



2020 Alternative Certification Model: Equality Impact Assessment

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1 Background

The Scottish Qualifications Authority (SQA) was asked by the Scottish Government to develop an alternative certification model, following the Scottish Government decision on 19 March 2020 to cancel the annual diet of examinations as a result of the COVID-19 public health emergency. Until late March 2020, it was envisaged that it may have been possible for SQA to receive and mark coursework assessment components. However, public health advice at that point made this no longer feasible or safe.

Centres were requested to submit estimates and rank orders for all graded National Course candidates. It is intended that the impact of the model will be positive and allow SQA to continue to contribute to equality of opportunity in the Scottish education and skills system. By providing SQA with accurate estimates data based on valid and reliable evidence, awards can be made that will enable learners to celebrate their achievements and progress to the next stage of education, training or employment.

The development of the model was informed by the following three principles:

- ◆ fairness to all learners
- ◆ safe and secure certification of qualifications, while following the latest public health advice
- ◆ maintaining the integrity and credibility of the qualifications system, ensuring that standards are maintained over time, in the interest of learners

This Equality Impact Assessment sets out SQA's responsibilities in relation to equalities and other relevant areas; an overview of the evidence and engagement that has informed this impact assessment; and an overview of the development of the alternative certification model, including the identification of relevant risks and their mitigation. The final section of this assessment outlines the lessons learned from this exercise and the future monitoring and support SQA will develop to support the production of estimates and other internal assessment decisions in centres for other SQA qualifications. We have throughout sought to have due regard to the needs to eliminate unlawful discrimination, harassment and victimisation and other prohibited conduct; to advance equality of opportunity between people who share a relevant protected characteristic and those who do not; and to foster good relations between people who share a protected characteristic and those who do not. We have sought to take action to achieve those aims.

2 Role and responsibilities

2.1 Scottish Qualifications Authority

SQA is an executive non-departmental public body (NDPB) established by statute to carry out administrative, commercial, executive and accreditation functions on behalf of Government. As an NDPB, SQA is responsible for making its own operational decisions.

The Education (Scotland) Act 1996 — as amended by the Scottish Qualifications Authority Act (2002) — sets out SQA's functions and provides the foundations for SQA's activities in accrediting, regulating and awarding qualifications. SQA is sponsored by the Scottish Government's Learning Directorate. SQA is the statutory awarding body for qualifications in Scotland. Its duties are to develop, validate, quality assure and award a national framework of qualifications for Scotland.

In addition, SQA has statutory duties both as the regulator and awarding body for National Qualifications in Scotland as defined by the Equality Act 2010. Section 96(7) of the Equality Act 2010 gives SQA, as the appropriate regulator of general qualifications in Scotland, a power to specify provisions, criteria or practices in relation to which the duty to make reasonable adjustments does not apply and to publish where specific 'reasonable adjustments' to National Qualifications should not be made. Reasonable adjustments are steps taken to avoid a disadvantage to a disabled person. The relevant General Qualifications in Scotland covered by section 96 of the Equality Act 2010 are:

- ◆ National Courses (National 1 to National 5, Higher and Advanced Higher)
- ◆ Scottish Baccalaureates
- ◆ All Skills for Work Courses
- ◆ Non-vocational Awards

As an awarding body, SQA works with schools, colleges, universities, industry and government, to ensure that qualifications are inclusive and accessible to all, recognising the achievements of learners, and providing clear pathways to further learning or employment. SQA maintains a broad portfolio of qualifications including National Courses across a range of subject areas and a more vocationally oriented range of Awards, National Progression Awards, National Certificates and Professional Development Awards. The organisation also has a proud history of developing Higher National Certificates and Diplomas, which are equivalent to the first and second year of Scottish university degree programmes.

The SQA Code of Practice outlines how SQA ensures that its qualifications are of a high quality and fit for purpose, and that the assessment of these qualifications is monitored and maintained to a consistently high standard. By doing so, it sets out the framework by which SQA safeguards the integrity of SQA's qualifications and assessment standards and ensures public confidence. The Code of Practice is based on a set of 13 governing principles, which govern how SQA meets its statutory duties and self-regulates its activities. Similar principles apply to SQA qualifications that are regulated by other organisations. Governing Principle 7 is specifically related to equalities issues and states that:

SQA will ensure that all qualifications and assessments are as fair and accessible as possible and that the needs of candidates are met in the administration of its assessments.

Section 149 (1) of the Equality Act 2010 requires SQA to have due regard to a number of needs, including the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it. The SQA Equality of Access to SQA Qualifications policy outlines the organisation's commitment to promoting and facilitating access to our qualifications. In practice this means that every reasonable step will be taken to ensure that we:

- ◆ produce qualifications based on national standards, which are as accessible as possible. We will equality review our qualifications to identify any aspects that might adversely impact on learners who share particular characteristics. We will aim to remove such adverse impacts, wherever possible, and minimise them where it is not possible to remove them altogether
- ◆ develop methods of assessment and quality assurance, which are sensitive to the needs of all candidates, but which do not compromise our overarching aims of fairness and consistency
- ◆ provide assessment arrangements to allow disabled candidates and/or those with additional support needs to access the assessment without compromising its integrity. For disabled candidates, we will make reasonable adjustments in accordance with the requirements of the Equality Act 2010

In its accreditation role, SQA accredits vocational qualifications that are offered across Scotland, including Scottish Vocational Qualifications, and approves bodies that wish to award them.

2.2 Public sector equality duty

SQA is required to assess the impact of implementing the ACM against the needs set out in the public sector equality duty. This duty requires SQA to have due regard to the need to:

- ◆ eliminate unlawful discrimination, harassment and victimisation and any other conduct prohibited by the Equality Act 2010
- ◆ advance equality of opportunity between people who share a protected characteristic and people who do not, and
- ◆ foster good relations between people who share a protected characteristic and people who do not

In relation to the annual external diet of exams in normal years, SQA encourages dialogue with centres regarding the individual needs of their candidates when requesting assessment arrangements or reasonable adjustments. This is a long standing and ongoing process in SQA and provides an understanding of the many and varied issues that some of our candidates have. SQA works in close partnership with centres and disability stakeholder groups to identify and deliver appropriate assessment arrangements for the candidates who need them.

As an employer and public body, SQA plays a leading part in the promotion of equality and diversity more widely. We recognise that equality of access to education is crucial in unlocking many significant opportunities in life, and we are aware of our responsibility to uphold both fairness for learners, and the credibility of Scotland's qualifications system. We aim to positively contribute to a more equal society through advancing equality and good

relations across all our activities. Our equality work is driven by the diverse needs of our communities — SQA learners, customers, employees and appointees and we aim to ensure these needs are taken account of and reflected in everything we do.

We carry out a number of activities to promote awareness of equality, diversity and inclusion and to meet our responsibilities. These include:

- ◆ designing and developing inclusive and accessible qualifications
- ◆ equality and inclusion training for Qualifications Development staff and SQA appointees
- ◆ ongoing consultation with SQA's Equality and Inclusion Key Partners Group
- ◆ equality monitoring campaigns to raise awareness of our employment monitoring responsibilities to improve collection, monitoring and reporting of SQA's employee information
- ◆ supporting and engaging with SQA's LGBTI Rainbow Network, Women's Network and Disability Network
- ◆ membership as a Stonewall Diversity Champion — in 2018 our submission to Stonewall Scotland's Workplace Equality Index (WEI) meant that SQA climbed 133 places, to 212 out of 434 UK companies who participated in the WEI
- ◆ participation in Stonewall Scotland's Employee Feedback Questionnaire in 2017 — 258 staff responded to Stonewall Scotland's Employee Feedback Survey (21 employees identified as LGBT). The results were encouraging and confirmed 90% of SQA LGBT staff, and 94% of non-LGBT staff, agreed that the workplace culture in SQA was inclusive of gay people
- ◆ re-accreditation to the Disability Confident Scheme in 2019

2.3 Scope of equality impact assessment

SQA's detailed equality impact assessment (EqIA) focuses on systematically assessing and recording the potential impact of implementing the ACM. This has involved assessing the impact on candidates with protected characteristics to ensure that, as far as possible, any negative impact is eliminated or minimised and opportunities for promoting and advancing equality are maximised. We have identified actions required throughout this work to ensure we meet our responsibilities.

The protected characteristics under the Equality Act 2010 are:

- ◆ age
- ◆ disability
- ◆ gender re-assignment
- ◆ pregnancy and maternity
- ◆ race
- ◆ religion or belief
- ◆ sex
- ◆ sexual orientation
- ◆ marriage and civil partnerships

(although marriage and civil partnership is not a protected characteristic for the purposes of the public sector equality duty).

We have also considered a wide range of additional factors that we recognise as having an impact on equality of access to qualifications, including:

- ◆ identified physical, medical, sensory, behavioural, mental health or learning difficulties, which mean that some candidates are defined as having additional support needs under the Additional Support for Learning Act (2014)
- ◆ socio-economic and other deprivation indicators as described in the Scottish Index of Multiple Deprivation (SIMD) and that may present barriers to accessing qualifications
- ◆ contexts for candidates who are care-experienced, home-schooled, have interrupted learning or other circumstances that may impact on their access to qualifications

2.4 Development of equality impact assessment

Development

The development of the EqIA has reflected the timeline of events, decision-making and development of the ACM since school closures and cancellation of the 2020 diet of examinations.

Information and evidence used to evaluate the impact of implementing the ACM on people who share protected characteristics and those others considered within the scope of the EqIA was gathered during the impact assessment and informed the development of the ACM.

Key data was considered during the development of each ACM step, with actions, decisions and refinements of the policy taken as a result, as outlined in the timeline below.

Table 1: Timeline of the development of the equality impact assessment

w/c	Event	Activity
19/03/20	Cabinet Secretary announces the closure of schools in Scotland and the cancellation of the 2020 diet of examinations	Correspondence between centres and SQA about disabled candidates and/or those with additional support needs continue Discussions begin on equality implications
	Centres requested to continue to prepare for completion and submission of coursework assessment components	Evidence gathering for the EqIA begins including media monitoring, correspondence analysis, research on estimating grades including potential for bias, issues for groups of disadvantaged candidates etc
24/03/20	Centres advised that, due to public health advice, Higher, Advanced Higher and late submission of National 5 coursework should not be submitted. Ongoing consideration of how to safely and securely mark National 5 coursework already submitted	Work continues on evidence gathering and discussions around the equality impact assessment

w/c	Event	Activity
02/04/20	Centres advised that National 5 coursework will not be marked due to latest public health advice and that an enhanced estimate scale and rank order would be required	<p>The guidance also states that 'A free appeals service will be available, to ensure that schools and colleges continue to have a mechanism to question any result'.</p> <p>Queries received concerning:</p> <ul style="list-style-type: none"> ◆ home-schooled candidates (where schools have no evidence to base an estimate on) ◆ adult learners (where colleges have no evidence to base an estimate on) ◆ challenges for estimating for candidates sitting exam only/virtual learning hubs ◆ request for additional information to be sent to SQA about why centres have arrived at estimating decisions¹
14/04/20	<p>Paper on proposed equality impact assessment submitted to Code of Practice Governing Group</p> <p>Invitation from Ofqual Access Consultation Forum (ACF) to take part in consultation and attend ACF conference call on Friday 24 April</p>	<p>Conference call and subsequent emails from members of the ACF contributed to improving understanding about some of the issues for disadvantaged candidates</p>
20/04/20	<p>Centres provided with information on providing candidate estimates and rank order</p> <p>Assessment Arrangements Request system is closed</p>	<p>SQA guidance clearly stated that 'there is no requirement to set additional mock or prelim exams or homework tasks for the purpose of determining a candidate estimate'. The guidance further stated, 'Where candidates would have reasonable adjustments or assessment arrangements (for example, a reader or scribe), the judgement should take account of likely achievement with the reasonable adjustment/assessment arrangement in place'. This helped to ensure candidates who were not able to carry out additional homework were not disadvantaged.</p> <p>Centres that have outstanding queries are contacted by SQA's Assessment Arrangements team to advise them of the above</p>

¹ SQA continued to receive a range of enquiries from April onwards. SQA assigned a dedicated team to handle these enquiries and continued to provide answers to candidates, parents, teachers, lecturers and others throughout April to July 2020.

w/c	Event	Activity
24/04/20	Attendance at Ofqual Access Consultation Forum to discuss equalities implications of their proposed model	Discussions around Ofqual's proposed model adds to our understanding of the issues for some disadvantaged candidates
27/04/20	SQA Academy course on estimates published	Centres have always submitted estimates for candidates entered for externally assessed graded National Courses. The SQA Academy course produced for 2020 paid particular attention to the need to mitigate against bias towards candidates. The module on estimates had 9,879 views from 2,666 users
04/05/20	SQA Academy course and guidance on using historical estimate data published	Centres are issued with pseudonymised results and estimates data for the past three years. This is to help and support with the accuracy of the refined estimates process

Key sources of information

Key information and data were gathered from a range of sources.

Ongoing equalities monitoring and engagement

SQA works in close partnership with centres, stakeholder groups and education partners in order to inform an ongoing programme of equality reviews to address our responsibilities under section 96 of the Equality Act 2010 that support the development of SQA's qualifications and assessments. Intelligence gained from this engagement means that we hold and continue to develop a body of knowledge about equalities and learners with protected characteristics to inform policy on access and inclusion in qualifications.

In relation to the annual diet of exams, SQA encourages dialogue with centres regarding the individual needs of their candidates when requesting assessment arrangements or reasonable adjustments. This is a long standing and ongoing process and allows us to understand the many and varied issues that some of our candidates have, and to identify and deliver appropriate assessment arrangements for the candidates who need them.

Our annual equalities in qualifications work is reported to and monitored by key governance groups and includes:

- ◆ the provision of assessment arrangements, including the use of ICT and assistive technologies, for disabled candidates and/or those identified as having additional support needs
- ◆ the quality assurance of centres' systems for the provision of assessment arrangements in SQA internal and external assessments
- ◆ the provision of support, effective guidance and training on inclusive design for those involved in the development of assessment materials
- ◆ the equality review process for qualifications and assessments
- ◆ annual equalities monitoring reports

The range of stakeholders who we work with and/or gather information and intelligence from, as part of our ongoing equalities monitoring and engagement, includes but is not limited to:

SQA governance and management groups:

- ◆ Qualifications Development Management Team
- ◆ Code of Practice Governance Group
- ◆ Executive Management Team
- ◆ Qualifications Committee
- ◆ Board of Management
- ◆ Advisory Council
- ◆ Equalities and Inclusion Steering Group

External stakeholder groups:

- ◆ Education Scotland
- ◆ Office of Qualifications and Examinations Regulation (Ofqual)
- ◆ Ofqual Access Consultation Forum
- ◆ Educational Institute of Scotland (EIS)
- ◆ Scottish Credit and Qualifications Framework (SCQF)
- ◆ CALL Scotland
- ◆ Scottish Sensory Centre
- ◆ Heads of Sensory Service Forum
- ◆ Scottish Parliament Education and Skills Committee
- ◆ centres identifying and requesting reasonable adjustments and assessment arrangements
- ◆ providers of services to disabled learners
- ◆ Equality & Inclusion Key Partners' Group
- ◆ disability groups, interest groups and charities
- ◆ Equality and Human Rights Commission
- ◆ Scottish Youth Parliament
- ◆ Who Cares? Scotland
- ◆ Cross Party Group on Dyslexia
- ◆ School Leaders Scotland (SLS)
- ◆ Scottish Council of Independent Schools (SCIS)

Relevant equalities and education research

SQA has an evidence-based approach to informing its approach to equalities and inclusion in qualifications and assessment. The basis for this was a thematic review completed in 2016 and annual reports on equality and inclusion in qualification design, assessment and quality assurance.

Desk-based research (see Appendix 2) was undertaken to supplement understanding gained through equalities monitoring and engagement. This included research on issues experienced or exacerbated since school closure for a range of learners, such as: learners with disabilities and/or additional support needs; those from particular ethnic groups who may be additionally affected by interrupted learning or the risk of bias in estimating practice; those who are care-experienced; those who experience poverty and deprivation. Research

was also undertaken on relevant education themes such as estimating practice and risk of bias in assessment judgements.

Consultation

Targeted consultation was undertaken (10 to 26 June 2020) with key equalities partners who work with and for learners, who share protected characteristics and others, who require additional support to access qualifications. Details of the proposed ACM and analysis of potential impacts were given. Opinion and advice were sought on the approach taken in the ACM, additional potential impacts not identified in the preliminary equality analysis, and any further actions that could be taken to mitigate against the risk to equity. A list of the consultation partners can be found in Appendix 1.

SQA also commissioned the Scottish Youth Parliament (SYP) to conduct focus group research to support the development of the equality impact assessment. This was carried out in June 2020 and findings were reported to SQA in July 2020. SYP held a series of focus groups with members of the Scottish Youth Parliament covering four key thematic areas, in consultation with the SQA. These themes were as follows:

- ◆ Theme 1: The impact that enforced home learning has had on learners
- ◆ Theme 2: The alternative certification model
- ◆ Theme 3: Equalities
- ◆ Theme 4: The future of assessment

Virtual focus group discussions were held with SYP members in June 2020, including with SYP's Education and Lifelong Learning Committee, on a series of agreed questions on the equalities and rights implications of the proposed ACM for 2020. Each session was co-designed and delivered by young people and SQA staff, and chaired by a member of the Scottish Youth Parliament in line with SYP's youth-led ethos.

SQA media and parliamentary monitoring service

This service provides daily intelligence on news, opinion, parliamentary business and key information published in relation to education matters and SQA. Specific equalities-focused monitoring contributes to our understanding of the educational challenges and successes experienced by learners, as well as politics, policy and decision-making relevant to them, for example:

<https://www.tes.com/news/equalities-watchdog-warns-ofqual-over-gcse-grading-bias>.

SQA statistical information, centre estimates Scottish Government pupil census and attainment

A range of statistical information was used to understand centre estimating practice. A detailed explanation is provided in Section 3: Alternative certification model.

Correspondence

Correspondence received through SQA's customer contact centre, qualifications teams, assessment arrangements teams, and research and policy team has contributed further to our understanding of equalities issues experienced by learners since the closure of schools and colleges and concerns about the impact of applying the alternative certification model.

Such correspondence has been typically received from parents/carers, centres, interest groups and professional bodies, and has reflected themes of support available to those who may be experiencing additional barriers to accessing education at this time, challenges in determining estimates, and concerns about potential bias in estimating and the long-term implications of this for equality of opportunity.

The principal research, information and evidence that informed the equality impact assessment can be found in Appendix 2.

3 Alternative certification model

3.1 Overview of model and development timeline

The alternative certification model has four steps:

- ◆ Step 1 – Estimates
- ◆ Step 2 – Awarding
- ◆ Step 3 – Results and Certification
- ◆ Step 4 – Appeals

3.2 Step 1 — estimates

Purpose

The purpose of this stage was to support centres in making and submitting accurate estimates for all graded National Course candidates in their centres. The key inputs to the alternative certification model were the teacher and lecturer estimates (checked locally by schools and colleges and moderated nationally by SQA) and the associated rank orders.

As the integrity of the estimates was critical in informing the awarding process, SQA refined the historic estimate process and provided additional support to centres to ensure they were able to make holistic professional judgements that provided robust evidence-based estimates for every candidate.

In our business-as-usual approach, a nine-point band scale is used for centres to base their estimates on and for certification. For the awarding process a refined 19-point band scale was developed to reflect mark distributions more closely. Each of the business-as-usual bands was split into two, except for lower A and D, which were split into three to give more granularity at the decision points for national awarding purposes.

Centres were provided with advice and guidance to assist them in generating estimates using this refined band scale. Centres were also asked to provide a rank order for each of their candidates within each refined band.

SQA asked for both estimates and rank order to ensure that we had the maximum amount of information available to inform decisions on grades for individual candidates and the required quality assurance process. We also asked schools and colleges to carry out local checks prior to submitting the estimates and rank orders to SQA.

Estimates

Estimates are a standard component of the business-as-usual awarding process.

Based on their professional judgement, teachers and lecturers make and submit estimates each year for almost all candidates in graded National Courses. Therefore, the requirement and the process of estimating is not new for centres. In normal years, estimates are used as a general indicator of cohort ability when setting grade boundaries and in other procedures, for example, exceptional circumstances consideration and post-results services.

Additionally, there is a long tradition of internal assessment decisions in SQA centres, for example, internally assessed units. However, it is acknowledged that in ACM there was a greater focus on the use of estimates with a specific focus on individual candidate outcomes in 'high-stakes' assessment.

Accuracy of centre estimates over time

In the awarding process, the concept of accuracy of estimates is very important. When SQA refers to accuracy it means in relation to actual results achieved. The accuracy of estimating may vary across grades, subjects, SCQF levels, departments and schools and colleges. Additionally, estimates may be lenient or severe. An initial investigation was undertaken in April 2020 in relation to estimated grades and resulted grades based on data from the 2019 diet of examinations. On average, only 45% of estimated grades matched the actual grades that were awarded. Estimate accuracy varied by grade, with greater grade accuracy seen at grade A compared to other grade levels. It is important to understand the difference between candidate matched estimate and result data and looking simply at the overall picture. The overall picture may mask inaccuracy at an individual level. At the extreme, the aggregate picture could exactly match estimates to the actual results yet be totally incorrect at an individual estimate level.

Studies from across the UK, for GCSEs, AS level and A level, about the accuracy of teacher estimates, show similar trends to SQA's data. Patterns show similar levels of accuracy and over- and under-estimation. Similarly, there are variations across subjects. Interestingly, some of the studies also highlight differences in accuracy of estimation by educational institution as well — with further education colleges being least accurate and selective schools being most accurate. This may be accounted for in part by the variability of the cohorts and their corresponding attainment.²

Ofqual's findings about individual variables are broadly similar: subject has a small but unsystematic effect; sex and age have small effects that are inconsistent across subjects; centre type has a small effect that may be attributable to correlation between centre type and attainment. There are likely some effects on estimation accuracy of ethnicity (that is more over-estimation for some ethnic minority groups) and disadvantage (that is more over-estimation for the more disadvantaged in general and less over-estimation for the higher attainers) but those effects were not quantified in Ofqual's research.³

Refined band scale

As stated above, in normal years, a nine-point band scale is used by centres to report their estimates and for the purposes of SQA certification. A refined 19-point band scale was introduced for the awarding process in order to more closely reflect mark distributions. Each of the business-as-usual bands was split into two, except for lower grade A and grade D, which were split into three to give more granularity at the decision points for national awarding purposes. This was mapped to the nine-point band scale for subsequent certification.

² British Educational Research Association, Volume 31, No 1 Feb 2005, Teacher Estimates of Candidates' Grades: Curriculum 2000 Advanced Level Qualifications, Debra Dhillon, AQA, UK

Scottish Examinations Board (SEB) (1996) Teacher Estimates and SCE Examinations (Dalkeith, SEB)

³ Ming WEI Lee, Merlin Walter, 2020 Ofqual Research and Analysis: Equality Impact Assessment Literature Review

Rank ordering of candidates

For the ACM, centres were required to provide a rank order for each of their candidates within each refined band. Unique rankings with few ties were expected within each refined band for National Courses. We recognised that it might be extremely difficult to distinguish between every candidate in large multi-class cohorts and centres were strongly advised to minimise the number of ties and the number of candidates who are tied within any refined band⁴.

Baird (1997) found that centres were good at rank ordering students.⁵ SQA has not used candidate rank order in assessment decision-making for many years. Rank order was previously used to form part of an alternative evidence appeals process. Rank order is still based on professional teacher judgement but removes the need for teachers to make specific grading decisions. In this approach teachers are being asked to rank candidates on their attainment relative to other candidates. However, there are challenges of comparable decision-making within and across centres and if used as the only source of data this could result in candidates of equivalent attainment either in or between centres gaining different grades. Centre rank orders must therefore be linked to an estimate.

Supporting centres' estimating decisions

The Equality Act 2010 places a duty on centres and education authorities not to discriminate against learners with protected characteristics including disabilities, sexual orientation and race. This includes the way education is provided, access to a benefit, facility or service, and exclusion. They must not treat disabled learners favourably and must take reasonable steps to avoid putting these learners at a substantial disadvantage.

Centre estimates, based on the professional judgement of their teachers/lecturers, were considered the fairest way in these unprecedented circumstances to make awarding decisions for individual candidates. Three measures were implemented to support centre management and teachers/lecturers in making these decisions and school/college management in their quality assurance. They were:

- ◆ **Information for Centres — Producing Estimates Session 2019–20**
Updated and more detailed guidance to support decision-making and submitting estimates.
- ◆ **SQA Academy online course on estimates — ACM**
Development of a bespoke online course to support centres.
- ◆ **Provision of Centre Data on Historical Estimation Accuracy**
Release of estimates and results information for the past three years to all schools and colleges.

⁴ [Information for Centres – Producing Estimates Session 2019-20](#)

⁵ Baird J A (1997) Teachers Estimates of A level Performance , Guilford, Internal Report RAC/763, Associated Examining Board

Potential sources and impact of bias

The use of centre estimates, without any corroborating candidate assessment information, may present some risks to accurate and fair awarding for some candidates, including those who share protected characteristics or those who have contexts that present barriers to accessing qualifications (for example care-experienced young people). These are discussed in the following sections.

Conscious or unconscious bias in centre estimating

SQA shares the view that teachers and lecturers will bring considerable experience and extremely high standards of professional practice to the process of reaching candidate estimate decisions for the awarding process and ensuring the integrity of the relevant National Course and its relationship with other National Courses. Nevertheless, conscious or unconscious bias, negative or positive, may occur with respect to any of the protected characteristics. A range of potential unconscious biases may contribute to inaccurate estimates, and of particular concern is the potential for under-estimation as a result. Research such as *Rules of the Game* (Wyness 2017)⁶ found that high-achieving disadvantaged students often have their grades under-estimated, with data indicating that black and minority ethnic students — including Gypsy Roma and Irish Traveller students — are more likely to be in these deprivation categories.

Where race is combined with deprivation, research suggests that under-estimation may be more likely, although at this time the probability of this is unknown. SQA does not gather candidate characteristics other than sex and date of birth in course entry data (because other candidate characteristics are not required to enable SQA to discharge its awarding function) and therefore is limited in its ability to investigate the possibility of bias in relation to historical estimating and attainment data.

The possibility of negative bias against those who share protected characteristics might result in under-awarding of grades. There may be a further negative impact on equality of opportunity where this prevents or delays progress to further planned education, employment or training. Whether bias results in either under- or over-estimating and in turn under- or over-awarding, there is a risk to good relations between those who share protected characteristics and those who do not where inequitable treatment is perceived or evidenced.

Ofqual, as part of its own equality impact assessment informing development of the 2020 awarding model to be used by the English awarding bodies it regulates, has undertaken and published a review of literature⁷ examining available research on bias in estimates. As an education partner and member of Ofqual's Access Consultation Forum, SQA has used this paper as part of the equality impact assessment for the ACM.

⁶ <https://www.suttontrust.com/wp-content/uploads/2017/12/Rules-of-the-Game.pdf>

⁷ Equality impact assessment: literature review

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879605/Equality_impact_assessment_literature_review_15_April_2020.pdf

Ofqual found that:

... subject has a small but unsystematic effect; gender and age have small effects which are inconsistent across subjects; centre type has a small effect which can be speculated to be attributable to the correlation between centre type and attainment and attainment-dependent prediction accuracy. There are likely some effects on prediction accuracy of ethnicity (that is, more over-prediction for some ethnic minority groups) and disadvantage (that is, more over-prediction for the more disadvantaged in general, and less over-prediction for the more disadvantaged among high attainers) but those effects have not been properly estimated.'
(p16)

Unconscious bias may also occur during rank ordering, perhaps especially when rank order with no ties is requested other than for large multi-class cohorts, but no discernible difference between candidates can be identified. SQA did not change the rank order of any candidate as part of the moderation process. This was maintained throughout the moderation process. Whilst it was anticipated that rank orders would be used as an input to the process, in practice their inclusion significantly increased the processing time required for moderation whilst neither improving the quality nor plausibility of the outcomes. We concluded that the 19 refined bands provided sufficient differentiation between candidates so that the use of rank order was not necessary.

Whilst rank orders did therefore not form one of the inputs to the final optimisation process, they were preserved by the process. This ensured that the relative performance of candidates as estimated by teachers were protected in the final awards. This is an important consideration based on the research evidence, noted above, that in general teachers are more accurate when estimating the relative than the absolute performance of their learners.

Potential impact	Basis for potential impact	Mitigation by SQA
Conscious or unconscious bias in estimating could result in candidates being estimated and receiving a course award that does not reflect their attainment.	All candidates potentially impacted: Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs	Refined band scale with more estimating points to support more granular decision-making in addition to the requirement for rank orders, which can assist with differentiating candidate attainment. To support the validity of centre estimates (model input) new information/instructions for centres outlining clearly the basis for estimates and suggested management quality assurance approaches; provision of historical data to inform estimators and management quality assurance, and online course with specific section on recognising and addressing conscious and unconscious bias. The above were provided to centres in April and May 2020.

Accuracy of estimates (centre level)

Variable accuracy in estimating practice presents another risk to the equity of using estimates as the core component of awarding in the alternative certification model. SQA's historical information comparing estimates with final awards supports other research findings that estimating practice in comparison to actual results achieved is not always accurate, sometimes significantly so.

Centres were asked to provide estimates based on each candidate's demonstrated and inferred attainment in all aspects of each course they were taking, and were advised that there was no need to set additional assessment tasks such as prelims for the purpose of determining these. Rather, we asked that the estimated grade and band be based on a holistic review of a candidate's performance as indicated by the available assessment evidence. Correspondence indicated that this might include work produced at home since school closures, and that interrupted learning has had a detrimental impact on the quality of work some candidates were able to produce. This may have applied particularly to candidates with the protected characteristic of disability, as well as those with other contexts that may present barriers to accessing qualifications. However, considering this work as part of the review of evidence for determining estimates could have presented additional challenge to estimating accurately, with the same risks to equality of opportunity described in relation to the effects of bias.

The potential difficulties in accurately determining an estimated grade based on demonstrated or inferred attainment for some of these candidates is reflected in correspondence received by SQA from education and interest group stakeholders and individual centres. This included some requests for advice about how to support candidates with additional support needs during school closure, concern that candidates were not able to access their usual level of support, and individual cases where estimating was proving particularly challenging.

The concerns arising are that some of the evidence upon which estimates are based may be below a candidate's usual or potential standard as a result of school closure and other COVID-19 circumstances and arrangements, and that the estimate and award made may be at a lower grade than might have been achieved by the time the candidate came to submit coursework and sit exams.

Consequently, there is the potential that some candidates who are disabled or who have experience of other factors that can present barriers to accessing qualifications may be disadvantaged by this element of the alternative certification model.

Potential impact	Basis for potential impact	Mitigation by SQA
<p>Data from 2019 diet of examinations indicated that only 45% of estimated grades matched the grades that were awarded — should this be carried across to 2020 then a significant proportion of submitted estimates would be inaccurate.</p>	<p>All candidates potentially impacted:</p> <ul style="list-style-type: none"> Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs 	<p>Refined band scale with more estimating points to support more granular decision-making in addition to the requirement for rank orders, which can assist with differentiating candidate attainment.</p> <p>Centre quality assurance and national awarding activity to adjust distributions where supported by data.</p> <p>To support the validity of centre estimates (model input) new information/instructions for centres outlining clearly the basis for estimates and suggested management quality assurance approaches; provision of historical data to inform estimators and management quality assurance, and online course with specific section on recognising and addressing conscious and unconscious bias.</p> <p>This information was provided to centres in April and May 2020.</p>

Completeness of estimating

There was a potential for candidates to be unconsciously overlooked and an estimate not provided for all the National Courses they would have undertaken in 2020. SQA only holds data for candidates entered for SQA qualifications; it does not hold details of all candidates enrolled in Scotland’s schools and colleges so cannot compare this data to entries to identify candidates without an entry. Indeed, even if this were possible SQA would have no way of identifying the specific qualification entries that ‘should’ apply to a candidate.

There was also a risk in 2020 that candidates who were home-schooled or faced some other disrupted attendance, such as Gypsy and Traveller children, would be unable to be estimated and thus not receive any certification. SQA’s records do not contain any information that would allow for the identification of home-schooled or other groups who may face this risk. However, in SQA’s guidance to centres on estimates, under the heading ‘How do I submit estimates for external learners who are home-schooled, privately tutored or who have previously studied at another centre?’ we said:

If the learner is registered to your centre, then as the approved centre, you need to gather the appropriate evidence to enable you to submit a refined estimate for the learner. It is for you to decide what evidence you are prepared to accept and review, such as work completed at home, with a tutor or in a previous centre. You also need to be happy to

authenticate this evidence and you can do this in a number of ways, such as discussing the work with the learner (and/or discussing with their tutor, where applicable).

It was therefore possible for any centre to provide SQA with an estimate for any candidate where they were confident there was sufficient evidence to enable them to do so.

Potential impact	Basis for potential impact	Mitigation by SQA
Centres do not submit estimates for all candidates leading to some candidates not receiving a course award.	Candidates not studying full-time at a centre, for example home-schooled candidates, Gypsy Roma, Irish Travellers, candidates who have recently moved school.	Monitoring exercise was undertaken to ensure all expected estimates were submitted. Only c200 from 500,000 were not received by 29 May 2020. Centres were contacted and by 3 June 2020 the estimates process had been completed ⁸ . SQA also provided guidance to centres encouraging them to provide estimates for all candidates where they had the evidence that allowed them to do so.

Accuracy of estimates (national level)

Again, SQA has a responsibility to individual learners and to the wider community to ensure that the standard of our qualifications is set appropriately and maintained over time and across courses. This means that we must make sure that the grade a candidate receives recognises achievement against the established knowledge, skills and understanding requirements of the course. It also means that we must make sure that it is not easier or harder to achieve the same result across different courses.

This is achieved through the development of course assessments based on an assessment 'blueprint' and consistent application of detailed 'fit-for-purpose' marking schemes through quality-assured marking processes. Finally, during awarding meetings each year, grade boundaries are set following a consideration of a range of qualitative and quantitative information, for the current year and the three previous years. The combination of the above activities provides SQA with the confidence to award graded National Courses.

SQA does not operate an explicit norm-referenced system where a fixed-proportion of grades is awarded each year; we do not fit results to a predetermined bell-curve or other distribution. Awarding meetings are held individually and there is no process to shape national level performance. However, the approach does result in a relatively stable national

⁸ By 3 June SQA had a complete set of estimates. Thereafter a small number (<50) – amendments to estimates were received from centres via SQA's exceptions process. This allowed SQA to correct errors, transpositions and corrections identified by centres.

system. Subject-by-subject variability is acknowledged, for example, larger uptake qualifications are more stable.

When the centre estimates were reviewed in early June 2020 it was evident that estimation tended to be higher than historic attainment, with proportions of candidates with A–C grades for National 5, Higher and Advanced Higher qualifications being estimated at 10%, 14% and 13% higher than 2019 results respectively. Given this, directly awarding centre estimates would not have maintained the integrity of the qualifications or standards over time. Moderation of estimates was therefore required in order to maintain the principle of maintaining the integrity and credibility of the qualifications system, ensuring that standards are maintained over time, in the interest of learners.

Potential impact	Basis for potential impact	Mitigation by SQA
<p>Accepting and awarding submitted centre estimates would lead to inflated attainment rates in 2020 and potentially raise issues in relation to currency and progression to further study and employment.</p>	<p>All candidates potentially impacted:</p> <ul style="list-style-type: none"> Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs 	<p>Undertaking the subsequent centre moderation and national awarding stages of the alternative certification model.</p> <p>This process began on 29 May 2020 and concluded on 13 July 2020.</p>

Accuracy of estimates — historical attainment of candidates with protected characteristics

SQA does not hold or collect data on candidates’ protected characteristics other than sex and date of birth. We do not need that additional data to carry out our statutory functions under the Education (Scotland) Act 1996 and, as such, we comply with our obligations under the Data Protection Act 2018 and minimise the amount of data we hold on candidates. As a result, there is no simple method for comparing 2020 estimates for candidates in equality groups to historic data for candidates with the same characteristics in order to see if the 2020 estimating process led to a different distribution of grades than historic attainment would suggest.

The table below outlines the data held by both SQA and the Scottish Government — though it should be noted SQA holds data for all candidates whereas the Scottish Government’s

data only covers local authority school candidates; college and independent school candidate data is not available meaning any use of the Scottish Government data provides only a partial picture of candidates.

Table 2: Summary of protected and other relevant characteristic data held by SQA and the Scottish Government

Protected/other relevant characteristic	Held by SQA?	Held by the Scottish Government?
Age	Yes	Yes
Disability	No	Yes
Gender reassignment	No	No
Pregnancy and maternity	No	No
Race	No	Yes
Religion or belief	No	No
Sex	Yes	Yes
Sexual orientation	No	No
Marriage/civil partnership	No	No
Care-experience	No	No
Additional support needs	No	Yes
Socioeconomic	No ⁹	Yes

SQA asked the Scottish Government to undertake an analysis of the centre estimates for the 2019 diet of examinations. It should be noted that this data set was incomplete; in all other years the provision of estimates is requested but not mandated from SQA centres and the absence of estimates does not preclude a candidate from being awarded a qualification, unlike in 2020. Nonetheless, it was a useful baselining exercise that showed:

- ◆ Sex: there was no evidence of differential estimation by sex.
- ◆ Additional support needs: similarly, entries for candidates with and without support needs saw comparable estimation.
- ◆ Race: around 90% of candidate entries were either 'White – British' or 'White – Other', with the largest other ethnicity (Asian – Pakistani) being 2.5%. Thus, each non-white ethnicity is a small dataset — and small datasets are difficult to analyse and draw firm conclusions from as the data tends to be variable, meaning it is often not possible to distinguish the natural variation found in small datasets from meaningful signals.
- ◆ Socioeconomic (i): SIMD data showed a higher number of estimates were received for candidates from the most deprived postcodes at National 5 than for Higher, decreasing again for Advanced Higher. It is not possible to tell from the data whether this is a function of the number of entries or a function of the number of estimates received.

⁹ Note, although SQA does not hold socioeconomic data in its databases, the Scottish Index of Multiple Deprivation postcode data is publicly available.

- ◆ Socioeconomic (ii): Despite some variability in cohort sizes, the analysis did not indicate that candidates from the most deprived postcodes were disadvantaged in estimation.

This work demonstrated that it was worthwhile, albeit with incomplete data, to carry out further analysis of the 2020 estimates, as follows:

- ◆ Using 2016–19 results we created a comparison in attainment (at grades A–B) between characteristics groups.
- ◆ We then compared the 2020 estimates and post-moderation results to these, to see if either the estimating stage or the post-moderation results from the awarding process had widened the difference in attainment (which would suggest disadvantage).

SQA was able to carry out this analysis for the data it holds. Analysis of the estimates did not show any identifiable disadvantage to any group of candidates. Indeed, for the most disadvantaged candidates, the 2020 estimates showed a smaller gap in terms of the proportion of candidates at grades A–C compared to the least disadvantaged candidates. This was true for all SIMD quintiles.

A summary of this analysis can be found in Appendix 3.

Potential impact	Basis for potential impact	Mitigation by SQA
Accepting and awarding submitted centre estimates would lead to disadvantage to candidates with protected characteristics.	All candidates potentially impacted: Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs	Review of 2019 centre estimate data to identify any disadvantage to candidates in equality groups, where data is available. This analysis was carried out in May 2020. Review of 2020 centre estimate data to identify disadvantage to candidates in equality groups, where data is available, as a result of the estimating stage of the alternative certification model. The analysis SQA was able to carry out, given the limitations of the available data, was completed in July 2020.

Summary of impact assessment of centre estimates stage

Equality groups impacted

Equality group	Potential impact	Equality group	Potential impact
Age	Yes	Sexual orientation	Yes
Disability	Yes	Marriage and civil partnerships	Yes
Gender reassignment	Yes		
Pregnancy and maternity	Yes	Additional support needs	Yes
Race	Yes	Care-experienced	Yes
Religion or belief	Yes	Socioeconomic	Yes
Sex	Yes		

Actions identified

Action	Taken?	Note	PSED
Ensuring 100% of expected estimates and rank orders received.	Yes (Done)	SQA does not hold a 'control' dataset of all learners; check is only possible on expected entries.	Eliminate discrimination.
Guidance on bias central to training materials provided to centres.	Yes (Done)	Made available to teachers and lecturers in time to allow them to train prior to submitting estimates. The course was accessed 9,879 times by 2,666 users.	Eliminate discrimination.
Estimates moderated to avoid an inflated set of results.	Yes (Done)	All stages of the ACM work together to have an impact on the final results.	Advance equality. Foster good relations.
Compare estimates data to historic attainment to identify any variance that may indicate systemic bias or discrimination.	Yes (Where data available)	Data available for age, sex and socioeconomic status. As part of lessons learned activity, SQA is working with Scottish Government to analyse datasets that they hold, but SQA does not.	Eliminate discrimination. Advance equality.

Meeting our public sector equality duty

Eliminate Discrimination	By ensuring we received all estimates we were expecting, guiding centres to training, setting expectations about conscious and unconscious bias and comparing estimate data to historic attainment SQA took steps to eliminate discrimination in the estimating stage.
Advancing Equality of Opportunity	By providing a fair and consistent national approach to estimates and by comparing estimates to historic data to evidence that no group was excluded from the estimating process, SQA took steps to advance equality of opportunity.
Fostering Good Relations	Through the application of a fair and consistent national approach, and thus safeguarding the credibility of all candidate's qualifications, SQA took steps to foster good relations by promoting equity between all candidates

3.3 Step 2 — awarding

Purpose

The objective of this stage was to make awarding decisions, which are fair to all candidates and which protect the integrity of qualifications, by processing estimate data using consistent methodology and, as far as possible, processes that are used to set grade boundaries in a normal year, for example, statistical analyses and awarding panel decision-making.

At the outset, the two main uncertainties in the awarding process were recognised as being:

- ◆ The nature of the estimates submitted by centres — the degree to which they aligned with the distribution of grades, at both national and centre level, that we would have expected had the exams run normally, and with reference to historic distributions.
- ◆ The approaches available to SQA to moderate estimates where this was shown to be necessary.

Furthermore, SQA recognised uncertainty relating to the challenge of identifying genuine over- or under-estimation, whilst recognising that genuine changes in performance due to different cohorts is a reasonable possibility and year-to-year centre variability is not unreasonable particularly when entry numbers are low/moderate and there are small cohorts. SQA also noted the difficulty of applying statistical techniques to low uptake courses and centres, and centres with no historic attainment in courses for which they were presenting candidates in 2020.

Against this background, and to support the overall principles of the ACM of fairness to all learners, safe and secure certification of qualifications and maintaining the integrity and

credibility of the qualifications system, SQA established a number of assumptions and principles to underpin and inform our approach to moderation:

- ◆ We would moderate the smallest number of estimates necessary to ensure maintenance of standards.
- ◆ We would only moderate estimates where there is clear evidence that it is required, and we have identified a way of moderating estimates that is consistent with our principles and these assumptions.
- ◆ There may be some courses for which we could not find a way of moderating the estimates submitted by centres.
- ◆ Rank orders are to be preserved: we would not change the rank order of any candidate as part of the moderation process. This assumption is based on the research evidence that, in general, teachers are more accurate when estimating the relative performance than the absolute performance of their students.
- ◆ We would base decisions on quantitative and qualitative analyses.
- ◆ We may need to take a different approach at different levels based on factors such as availability of prior attainment data.
- ◆ We would keep a clear rationale and audit trail for every decision.

There were three steps within centre moderation and national awarding, which were informed by a number of datasets and considerations. These are outlined below.

Reviewing ‘accuracy’ of centre estimates

The plausibility of submitted centre estimates were reviewed based on the following analysis:

Starting point distributions (based on centre prior attainment)

National and centre level distributions were based on the prior attainment of candidates entered for Higher and Advanced Higher courses in session 2019–20. These were based on previous years’ centre-by-subject results data and show a high and low percentage for attainment at each grade, creating a range in which the 2020 estimates would be expected to be consistent with. SQA’s normal approach to awarding results in a relatively stable system of grade distribution, which makes it appropriate to confirm historical starting point distributions to provide a check on whether estimates submitted for 2020 are, at a national level, in line with the results that would have been expected had the 2020 examinations run normally. These distributions were also used in the national awarding meeting step to judge the degree to which moderation of estimates had been effective in addressing any systematic over- or under-estimation.

Estimates were received from a number of centres with no historical data available from which to create a starting point distribution. Following extensive exploration of how to moderate the estimates from these centres in a fair and consistent way, a decision was taken that in these circumstances the centres should be excluded from the final optimisation run. This meant that these candidates in these centre/course combinations were awarded the unmoderated estimate submitted by the centre.

Whilst this decision resulted in the final grade distributions for some courses breaching the starting point distribution tolerances, it also meant that other candidates were not

disadvantaged through further moderation. Importantly it also ensured that SQA complied with its principle of only moderating estimates where it could find a way of doing so.

Volume of attainment measures by centre and course

A measure of the historical annual volume of attainment for each centre at an aggregate and individual course level.

Measure of centre estimation accuracy

A measure of how accurate each centre's estimates have been historically, notwithstanding the fact that this year's estimating practice is likely to have been influenced by its more central significance in awarding, and the training and guidance provided by SQA.

Criteria for centre moderation requirements

These were dependent on analysis of 2020 estimate data and based on starting point distributions, historical attainment data and measures of historical centre estimation accuracy.

Moderation of centre estimates

The challenges of applying these steps to centres whose attainment and/or consistency of estimating varies, who have low or new uptake, or where other factors emerge that suggest further attention is required, is acknowledged. In setting the criteria and tolerances for the moderation process we took account of historical variability in attainment at a centre level — so those centres where attainment is more variable year on year were allowed more variance in their performance this year before being selected for moderation.

Approaches to moderation of centre estimates

Where the requirement for moderation was identified, the core principles in validating and moderating estimates are to ensure consistency across centres, fairness to candidates, and maintenance of national standards in final awarding. Analysis was undertaken to ascertain whether outcomes of moderation activity achieved the expected outcomes. During the moderation process all data was pseudonymised and aggregated.

National awarding meetings

National awarding meetings reviewed the proposed final distribution of grades for each course against the starting point distributions and was asked to confirm they were plausible.

A panel approach was implemented for awarding decisions and sign-off. This was based on consistent design rules to contribute to objectivity, equity and fairness for candidates and centres.

Potential sources of negative impact

Bias in the awarding process

Centre estimates were the only input to centre moderation and national awarding. Therefore, if bias was not addressed through the mitigation strategies adopted in stage 1 — submission of centre estimates — then it was likely to remain. However, the awarding process was also in itself a mitigation strategy, particularly, in relation to inaccuracy of centre estimates at a national level.

Potential impact	Basis for potential impact	Mitigation by SQA
Awarding process may maintain or introduce further bias.	All candidates potentially impacted: Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs	The use of pseudonymised, aggregated candidate data should avoid any further bias being introduced at a candidate level. All things remaining equal, it should address issues of centre over-estimation and, where it occurred, under-estimation.

Unintended outcomes of the awarding process leading to disadvantage for candidates with protected characteristics

Although the awarding process itself is a mitigation strategy, SQA also considered the possible impact of this stage on candidates with protected characteristics. In order to measure this impact, the analysis outlined in the previous section — the analysis of 2020 estimates compared to historic attainment for candidates with specific characteristics — was also carried out comparing the outcome of the awarding process with historic attainment.

Analysis of grade A to C attainment showed that:

- ◆ The gap between male and female candidates widened slightly compared to the 2020 estimates, at all levels.
- ◆ The gap between male and female candidates for 2020 results is in line with historic result differentials.
- ◆ Although the gap between younger (age <15) and older (age 18+) and the 15–18 cohorts has widened, it remains similar to previous years. The under 15 and over 18 cohorts are very small, so it is no surprise that there is somewhat greater variability here than for sex.

At Grade A–C, the gaps between most and least disadvantaged groups of learners were narrower than any seen in the comparative historic data for each qualification level for the last five years, save for the gap at Higher, where it is the smallest gap in the last four years. Compared to both the average Grade A–C performance over the last four years (2016–19) and to 2019 Grade A–C performance, the 2020 results were higher for the most disadvantaged learners at all levels.

Compared to the 2016–19 average, in the 2020 results the most disadvantaged learners outperformed by 3.9%, 2.3% and 7.8% for National 5, Higher and Advanced Higher respectively.

Compared to the 2019 results, in the 2020 results the most disadvantaged learners outperformed by 5.3%, 4.6% and 10.9% for National 5, Higher and Advanced Higher respectively.

A summary of this analysis can be found in Appendix 3.

Potential impact	Basis for potential impact	Mitigation by SQA
Awarding process may maintain or introduce further bias.	All candidates potentially impacted: Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs	Review of 2020 awarding outcomes to identify any disadvantage to candidates in equality groups, where data is available as a result of the awarding stage of the alternative certification model. The analysis SQA was able to carry out, given the limitations of the available data, was completed in July 2020. Furthermore, for candidates where the awarding process led to a lower grade than submitted in the estimating stage, they are eligible for a post-certification review as outlined in Section 3.4

Summary of impact assessment of centre moderation and national awarding stage

Equality groups impacted

Equality group	Potential impact	Equality group	Potential impact
Age	Yes	Sexual orientation	Yes
Disability	Yes	Marriage and civil partnerships	Yes
Gender reassignment	Yes		
Pregnancy and maternity	Yes	Additional support needs	Yes
Race	Yes	Care experienced	Yes
Religion or belief	Yes	Socioeconomic	Yes
Sex	Yes		

Actions identified

Action	Taken?	Note	PSED
Use of pseudonymised centre and candidate data throughout the stage.	Yes (Done)		Eliminate discrimination.
Compare moderated results to historic attainment to identify any variance that may indicate systemic bias or discrimination.	Yes (where data available)	Data available for age, sex and socioeconomic status. As part of lessons learned activity, SQA is working with Scottish Government to analyse datasets that SG holds, but SQA does not.	Eliminate discrimination. Advance equality. Foster good relations.
Applying a common methodology to all entries from all centres	Yes (Done)		Foster good relations

Meeting our public sector equality duty

Eliminate Discrimination	By pseudonymising data and comparing moderated results to historic data — and so checking to ensure no particular group was disadvantaged as a result of this stage — SQA took steps to eliminate discrimination in the moderation stage.
Advancing Equality of Opportunity	By comparing moderated results to historic data to evidence that no group was excluded from or disadvantaged by the moderating process, SQA took steps to advance equality of opportunity.
Fostering Good Relations	Through the application of a fair and consistent national approach, and thus safeguarding the credibility of all candidate's qualifications, SQA took steps to foster good relations by promoting equity between all candidates

3.4 Step 3 — Results and certification

Purpose

The purpose of this third stage, which is not a component of the awarding process and chronologically comes before appeals (post-certification review), is to ensure that candidates have physical and verified evidence of their attainment to celebrate their achievements and are able to take up opportunities for further learning, training and employment, which may be dependent on SQA results, now and in the future. Results will be issued to learners on Tuesday 4 August 2020, by post and from 8am, by text and/or email if the learner has an

active MySQA account, SQA's email and text service. SQA's online service is available from Wednesday 5 August 2020.

Certificates will take the appearance and format of those in recent years. One objective of this is to guard against discrimination or reduce equality of opportunity between those who are certificated this year and those who were certificated in the past. There will be no mention of the ACM or any of the unique contexts within which the 2020 results were calculated or awarded. This is to ensure that candidates and other users of the certificate can be confident that the awards made have the same parity of esteem as awards made in previous years and that the certificate provides evidence of validated achievement that can be used to progress to further or higher education or to employment or training, now or in the future.

In terms of certificate production and delivery, external printing and distribution service providers are currently working at close to normal business as usual capacity and that certificates will be printed and delivered as planned. However, SQA requires to consider the risk of paper certificates remaining the primary communication of awards to candidates, what contingencies are in place if that remains the objective, and similarly consider the risk if digital channels were instead to become the primary communication of awards. Should there be interruption to the business of our printing and delivery suppliers, digital delivery may need to be the primary means of delivering awards.

Potential sources of negative impact

At this point in the process, all decision-making in relation to candidate attainment has taken place. It is not believed that this is a source of bias. Results are communicated to candidates in two ways: using digital technology (MySQA) and by posting paper certificates. There are potential negative impacts of both approaches.

Paper certificates

SQA sends certificates to all candidates through the postal system. We work with the Post Office to ensure these are delivered to all candidates across Scotland — including island communities — on results day.

We have identified that for some candidates receiving mail at home may be an issue. If paper delivery is not possible, there may be a risk to equality of opportunity for those candidates who require paper copies as proof of their awards in order to progress to further or higher education, employment or training.

Potential impact	Basis for potential impact	Mitigation by SQA
Certificates delivered by the postal service may not be accessible to all candidates.	Socioeconomic Care-experience	SQA provides access to results via the MySQA service, allowing for text, email and website access to results. For care-experienced people aged 26 or under, replacement certificates are available free-of-charge.

Digital technology

SQA currently has around 69,000 MySQA active registrations from candidates this year (138,000), of whom just under 18,000 have registered since the start of the year. The characteristics of those already registered are not known but it may be reasonable to assume that some of those who have not registered include a proportion of:

- ◆ disabled candidates who are unable to access technology used for digital delivery
- ◆ visually impaired candidates who prefer to access enlarged or braille certificates
- ◆ candidates experiencing poverty, deprivation or other circumstances who have limited or no access to digital devices or broadband

Results on text, email and the Result View on MySQA are not intended as fully authenticated records of achievement for the purpose of third-party users.

Potential impact	Basis for potential impact	Mitigation by SQA
MySQA may not be accessible to all candidates.	Disability Socioeconomic Care-experience Additional support needs	SQA provides paper copies of certificates, posted directly to candidates' addresses.

Supporting candidates from results day onwards

This year — as every year — SQA will provide a Candidate Advice Line (CAL) for all candidates from results day until the end of that week. Thereafter, our normal Contact Centre is in place to handle enquiries from candidates, parents and others. The CAL takes enquiries by phone, email, Facebook, Twitter and via our website. All CAL staff — which consists of our regular Contact Centre team augmented by colleagues from across SQA, who volunteer to be of assistance to Scotland's candidates — are trained, have full supporting documentation and are supported directly by more experienced staff throughout the week.

In this way, SQA is providing both direct responses to any enquiries candidates may have, and having the opportunity, where appropriate, to signpost to other organisations that may be best-placed to assist a candidate. This will include other education and skills organisations, such as Skills Development Scotland, their own school or college, or other organisations who can provide help and support including the Equality Advisory Support Service.

Potential impact	Basis for potential impact	Mitigation by SQA
Candidates may wish to contact SQA to discuss issues, including those related to equality and discrimination.	All candidates potentially impacted: Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs	SQA provides a Candidate Advice Line able to provide both direct assistance or, where more appropriate, signposting to other organisations.

Summary of impact assessment of result and certification stage

Equality groups impacted

Equality group	Impact	Equality group	Impact
Age	No	Sexual orientation	No
Disability	Yes	Marriage and civil partnerships	No
Gender reassignment	No	Additional support needs	Yes
Pregnancy and maternity	No	Care-experienced	Yes
Race	No	Socioeconomic	Yes
Religion or belief	No		
Sex	No		

Actions identified

Action	Taken?	Note	PSED
Use of MySQA to deliver results.	Yes (Done)	Electronic delivery of results helps candidates where receiving post may be an issue.	Advance equality.
Sending certificates through the post.	Yes (Done)	Postal delivery of certificates helps candidates with limited access to technology.	Advance equality.
Free replacement certificates for care-experienced learners.	Yes (Done)		Advance equality.
Providing the Candidate Advice Line	Yes (Done)		Advance equality.

Meeting our public sector equality duty

Advancing Equality of Opportunity	By having different ways of providing candidates with their result information, SQA advances equality of opportunity as this meets the needs of candidates who would otherwise miss out on results delivered in only one way. This is augmented by the Candidate Advice Line, available to all candidates.
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3.5 Step 4 — Appeals (post-certification review)

Purpose

The purpose of this fourth and final stage of the alternative certification model, is to ensure that any risk of inaccurate awarding is addressed. This free appeals (post-certification review) process will be provided for centres to challenge any downwards adjustments that have been made to teacher estimates, based on centre moderation decisions.

Centres will be able to submit an appeal (post-certification review) request and SQA will consider the candidate evidence upon which the centre's estimates were based, using experienced senior examiners in each subject area. The objective of this service is to provide equality of opportunity for all by providing a final mechanism to ensure that candidates have been awarded the grades they deserve and are able to celebrate their success and progress to the next stage of education, employment or training. It also aims to address unintended discrimination or bias, which may have arisen during centre moderation and national awarding through the application of moderation processes that seek to address systematic over- or under-estimating but cannot account for variable estimating practice.

After results are issued on 4 August 2020, centres will be able to request a review where any award made is lower than that estimated. They will receive a report advising them of those

candidates who are eligible on this basis. As in normal years, priority will be given to requests for those learners requiring a result to secure a conditional place at college or university. Assessment evidence must be available to support the estimated grade — this can be wide ranging and include prelim or mock papers, additional tasks or assignments and performance or practical evidence. In some cases, SQA may already hold evidence that has previously been submitted but not marked, for example some National 5 coursework or visiting assessment outcomes.

Schools and colleges may submit a rationale for their decision-making for each learner or group of learners, which highlights the key areas of evidence that they believe validates their estimated grade. Candidates must give their permission for a request to be made. Requests must be signed-off by the head of centre, or their representative, before being submitted to SQA. Once a request and all the associated assessment evidence is received, it will be reviewed by a senior subject specialist examiner and they will either accept or reject the request, based on the evidence submitted.

If a request is accepted, the learner will be upgraded. It is important to note that if the learner has been downgraded by a number of grades, for example if the centre estimate is grade A but a grade D has been awarded, the learner may, depending on the evidence, be upgraded to grade C, B or A. If the learner requires the result for a conditional college or university place, SQA will advise the school or college, the higher education institute and UCAS, as appropriate. Learners will be sent an updated Scottish Qualifications Certificate after all review requests for 2020 have been completed. If a request is rejected, SQA will confirm the original grade certificated, or an alternative lower grade, with the school or college.

It is possible that a lower grade may be awarded following a review because the evidence supplied is judged to be so far from standard that it cannot support either the original school or college estimate or the certificated grade awarded. The inclusion of this option within the review process supports fairness and equity to all learners, while maintaining the integrity and credibility of the qualifications.

The post-certification review (appeal) is an academic judgement and SQA's decision on matters of academic judgement is final. However, the process is supplemented by an escalated appeal process, available for centres to utilise if, after the review is complete, they believe there has been a procedural error. Escalated appeals follow a two-stage process: first a review to see if SQA's adherence to the process can be evidenced. If it can, the escalated appeal is declined. If it cannot be evidenced, then the appealed results will be passed back to the post-certification review process for a new review of the evidence. If SQA declines to accept the escalated appeal, the centre retains the right to ask SQA's Appeals Sub Committee (chaired by the Convenor of SQA's Qualification Committee, an SQA Board member) to consider the appeal. The Appeal Sub Committee's decisions are final.

Potential sources of negative impact

There are at least two potential sources of discrimination, and therefore negative impact: a centre does not make a post-certification review request, and/or discrimination in the review undertaken by SQA. Both of which, singularly or in combination, could result in disadvantage.

Subject-specialist bias in the post-certification review (appeal)

In a similar manner to potential discrimination being introduced into the original centre estimate, the post-certification review may introduce a conscious or unconscious bias when undertaking the review. SQA explored the possibility of ensuring that, as far as possible, details of candidates and centres were not available to the subject specialists during the post-certification review stage as this would have been an effective mitigation against conscious and unconscious bias. However, this was not possible: subject specialists will be presented with a range of ad hoc and bespoke pieces of candidate evidence to review. It would be impractical in the timescales available to introduce an administrative manual process to redact or cover up candidate and centre details on each item of evidence. It may also introduce further risk to the process as the additional manual handling of evidence increases the likelihood of items becoming misplaced or misallocated. Furthermore, subject specialists will be required to access SQA systems to look up original estimate data — a process clearly only possible if they have some identifying information for each candidate.

SQA has addressed this risk in other ways. Firstly, SQA selected experienced and senior subject specialists who have a track record of being effective and expert markers to carry out the evidence reviews in the post-certification review stage. Secondly, this experienced group were required to complete further training, which includes a specific section on bias. Thirdly, SQA always ensures conflicts of interest are managed. For example, subject specialists are never allocated evidence from their own centre to review.

SQA expects that small teams of experienced subject experts will be used for each course. Where these small teams need to be augmented by further members of the marking team, their marking will be subject to a quality assurance process that will identify any marking that deviates from the national standard. Where a subject specialist fails to meet the standard, we will apply no tolerance; that is to say their full allocation of reviews (including those already completed) will be reallocated to specialists who have met the standard.

Potential impact	Basis for potential impact	Mitigation by SQA
Introduction of conscious or unconscious bias when considering the review.	All candidates potentially impacted: Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs	Although not possible to suppress candidate or centre details, only experienced specialists are being engaged to carry out this work. They are receiving further training and their work will be subject to quality assurance and, if they do not meet SQA's standard, their work will be reallocated.

Candidate issues with the original centre estimate

There may be instances where a candidate is unhappy with the original estimate submitted by their centre, whether this has been moderated by SQA or not. Centres were given clear guidance by SQA on the approach to take and also how to be mindful of their own duties under equality legislation. As such, the responsibility for reaching their estimates in a fair and lawful manner rests with the centre concerned and, where appropriate, with local authorities. Nonetheless, it is possible that a candidate successfully challenges their centre on the fairness of their original estimate — potentially on grounds related to protected or other relevant characteristic. If they had received a grade lower than estimated they would already be eligible for post-certification review. However, if SQA had awarded the same grade as estimated then it is recognised that there should be a mechanism to address that.

Potential impact	Basis for potential impact	Mitigation by SQA
Candidates believe their centre, has given an estimate lower than they believe is appropriate including a belief that the lower estimate is the result of discrimination.	All candidates potentially impacted: Age Religion or belief Disability Sex Gender reassignment Sexual orientation Pregnancy and maternity Marriage and civil partnerships Race Socioeconomic Care-experience Additional support needs	Candidates will be directed back to their centres. Centres will be expected to apply their own processes and confirm estimates were reached in a fair and lawful manner. Where a centre concludes this is not the case, they are asked to write to SQA's Director of Operations for an exceptional consideration, whereby the post-certification review process will be opened for the candidate(s) in question.

Addressing systemic bias against candidates with protected characteristics through post-certification review

The analysis of both estimates and awarding outcomes, summarised in Appendix 3, did not show any group of candidates with a shared characteristic to be disadvantaged as a result of either of these stages.

Nonetheless, SQA considered whether there were any mitigating actions it could take should this analysis have identified any disadvantage. Specifically, whether it would be appropriate to open the post-certification review process to any candidate who shared a characteristic where we had identified disadvantage.

SQA identified two key issues with using the post-certification review (appeal) in this way. Firstly, the key decision when opting for a review is to make a judgement as to how a candidate's evidence compares to the national standard against which it would be measured. This is an academic judgment that is properly made by a suitable professional. It would be problematic if the responsibility for making this judgement was passed to the individual candidate. The alternative is to retain the decision-making role with the centre — however, given this would be an attempt to redress a perceived shortcoming in a decision the centre had already made this too looks inappropriate.

Furthermore, even if the centre and candidate were to agree to submit a post-certification review, the widespread generous estimation in the estimates submitted to SQA in the estimating stage strongly suggests that a number of candidates who submit evidence for a post-certification review would be subject to a downward movement in grade. For an individual this would be a negative outcome; for a cohort of candidates with a shared characteristic it would likely have the net effect of widening the differential between 2020 and previous years.

As such, SQA considered that to apply this as a mitigating action would likely lead to a greater disadvantage to candidates and therefore it should not be applied.

Summary of impact assessment of post certification review stage

Equality groups impacted

Equality group	Potential impact	Equality group	Potential impact
Age	Yes	Sexual orientation	Yes
Disability	Yes	Marriage and civil partnerships	Yes
Gender reassignment	Yes		
Pregnancy and maternity	Yes	Additional support needs	Yes
Race	Yes	Care-experienced	Yes
Religion or belief	Yes	Socioeconomic	Yes
Sex	Yes		

Actions identified

Action	Taken?	Note	PSED need
Use of pseudonymised centre and candidate data throughout the stage.	No	This was not possible as examiners needed reference data to look up candidates on SQA systems. Impractical to redact or remove all personal information from ad hoc evidence provided by centres.	Eliminate discrimination.
Using a common approach to all entries from all centres	Yes (Done)		Foster good relations. Advance equality.
Further guidance to centres on paying due regard to bias and discrimination in considering use of post-certification reviews.	Yes (Done)	Specific reference made to the Equality Act in guidance to centres.	Eliminate discrimination.
Compare post certification review uptake and outturn to identify any variance that may indicate systemic bias or discrimination.	Yes (planned)	Data will not be available until after the post-certification review period has concluded. SQA will need to work with the Scottish Government in order to be able to carry out full analysis.	Eliminate discrimination. Advance equality. Foster good relations.
Exceptional route to a post-certification review where candidates have been subject to discrimination at original estimate stage.	Yes (Done)	SQA will consider a range of exceptional requests for post-certification reviews including where a centre has determined they did not meet their own obligations under the Equality Act.	Eliminate discrimination.
Using post-certification reviews as a mechanism for addressing systemic bias or discrimination identified in analysis of estimates or moderated results.	No	Available data did not identify any equality groups subject to discrimination. Even so, using post-certification reviews is problematic: as estimates tended to be generous and a review could lead to a grade being raised or lowered, it is likely that this may have led to a large number of downgrades as upgrades and thus would not have been a mitigation.	Eliminate discrimination. Advance equality. Foster good relations.

Meeting our public sector equality duty

Eliminate Discrimination	By providing further guidance to centres on bias and discrimination, providing a route for centres who identify candidates who have been subject to discrimination to access the post-certification review stage and planning to compare post-certification review data to historic data — and so checking to ensure no particular group was disadvantaged as a result of this stage — SQA took steps to eliminate discrimination in the post certification review stage.
Advancing Equality of Opportunity	By comparing post certification review participation and results to historic data in order to evidence that no group was excluded from the moderating process, SQA took steps to advance equality of opportunity in this stage.
Fostering Good Relations	Through the application of a fair and consistent national approach, and thus safeguarding the credibility of all candidate's qualifications, SQA took steps to foster good relations by promoting equity between all candidates.

4 Lessons learned and future actions

The alternative certification model was a response to the particular challenge faced as a result of the COVID-19 pandemic. Unlike other large-scale changes to a qualifications system, this is not scheduled to be repeated nor is it intended to be a newly established standard approach. So many of the mitigations applied this year are not replicable in the future as a wholly different approach will be used.

Nonetheless, there remains useful future actions that can be carried out. Based on a consideration of this impact assessment, the following actions are proposed:

- ◆ Review and update guidance on internal assessment and estimates to capture issues around conscious and unconscious bias.
- ◆ Explore options for increased monitoring of protected characteristics (for example Scottish Government data sources). SQA and the Scottish Government are in the process of developing a suitable approach to data sharing that will allow for some further analysis of both estimates and moderated results compared to data held in the pupil census, as outlined in Table 2
- ◆ Following the post-certification review process, SQA will similarly look to carry out comparable analysis of those candidates who made use of this process.
- ◆ SQA will also review the process used to compile this equality impact assessment, linking in with ongoing work looking at the range of methods used in different contexts across SQA to meet our public sector equality duty.

Appendix 1: Targeted consultation organisations

Lead Scotland

Shawlands Academy

Glasgow Kelvin

Call Scotland

CDN

Retired Practitioner

Education Scotland

Dundee City Council

City of Edinburgh Council

Deaf Support Service

St Paul's R.C. Academy

Rosshall Academy

Dingwall Academy

Dyslexia Scotland

CELCIS

Appendix 2: Research

Additional Support for Learning: Research on the experience of children and young people and those that support them

Scottish Government, March 2019, retrieved April 2020

Review of Implementation of Additional Support for Learning in Scotland

Enquiry response, December 2019, retrieved April 2020

Additional Support for Learning in Scottish School Education: Exploring the gap between promise and practice

EIS, May 2019, retrieved April 2020

Provision for learning support in Scotland: a survey of local authorities Report to Educational Institute for Scotland

University of Aberdeen, September 2018, retrieved April 2020

Methods used by teachers to predict final A Level grades for their students

Tim Gill, Research Matters, Issue 28, Autumn 2019, retrieved April 2020

Investigating the accuracy of predicted A level grades as part of the 2010 UCAS admission process

BIS Research paper number 120, November 2013, retrieved April 2020

EIS Child Poverty Survey 2016

The Educational Institute of Scotland, June 2017, retrieved April 2020

Exceptional arrangements for assessment and grading in 2020

Ofqual, April 2020, retrieved April 2020

Equality impact assessment: literature review

Ofqual April 2020, retrieved April 2020

JCQ's response to Ofqual's publication of further guidance on summer awarding in 2020, retrieved April 2020

Poverty in Scotland 2019

Emma Congreve, Joseph Roundtree Foundation, retrieved April 2020

Predicted grades: accuracy and impact A report for University and College Union

Dr Gill Wyness, UCL Institute of Education December 2016, retrieved April 2020

Predicting students' academic performance based on school and socio-demographic characteristics

Tamara Thiele, Alexander Singleton, Daniel Pope & Debbi Stanistreet, November 2014, retrieved April 2020

Rules of the Game: Disadvantaged students and the university admissions process

Gill Wyness, December 2017, retrieved April 2020

Supporting care-experienced and estranged students in higher education – responding to COVID-19

Become, Stand Alone, the National Network for the Education of Care Leavers (NNECL), the Unite Foundation and Spectra, UK-wide survey of higher education students who are either care-experienced or estranged March 2020, retrieved April 2020

The Long-term Consequences of Teacher Discretion in Grading of High-stakes Tests

Rebecca Diamond and Petra Persson, April 2016, Revised June 2016, retrieved April 2020

The Missing ‘One-Offs’: The Hidden Supply of High-Achieving, Low-Income Students

Caroline Hoxby and Christopher Avery, Spring 2013, retrieved April 2020.

Unconscious Bias 2016

UCAS, August 2016, retrieved April 2020

Unskilled and unaware in the classroom: College students’ desired grades predict their biased grade predictions

Michael J. Serra¹ & Kenneth G. DeMarree², Psychonomic Society, Inc. 2016, retrieved April 2020

Digital Participation and Social Justice in Scotland

Douglas White, September 2016, The Carnegie UK Trust, retrieved April 2020

Evidence

To ensure we meet our responsibilities to give due regard to the general equality duty we considered a range of information and evidence to consider the impact of the alternative certification model on people who share protected characteristics. Mitigating action taken has been recorded.

Source	Potential impact on protected groups	Relevant candidate characteristics	General equality duty
Professional knowledge regarding the many and varied disadvantages that some of our candidates face.	<p>Potential for disadvantage to some candidates with protected characteristics as described in the Equality Act 2010, and other candidates covered by SQA's Policy on Equality of Access to Qualifications has been identified.</p> <p>All candidates are experiencing interrupted learning during this time; home-schooling, distance and online learning has become the new norm and, as such, individual support may be reduced. This may have an impact on the quality of work some learners have been able to produce since school closure.</p> <p>The concerns arising are that some of the work upon which estimates are being determined may be below a candidate's usual or potential standard as a result of school closure and other COVID-19 circumstances and arrangements, and that the</p>	<p>Disability Sex Sexual orientation Gender reassignment Race Religion or belief Pregnancy and maternity</p> <p>Candidates who have identified additional support needs, are experiencing poverty and deprivation, or are normally home-schooled. Also care-experienced candidates or those who have had interrupted learning due to illness or disability prior to school closures.</p>	<p>Relating to the detail of the mitigating actions recorded — identify how we have met our responsibilities to give due regard to need to eliminate discrimination, advance equality of opportunity and foster good relations.</p>
Information gathered from SQA's governance and management groups.			
Correspondence and engagement with equality and inclusion stakeholders.			
Correspondence received from education and interest group stakeholders and individual stakeholders.			

Source	Potential impact on protected groups	Relevant candidate characteristics	General equality duty
	<p>estimate and award made may be at a lower grade than might have been achieved by the time the candidate came to submit coursework and sit exams.</p> <p>The potential difficulties in accurately determining an estimated grade based on demonstrated or inferred attainment for some of these candidates is acknowledged and reflected in correspondence received from education and interest group stakeholders and individual centres.</p>		
<p>Ofqual Research and Analysis Literature Review</p>	<p>Research on bias in estimates. Studies of potential bias in teacher assessment suggest that differences between teacher assessment and exam assessment results can sometimes be linked to student characteristics like gender, special educational needs, ethnicity and age.</p> <p>There are likely some effects on: estimation accuracy of ethnicity (that is, more over-estimation for some ethnic minority groups) and disadvantage (that is, more</p>	<p>Sex Additional support needs Ethnicity Age</p> <p>Ethnicity Socio-economic disadvantage</p>	<p>Duty to eliminate discrimination and advance equality.</p>

Source	Potential impact on protected groups	Relevant candidate characteristics	General equality duty
	over-estimation for the more disadvantaged in general, and less over-estimation for the more disadvantaged among high attainers), but those effects have not been quantified.		
	The potential for inaccurate estimating, including that which might occur as a result of unconscious bias, represents a risk of disadvantage in relation to any of the protected characteristics, as well as the other categories of candidate referenced in this EIA.	All	
Rules of the Game (Wyness 2017)	<p>A range of potential unconscious biases may also contribute to inaccurate estimation, and of particular concern is the potential for under-estimation as a result.</p> <p>Research found that high-achieving disadvantaged students often have their grades under-estimated, with data indicating that black and minority ethnic students, including Gypsy Roma and Irish Traveller students are more likely to be in these deprivation categories. In the absence of exams and</p>	Disadvantaged students Ethnicity Gypsy Roma and Irish Traveller	

Source	Potential impact on protected groups	Relevant candidate characteristics	General equality duty
	<p>associated quality assurance measures to mitigate against bias where possible by suppressing candidate data in all but performance assessments and marking from paper procedures, the risk of bias affecting an individual's final award is presented by reliance on estimates as a core component of grading. The extent of this risk is not known, and it may be small.</p>		
<p>SQA estimates and attainment data; Scottish Government pupil census and attainment data.</p>		<p>Gender Socio-economic disadvantage Additional support needs/ disability Ethnicity Race</p>	

Appendix 3: Data analysis

Analysis of the Diet 2019 centre estimates

SQA asked the Scottish Government for data on the Diet 2019 centre estimates and results. This data set was incomplete — estimates are requested from SQA centres but not mandated, and the absence of estimates does not preclude a candidate from being resultted.

Analysis included comparisons of:

- ◆ cohort sizes for each characteristic.
- ◆ grade distribution for estimates and results by characteristic.
- ◆ estimate accuracy for each characteristic, looking at the overall proportions of grades that were underestimated, overestimated, and as estimated.

Notes:

- ◆ The analysis covers National 5, Higher and Advanced Higher courses.
- ◆ The data include entries from all candidates with estimates who were on roll at a publicly-funded mainstream school. Candidate entries from colleges and independent schools were excluded (approximately 45,000 candidates), as this data is not held by the Scottish Government.
- ◆ Candidate characteristics were taken from the 2018 pupil census. If a candidate had a missing datazone (approximately 1% of candidates), then the school datazone was used.
- ◆ The data looks at each qualification and the grade attained. This means a learner is likely to be counted more than once, depending on how many qualifications they participated in.
- ◆ All percentages are rounded separately, and breakdowns may not sum to 100 per cent.
- ◆ 'Percentage Point Difference' figures are calculated prior to percentage rounding.

National 5 qualifications

Table A1 below shows the proportion of candidate entries for each characteristic in Diet 2019 National 5 qualifications.

Similar proportions of entries were from female (51.4%) and male (48.6%) candidates. Over 90% of candidate entries were either 'White – British' or 'White – Other', with the largest other ethnicity (Asian – Pakistani) being 2.2%. Each non-white ethnicity had very small cohort sizes, which are more volatile, meaning it is often not possible to distinguish the variation found in small datasets from meaningful results.

Similarly, Urban/Rural cohort sizes varied between 3.7% (remote small towns) and 38.2% (other urban areas). Scottish Index of Multiple Deprivation (SIMD) data showed a somewhat higher proportion of estimates received for candidates from the least deprived postcodes. A much higher proportion of entries was from candidates with no additional support needs (76.4%), than candidates with additional support needs (23.6%).

Table A1 – Proportion of National 5 candidate entries by characteristic group in Diet 2019.

Characteristic	Proportion of entries (%)
Gender	
Male	48.6%
Female	51.4%
Ethnicity¹	
White – Scottish	83.1%
White - non-Scottish	8.9%
Mixed or multiple ethnic groups	1.2%
Asian - Indian	0.7%
Asian - Pakistani	2.2%
Asian - Chinese	0.5%
Asian – Other	0.7%
African/ Black/ Caribbean	1.1%
All other categories	0.6%
Not Disclosed/Not known	1.0%
Urban/Rural	
Large Urban Areas	29.6%
Other Urban Areas	38.2%
Accessible Small Towns	9.7%
Remote Small Towns	3.7%
Accessible Rural	12.6%
Remote Rural	6.2%
SIMD⁴	
0-20% (Most Deprived)	17.0%
20-40%	17.6%
40-60%	19.6%
60-80%	21.9%
80-100% (Least Deprived)	24.0%
Additional Support Needs⁵	
ASN	23.6%
No ASN	76.4%
All School candidates	100.0%

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>.

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Tables A2 and A3 below show the distribution and the percentage point difference of estimated grades and resulted grades in Diet 2019 for each characteristic at National 5.

Generally lower numbers of Grade As were estimated than resulted in Diet 2019. In contrast, higher numbers of Grade Cs were estimated than resulted. Overall, the A-C rates of estimated and resulted grades were similar.

Table A2 – Grade distribution of the 2019 Estimates and Results at National 5.

Characteristic	Achieved grade (%)					Estimated grade (%)				
	A	B	C	D	NA	A	B	C	D	NA
Gender										
Male	28.9	25.1	21.8	13.8	10.4	22.7	23.8	29.3	13.9	10.4
Female	37.8	24.0	18.6	11.4	8.2	29.7	24.8	25.7	11.2	8.6
Ethnicity¹										
White – Scottish	33.0	24.7	20.3	12.7	9.4	25.8	24.4	27.7	12.6	9.4
White - non-Scottish	35.9	24.2	18.8	11.9	9.3	28.6	23.7	26.3	12.0	9.4
Mixed or multiple ethnic groups	42.4	22.9	17.1	10.6	7.0	33.6	22.5	25.9	9.8	8.2
Asian - Indian	45.1	21.9	16.6	10.1	6.4	37.4	22.8	21.5	10.3	8.1
Asian - Pakistani	34.0	24.2	21.6	11.9	8.3	25.1	23.3	27.2	13.0	11.5
Asian - Chinese	53.5	21.8	13.9	6.7	4.1	46.1	22.8	19.1	6.2	5.8
Asian – Other	35.1	23.7	21.5	12.6	7.0	28.4	23.3	28.0	11.6	8.7
African/ Black/ Caribbean	28.6	23.9	23.0	14.3	10.2	21.0	25.9	28.1	13.6	11.3
All other categories	34.0	21.4	20.1	13.0	11.5	27.0	22.5	25.6	14.2	10.7
Not Disclosed/Not known	28.3	24.8	21.9	15.3	9.7	21.7	24.9	30.4	12.6	10.5
Urban/Rural										
Large Urban Areas	34.9	23.7	19.7	12.3	9.3	27.7	23.3	27.1	12.1	9.8
Other Urban Areas	31.4	24.7	21.0	13.0	9.8	24.7	24.6	28.3	13.0	9.3
Accessible Small Towns	35.4	24.7	19.3	12.0	8.5	27.6	24.4	26.5	12.0	9.4
Remote Small Towns	30.6	25.7	20.5	13.6	9.6	24.5	25.1	28.0	12.7	9.7
Accessible Rural	34.8	25.2	19.4	12.0	8.6	26.7	24.6	26.4	12.6	9.7
Remote Rural	35.6	25.0	19.3	12.0	8.2	27.1	25.6	27.3	11.9	8.1
SIMD⁴										
0-20% (Most Deprived)	21.0	24.6	24.4	16.8	13.2	16.3	23.8	33.7	15.2	11.0
20-40%	26.4	24.9	22.8	14.7	11.3	20.6	24.5	30.2	14.4	10.4
40-60%	31.8	25.5	20.6	12.8	9.3	24.4	24.9	28.5	12.7	9.4
60-80%	37.5	24.4	18.9	11.1	8.1	29.6	24.6	25.4	11.5	8.9
80-100% (Least Deprived)	45.2	23.5	16.0	9.1	6.1	36.0	23.7	22.1	10.1	8.2
Additional Support Needs⁵										
ASN	24.2	23.9	23.2	15.8	12.9	18.1	22.2	31.7	15.8	12.1
No ASN	36.4	24.7	19.2	11.6	8.2	28.8	24.9	26.2	11.5	8.6
All School candidates	33.5	24.5	20.1	12.6	9.3	26.3	24.3	27.5	12.5	9.5

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Table A3 – Percentage point difference of 2019 estimated and resulted grade distributions at National 5.

Characteristic	P.P. Difference (Estimated grade - Achieved Grade)				
	A	B	C	D	No award
Gender					
Male	-6.3	-1.4	7.5	0.1	0.0
Female	-8.1	0.8	7.1	-0.2	0.4
Ethnicity¹					
White – Scottish	-7.1	-0.3	7.4	0.0	0.1
White - non-Scottish	-7.2	-0.5	7.6	0.1	0.1
Mixed or multiple ethnic groups	-8.8	-0.4	8.8	-0.8	1.2
Asian - Indian	-7.7	0.9	4.9	0.2	1.7
Asian - Pakistani	-8.9	-1.0	5.6	1.0	3.2
Asian - Chinese	-7.3	1.1	5.2	-0.6	1.6
Asian – Other	-6.7	-0.4	6.4	-1.0	1.7
African/ Black/ Caribbean	-7.6	2.0	5.1	-0.7	1.1
All other categories	-7.1	1.1	5.6	1.2	-0.8
Not Disclosed/Not known	-6.6	0.1	8.5	-2.7	0.8
Urban/Rural					
Large Urban Areas	-7.3	-0.4	7.4	-0.2	0.5
Other Urban Areas	-6.6	-0.2	7.3	0.0	-0.5
Accessible Small Towns	-7.8	-0.3	7.2	-0.1	0.9
Remote Small Towns	-6.1	-0.6	7.5	-0.9	0.1
Accessible Rural	-8.1	-0.6	7.0	0.5	1.1
Remote Rural	-8.4	0.6	8.1	-0.1	-0.1
SIMD⁴					
0-20% (Most Deprived)	-4.7	-0.8	9.3	-1.6	-2.2
20-40%	-5.8	-0.4	7.4	-0.3	-0.9
40-60%	-7.4	-0.5	7.9	-0.1	0.1
60-80%	-7.9	0.1	6.6	0.3	0.9
80-100% (Least Deprived)	-9.3	0.1	6.1	0.9	2.1
Additional Support Needs⁵					
ASN	-6.1	-1.6	8.5	0.0	-0.8
No ASN	-7.6	0.2	7.0	-0.1	0.5
All School candidates	-7.2	-0.3	7.3	0.0	0.2

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Figures A1–A3 below show how close centres were to accurately estimating individual attainment against what each candidate actually attained in Diet 2019 by characteristic at National 5. The data looks at each qualification and the grade attained. This means a learner

is likely to be counted more than once, depending on how many qualifications they participated in.

There was no evidence of differential estimation across gender, with similar proportions of grades underestimated. Despite some variability in cohort sizes, SIMD data showed that entries from candidates from the most deprived postcodes were not disadvantaged in estimation and had slightly higher proportions of grades over-estimated. Similarly, entries for candidates with and without additional support needs saw comparable estimation.

Figure A1 – Overall estimating accuracy at National 5 (Diet 2019) by gender.

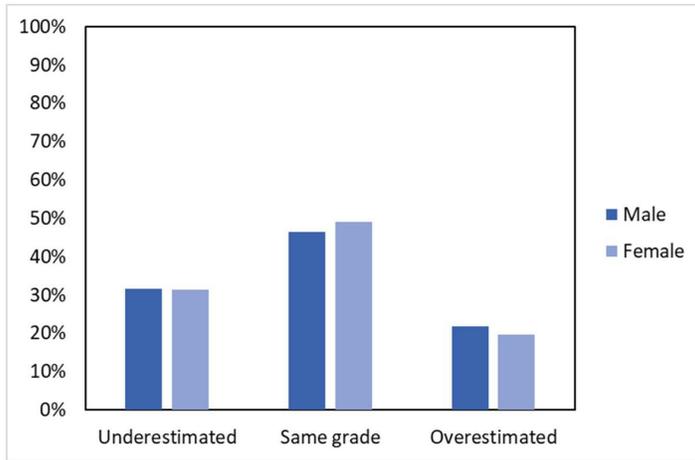


Figure A2 – Overall estimating accuracy at National 5 (Diet 2019) by SIMD.

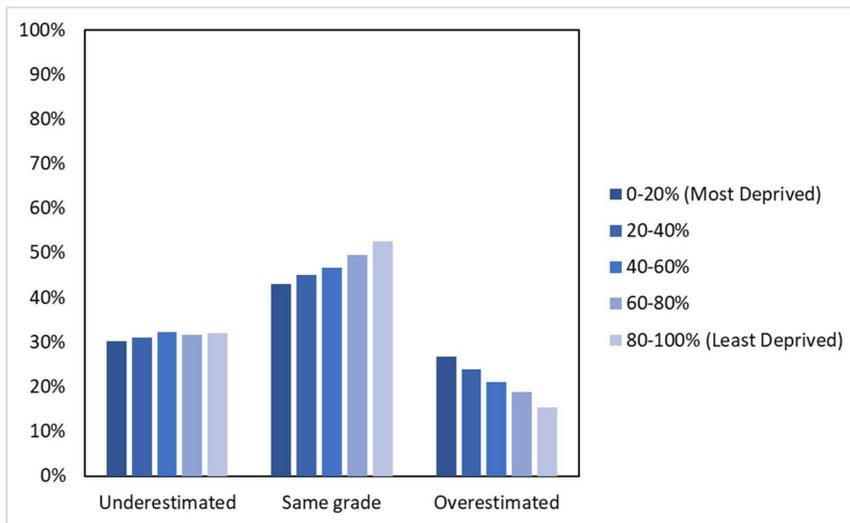
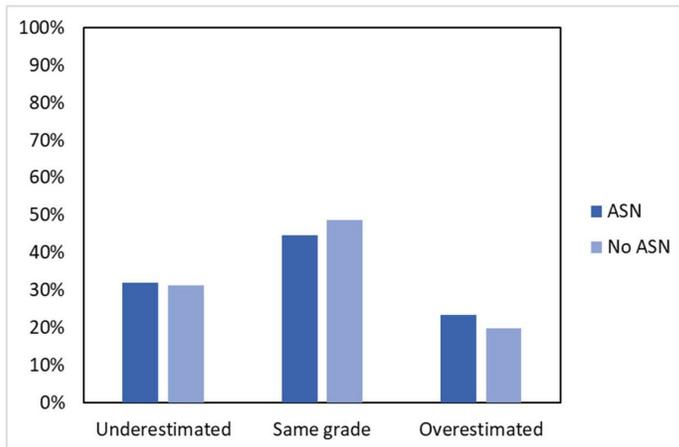


Figure A3 – Overall estimating accuracy at National 5 (Diet 2019) by ASN status.



Higher qualifications

Table A4 below shows the proportion of candidate entries for each characteristic in Diet 2019 Higher qualifications.

Higher proportions of entries were from female (55.8%) than male (44.2%) candidates.

Over 90% of candidate entries were either 'White – British' or 'White – Other', with the largest other ethnicity (Asian – Pakistani) being 2.6%. Each non-white ethnicity had very small cohort sizes, which are more volatile, meaning it is often not possible to distinguish the variation found in small datasets from meaningful results.

Similarly, Urban/Rural cohort sizes varied between 3.3% (remote small towns) and 37.9% (other urban areas). SIMD data showed a higher proportion of estimates received for candidates from the least deprived postcodes.

A much higher proportion of entries was from candidates with no additional support needs (81.2%), than candidates with additional support needs (18.8%).

Table A4 – Proportion of Higher candidate entries by characteristic group in Diet 2019.

Characteristic	Proportion of entries (%)
Gender	
Male	44.2%
Female	55.8%
Ethnicity¹	
White – Scottish	82.0%
White - non-Scottish	8.8%
Mixed or multiple ethnic groups	1.2%
Asian - Indian	0.9%
Asian - Pakistani	2.6%
Asian - Chinese	0.7%
Asian – Other	0.9%
African/ Black/ Caribbean	1.2%
All other categories	0.7%
Not Disclosed/Not known	1.1%
Urban/Rural	
Large Urban Areas	30.7%
Other Urban Areas	37.9%
Accessible Small Towns	9.6%
Remote Small Towns	3.3%
Accessible Rural	12.2%
Remote Rural	6.4%
SIMD⁴	
0-20% (Most Deprived)	14.3%
20-40%	15.7%
40-60%	19.4%
60-80%	22.9%
80-100% (Least Deprived)	27.6%
Additional Support Needs⁵	
ASN	18.8%
No ASN	81.2%
All School candidates	100.0%

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Tables A5 and A6 below show the distribution and the percentage point difference of estimated grades and resulted grades in Diet 2019 for each characteristic at Higher level.

Generally lower numbers of Grade As were estimated than resulted in Diet 2019. In contrast, higher numbers of Grade Cs were estimated than resulted. Overall, the A-C rates of estimated and resulted grades were similar.

Table A5 – Grade distribution of the 2019 Estimates and Results at Higher.

Characteristic	Achieved grade (%)					Estimated grade (%)				
	A	B	C	D	NA	A	B	C	D	NA
Gender										
Male	23.4	23.6	23.9	17.1	12.1	19.2	23.4	30.0	14.8	12.7
Female	28.7	24.9	22.8	14.7	8.9	24.1	26.0	28.2	12.0	9.7
Ethnicity¹										
White – Scottish	25.7	24.4	23.4	16.0	10.5	21.4	24.9	29.4	13.4	10.9
White - non-Scottish	31.0	23.6	21.9	13.9	9.5	25.9	24.9	27.1	11.8	10.3
Mixed or multiple ethnic groups	30.4	24.2	22.3	14.4	8.7	25.8	23.6	26.6	12.3	11.6
Asian - Indian	37.2	24.2	18.4	12.4	7.8	30.9	22.0	24.4	10.7	12.1
Asian - Pakistani	23.9	23.8	24.4	17.0	11.0	19.1	23.4	26.9	15.2	15.5
Asian - Chinese	44.0	25.9	16.8	8.2	5.0	37.2	28.5	21.0	7.1	6.2
Asian – Other	26.5	24.6	22.4	16.2	10.2	23.2	25.7	25.6	13.8	11.8
African/ Black/ Caribbean	19.0	24.6	26.9	17.4	12.1	17.1	21.9	31.0	16.5	13.6
All other categories	29.8	22.8	21.8	15.7	10.0	26.0	24.2	26.2	12.5	11.1
Not Disclosed/Not known	26.2	25.2	24.8	13.8	10.0	21.5	24.7	29.9	13.1	10.8
Urban/Rural										
Large Urban Areas	28.3	23.9	22.2	15.1	10.5	23.6	24.5	28.0	12.7	11.2
Other Urban Areas	23.9	24.3	24.1	16.6	11.1	20.6	24.8	29.7	13.8	11.0
Accessible Small Towns	27.2	24.5	23.4	15.3	9.7	21.7	24.6	29.2	13.7	10.9
Remote Small Towns	24.5	24.1	23.3	17.7	10.4	19.6	24.5	29.3	14.6	11.9
Accessible Rural	28.0	25.2	22.9	14.8	9.2	22.0	24.8	29.0	13.1	11.1
Remote Rural	28.4	24.9	23.8	14.6	8.2	23.6	26.9	28.4	11.7	9.4
SIMD⁴										
0-20% (Most Deprived)	16.4	22.7	26.3	20.3	14.4	15.6	23.8	33.5	15.6	11.5
20-40%	19.8	23.2	25.6	18.7	12.7	17.4	24.6	31.2	15.0	11.8
40-60%	24.8	24.6	24.3	16.1	10.3	20.8	25.1	29.4	13.5	11.1
60-80%	28.4	25.0	22.6	14.6	9.4	23.5	25.2	28.1	12.6	10.6
80-100% (Least Deprived)	34.7	25.1	20.2	12.3	7.7	27.3	24.9	25.6	11.5	10.6
Additional Support Needs⁵										
ASN	20.3	22.9	24.9	18.6	13.2	16.9	22.6	31.3	15.6	13.7
No ASN	27.8	24.6	22.9	15.1	9.6	23.1	25.3	28.4	12.7	10.4
All School candidates	26.4	24.3	23.3	15.7	10.3	21.9	24.8	29.0	13.3	11.0

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>.

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Table A6 – Percentage point difference of 2019 estimated and resulted grade distributions at Higher.

Characteristic	P.P. Difference (Estimated grade - Achieved Grade)				
	A	B	C	D	No award
Gender					
Male	-4.2	-0.2	6.1	-2.2	0.6
Female	-4.6	1.0	5.4	-2.6	0.8
Ethnicity¹					
White – Scottish	-4.3	0.5	5.9	-2.6	0.5
White - non-Scottish	-5.1	1.2	5.2	-2.1	0.8
Mixed or multiple ethnic groups	-4.5	-0.6	4.3	-2.1	2.9
Asian - Indian	-6.3	-2.3	6.0	-1.7	4.3
Asian - Pakistani	-4.8	-0.4	2.5	-1.8	4.5
Asian - Chinese	-6.8	2.6	4.2	-1.2	1.2
Asian – Other	-3.4	1.1	3.2	-2.4	1.5
African/ Black/ Caribbean	-1.9	-2.7	4.1	-1.0	1.5
All other categories	-3.8	1.5	4.4	-3.2	1.1
Not Disclosed/Not known	-4.7	-0.5	5.1	-0.7	0.8
Urban/Rural					
Large Urban Areas	-4.7	0.7	5.7	-2.4	0.8
Other Urban Areas	-3.3	0.5	5.6	-2.8	0.0
Accessible Small Towns	-5.5	0.1	5.8	-1.6	1.2
Remote Small Towns	-4.9	0.4	6.0	-3.1	1.5
Accessible Rural	-6.0	-0.4	6.1	-1.7	2.0
Remote Rural	-4.9	2.0	4.6	-2.9	1.2
SIMD⁴					
0-20% (Most Deprived)	-0.7	1.0	7.3	-4.7	-2.8
20-40%	-2.4	1.4	5.6	-3.7	-0.9
40-60%	-4.0	0.6	5.2	-2.6	0.9
60-80%	-4.8	0.2	5.5	-2.1	1.2
80-100% (Least Deprived)	-7.4	-0.1	5.4	-0.8	2.9
Additional Support Needs⁵					
ASN	-3.4	-0.3	6.3	-3.0	0.4
No ASN	-4.7	0.7	5.5	-2.3	0.8
All School candidates	-4.4	0.5	5.7	-2.5	0.7

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>.

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Figures A4–A6 below show how close centres were to accurately estimating individual attainment against what each candidate actually attained in Diet 2019 by characteristic at Higher level. The data looks at each qualification and the grade attained. This means a

learner is likely to be counted more than once, depending on how many qualifications they participated in.

There was no evidence of differential estimation across gender, with similar proportions of grades under-estimated. Despite some variability in cohort sizes, SIMD data showed that entries from candidates from the most deprived postcodes were not disadvantaged in estimation and had slightly higher proportions of grades over-estimated. Whereas, entries from candidates from the least deprived postcodes had slightly higher proportions of grades under-estimated. Similarly, entries for candidates with and without additional support needs saw comparable estimation.

Figure A4 – Overall estimating accuracy at Higher (Diet 2019) by gender.

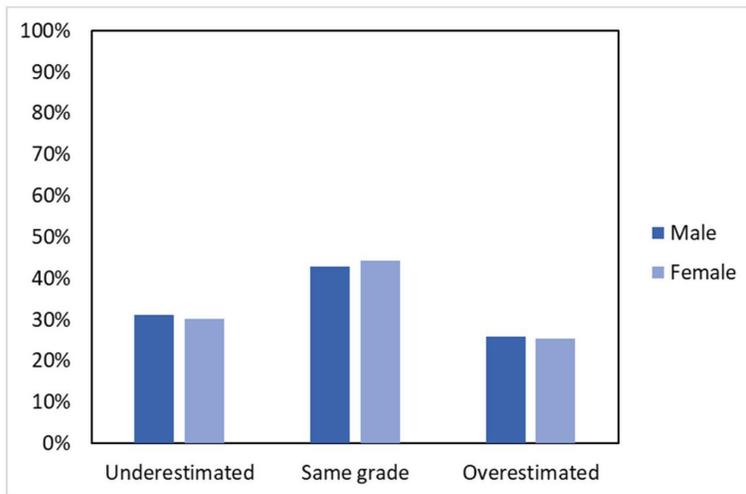


Figure A5 – Overall estimating accuracy at Higher (Diet 2019) by SIMD.

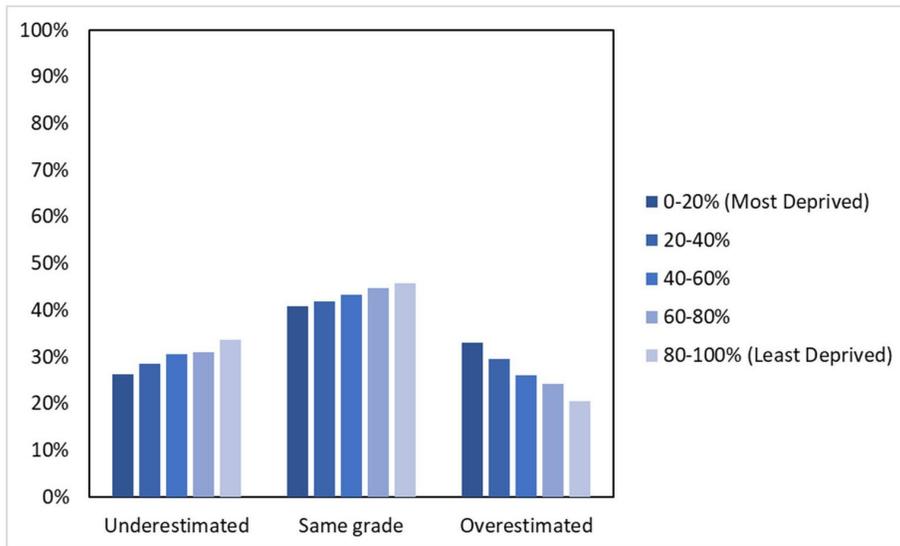
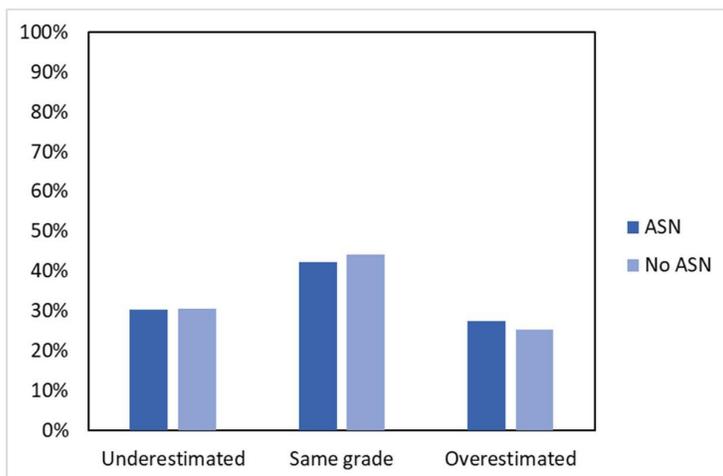


Figure A6 – Overall estimating accuracy at Higher (Diet 2019) by ASN status.



Advanced Higher

Table A7 below shows the proportion of candidate entries for each characteristic in Diet 2019 Advanced Higher qualifications.

Higher proportions of entries were from female (56.3%) than male (43.7%) candidates.

Around 90% of candidate entries were either 'White – British' or 'White – Other', with the largest other ethnicity (Asian – Pakistani) being 2.5%. Each non-white ethnicity had very small cohort sizes, which are more volatile, meaning it is often not possible to distinguish the variation found in small datasets from meaningful results.

Similarly, Urban/Rural cohort sizes varied between 3.3% (remote small towns) and 33.9% (other urban areas). SIMD data showed a much higher proportion of estimates received for candidates from the least deprived postcodes.

A much higher proportion of entries was from candidates with no additional support needs (83.4%), than candidates with additional support needs (16.6%).

Table A7 – Proportion of Advanced Higher candidate entries by characteristic group in Diet 2019.

Characteristic	Proportion of entries (%)
Gender	
Male	43.7%
Female	56.3%
Ethnicity¹	
White – Scottish	79.4%
White - non-Scottish	10.3%
Mixed or multiple ethnic groups	1.7%
Asian - Indian	1.3%
Asian - Pakistani	2.5%
Asian - Chinese	1.2%
Asian – Other	1.1%
African/ Black/ Caribbean	0.9%
All other categories	0.5%
Not Disclosed/Not known	1.0%
Urban/Rural	
Large Urban Areas	31.5%
Other Urban Areas	33.9%
Accessible Small Towns	10.8%
Remote Small Towns	3.3%
Accessible Rural	14.2%
Remote Rural	6.3%
SIMD⁴	
0-20% (Most Deprived)	9.3%
20-40%	12.2%
40-60%	17.8%
60-80%	26.1%
80-100% (Least Deprived)	34.7%
Additional Support Needs⁵	
ASN	16.6%
No ASN	83.4%
All School candidates	100.0%

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Tables A8 and A9 below show the distribution and the percentage point difference of estimated grades and resulted grades in Diet 2019 for each characteristic at Advanced Higher level.

Generally lower numbers of Grade As were estimated than resulted in Diet 2019. In contrast, higher numbers of Grade Bs and grade Cs were estimated than resulted. Overall, the A–C rates of estimated grades were higher than resulted grades.

Table A8 – Grade distribution of the 2019 Estimates and Results at Advanced Higher.

Characteristic	Achieved grade (%)					Estimated grade (%)					
	A	B	C	D	NA	A	B	C	D	NA	
Gender											
Male	28.7	23.6	22.9	9.1	15.7	24.7	26.5	29.2	10.3	9.3	
Female	27.2	26.6	25.8	9.1	11.4	23.6	31.6	29.8	8.8	6.3	
Ethnicity¹											
White – Scottish	26.9	24.9	25.1	9.3	13.7	23.4	29.6	29.9	9.6	7.6	
White - non-Scottish	32.0	26.6	22.0	7.7	11.7	27.8	29.1	28.8	8.2	6.2	
Mixed or multiple ethnic groups	31.8	30.6	20.7	11.1	5.9	31.2	25.6	28.1	9.3	5.9	
Asian - Indian	32.3	32.3	22.4	5.1	7.9	28.7	31.1	21.3	11.4	7.5	
Asian - Pakistani	26.2	27.9	22.1	11.2	12.6	19.2	26.9	31.6	11.6	10.7	
Asian - Chinese	39.4	19.9	22.0	8.3	10.4	35.7	24.5	23.7	8.7	7.5	
Asian – Other	29.2	21.7	26.9	7.5	14.6	25.5	27.4	25.9	9.9	11.3	
African/ Black/ Caribbean	22.0	27.7	24.9	13.0	12.4	18.1	35.0	27.7	10.7	8.5	
All other categories	34.6	27.1	20.6	5.6	12.1	26.2	28.0	31.8	4.7	9.3	
Not Disclosed/Not known	36.0	21.0	25.0	5.5	12.5	23.5	32.0	27.5	9.5	7.5	
Urban/Rural											
Large Urban Areas	31.3	25.6	23.2	8.1	11.8	26.2	29.2	28.7	8.6	7.3	
Other Urban Areas	24.7	24.1	25.2	10.2	15.7	22.4	29.7	29.7	9.8	8.4	
Accessible Small Towns	26.2	25.6	25.5	9.3	13.3	23.2	29.1	30.2	10.2	7.3	
Remote Small Towns	27.9	24.2	26.2	8.3	13.3	22.2	28.2	31.6	10.0	7.9	
Accessible Rural	27.4	26.5	25.7	8.9	11.5	23.3	30.1	29.3	10.0	7.3	
Remote Rural	31.0	26.9	22.6	8.7	10.9	26.4	28.0	30.7	9.6	5.3	
SIMD⁴											
0-20% (Most Deprived)	21.8	23.1	25.6	10.1	19.5	18.5	30.1	35.3	8.7	7.4	
20-40%	22.6	24.2	26.6	11.1	15.6	19.8	29.2	32.3	10.4	8.3	
40-60%	26.9	25.3	24.7	10.0	13.1	23.4	29.9	30.6	9.5	6.6	
60-80%	28.6	24.9	25.6	8.6	12.3	24.3	29.7	29.1	9.3	7.6	
80-100% (Least Deprived)	31.2	26.5	22.7	8.0	11.5	27.2	28.8	26.7	9.4	7.8	
Additional Support Needs⁵											
ASN	24.7	24.4	26.0	9.5	15.3	20.8	27.9	32.1	10.5	8.7	
No ASN	28.5	25.4	24.3	9.0	12.8	24.7	29.7	29.0	9.2	7.4	
All School candidates	27.8	25.3	24.6	9.1	13.2	24.1	29.4	29.5	9.5	7.6	

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Table A9 – Percentage point difference of 2019 estimated and resulted grade distributions at Advanced Higher.

Characteristic	P.P. Difference (Estimated grade - Achieved Grade)				
	A	B	C	D	No award
Gender					
Male	-4.0	2.9	6.2	1.3	-6.4
Female	-3.6	5.1	4.0	-0.3	-5.1
Ethnicity¹					
White – Scottish	-3.5	4.6	4.7	0.3	-6.1
White - non-Scottish	-4.2	2.5	6.8	0.4	-5.5
Mixed or multiple ethnic groups	-0.6	-4.9	7.4	-1.9	0.0
Asian - Indian	-3.5	-1.2	-1.2	6.3	-0.4
Asian - Pakistani	-7.0	-1.0	9.5	0.4	-1.9
Asian - Chinese	-3.7	4.6	1.7	0.4	-2.9
Asian – Other	-3.8	5.7	-0.9	2.4	-3.3
African/ Black/ Caribbean	-4.0	7.3	2.8	-2.3	-4.0
All other categories	-8.4	0.9	11.2	-0.9	-2.8
Not Disclosed/Not known	-12.5	11.0	2.5	4.0	-5.0
Urban/Rural					
Large Urban Areas	-5.1	3.6	5.5	0.5	-4.5
Other Urban Areas	-2.3	5.6	4.5	-0.4	-7.3
Accessible Small Towns	-3.0	3.5	4.7	0.9	-6.1
Remote Small Towns	-5.7	4.0	5.4	1.7	-5.4
Accessible Rural	-4.1	3.6	3.6	1.1	-4.2
Remote Rural	-4.5	1.1	8.1	0.9	-5.6
SIMD⁴					
0-20% (Most Deprived)	-3.3	7.0	9.7	-1.3	-12.1
20-40%	-2.7	5.0	5.7	-0.7	-7.4
40-60%	-3.5	4.6	5.9	-0.5	-6.5
60-80%	-4.3	4.8	3.5	0.7	-4.6
80-100% (Least Deprived)	-4.0	2.3	4.0	1.4	-3.7
Additional Support Needs⁵					
ASN	-3.9	3.5	6.1	1.0	-6.6
No ASN	-3.7	4.2	4.7	0.2	-5.5
All School candidates	-3.8	4.1	4.9	0.4	-5.7

1. The categories used to collect ethnicity and national identity data changed in the 2011 pupil census to agree with the categories used in the main population census. These categories match the Scottish Government EAS publication groupings.

2. For 2018/19 the 'African/ Black/ Caribbean' category includes 'African', 'African - Other', and the 'Caribbean or Black' categories.

3. For 2018/19, 'All other categories' includes 'Other - other' and 'Other - Arab'.

4. Based on SIMD 2016 for 2018/19. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>.

5. Pupils who have a CSP, IEP, Child's Plan are assessed or declared disabled or have another need.

Figures A7–A9 below show how close centres were to accurately estimating individual attainment against what each candidate actually attained in Diet 2019 by characteristic at Advanced Higher level. The data looks at each qualification and the grade attained. This means a learner is likely to be counted more than once, depending on how many qualifications they participated in.

There was no evidence of differential estimation across gender, with similar proportions of grades underestimated. Despite some variability in cohort sizes, SIMD data showed that entries from candidates from the most deprived postcodes were not disadvantaged in estimation and had slightly higher proportions of grades over-estimated. Similarly, entries for candidates with and without additional support needs saw comparable estimation.

Figure A7 – Overall estimating accuracy at Advanced Higher (Diet 2019) by gender.

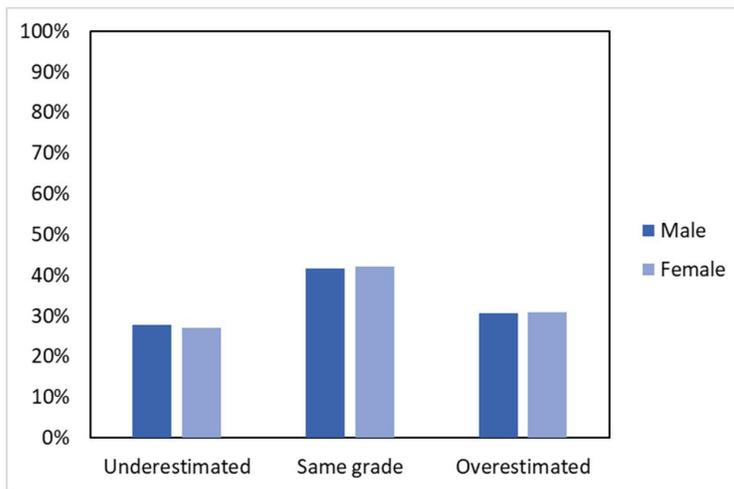


Figure A8 – Overall estimating accuracy at Advanced Higher (Diet 2019) by SIMD.

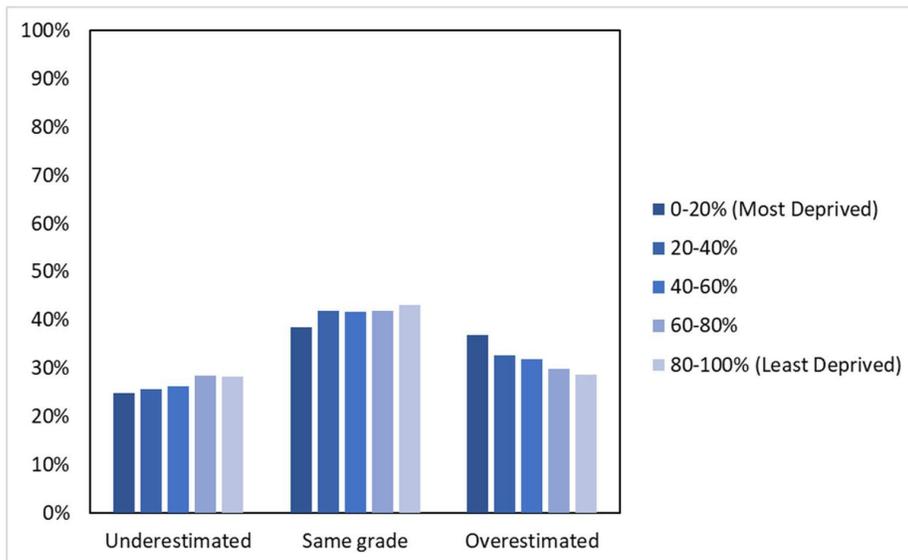
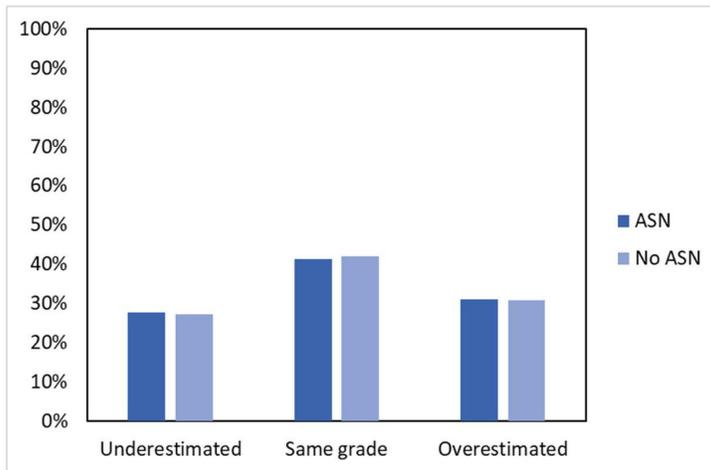


Figure A9 – Overall estimating accuracy at Advanced Higher (Diet 2019) by ASN status.



Analysis of the 2020 estimates and results

SQA carried out analysis on the data it holds for the 2020 estimates and post-moderation results.

Due to the COVID-19 pandemic, SQA developed an alternative certification model for the 2019–20 session. In the absence of exams and coursework, the core element of the model for National 5, Higher and Advanced Higher certification was estimated grades. Therefore, for 2020, unlike in previous years, estimates were mandated from SQA centres, and the absence of estimates would preclude a candidate from being resultted. This means 2020 estimates cannot be compared to estimates received in previous years. As a different approach has been used for the production and finalisation of the 2020 results, these statistics should be compared to those of previous years with caution.

Analysis included:

- ◆ A comparison in attainment at grades A–C between characteristic groups was created using 2016–19 results.
 - Sex: Proportion of females estimated/resulted grades A–C minus proportion of males estimated/resulted grades A–C to give the percentage point (PP) difference in attainment.
 - Age: Proportion of estimated/resulted grades A–C for an age group minus proportion of estimated/resulted grades A–C in the 15–18 age group to give the PP difference in attainment.
 - SIMD: Proportion of estimated/resulted grades A–C for a SIMD quintile (1–4) minus proportion of estimated/resulted grades A–C in the 5th SIMD quintile (80–100% (Least Deprived)) to give the PP difference in attainment.

- ◆ The 2020 estimates and post-moderation results were compared to the 2016–19 analysis, to see if either the estimating stage or the post-moderation results from the

ACM has widened the difference in attainment beyond historical patterns (which would suggest disadvantage).

- ◆ 95% confidence intervals were calculated for the difference in attainment to show uncertainty associated with the sample. Generally speaking, the greater the number of candidates and the less they varied, the smaller the range of the confidence interval.

Notes:

- ◆ The analysis covers National 5, Higher and Advanced Higher course types.
- ◆ The data include entries from all candidates with 2016–19 results or 2020 estimates from SQA centres. Note, unlike the diet 2019 analysis (above), the data was not limited to publicly funded mainstream schools.
- ◆ The data looks at each qualification and the grade attained. This means a candidate is likely to be counted more than once, depending on how many qualifications they participated in.
- ◆ SQA has adopted the International Organization for Standardisation (ISO), and Information Standards Board for Education, Skills and Children's Services (ISB) categories for legal sex type. These allow the use of the values Male, Female, Not Known, and Not Applicable, as per the reference materials below. As such, the category may differ to that used in the Diet 2019 analysis above, which is based on Scottish Government data.
- ◆ [Information Standards Board for Education, Skills and Children's Services \(Legal Sex Type\)](#)
- ◆ [International Organization for Standardisation \(ISO/IEC 5218:2004\)](#)
- ◆ Sex: candidates with a legal sex status not known and not applicable were removed from the analysis due to extremely low numbers.
- ◆ SIMD: Candidates with no postcode, same postcode as the centre and candidates with a postcode not in 2016 SIMD data were excluded. This was between 1-2% for each year.
- ◆ All percentages are rounded separately, and breakdowns may not sum to 100 per cent.
- ◆ 'Percentage Point Difference' figures are calculated prior to percentage rounding.

National 5 qualifications

Table A10 below shows the proportion of candidate entries for each characteristic in 2020 and historic years National 5 qualifications.

Higher proportions of entries were from female than male candidates across all years. Around 99% of candidate entries were in the 15-18 age group. Other age groups had very small cohort sizes, which can be volatile and show greater variability across years.

SIMD data showed a higher proportion of estimates received for candidates from the least deprived postcodes.

Table A10 – Proportion of National 5 candidate entries by characteristic group in Diet 2020.

Characteristic	2016	2017	2018	2019	2020
Sex					
Female	51.2%	51.5%	51.7%	51.4%	51.1%
Male	48.8%	48.5%	48.3%	48.6%	48.9%
Age					
15 to 18	99.0%	98.9%	98.8%	98.8%	98.9%
Below 15	0.1%	0.1%	0.1%	0.2%	0.2%
Over 18	0.9%	1.0%	1.0%	1.0%	0.9%
SIMD⁴					
0-20% (Most Deprived)	16.6%	16.7%	16.7%	16.4%	16.7%
20-40%	17.4%	17.3%	16.9%	17.1%	17.2%
40-60%	19.8%	19.3%	19.3%	18.9%	18.9%
60-80%	21.5%	21.7%	21.3%	21.8%	21.5%
80-100% (Least Deprived)	24.8%	24.9%	25.7%	25.8%	25.8%

4. Based on SIMD 2016. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

Figures A10–A12 below show the percentage point (PP) difference in attainment at grades A–C between characteristic groups for 2020 estimates and post-moderated results, and historic years at National 5.

The difference in attainment between males and females for 2020 estimates and results is comparable to previous years, suggesting there was no identifiable disadvantage. Similarly, the difference for ‘below 15’ and ‘over 18’ age groups is in line with previous years.

For candidates from the most deprived 20% of postcodes, the 2020 estimates and results showed a smaller gap in terms of the proportion of candidates at grades A–C compared to candidates from the least deprived 20% of postcodes. This was true for all SIMD quintiles.

Figure A10 – Difference (PP) in attainment at grades A–C by sex at National 5.

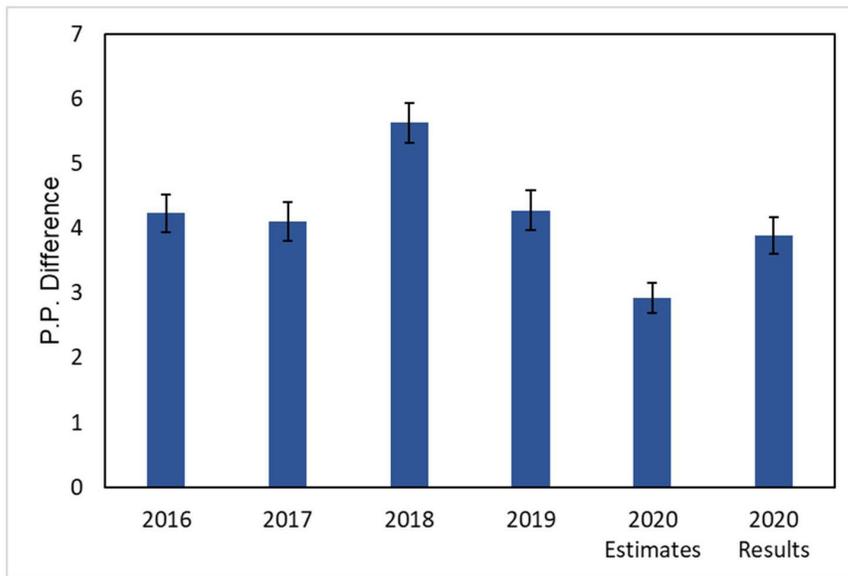


Figure A11 – Difference (PP) in attainment at grades A–C by age at National 5.

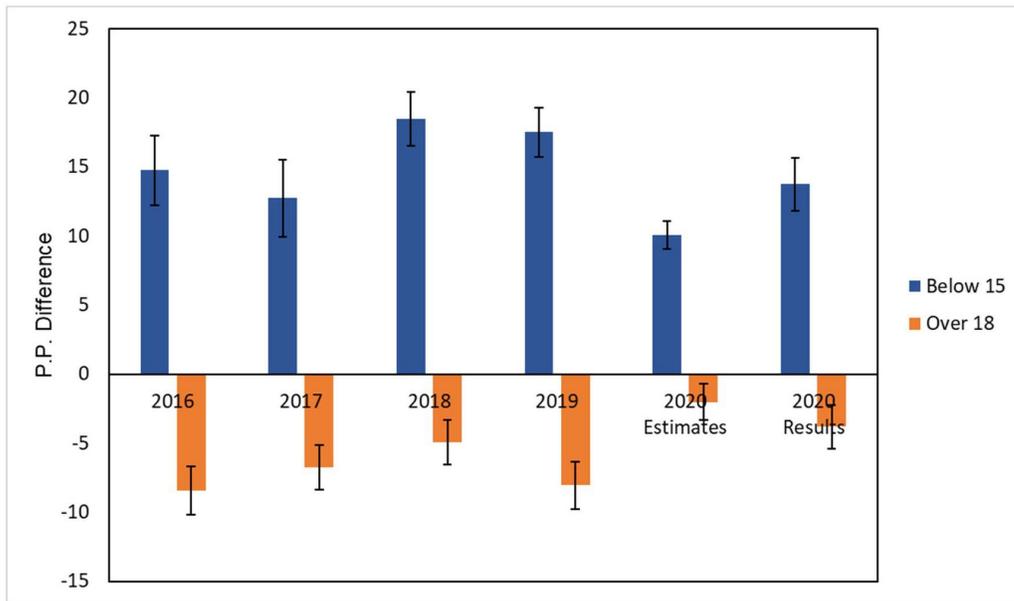


Figure A12 – Difference (PP) in attainment at grades A–C by SIMD at National 5.

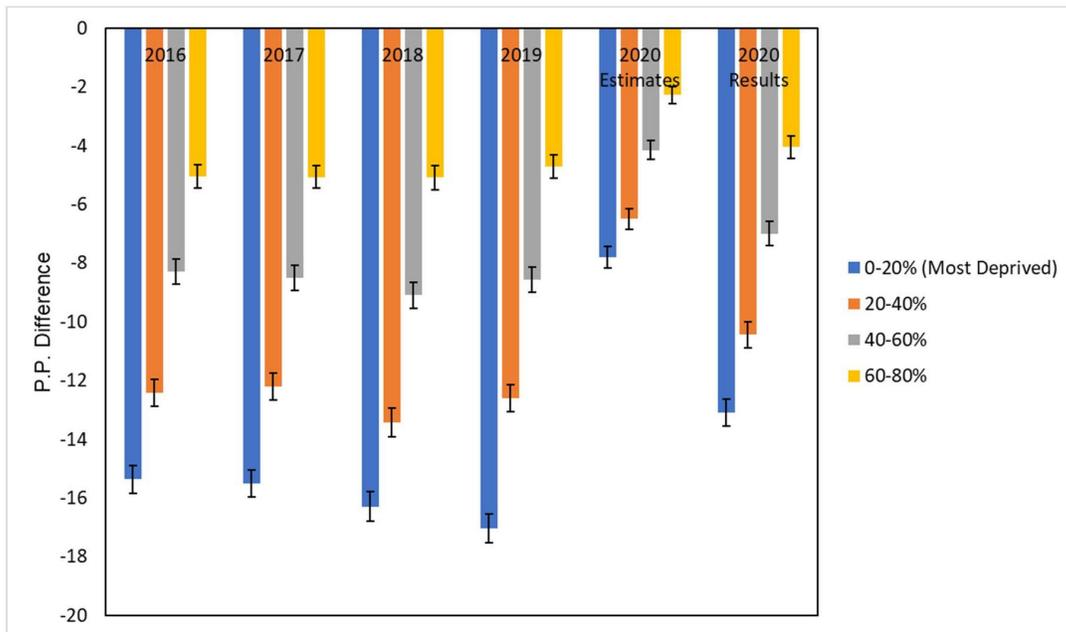


Table A11 – Proportion of grades A–C at National 5 by characteristic.

Characteristic	2016	2017	2018	2019	2020 Estimates	2020 Results
Sex						
Female	81.4%	81.5%	80.2%	80.3%	90.0%	82.9%
Male	77.2%	77.4%	74.5%	76.0%	87.1%	79.0%
Age						
15 to 18	79.4%	79.5%	77.5%	78.2%	88.6%	81.0%
Below 15	94.2%	92.3%	95.9%	95.8%	98.7%	94.7%
Over 18	71.0%	72.8%	72.5%	70.2%	86.6%	77.2%
SIMD⁴						
0-20% (Most Deprived)	71.4%	71.4%	69.0%	68.7%	84.5%	74.0%
20-40%	74.4%	74.7%	71.9%	73.2%	85.8%	76.7%
40-60%	78.5%	78.4%	76.2%	77.2%	88.2%	80.1%
60-80%	81.8%	81.9%	80.2%	81.1%	90.0%	83.1%
80-100% (Least Deprived)	86.8%	86.9%	85.3%	85.8%	92.3%	87.1%

4. Based on SIMD 2016. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>.

Higher qualifications

Table A12 below shows the proportion of candidate entries for each characteristic in the 2020 Higher qualifications.

Higher proportions of entries were from female than male candidates across all years. Around 97% to 98% of candidate entries were in the 15–18 age group. Other age groups had very small cohort sizes, which can be volatile and show greater variability across years.

SIMD data showed a higher proportion of estimates received for candidates from the least deprived postcodes.

Table A12 – Proportion of Higher candidate entries by characteristic group in Diet 2020.

Characteristic	2016	2017	2018	2019	2020
Sex					
Female	55.2%	55.0%	55.6%	55.9%	55.7%
Male	44.8%	45.0%	44.4%	44.1%	44.3%
Age					
15 to 18	97.4%	97.2%	97.2%	97.7%	98.2%
Below 15	0.0%	0.0%	0.0%	0.0%	0.0%
Over 18	2.7%	2.7%	2.8%	2.3%	1.8%
SIMD⁴					
0-20% (Most Deprived)	13.1%	13.2%	13.6%	13.8%	13.5%
20-40%	15.5%	15.5%	15.2%	15.2%	15.3%
40-60%	19.3%	19.4%	18.9%	18.7%	18.6%
60-80%	23.2%	23.2%	23.3%	22.8%	23.1%
80-100% (Least Deprived)	28.9%	28.7%	29.0%	29.6%	29.5%

4. Based on SIMD 2016. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

Figures A13–A15 below show the percentage point (PP) difference in attainment at grades A–C between characteristic groups for 2020 Estimates and post-moderated results, and historic years at Higher.

The difference in attainment between males and females for 2020 estimates and results is comparable to previous years, suggesting there was no identifiable disadvantage. Similarly, the difference for ‘below 15’ and ‘over 18’ age groups is in line with previous years.

For candidates from the most deprived 20% of postcodes, the 2020 estimates showed a smaller gap, and 2020 results showed a very similar difference in terms of the proportion of candidates at grades A–C compared to candidates from the least deprived 20% of postcodes. This was true for all SIMD quintiles.

Figure A13 – Difference (PP) in attainment at grades A–C by sex at Higher.

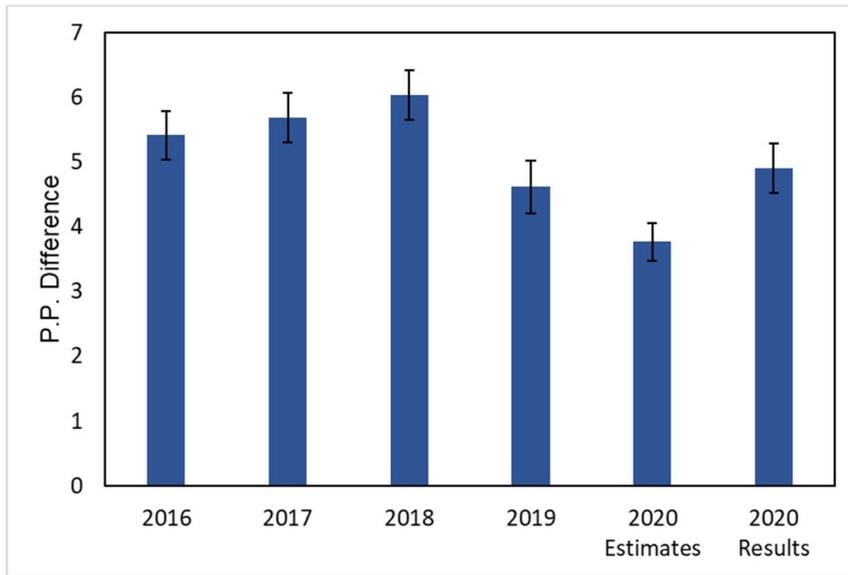


Figure A14 – Difference (PP) in attainment at grades A–C by age at Higher.

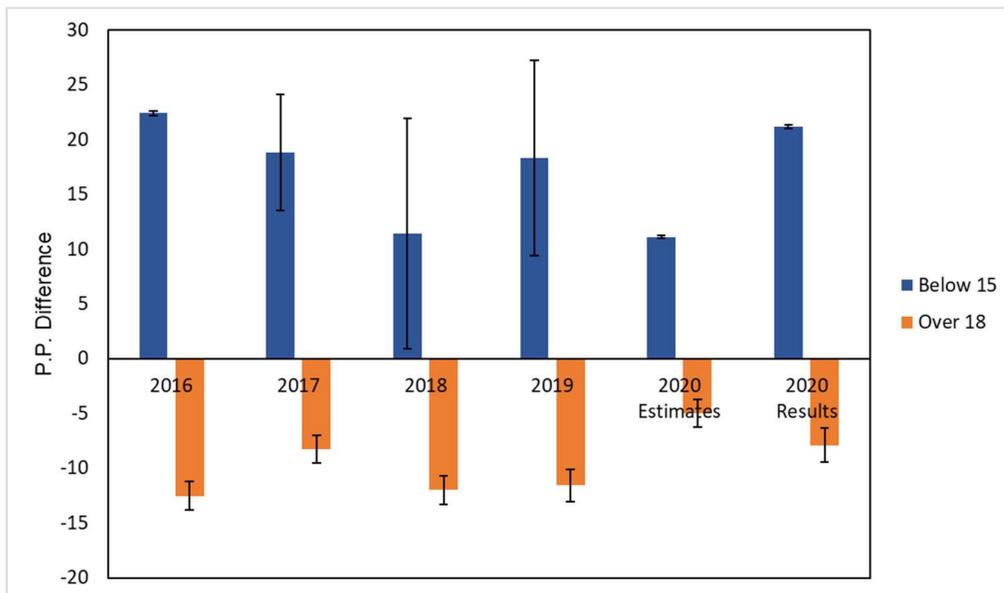


Figure A15 – Difference (PP) in attainment at grades A–C by SIMD at Higher.

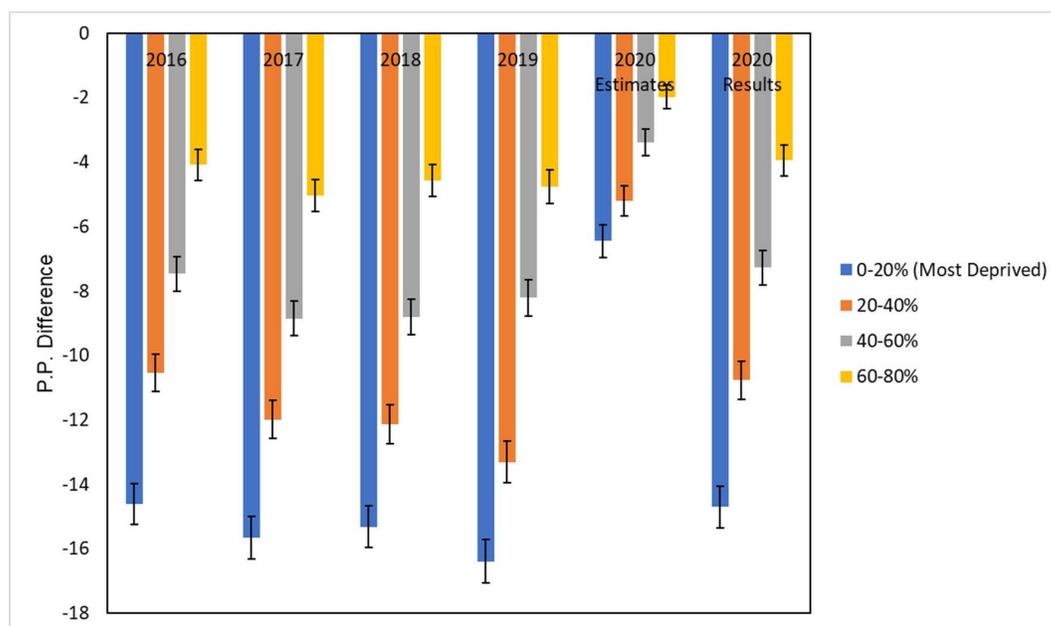


Table A13 – Proportion of grades A–C at Higher by characteristic.

Characteristic	2016	2017	2018	2019	2020 Estimates	2020 Results
Sex						
Female	79.7%	79.6%	79.5%	76.8%	90.5%	80.9%
Male	74.3%	73.9%	73.5%	72.2%	86.7%	76.0%
Age						
15 to 18	77.6%	77.3%	77.2%	75.0%	88.9%	78.8%
Below 15	100.0%	96.1%	88.6%	93.3%	100.0%	100.0%
Over 18	65.1%	69.0%	65.2%	63.5%	83.9%	70.9%
SIMD⁴						
0-20% (Most Deprived)	68.6%	68.2%	68.2%	65.3%	85.1%	69.9%
20-40%	72.7%	71.9%	71.3%	68.3%	86.3%	73.8%
40-60%	75.8%	75.0%	74.7%	73.4%	88.2%	77.3%
60-80%	79.1%	78.8%	78.9%	76.9%	89.6%	80.6%
80-100% (Least Deprived)	83.2%	83.9%	83.5%	81.7%	91.5%	84.6%

4. Based on SIMD 2016. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>.

Advanced Higher qualifications

Table A14 below shows the proportion of candidate entries for each characteristic in the 2020 Advanced Higher qualifications.

Higher proportions of entries were from female than male candidates across all years. Over 99% of candidate entries were in the 15–18 age group. Other age groups had very small cohort sizes, which can be volatile and show greater variability across years.

SIMD data showed a much higher proportion of estimates received for candidates from the least deprived postcodes.

Table A14 – Proportion of Advanced Higher candidate entries by characteristic group in Diet 2020.

Characteristic	2016	2017	2018	2019	2020
Sex					
Female	54.6%	54.8%	55.2%	56.2%	55.9%
Male	45.4%	45.2%	44.8%	43.8%	44.1%
Age					
15 to 18	99.4%	99.6%	99.5%	99.6%	99.7%
Below 15	0.0%	0.0%	0.0%	0.0%	0.0%
Over 18	0.6%	0.4%	0.5%	0.3%	0.3%
SIMD⁴					
0-20% (Most Deprived)	7.3%	8.0%	8.0%	8.2%	8.8%
20-40%	11.2%	11.2%	11.1%	11.1%	10.6%
40-60%	16.9%	17.2%	17.2%	16.6%	16.7%
60-80%	25.2%	24.5%	24.7%	25.4%	24.1%
80-100% (Least Deprived)	39.4%	39.2%	39.0%	38.8%	39.8%

4. Based on SIMD 2016. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>

Figures A16–A18 below show the percentage point (PP) difference in attainment at grades A–C between characteristic groups for 2020 Estimates and post-moderated results, and historic years at Advanced Higher.

Due to small cohort sizes at Advanced Higher qualifications, the data shows great variability and should be interpreted with caution. The difference in attainment between males and females for 2020 estimates and results is comparable to previous years, suggesting there was no identifiable disadvantage.

Similarly, the difference for ‘over 18’ age group is in line with previous years. There were no entries from candidates below 15 years old.

For candidates from the most deprived 20% of postcodes, the 2020 estimates and results showed a smaller gap in terms of the proportion of candidates at grades A–C compared to candidates from the least deprived 20% of postcodes. This was true for all SIMD quintiles.

Figure A16 – Difference (PP) in attainment at grades A–C by sex at Advanced Higher.

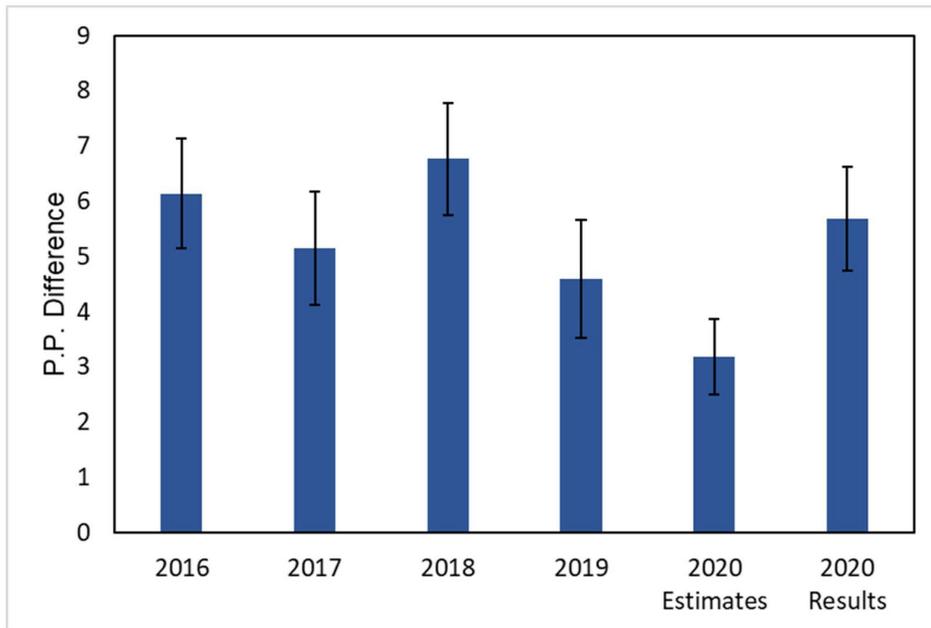


Figure A17 – Difference (PP) in attainment at grades A–C by age at Advanced Higher.

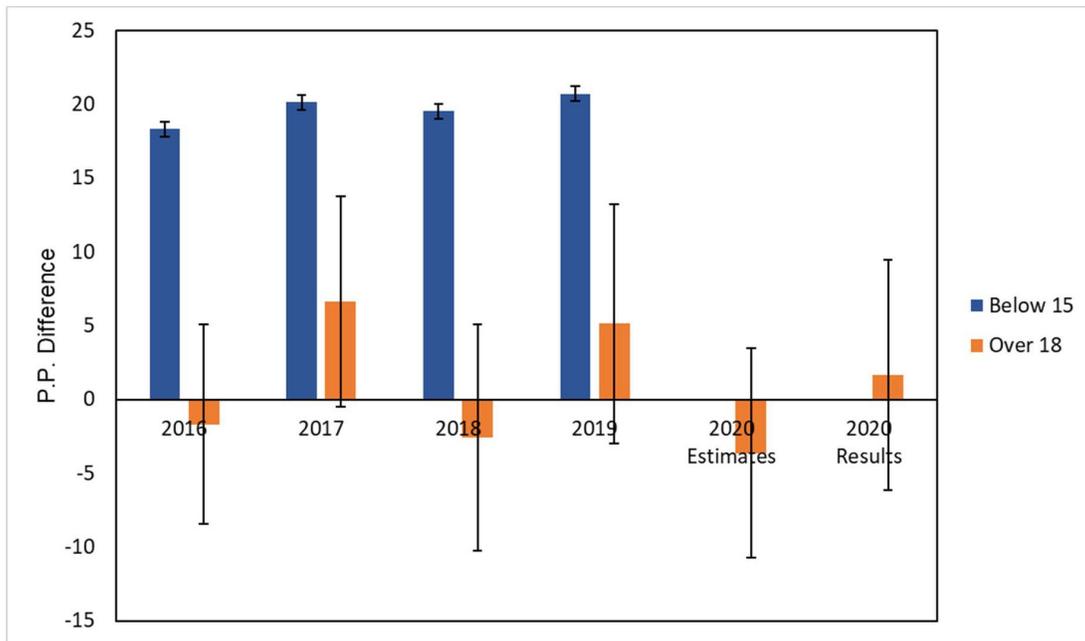


Figure A18 – Difference (PP) in attainment at grades A–C by SIMD at Advanced Higher.

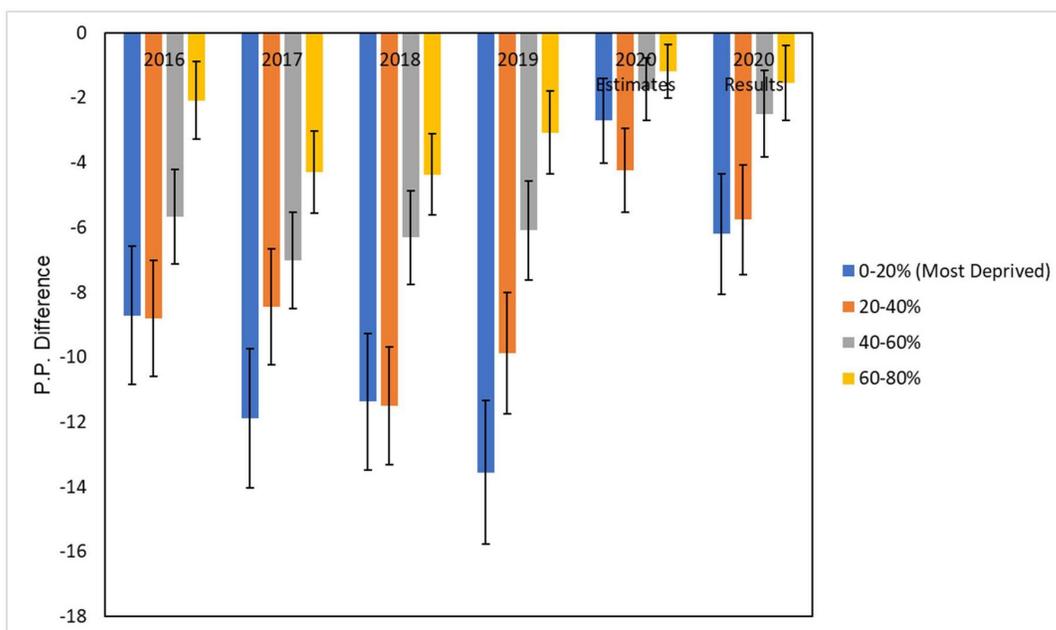


Table A15 – Proportion of grades A–C at Advanced Higher by characteristic.

Characteristic	2016	2017	2018	2019	2020 Estimates	2020 Results
Sex						
Female	84.5%	82.2%	83.5%	81.3%	94.2%	87.4%
Male	78.3%	77.1%	76.7%	76.7%	91.0%	81.7%
Age						
15 to 18	81.7%	79.9%	80.5%	79.3%	92.8%	84.8%
Below 15	100.0%	100.0%	100.0%	100.0%	NA	NA
Over 18	80.0%	86.5%	77.9%	84.4%	89.2%	86.5%
SIMD⁴						
0-20% (Most Deprived)	76.1%	72.2%	73.4%	69.7%	91.4%	80.6%
20-40%	76.0%	75.6%	73.3%	73.4%	89.8%	81.0%
40-60%	79.1%	77.0%	78.5%	77.2%	92.3%	84.3%
60-80%	82.7%	79.8%	80.5%	80.2%	92.9%	85.2%
80-100% (Least Deprived)	84.8%	84.1%	84.8%	83.3%	94.1%	86.8%

4. Based on SIMD 2016. More information on the Scottish Index of Multiple Deprivation can be found at: <http://www.gov.scot/Topics/Statistics/SIMD>.