Nuffield Foundation

UNIVERSITY of STIRLING

Choice, Attainment and Positive Destinations

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TODAY'S THEMES:

- **1. Exploring trends in subject choices and the determinants of subject choice :**
- *Level of schools (using the SG aggregate data)*
- Trends in subject choices at different stages and levels of qualifications
- The relationship between subject choices in S5 and the subsequent subject
- choices in S5 and S6
- The relationship between subject choice and school characteristics
- *Level of individuals (using the Scottish Longitudinal Study data)*
- The relationship between family characteristics and subject choice I nS4.
- 2. **Exploring the consequences of subject choice:**
- *Level of schools (using the SG aggregate data)*
- The impact of subject choice in S4 on the attainment at Nat5, Higher and Advanced Higher level of qualifications.

NARROWING THE SECONDARY CURRICULUM?

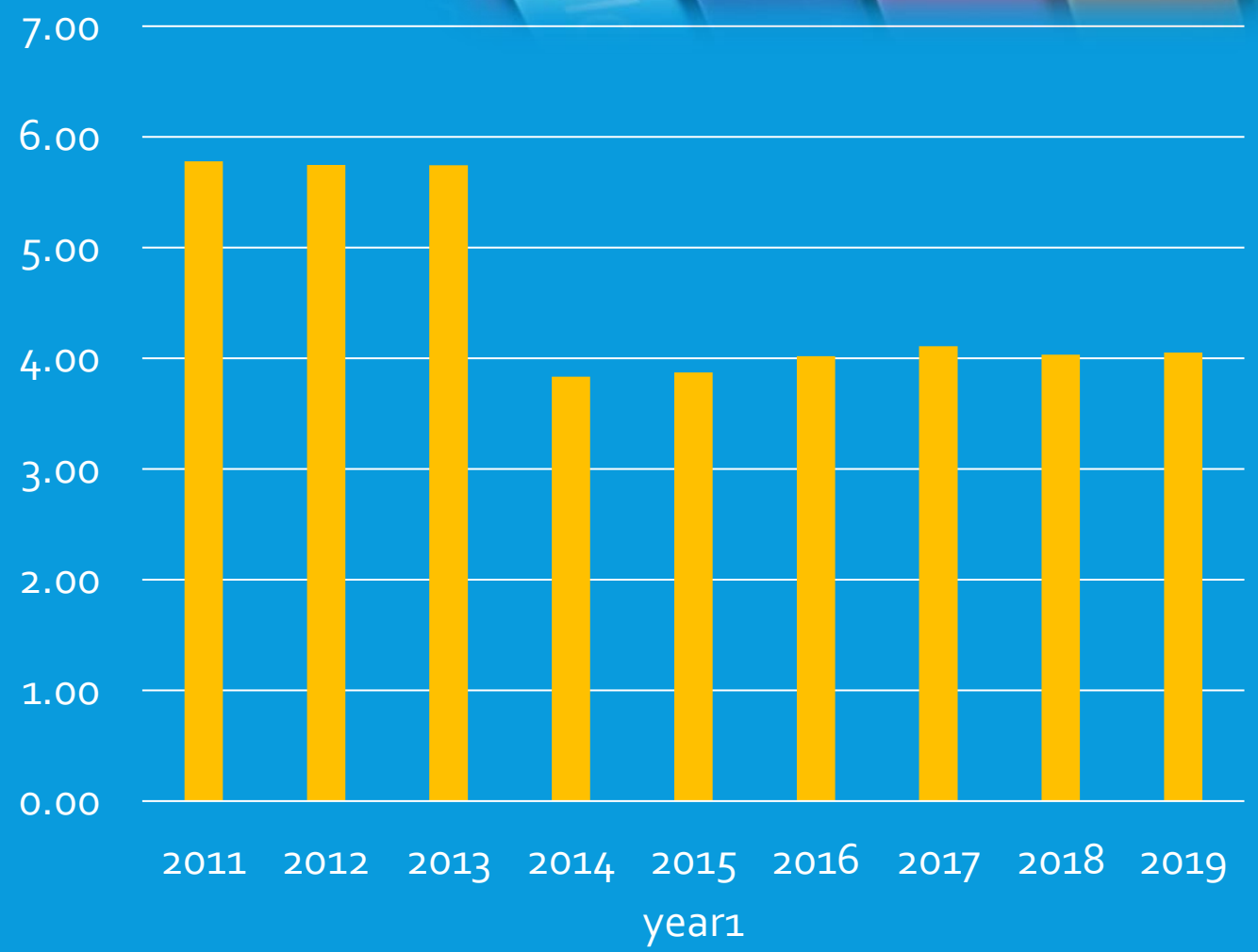
Exploration of subject choices at different levels of Scottish National Qualifications over the period 2011-2019 using the administrative educational data

OUR AIMS:

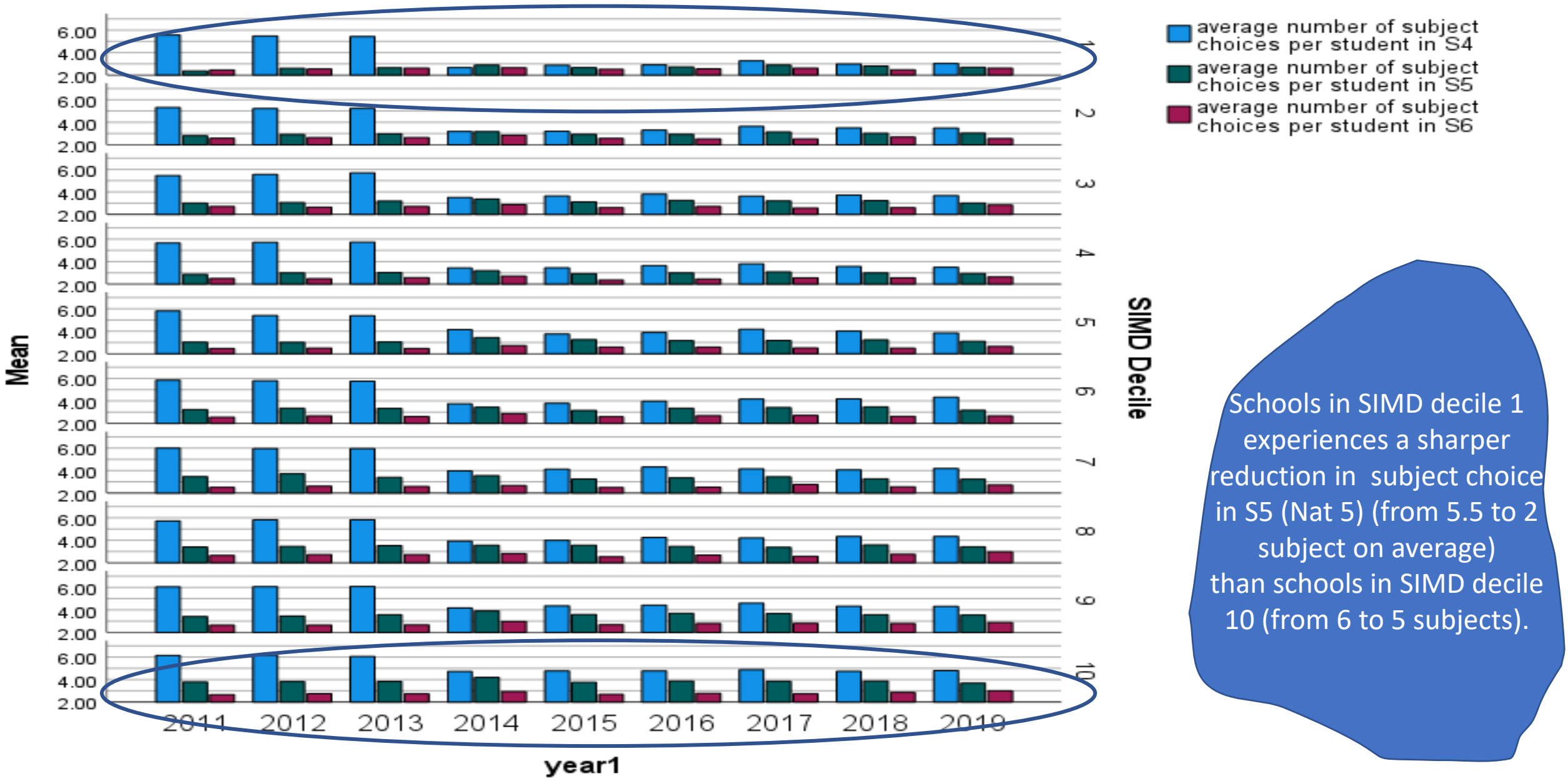
- To obtain nuanced understanding of trends in subject entries and subject choices at different levels of Scottish National qualifications during the senior stage of secondary education.
- To explore the relationship between subject choice in S4 and the subsequent choices of subjects in S5 (at levels Nat 5 and Higher) and in S6 (at levels Higher and Advanced Higher)
- To explore the relationship between subject choice at different stages and levels of Scottish National Qualifications and school characteristics.

SECONDARY CURRICULUM NARROWING UNDER THE CFE

- This paper explores phenomenon of the Secondary Curriculum Narrowing under the CfE.
- The curriculum narrowing manifests itself through a reduced number of subjects that pupils take for SCQF Level 5 (National 5) qualifications in S4.
- Existing evidence shows that after 2014 there is a social gradient in the subject choice at Nat 5 level (Shapira &Priestley 2019).



SUBJECT CHOICES BY SIMD DECILE



Schools in SIMD decile 1 experiences a sharper reduction in subject choice in S5 (Nat 5) (from 5.5 to 2 subject on average) than schools in SIMD decile 10 (from 6 to 5 subjects).

IMPORTANCE OF SUBJECT CHOICE (SC)

- Curriculum choices and decisions during the senior stage of secondary school such as number and composition of subjects entered for national qualifications as early as at age 15 are highly consequential:
  - SC is linked to social class destinations and chances of entering service class and avoid low skilled occupation in later life and plays important role in social mobility (Iannelli, Smyth & Klein , 2016).

  SC in at age 15-16 at National 5 qualifications:
  - determines whether young people would be able to make a transition into higher education
  - determines what type of educational institutions they are likely to be admitted.

  The emerging evidence that the SC at Nat 5 level is becoming socially stratified is particularly worrying.

LINK BETWEEN SUBJECT CHOICE AND FAMILY BACKGROUND

- Selection of school subjects within the secondary education system in Scotland and in the UK is socially patterned:

  there are differences in the subject's uptake by parental social class and the social inequalities in subject choice in S3/S4 are also reproduced in S5/S6 (e.g. Iannelli and Klein 2015).

- To make an informed subject choice young people need an access to information about consequences of particular choices.
  - Friends and family generally pass on advice surrounding career and educational choices they know, thus young people who are lacking access to advantaged individuals can both lack advice on more beneficial transitions whilst be shepherded towards disadvantaged careers.
  - They might opt for 'safe' choices and select subjects that are easy to pass (Iannelli &Duta, 2017) which might narrow their opportunities: they would apply to a specific type of universities/degree programmes (Boliver, 2015).

- Previously the social inequality in subject choice was linked to the composition of the subject choice (ibid).

- Since 2014 it seams that social inequality also starts manifesting itself through the number of qualifications at Nat 5 level that young people have an opportunity to enter in S4.

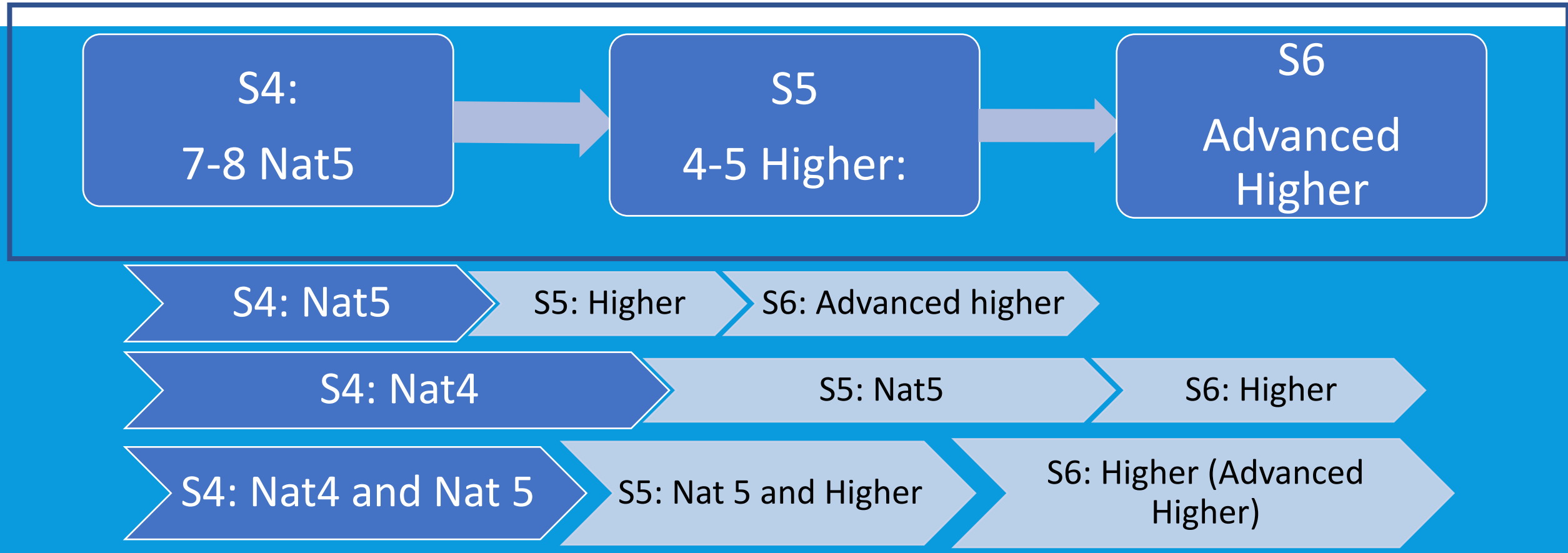
SCHOOL LEVEL DETERMINANT OF SUBJECT CHOICE

There is a strong association between the SES composition of school and subjects studied (e.g. Anders at al. 2017):

- the impact of the school SES on pupils' subject choices is as strong as the impact of their family SES;
- school explain about a third of the variation in academic selectivity of subjects;
- pupils in schools with more socio-economically and academically advantaged intakes are more likely to study more academically selective subjects, even after controlling for individuals' own SES.

- Schools may deliberately take into account the SES composition and offer young people subjects that they deem appropriate for them (Anders et al. 2017).
- There is a known difficulty that schools with a high intake of children from lower SES have in recruiting and retaining highly qualified staff (Lupton, 2005; Lupton &Thrupp, 2012; Ofsted, 2013).
- A lack of qualified staff in such shortage areas as sciences and modern languages place constrains at the number and composition of subjects offered to young people.

MORE FLEXIBLE SECONDARY SCHOOLS CURRICULUM? MORE FLEXIBLE HIGHER EDUCATION REQUIREMENTS?

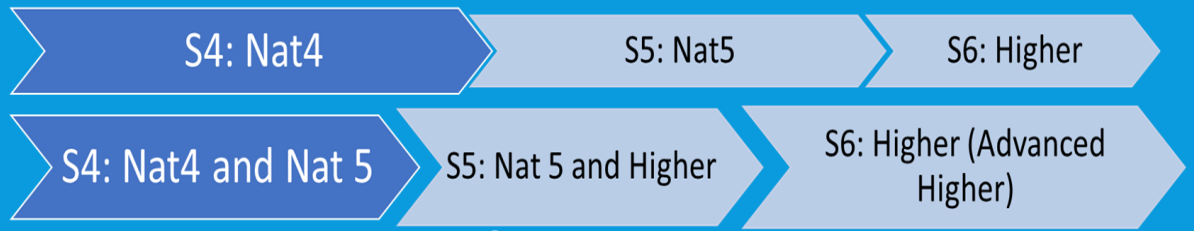


University requirements: 4-5 A-B Highers in one sitting

RESEARCH HYPOTHESES:

- 1. The number of subject choices in S4 at National 5 level is positively associated with number of subject choices in S5 at Higher level and in S6 at Advanced Higher.
- 2.The numbers of subject choices
  - in S4 at National 5,
  - in S5 at Higher level and
  - in S6 at Advanced Higher level

- are negatively associated with such characteristics as school area level of deprivation (measured by the SIMD decile), the percentage of pupils registered for free school meals, the percentage of pupils with additional support needs .
- 3. The numbers of subject choices
  - in S5 at National 5,
  - in S6 at Higher level



- are positively associated with such characteristics as school area level of deprivation (measured by the SIMD decile), the percentage of pupils registered for free school meals, the percentage of pupils with additional support needs .

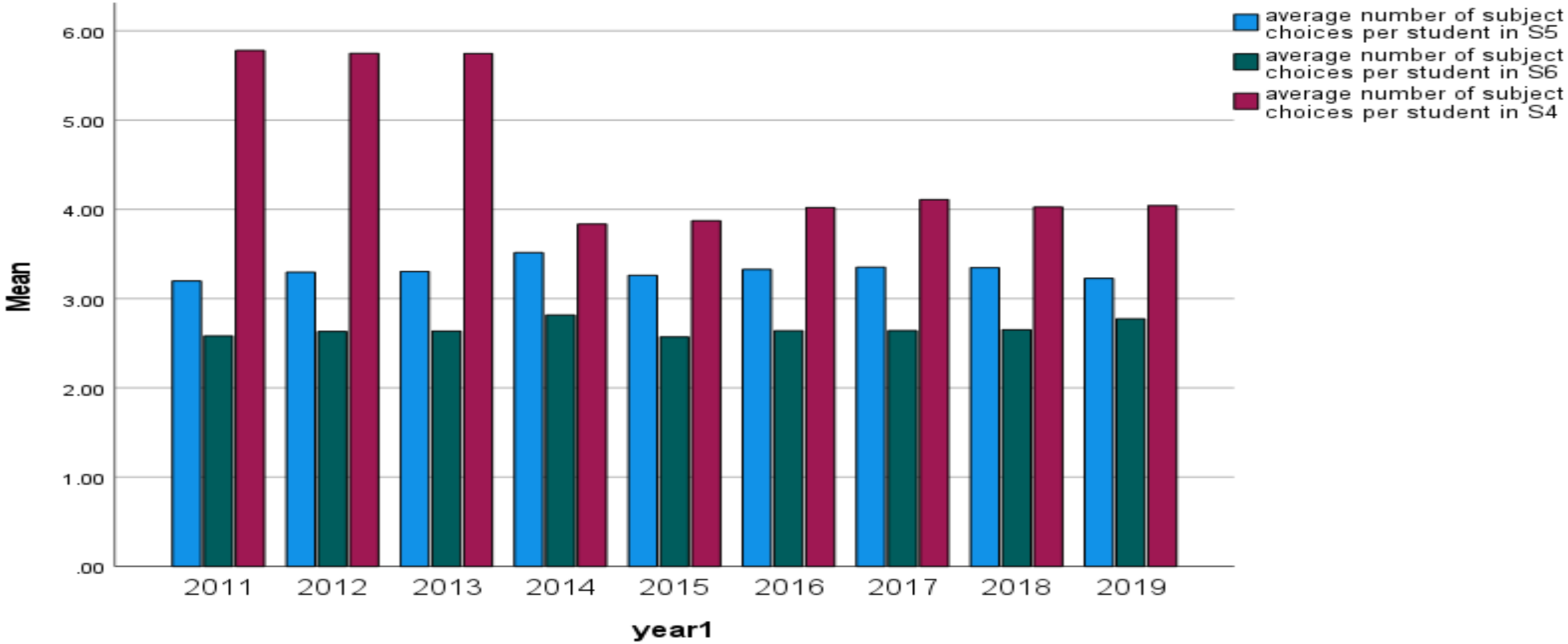
DATA AND METHODS

- Research population and sample – all publicly funded secondary schools in Scotland (special schools are excluded)
- The Scottish Gov (ScotExec) Educational data (Subject entries and attainment +School Census) for years 2011-2019
- Descriptive statistics:
  - Examination of trends over time in subject entries and number of subject choices
  - Examination of the bivariate relationship (using Pearson R correlations) over time between
  - i. Number of subject choices at different stages and levels of qualifications
  - ii. Number of subject choices at different stages and levels of qualifications and school characteristics.

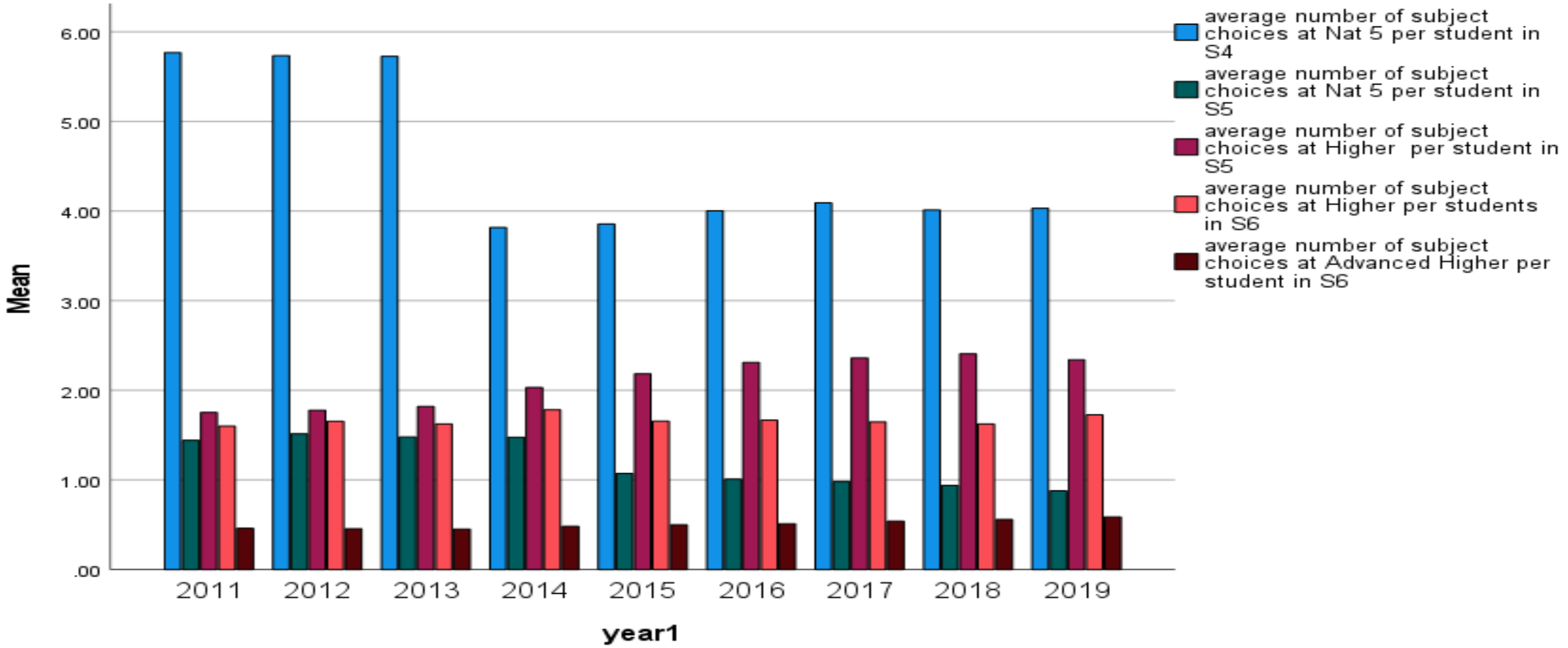
Multivariate analysis

- Linear regressions predicting the subject choice at different stages and levels of qualifications

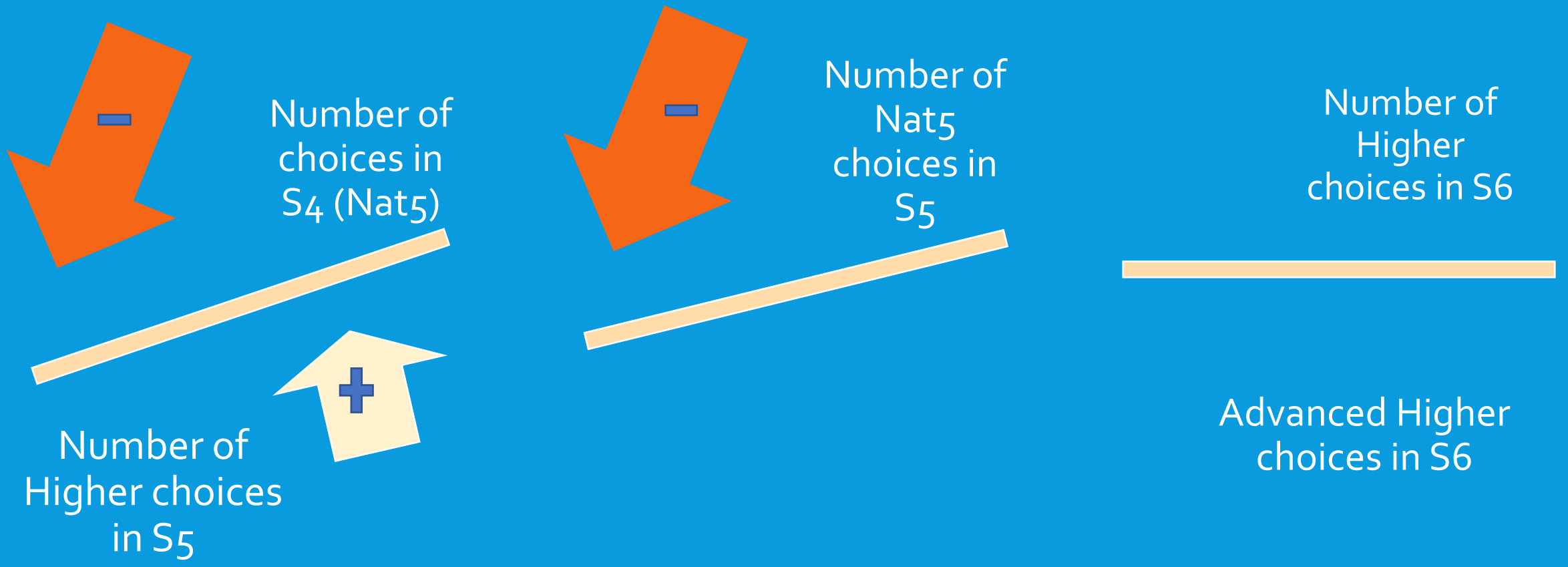
AVERAGE NUMBER OF SUBJECT ENTRIES PER STUDENT (SUBJECT CHOICES) PER STAGE



AVERAGE NUMBER OF SUBJECT ENTRIES PER STUDENT (SUBJECT CHOICES) PER STAGE AND LEVEL

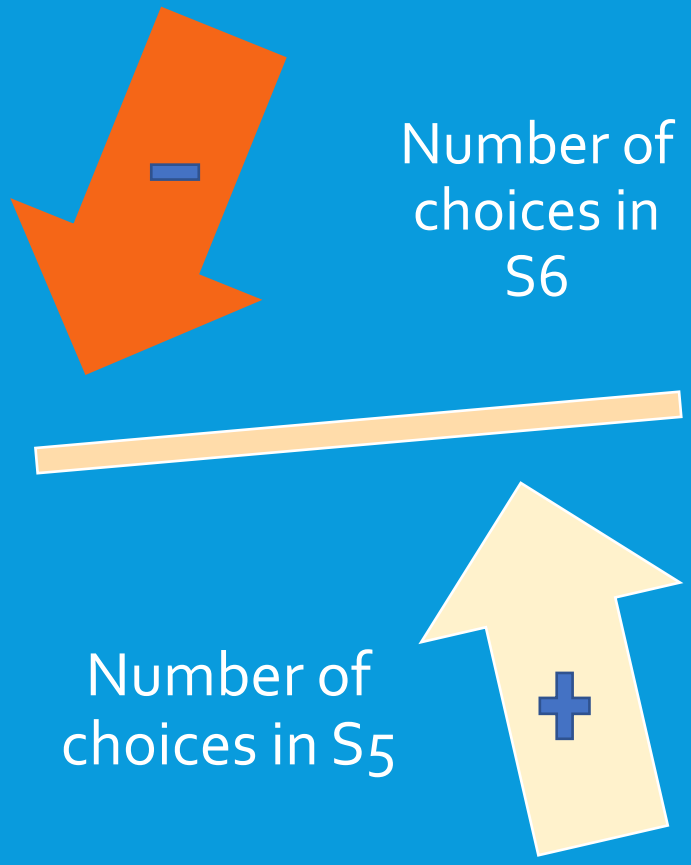


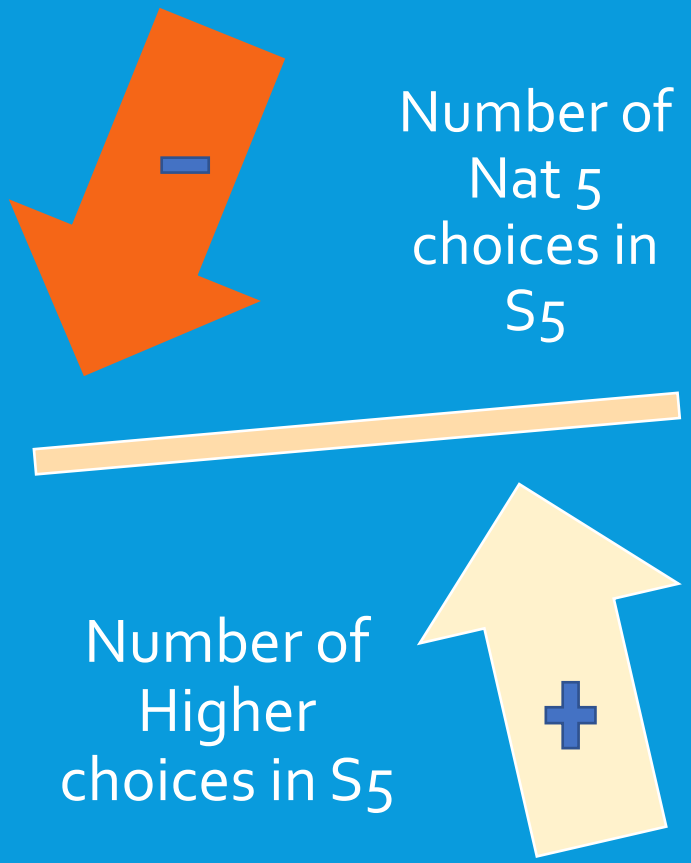
TRENDS IN NUMBER OF SUBJECT CHOICES BY STAGE AND LEVEL OF QUALIFICATIONS

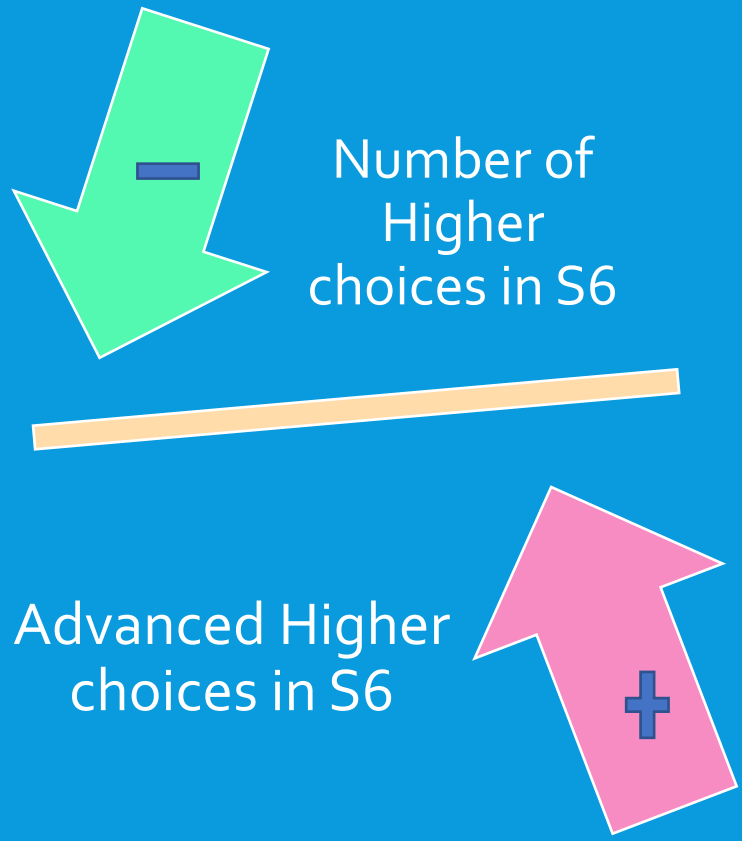


BIVARIATE ANALYSIS (PEARSON CORRELATIONS)

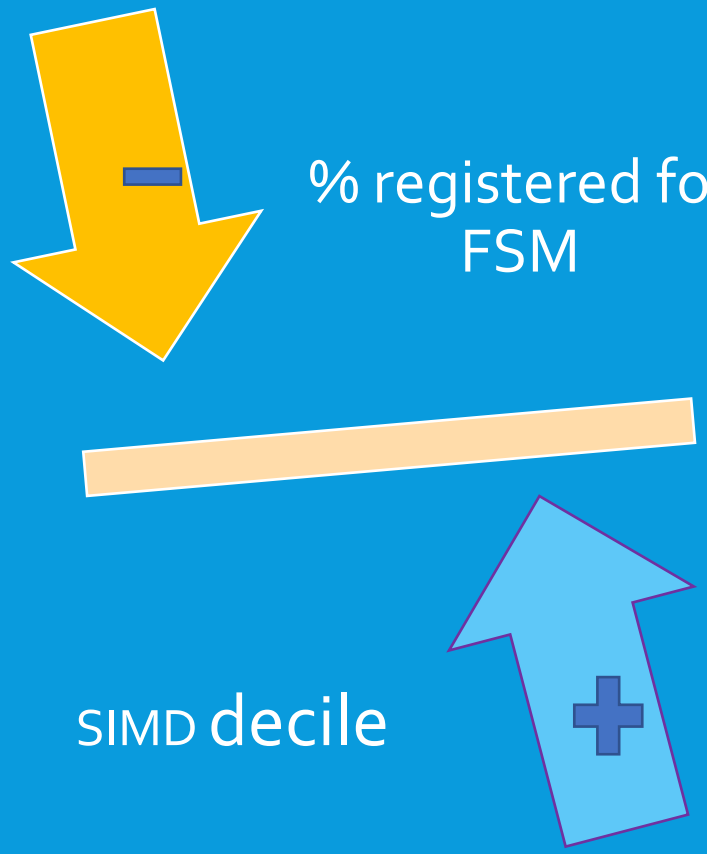
SUMMARY (BIVARIATE ANALYSES): THE RELATIONSHIPS BETWEEN NUMBER OF SUBJECT CHOICES IN S4, IN S5 AND

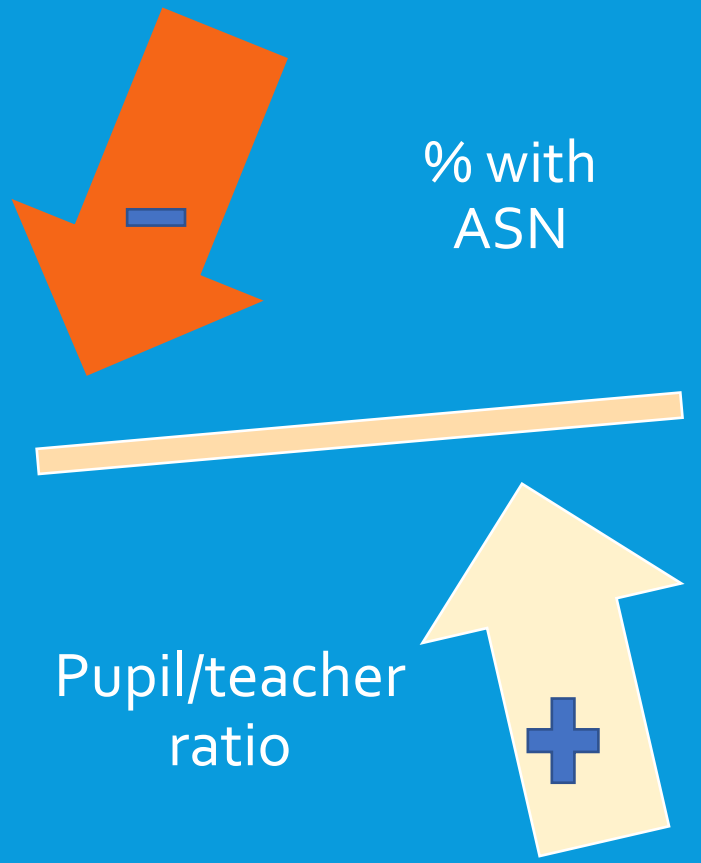




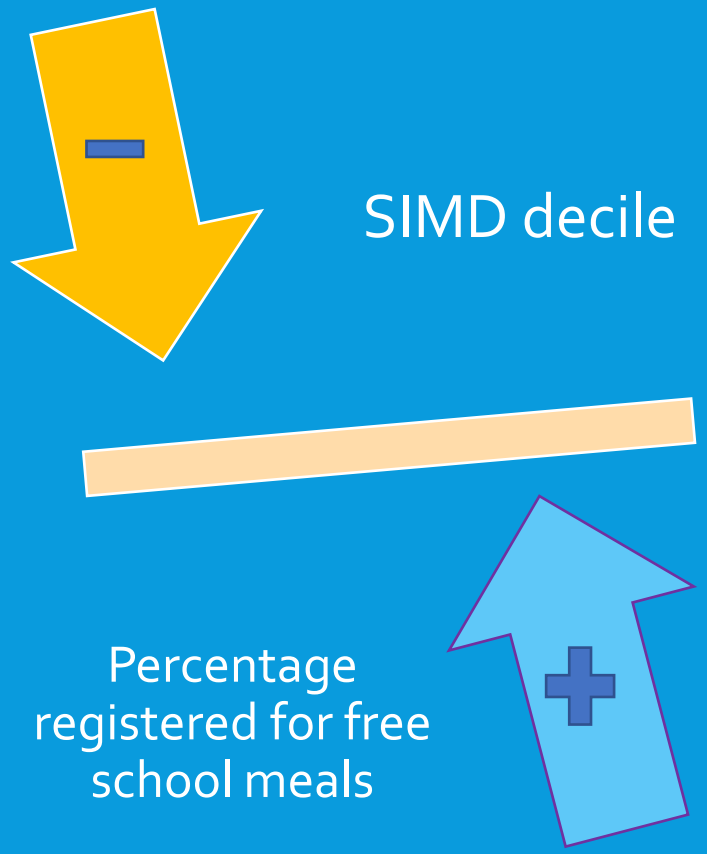


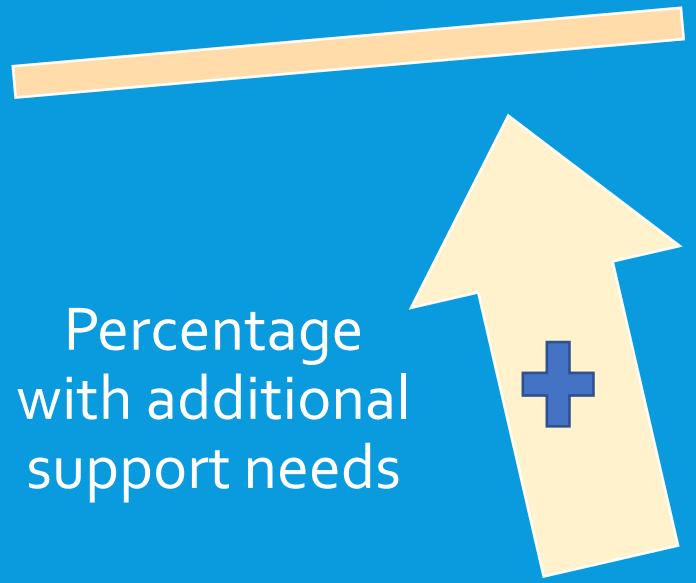
SUMMARY (BIVARIATE ANALYSES): THE RELATIONSHIPS BETWEEN NUMBER OF SUBJECT CHOICES IN S4 AND SCHOOL CHARACTERISTICS



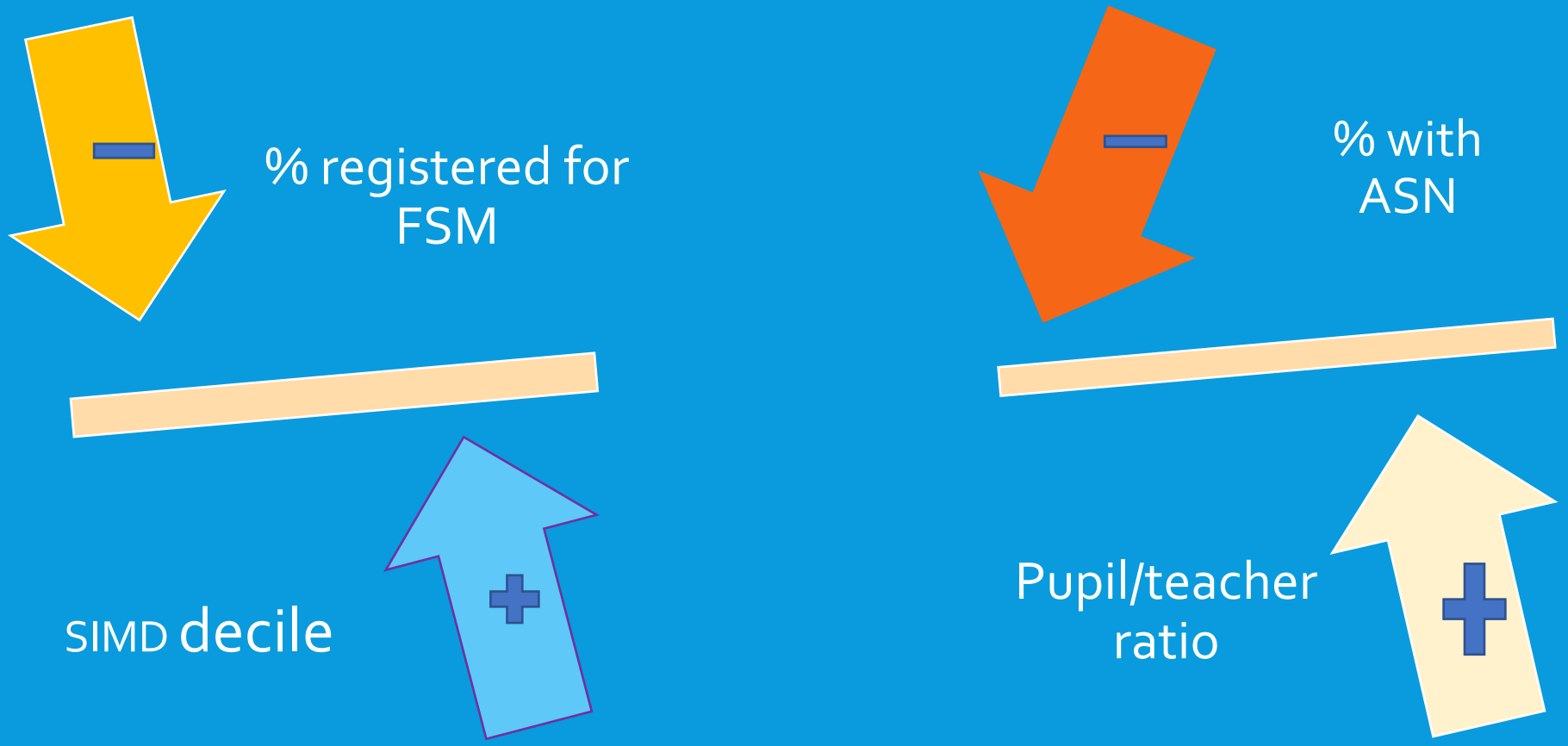


SUMMARY (BIVARIATE ANALYSES): THE RELATIONSHIPS BETWEEN NUMBER OF SUBJECT CHOICES IN S5 AT NAT 5 LEVEL AND SCHOOL CHARACTERISTICS



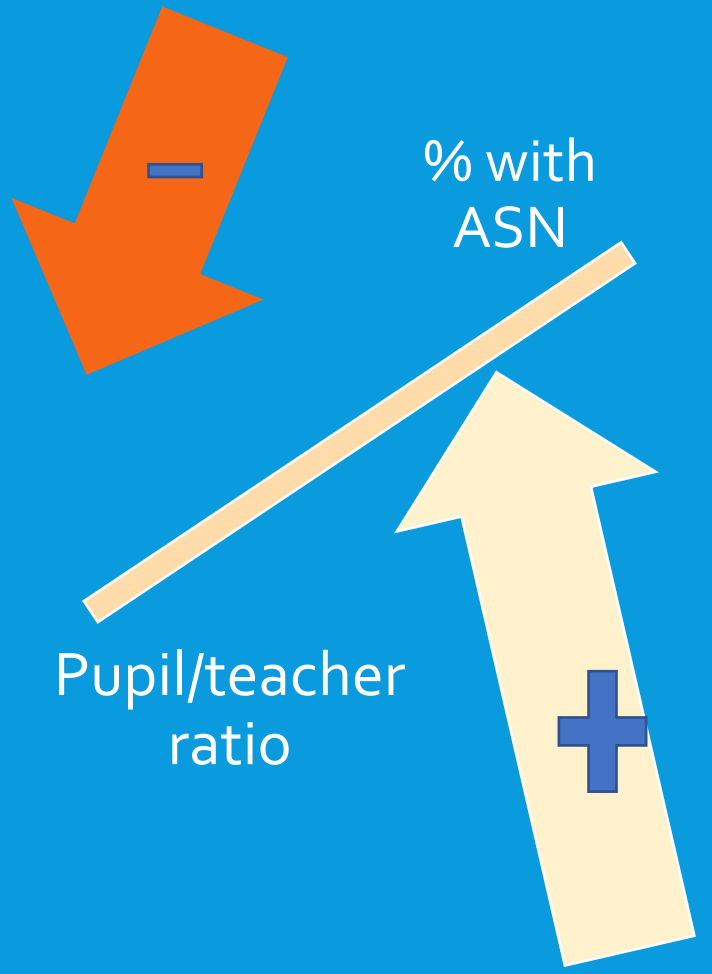


SUMMARY: NUMBER OF SUBJECT CHOICES IN S5 AT HIGHER LEVEL



SUMMARY: NUMBER OF SUBJECT CHOICES IN S6 AT HIGHER LEVEL

SIMD decile



REGRESSION ANALYSIS

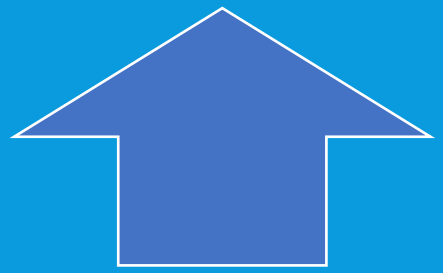
REGRESSION ANALYSIS: PREDICTING NUMBER OF SUBJECT CHOICES IN S4

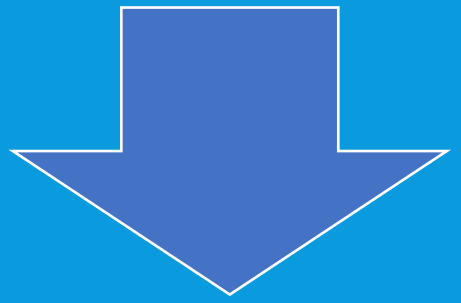
SIMD decile

Staff-Student ratio

Large urban area

Remote rural areas





%reg FSM

%ASN

year

REGRESSION ANALYSIS: PREDICTING NUMBER OF NAT 5 SUBJECT CHOICES IN S5

Staff-Student ratio

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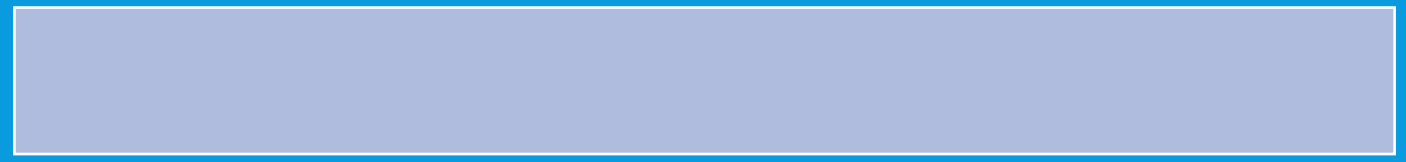
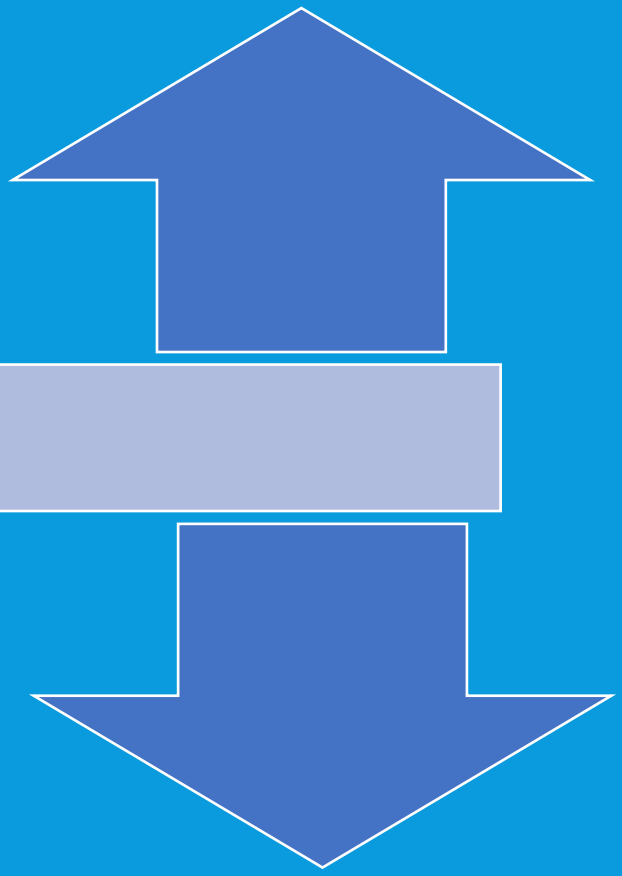


Number of Nat 5 subject choices in S4

SIMD decile

year



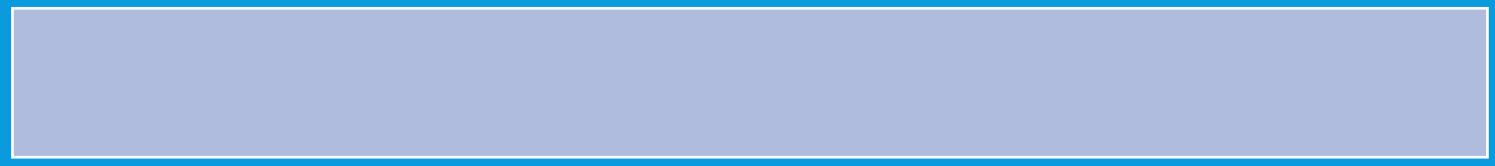
PREDICTING NUMBER OF **HIGHER SUBJECT CHOICES IN S5** FROM NUMBER OF NAT5 SUBJECT CHOICES IN S4 AND SCHOOL CHARACTERISTICS

Number of Nat 5 subject choices in S4

SIMD decile

Year

Staff-Student ratio



%reg FSM

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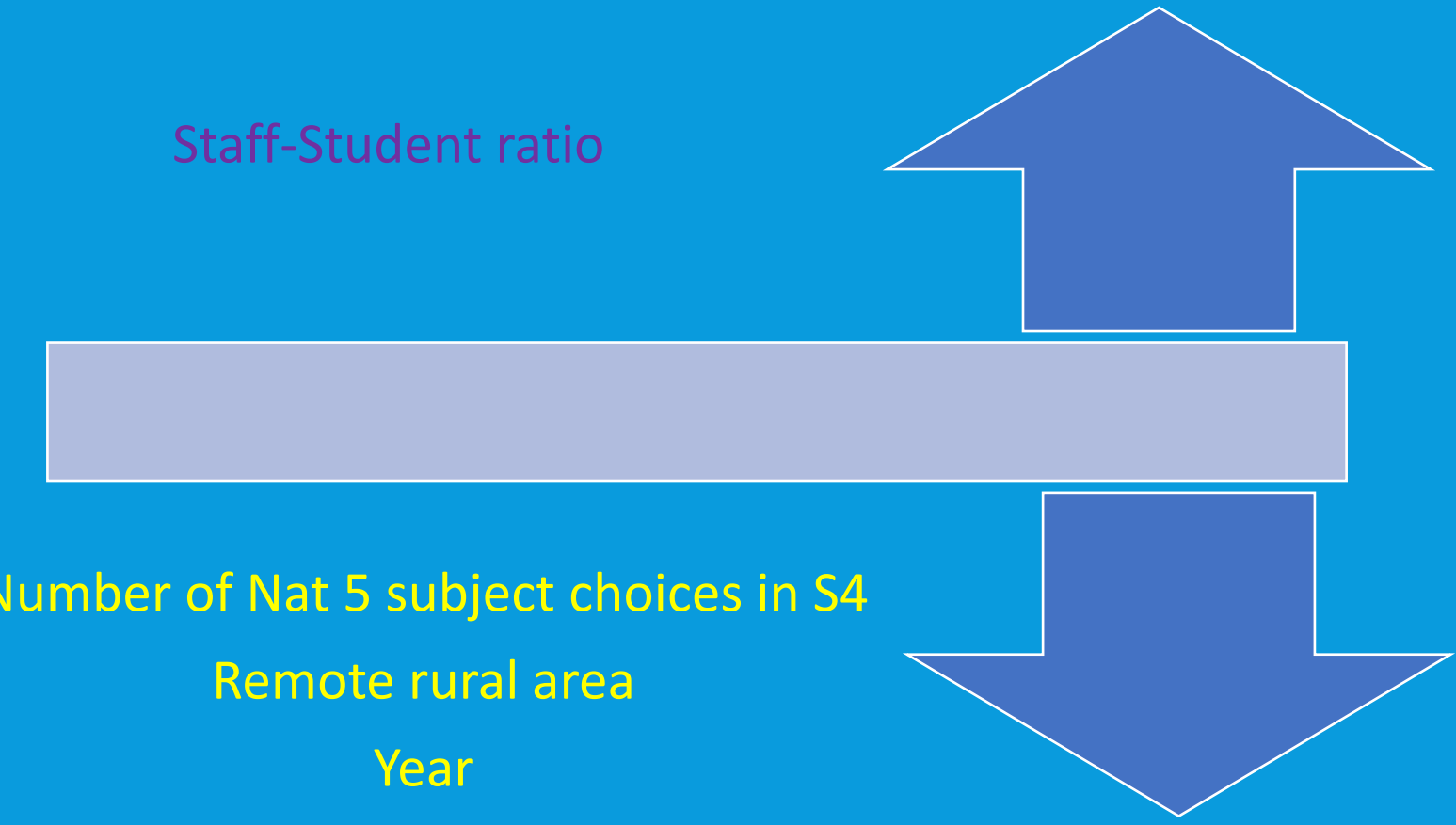
Remote rural areas

REGRESSION ANALYSIS: PREDICTING NUMBER OF HIGHER SUBJECT CHOICES IN S6

Staff-Student ratio



Number of Nat 5 subject choices in S4

Remote rural area

Year

%reg FSM

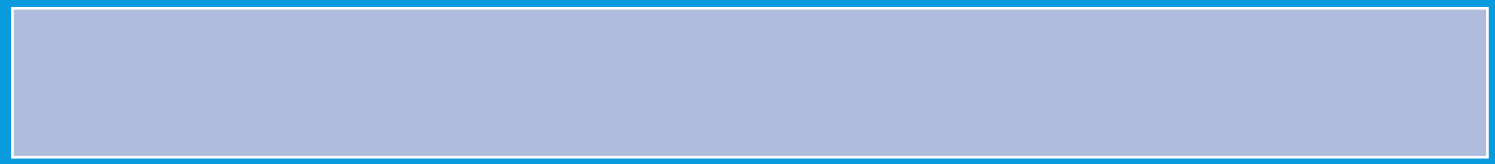
PREDICTING NUMBER OF **ADVANCED HIGHER SUBJECT CHOICES IN S6** FROM NUMBER OF NAT5 SUBJECT CHOICES IN S4 AND SCHOOL CHARACTERISTICS

Number of Nat 5 subject choices in S4

SIMD decile

Year

Staff-Student ratio

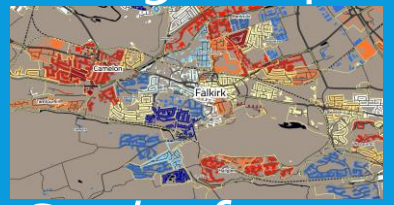


%reg FSM

Remote rural areas

DID WE GAIN FURTHER INSIGHTS FROM REGRESSION ANALYSIS?

- The magnitude of the impacts and the 'net' impacts.
- 1. Everything else being equal the change over time in the number of subject choices is even bigger that it appears from descriptive stats
- 2. The overtime reduction in the number of subject choices is particularly large at National 5 level of qualifications (both in S4 and S5)
- Only student/teacher ratio, SIMD decile and living in large towns/remote rural areas are positively associated with subject choice at Nat 5 in S4



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- *In S5 the factors that are positively associated with entries in Nat 5 are student-teacher ratio, % of pupils with ASN and % registered for free school meals*

+

Decline in entries to Nat 5 qualifications both in S4 and S5

Entry to Nat 5 in S4 is associated with an advantage

Entry to Nat 5 in S5 is associated with a disadvantage

DID WE GAIN FURTHER INSIGHTS FROM REGRESSION ANALYSIS?

Number of Higher subjects choices in S5:

- Positively associated with subject choice in S4
- Negatively associated with living in remote rural area, % of students with ALN and with a % registered for FSM:



Numb[illegible]ner [illegible]hoi[illegible]

- Negatively associated with subject choice in S4
- Negatively associated with SIMD decile
- Positively associated with staff-student ratio

Number of Advanced Higher choices in S6:

negatively associated with registered for FSM

positively associated with the SIMS decile

positively associated with subject choices in S4



Higher number of Higher choices in S5 is associated with an advantage

Higher number of Hgher choice in S6 is associated with a disadvantage

Higher number of AH choices in S6 is associated with an advantage

CONCLUSIONS

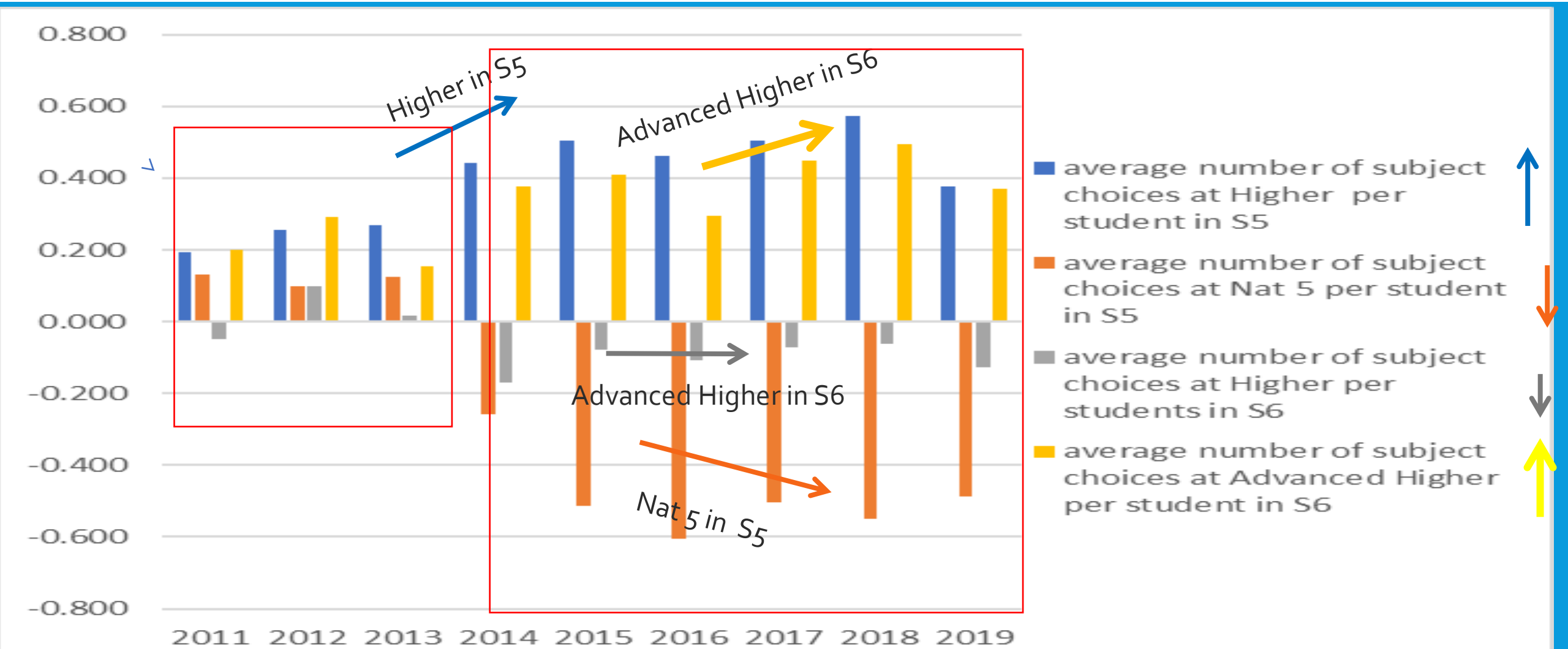
- Nat 5 subject choice in S4 is consequential for subject choice at different level of Scottish National Qualifications in S6 and S6.
- Nat 5 subject choice in S4 is positively associated with Higher subject choice in S5 and Advanced Higher subject choice in S6. .
- Nat 5 subject choice in S4 is negatively associated with the Nat 5 choices in S5 and Higher choices in S6.
- Nat 5 subject choice in S4, Higher subject choice in S5 and Advanced Higher subject choice in S6 are all positively associated with characteristics of schools that signal social advantage.
- Nat 5 subject choice in S6, and Higher subject choice in S6 are negatively associated with characteristics of schools that signal social advantage.

THANK YOU!

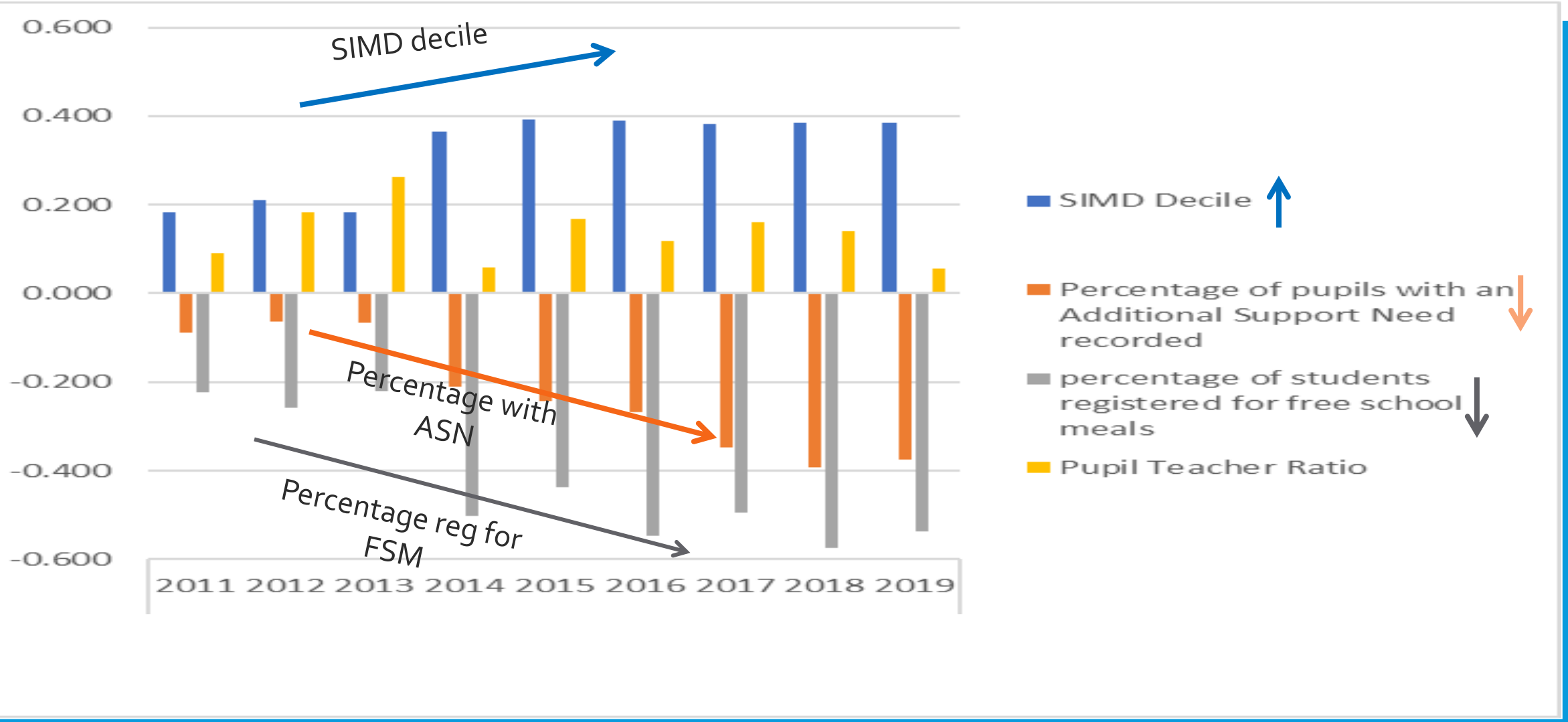
- Questions?

CHARTS

PEARSON CORRELATION COEFFICIENTS BETWEEN NUMBERS OF SUBJECT CHOICE IN S4 AND SUBJECT CHOICES IN S5 AND S6



PEARSON CORRELATION COEFFICIENTS BETWEEN NUMBER OF SUBJECT CHOICE IN S4 AND SCHOOL CHARACTERISTICS



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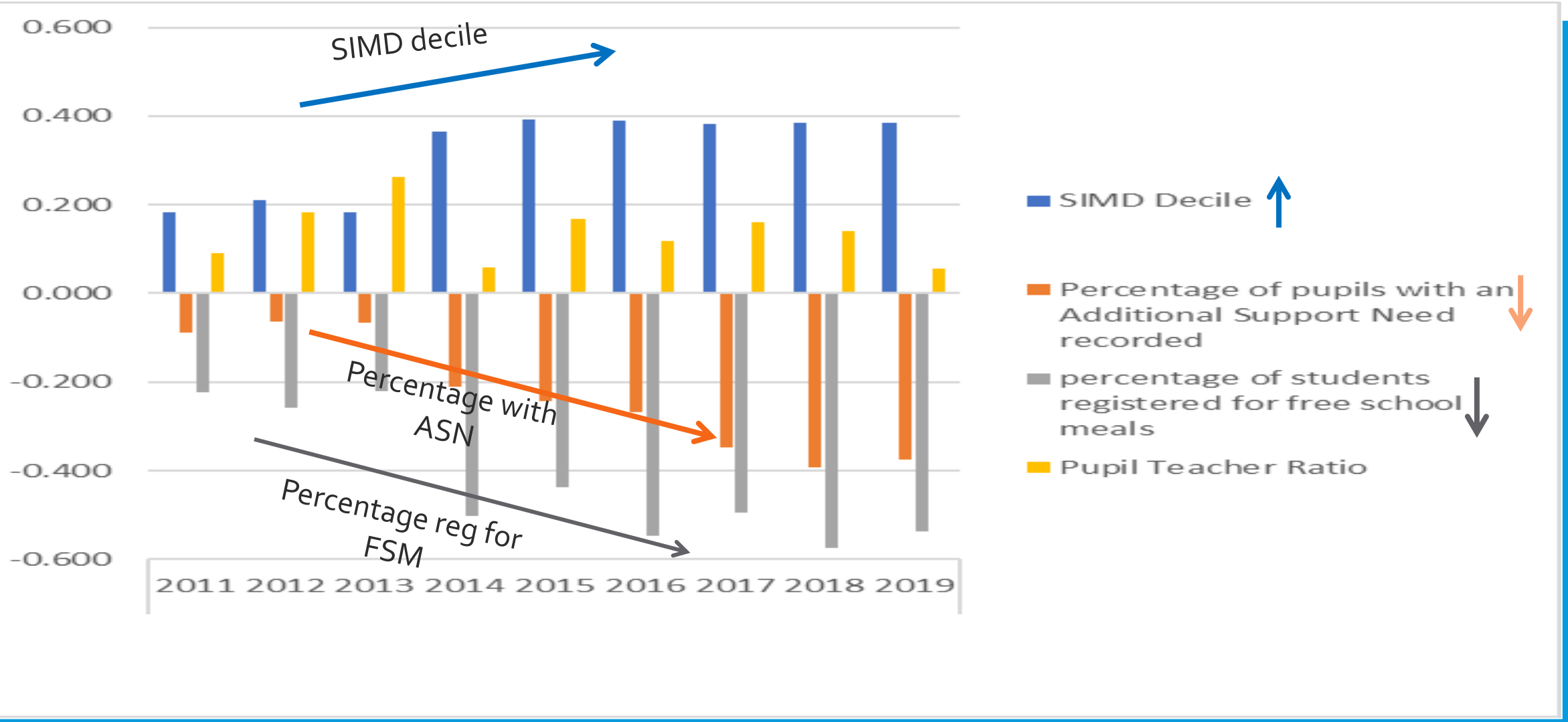
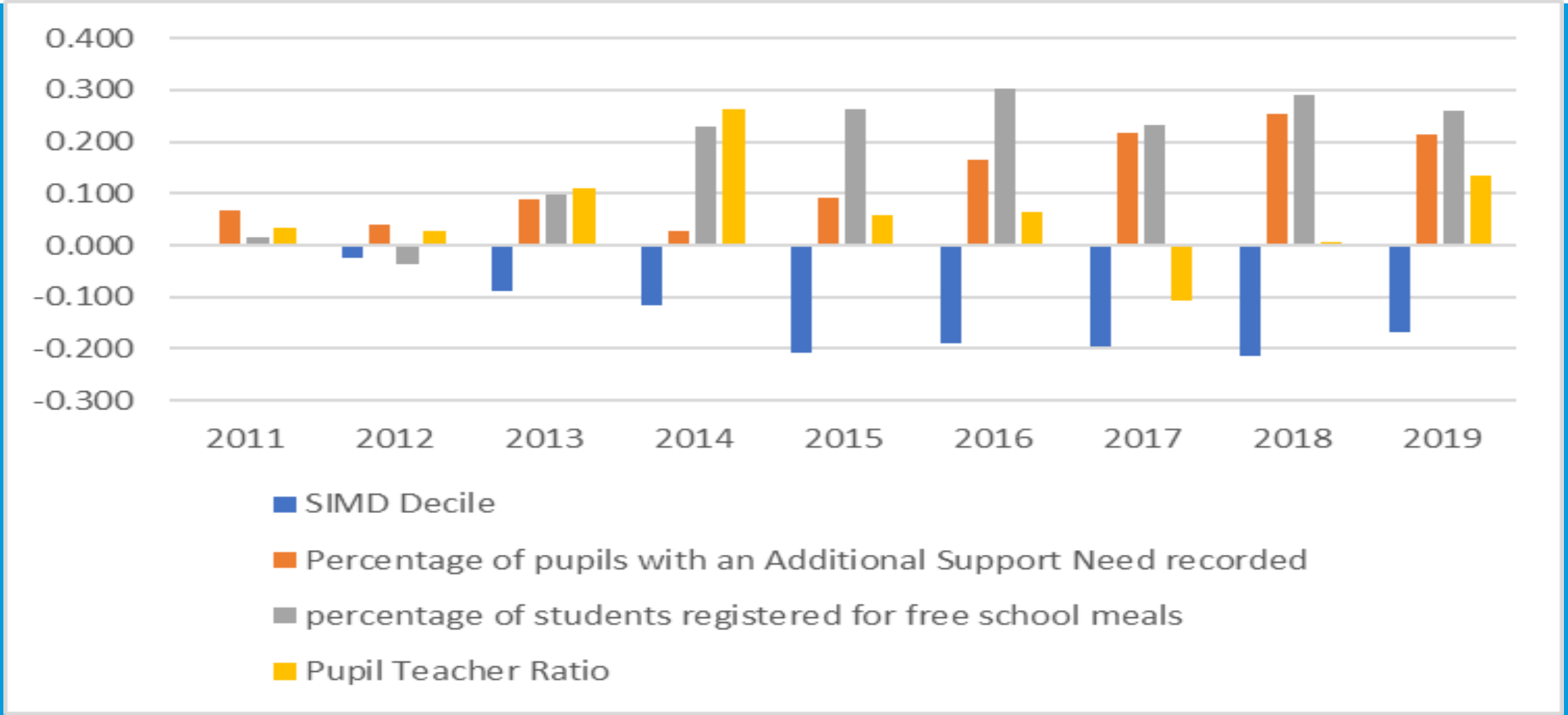
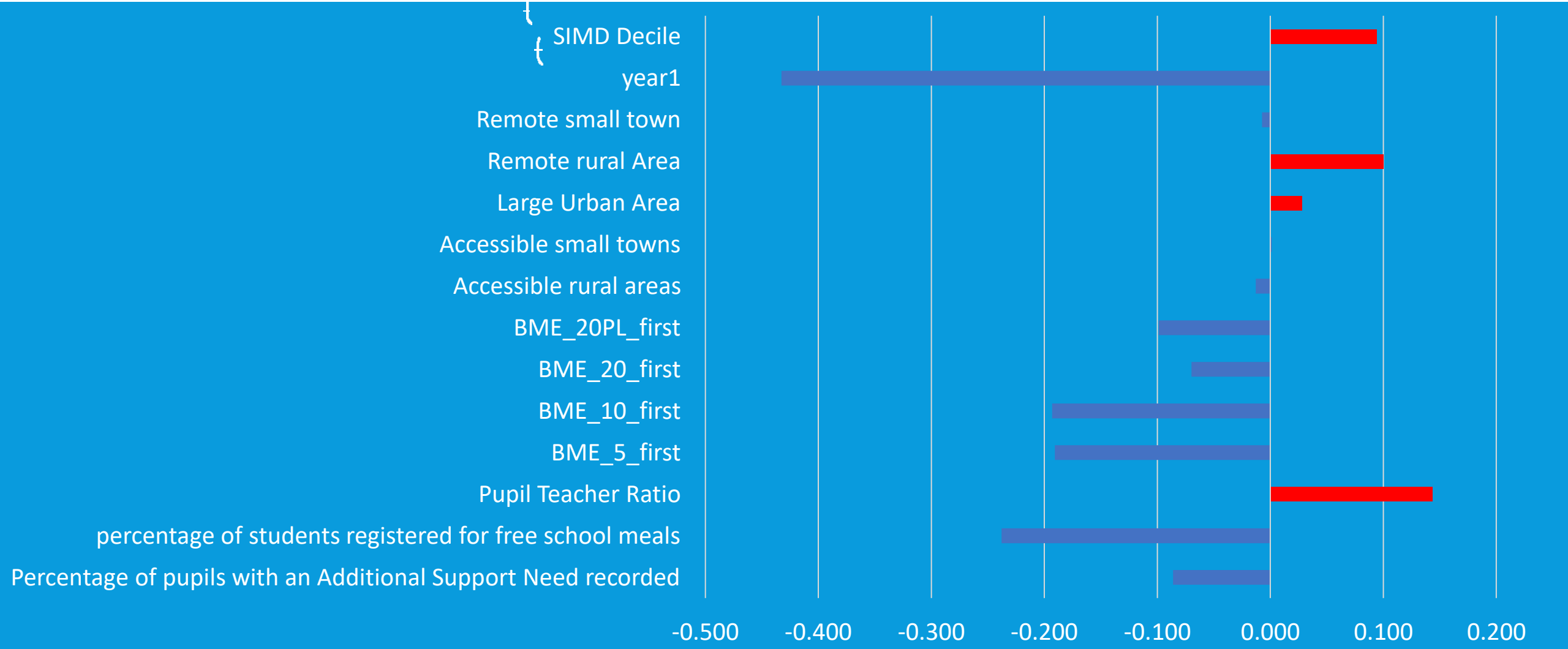


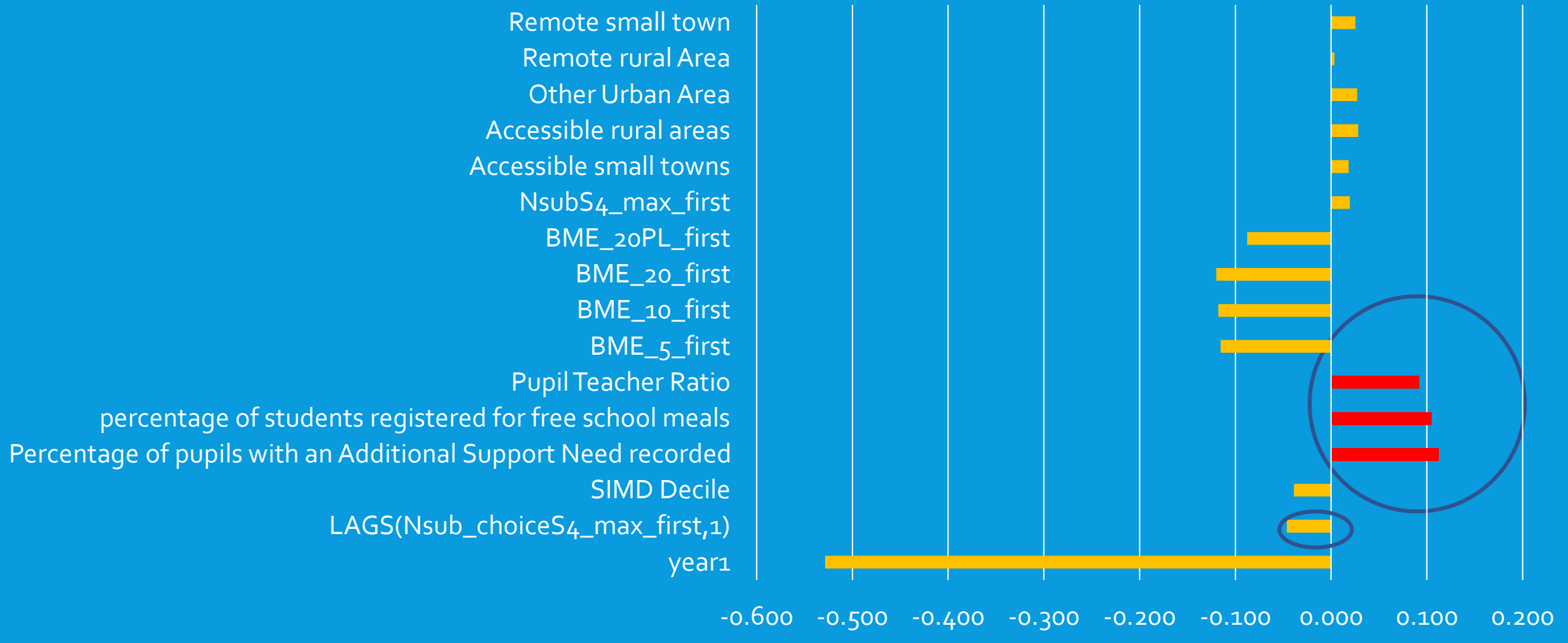
PEARSON CORRELATION COEFFICIENTS BETWEEN SUBJECT CHOICE IN S5 AT NAT5 LEVEL AND SCHOOL CHARACTERISTICS



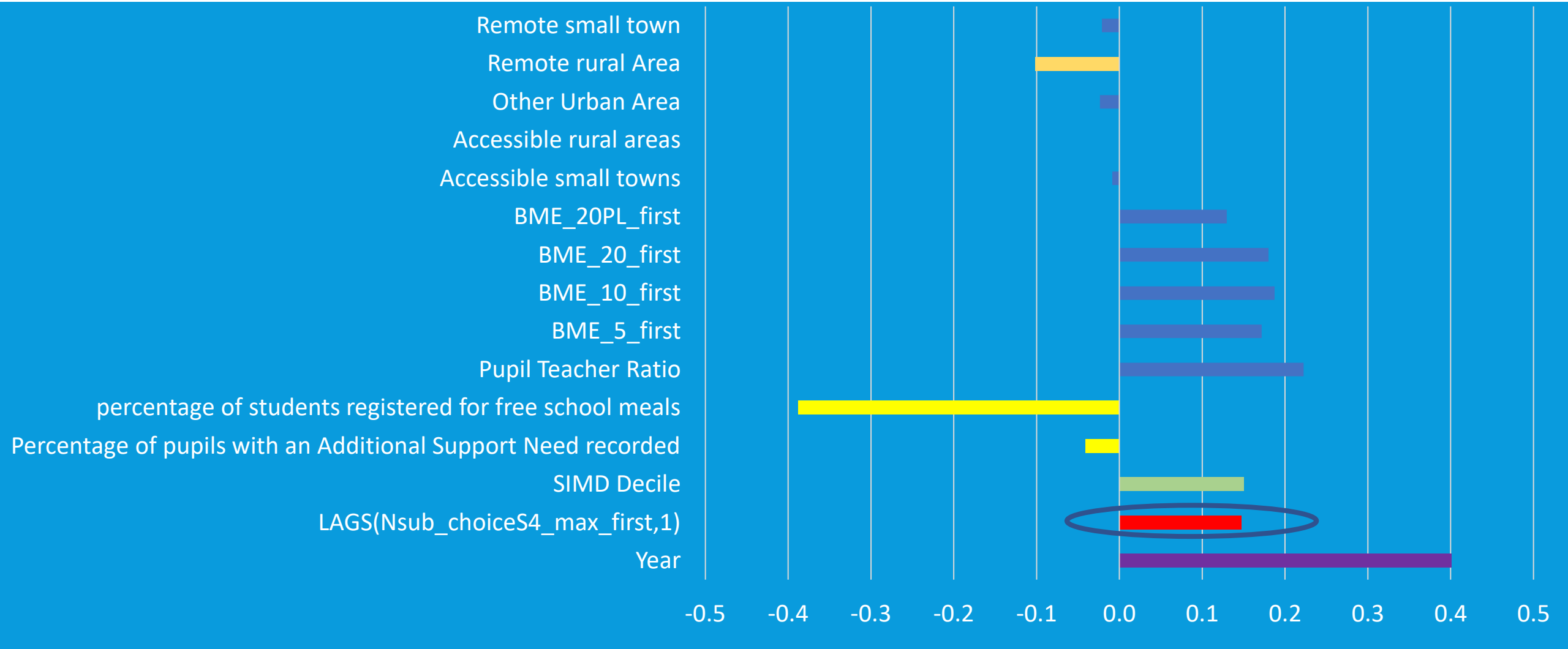
PREDICTING SUBJECT CHOICES IN S4(NAT 5) FROM SCHOOL CHARACTERISTICS



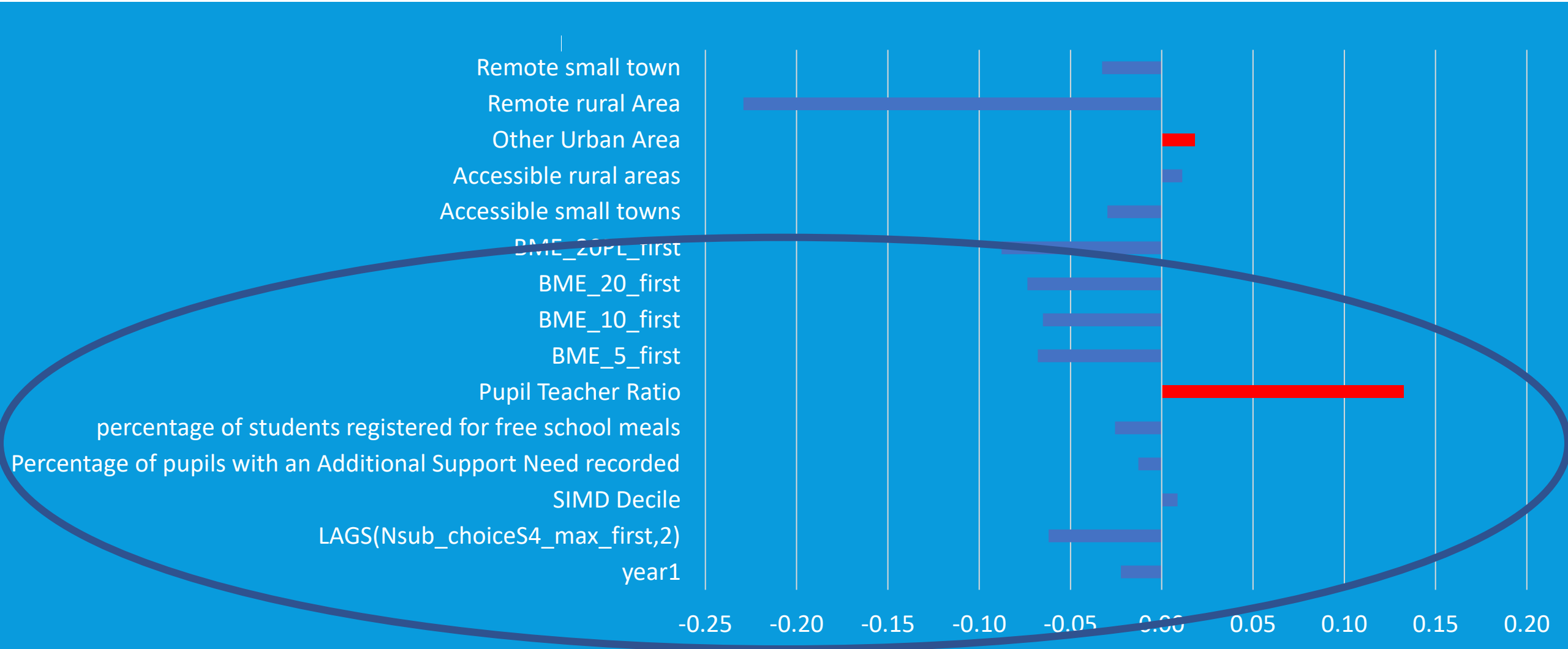
PREDICTING **NUMBER OF NAT5 SUBJECT CHOICES IN S5** FROM NUMBER OF NAT5 SUBJECT CHOICES IN S4 AND SCHOOL CHARACTERISTICS



PREDICTING NUMBER OF **HIGHER SUBJECT CHOICES IN S_5** FROM NUMBER OF NAT_5 SUBJECT CHOICES IN S_4 AND SCHOOL CHARACTERISTICS



PREDICTING NUMBER OF **HIGHER SUBJECT CHOICES IN S6** FROM NUMBER OF NAT5 SUBJECT CHOICES IN S4 AND SCHOOL CHARACTERISTICS



PREDICTING NUMBER OF **ADVANCED HIGHER SUBJECT CHOICES IN S6** FROM NUMBER OF NAT5 SUBJECT CHOICES IN S4 AND SCHOOL CHARACTERISTICS