



UNIVERSITY OF
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A comparison of measures of socio-economic background for predicting primary and secondary school attainment

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A project supported by the Department for Education



In collaboration with

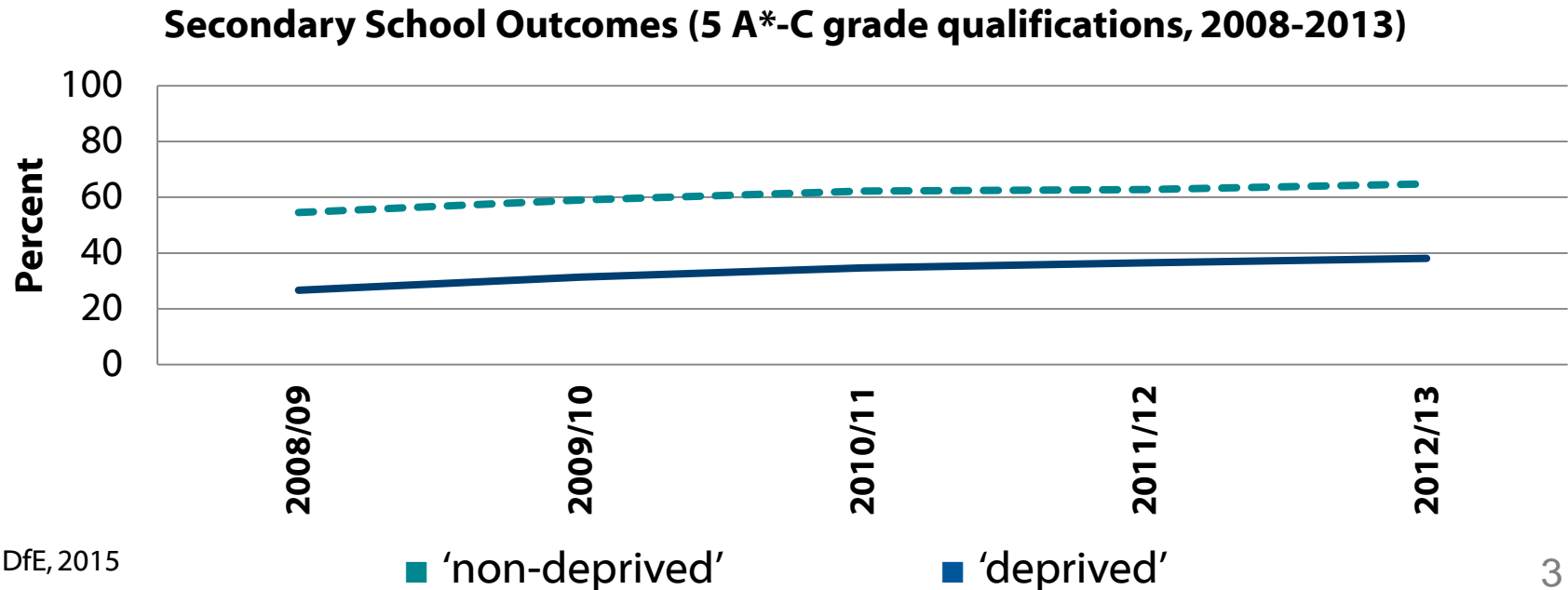


Educational inequality

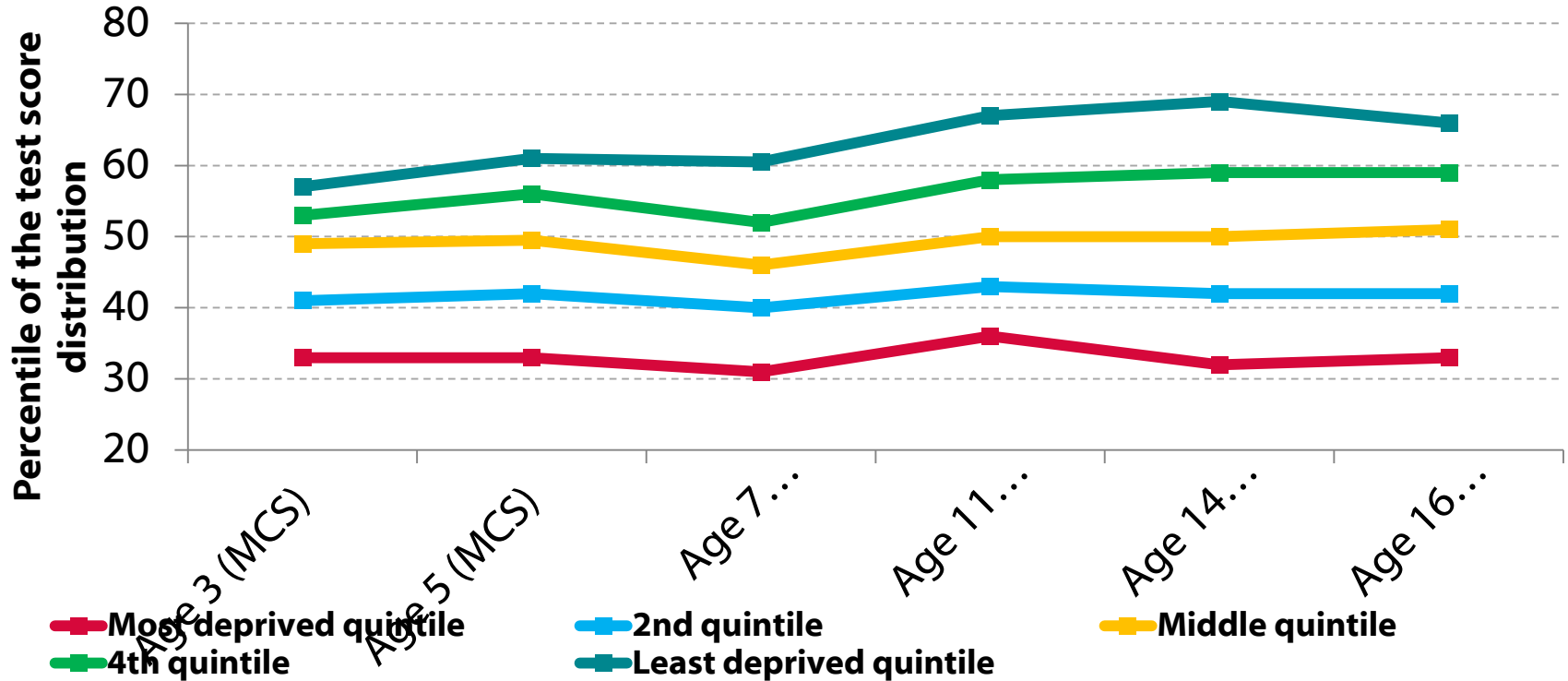
The English context

Socio-economic attainment gap

England continues to exhibit an attainment gap:



Socio-economic attainment gap



Compensatory system

Children who are deemed to be in 'deprived' circumstances are eligible for free school meals

Schools can also receive supplementary funding, for a wide range of pupil meeting certain criteria = Pupil Premium

Identifying deprivation

Department for Education currently uses eligibility for Free School Meals (FSM) as the key measure to identify students from a deprived socio-economic background.

FSM eligibility is used for many purposes:

- allocation of funding via school formulae;

- allocation of the Pupil Premium;

- measuring the socio-economic gap in achievement.

FSM eligibility criteria

Periodically reviewed.

Currently:

Receipt of certain government benefits, covering:

Household income below a threshold

Unemployment

Other special circumstances

+

Inform school of receipt of these benefits

A note of caution

FSM eligibility measure does not perfectly capture
“the working poor”

FSM eligibility not a fixed characteristic

Eligibility \neq Uptake

“FSM ever 6”

Eligibility for free school meals at any point in the past **6** years, as identified in administrative data

Research into FSM

Commissioned by the Department for Education

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How does Free School Meal eligibility (FSM) compare to other measures of socio-economic background in predicting pupil attainment?

Draw on rich survey data to obtain a range of measures of socio-economic background not commonly available in administrative data

Explore their relative predictive power in relation to pupil attainment, as well as the practicality of potentially using them instead of FSM eligibility

Primary School

Millennium Cohort Study (MCS)

+

Matched records from the National
Pupil Database

+

Administrative data from Census

Estimation sample: 5,456 pupils

Secondary School

Longitudinal Study of Young People
in England (LSYPE1)

+

Matched records from the National
Pupil Database

+

Administrative data from Census

Estimation sample: 12,678 pupils

Causal factors

Parental qualifications/education

Parental employment

Household income

Proxies

Individual

FSM eligibility

Household characteristics

Neighbourhood

Index of deprivation affecting children, IDACI

Index of multiple deprivation

Proportion top occupations

Proportion with HE

Accounting for:

Individual characteristics

Demographics (ethnicity, quarter of birth, ...)

Region

Urban/Rural

School characteristics

Type

Contextual Value Added score – ‘quality proxy’

Proportion with special educational needs

Proportion who speak English at home

Proportion eligible for FSM in school

Measures: pupil attainment outcomes

Primary school

Assessments at age 11

Maths and English scores/ levels
1 level = 2 years of progress

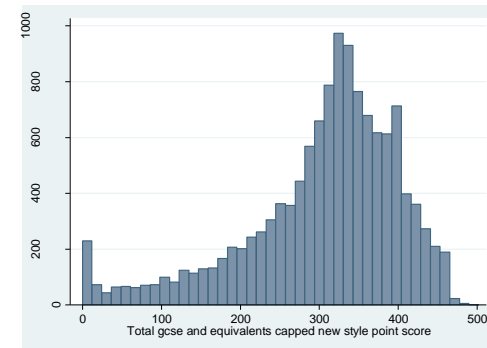
Score	Mean	Standard Deviation	Min	Max
Estimation sample	4.9	0.7	2.5	6.5

Secondary school

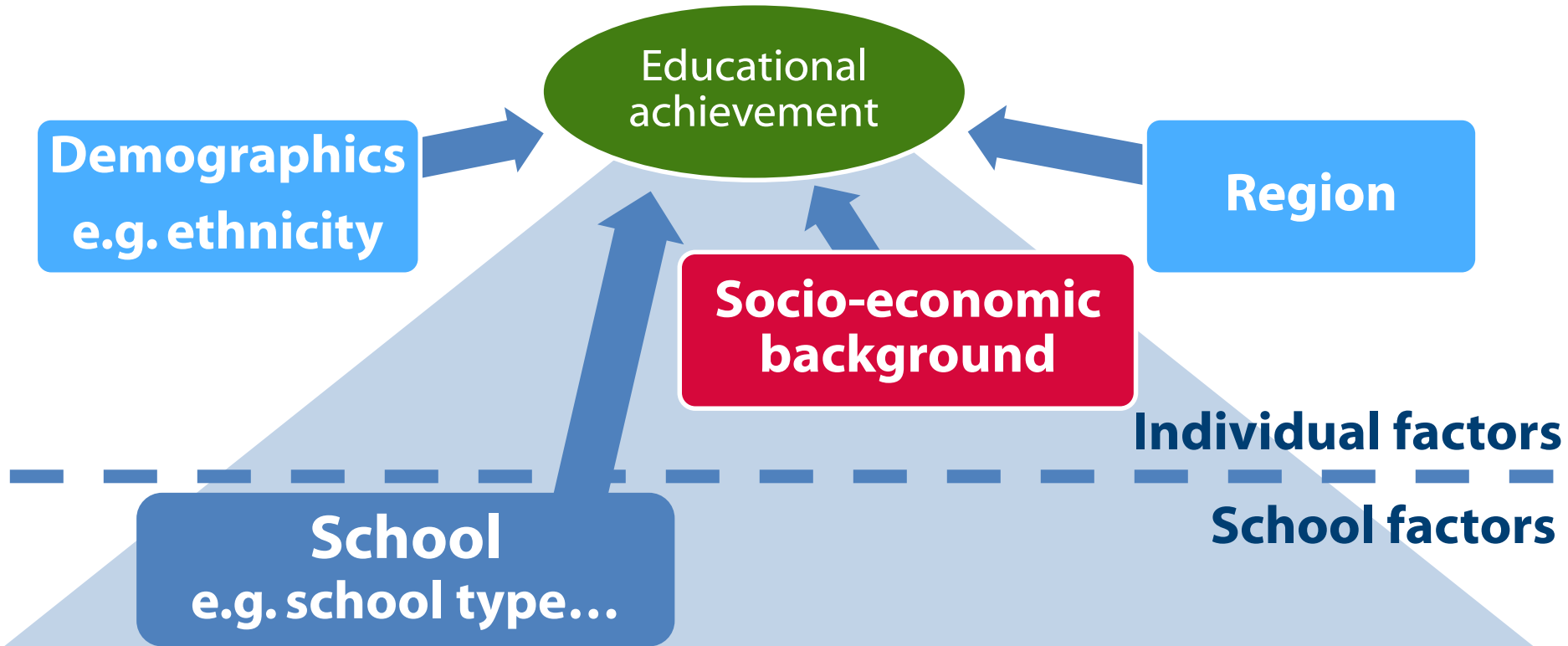
Assessments at age 16 (GCSE)

Total score (capped to the best 8 qualifications)

A* = 58 pts; A = 52 pts; B = 46 pts...



Multi-level modelling approach



Results approach

Focus on the explained variance in pupil attainment by each causal or proxy measure of socio-economic background

Explore the identified attainment gap for each of the measures

Results – individual measures

Proportion explained variance at the individual level

Measure	Primary School	Secondary School
FSM-ever eligibility	14.85%	23.31%
FSM-number of years of eligibility	15.01%	23.44%
Highest household occupation	18.92%	25.62%
Highest household qualification	17.69%	25.77%
Household employment	13.25%	22.54%
Household income	16.06%	20.61%
Further household characteristics	16.46%	24.30%
Neighbourhood: IDACI	12.86%	20.83%
Neighbourhood: occupations	13.60%	21.07%

Focusing in: FSM-ever6

Primary school

14.85% of variance explained

Being eligible for FSM at any point in primary school associated with a difference of 0.32 in the age 11 score,

This is equivalent to roughly 8 months of progress in primary school (to age 11).

Secondary school

23.31% of variance explained

Being eligible for FSM at any point in the 5 years preceding secondary exams is associated with a 56 point reduction in the secondary school score.

This is equivalent to one letter grade lower on 7 GCSE exams, or a full GCSE at A* extra for non-FSM

Focusing in: household income

Primary school

16.06% variance explained

Every additional £1000 of annual household income is associated with an increase of 0.01 in the age 11 levels attained

E.g. A child in a household earning £20,000 annually will achieve roughly 2.5 months less progress than a child in a family earning £30,000/year.

Secondary school

20.61% of variance explained

Every additional £1000 of annual household income is associated with an increase of 0.547 points in the secondary school score.

Eg.: A pupil in a household earning £35,000/year will achieve a mark of one letter grade higher (from C to B; or from B to A;) on one exam, compared to household earning £20,000/year.

Focusing in: parental education

Primary school

17.69% of variance explained

Compared to households where at least one parent has a degree qualification, other qualifications are associated with attainment gaps of:

Upper-secondary	0.26 – 6 months
Lower-secondary	0.37 – 9 months
Primary	0.60 – 14 months

Secondary school

25.77% of variance explained

Compared to households where at least one parent has a degree qualification, other qualifications are associated with attainment gaps of:

Upper-secondary	38 points
Lower-secondary	55 points
Primary	81 points

Focusing in: neighbourhood IDACI

Primary school

12.86% variance explained

There is a 0.48 difference in the primary school score between the least and the most deprived neighbourhoods, a difference of roughly half a level, or one year of progress

Secondary school

20.83% of variance explained

There is a 105.9 point difference in secondary school score between pupils from the least and from the most deprived neighbourhoods, approximately equivalent to two extra GCSEs (at A and A*) compared to the most deprived neighbourhood

Re-focusing on the FSM result

Testing a measure of socio-economic background composed of **all available** 'causal' and 'proxy' measures, FSM eligibility retains its statistical significance

This highlights that it continues to capture an aspect of deprivation not identified through any other single measure

Conclusions

When comparing all measures and proxies of socio-economic background, a large proportion of conclusions stand for both primary and secondary school attainment

Conclusions

Parental qualifications, parental occupations and household characteristics perform better than FSM-eligibility

However, at-scale collection of this information is impractical and difficult in the system

Household income performs better at primary than at secondary level, but data quality concerns overwhelm all other considerations

Conclusions

Neighbourhood measures perform worse than FSM-eligibility

They benefit from existing data collection structures

But suffer from the disadvantage of long time delays between data collection and potential use

They do not accurately capture high-density areas

Conclusions

Free school meal eligibility (in its ever-6, or discrete number of years) remains a good (albeit imperfect) measure of socio-economic background in education

It continues to be used in the system

New evidence confirms it is also appropriate for use at the end of compulsory schooling, for efforts to increase higher education participation for the most disadvantaged.

Thank you

Questions

Sonia Ilie, University of Cambridge



Prezentace byla využita na mezinárodní konferenci **Spravedlivost ve vzdělávání**
Na kontextu záleží aneb možnosti zjišťování kontextu vzdělávání pomocí indikátorů
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