



Monitoring attainment gaps for students with protected characteristics in England

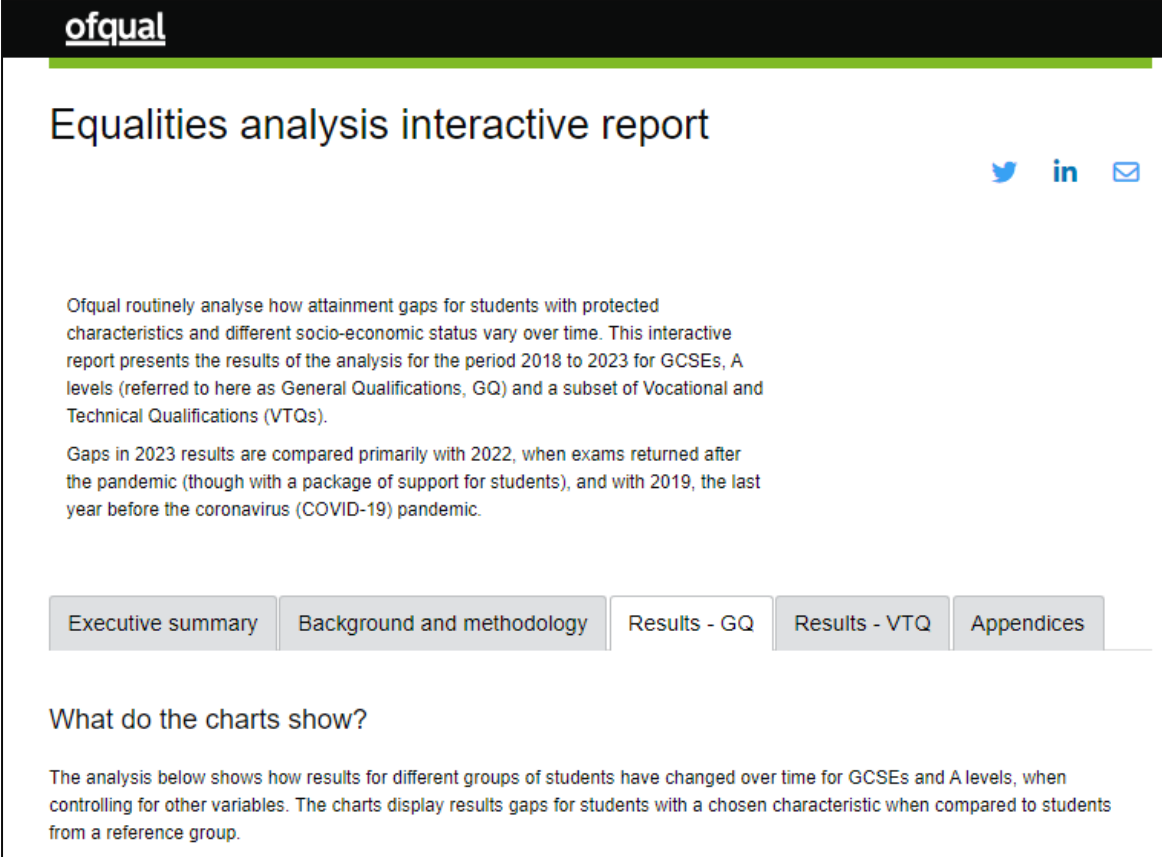
Nadir Zanini

Expert meeting on Statistics on Children
Geneva, 4-6 March 2024



Outline

- Background and motivation:
 - Education in **England** and the pandemic
 - **Exams** and **teacher judgement**
- Monitoring **attainment gaps**:
 - Common descriptive statistics
 - Ofqual's equalities analysis
- **Lessons learnt**:
 - Methodological advancements
 - Substantive findings
 - Areas for further development



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Equalities analysis interactive report

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Ofqual routinely analyse how attainment gaps for students with protected characteristics and different socio-economic status vary over time. This interactive report presents the results of the analysis for the period 2018 to 2023 for GCSEs, A levels (referred to here as General Qualifications, GQ) and a subset of Vocational and Technical Qualifications (VTQs).

Gaps in 2023 results are compared primarily with 2022, when exams returned after the pandemic (though with a package of support for students), and with 2019, the last year before the coronavirus (COVID-19) pandemic.

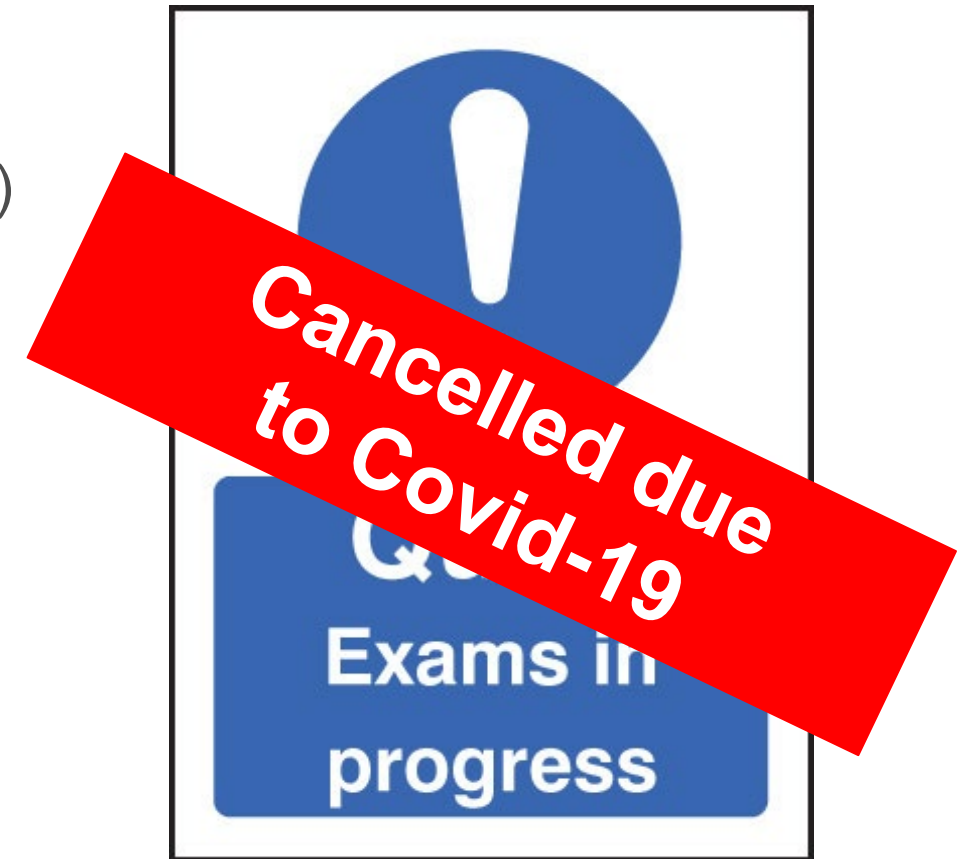
Executive summary Background and methodology Results - GQ Results - VTQ Appendices

What do the charts show?

The analysis below shows how results for different groups of students have changed over time for GCSEs and A levels, when controlling for other variables. The charts display results gaps for students with a chosen characteristic when compared to students from a reference group.

Background and motivation

- Students in England:
 - Take exams at 16 and 18
 - Choose a combination of General (GCSE/A level) and Vocational/Technical qualifications
- In 2020, with the outbreak of Covid-19:
 - Schools closed and exams cancelled
 - Exams replaced by **teacher judgement in 2020 and 2021**



Attainment gaps

- Teacher judgement:
 - More **vulnerable to bias** than test-based assessment
 - Potentially biased against **specific groups of students**
- Fears that:
 - **Existing** attainment gaps **widened**
 - **New** inequalities **created**
- **Exams reintroduced in 2022**, but still concerns for the unequal impact of the pandemic on children

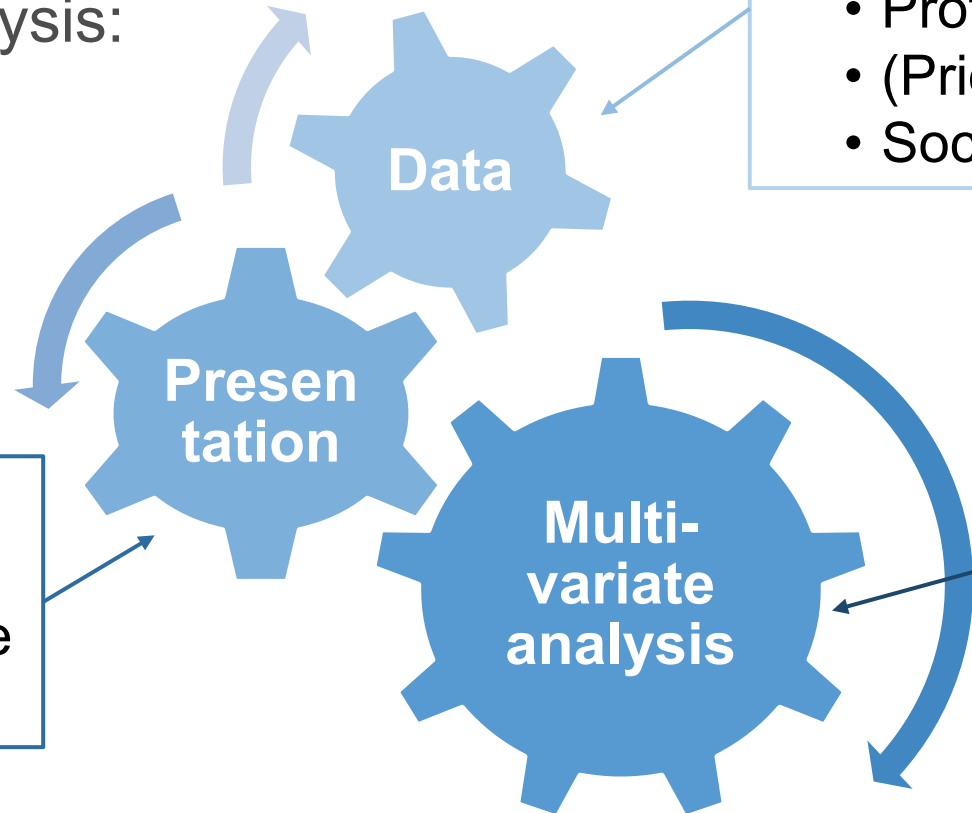


Monitoring attainment gaps

- Existing descriptive statistics – grade distributions broken down by selected students' characteristics
- Ofqual's approach – equalities analysis:

Broaden student's information through **linked administrative data**:

- Protected characteristics
- (Prior and concurrent) attainment
- Socio-economic deprivation



Presentation:

- Focus on '**notable changes**' over-time
- **Interactive** report

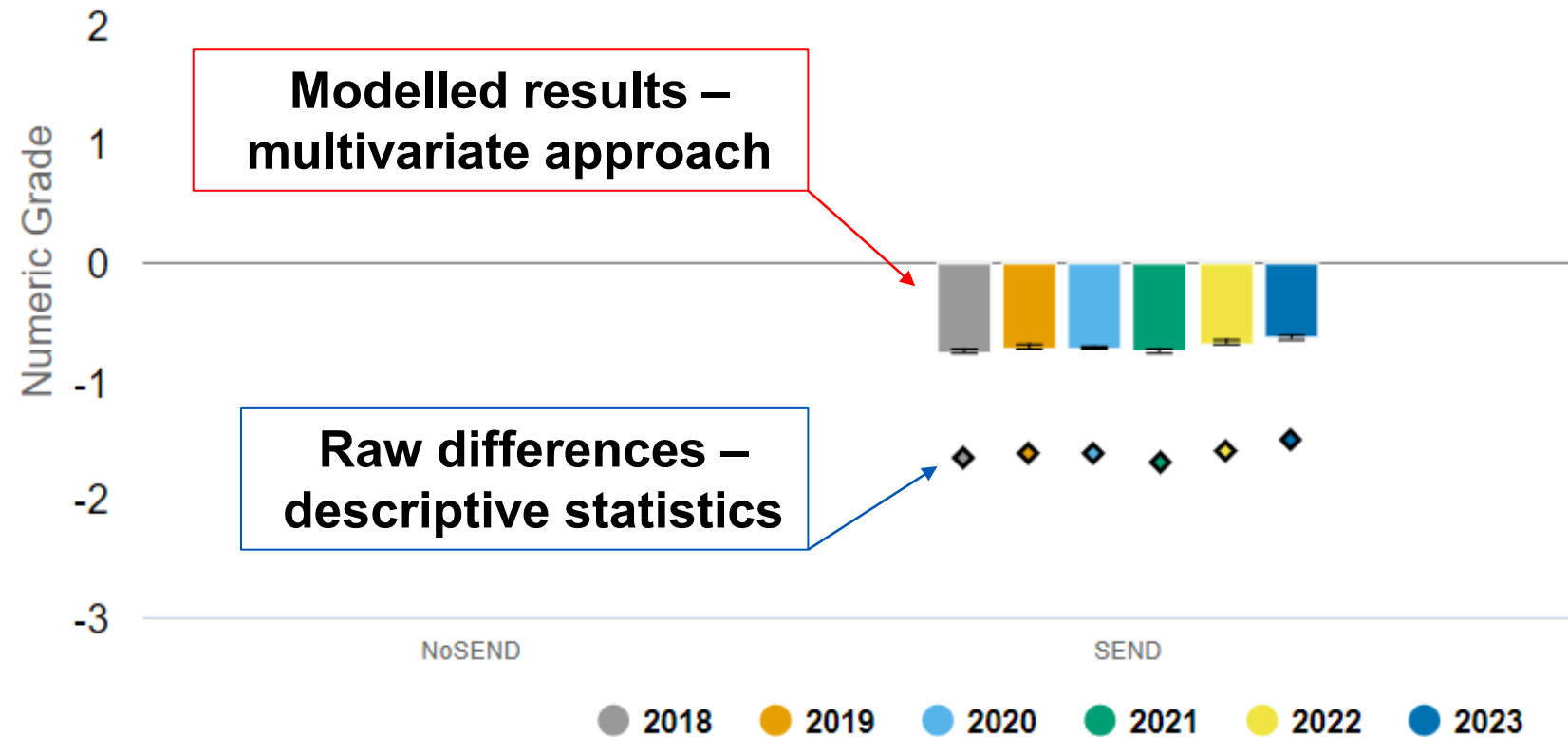
Shift to a **multi-variate** approach:

- Account for the **interplay** of characteristics – interpret findings as 'holding other factors fixed'
- Control for **school-fixed effects**

Lesson learnt n. 1a – Advantages of a multivariate approach

- Relative differences between students with Special Education Needs and Disabilities (and those without) :

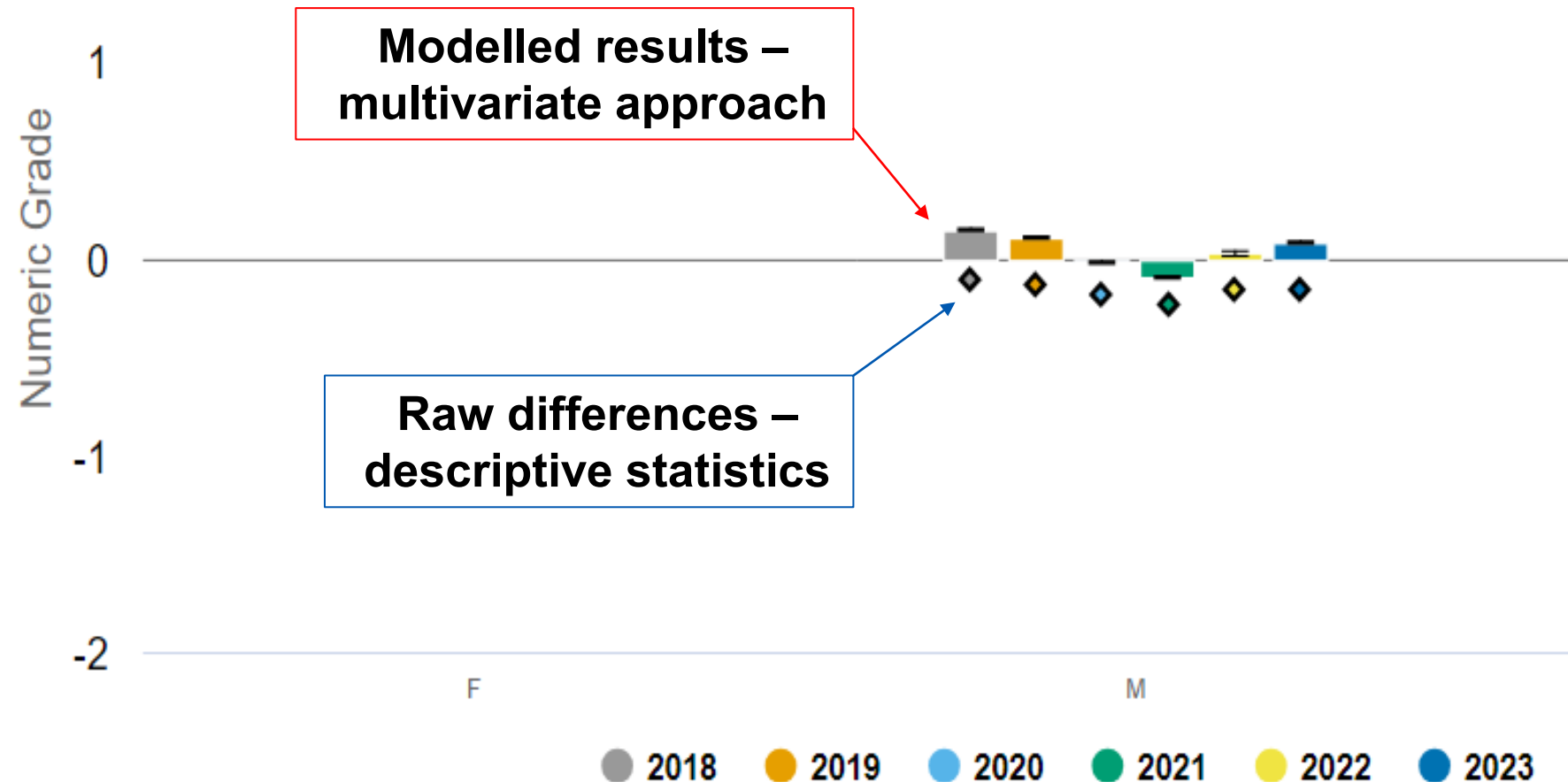
- Results differ for multivariate analysis descriptive statistics
- Interplay between students' characteristic
- Huge role played by **prior attainment – best predictor**



Lesson learnt n. 1b – Advantages of a multivariate approach

- Gender gap (boys vs girls) at A level (18-year-olds, academic path):

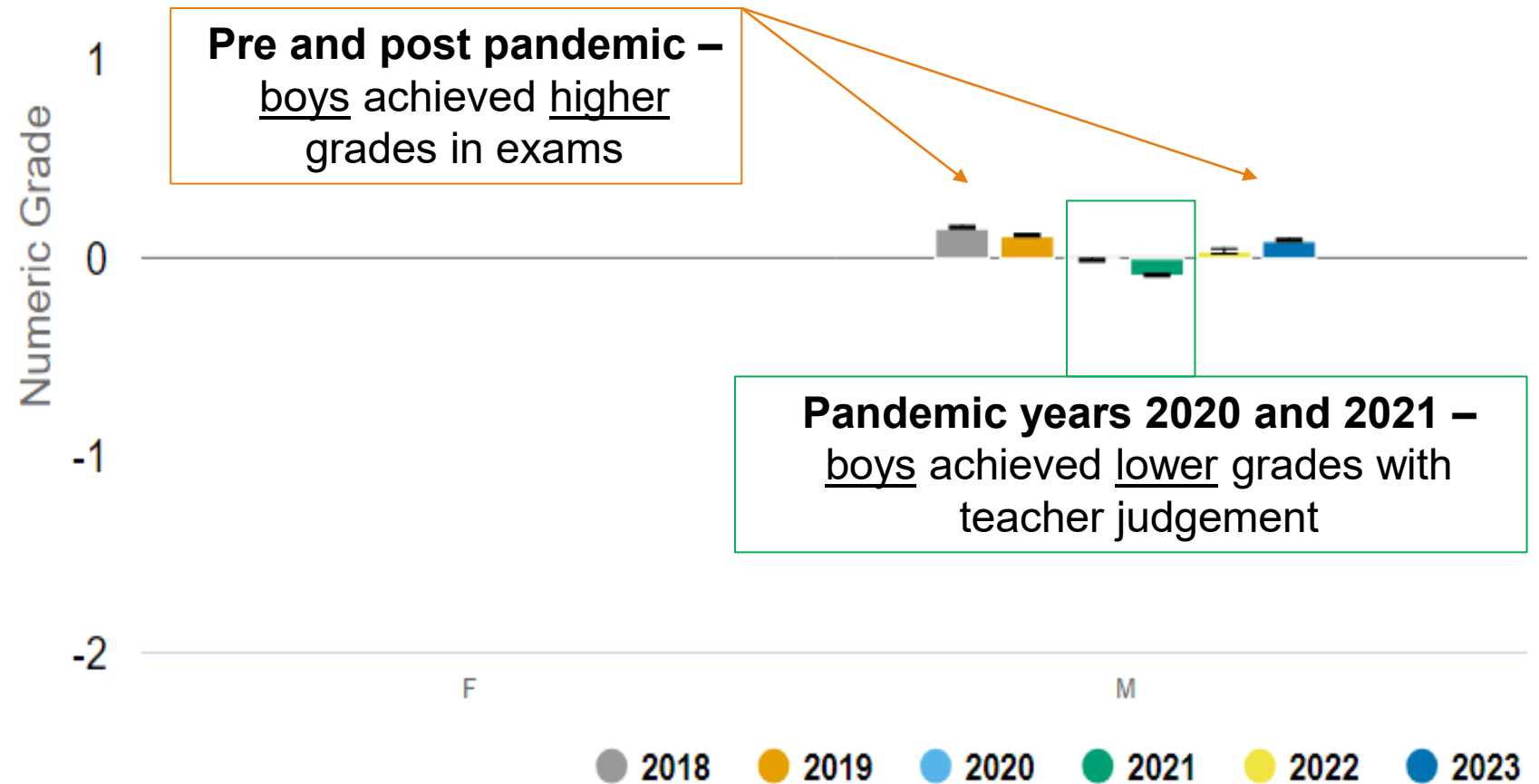
- Results differ not only in terms of size, also in terms of **sign/direction**
- Simple **descriptive** statistics can be **misleading**



Lesson learnt n. 2 – Substantive results: teacher judgement

- Gender gap (boys vs girls) at A level (18-year-olds, academic path):
[as before, but focus on multivariate approach results]:

- A clearly **different pattern** was highlighted when teacher judgement was used
- Indication that **teacher judgement may be biased**



Lesson learnt n. 3 – Presentation: ‘notable changes’ over time

- Attainment gaps may be due to pre-existing societal differences, so focus on changes **over-time** (as opposed to gaps at a given point in time)
- Multi-step method to identify **changes that are ‘worthy of note’**:
 1. Statistically significant
 2. Larger than year-on-year fluctuations
 3. Exceeding an effect size criterion
- Advantages:
 - Given the large sample size, we do not flag very small differences between groups/years
 - Only changes that are worthy of note as operationally relevant are flagged

Lesson learnt n. 4 – Interactive report and user engagement

- There are **many combinations** of different students' characteristics and different ways to look at the data – large number of graphs and charts
- User engagement highlighted that it is helpful to be able to **explore the results focussing on specific areas**
- Results published as an **accessible [interactive report – web dashboard](#)**:

The screenshot shows a web dashboard interface with the following elements:

- Qualification level:** A dropdown menu with "GCSE" selected.
- Variable:** A dropdown menu with "Income Deprivation Affecting Children Index" selected.
- Outcome measure:** A dropdown menu with "Numeric Grade" selected.
- Select whether you would like to see results after controlling for other variables, and/or raw descriptives:**
 - Modelled (bars)
 - Raw (points)
- Select whether you would like to see estimates or differences relative to the reference group:**
 - Absolute
 - Relative

Lesson learnt n. 5 – Data to be used for further research

- A **linked administrative dataset** was put together:
 - Students' attainment, prior and concurrent (Ofqual collects this data from Awarding Organisations)
 - Demographic and socio-economic background (National Pupil Database and the Individualised Learner Record held by the UK Department for Education)
- This data is potentially **useful for investigating a range of policy-related questions** by government analysts and academics:
 - Can be further augmented, for example with information on university admissions
 - **GRADE (Grading and Admissions Data for England)** is **available to external researchers** for independent analysis and evaluation
 - **Safeguards** were put in place to protect children's data (ie 5 Safes Framework)

Final remarks

- Limitations and further areas for development:
 - **Interpretation** – The complexity of attainment gaps and how they have been estimated may be difficult to communicate
 - **Data** – There are still missing information and additional data that could be added in
- We have learnt a lot:
 - Putting together **data from multiple administrative** sources is an investment, but it has **good returns** (especially if the data is then used also for other purposes)
 - **Presenting** and interpreting the analysis in an **engaging and accessible** way helps **raising awareness** and avoiding misuse of statistics
 - Using a **multi-variate approach** allowed us to retrieve **more robust evidence**
- Overall – we should **encourage** the use of more **advanced methodology/innovation** for statistical monitoring as a source of **robust/impactful evidence** to inform policies



To know more about
Ofqual's equalities analysis,
please visit:

<https://analytics.ofqual.gov.uk/>



Thank you!