 (0.13)	2.47 (0.12)
Number of academic Advanced Highers	0.66 (0.032)	0.45 (0.04)	0.30 (0.03)
UCAS academic subjects at Higher and Advanced Higher level	271 (6.84)	211 (10.1)	158 (8.98)
US			
Number of AP/IB/Hons	1.60 (0.03)	1.17 (0.04)	0.78 (0.04)
Academic GPA	2.98 (0.01)	2.81 (0.02)	2.53 (0.03)

Note: Means; SE in brackets



The role of different dimensions of academic curricula in explaining social class inequalities in access to HE institutions in Scotland

	M1 (parental soc. class + control var.)	M2 (M1+ <i>number</i> of advanced courses)	M3 (M1+ <i>type of</i> <i>subjects</i> – adv. courses)	M4 (M1+ <i>grades</i> –advanced courses)	M5 full model (M3-M4 combined)
Ancient universities					
Intermediate vs service	-0.106***	-0.0533	-0.0392	-0.0464	-0.0299
Working class vs service	-0.162***	-0.0629*	-0.0497	-0.0554*	-0.0337
Old universities					
Intermediate vs service	-0.0177	-0.0003	0.00328	-0.00681	0.0016
Working class vs service	-0.0639*	-0.00915	-0.0157	-0.0218	-0.0227
New universities					
Intermediate vs service	0.0325	0.0102	-0.0059	0.00136	-0.0109
Working class vs service	0.00807	-0.0006	-0.00795	-0.0160	-0.0161
FE colleges					
Intermediate vs service	0.0914***	0.0434*	0.0418*	0.0518*	0.0425*
Working class vs service	0.218***	0.0727***	0.0733***	0.0932***	0.0724***

AMEs; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The role of different dimensions of academic curricula in explaining social class inequalities in access to HE institutions in the US

	M1 (parental soc. class + control var.)	M2 (M1+ <i>number</i> of advanced courses)	M3 (M1+ <i>type of</i> <i>subjects</i> – adv. courses)	M4 (M1+ <i>grades</i> –advanced courses)	M5 full model (M1-M4 combined)
Highly and Most competitive					
Intermediate vs service	-0.055***	-0.028***	-0.029***	-0.039***	-0.028***
Working class vs service	-0.081***	-0.041***	-0.040***	-0.054***	-0.036**
Competitive and Very competitive					
Intermediate vs service	-0.031*	-0.014	-0.014	-0.014	-0.011
Working class vs service	-0.148***	-0.102***	-0.099***	-0.099***	-0.089***
Non- and Less competitive					
Intermediate vs service	0.006	0.004	0.004	0.005	0.004
Working class vs service	-0.008	-0.008	-0.009	-0.005	-0.007
Two-year colleges					
Intermediate vs service	0.078***	0.038**	0.038**	0.048***	0.035**
Working class vs service	0.24***	0.15***	0.147***	0.158***	0.132***

AMEs; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

- Social stratification patterns across HE institutions are similar in the US and Scotland but the mechanisms by which these patterns are produced reflect national institutional contexts
- Social inequalities in entry to the most prestigious universities are mediated by different dimensions of academic strength of curricula in the two countries:
 - quantity of advanced academic courses taken in the US and types of courses in Scotland
 - Contrary to Scotland, in the US, social origin factors have a direct effect, not explained by school achievement and curricula, on entry to prestigious universities



Applied Quantitative Methods Network

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