

Pre-Assessment Review of the quality of further education administrative data in Northern Ireland

Department for Employment & Learning Northern Ireland

August 2015

Background

Statistics & Research Branch (SRB) within the Department for Employment & Learning Northern Ireland (DELNI) is responsible for statistics about enrolments at Further Education (FE) colleges in Northern Ireland (NI).

It was planned that the NI FE Statistics will undergo a UK Statistics Authority assessment in spring 2016, however in the interim period a decision has been made to delay this until the 2017/18 year at the earliest. The reason for this is due to a combination of factors: the incorporation of Analytical Services into a new Department for the Economy; the introduction of a major policy initiative on Youth Training and Higher Level Apprenticeships and considerable changes to the structure of the unit and staffing.

The statistics are compiled from administrative data, which are collected by FE colleges for the purpose of enrolment of students. A Consolidated Data Return (CDR) has been recently introduced by DELNI to bring together data that previously were collected in five separate returns. This was used for the first time to compile FE statistics for the academic year 2013/14.

In light of the proposed upcoming UK Statistics Authority assessment (now delayed) and the new regulatory standard set out by the Authority for the use of administrative data in official statistics, DELNI initiated a “pre-assessment” review of their FE statistics.

The review was funded by the Quality Improvement Fund (QIF), which is primarily designed to support work to improve the quality of and trust in official statistics across the Government Statistical Service (GSS). The review was carried out by the Methodology Advisory Service (MAS), using experts based in Quality Centre (QC).

Objectives of the review

The review focussed on establishing whether the measures in place for the use of administrative data in FE statistics could meet the requirements of the new regulatory standard for the quality assurance of administrative data used in official statistics (UK Statistics Authority, 2015a).

In line with the Quality Assurance Toolkit, the following four practice areas were considered regarding the use of administrative data in FE statistics:

1. Operational context and administrative data collection;
2. Communication with data supply partners;

3. Quality assurance principles, standards and checks applied by data suppliers;
4. Producers' quality assurance investigations and documentation.

In particular, the objectives of the review, as set out in the QIF bid, were to assess the quality of the CDR data through:

- a. reviewing the integrity of the statistical process for collecting the FE activity information;
- b. the validation procedures applied to the administrative data;
- c. the methods used for the reporting of these data within FE Colleges and identification of any risks associated with data recording in the administrative process;
- d. the quality of the statistics produced ensuring that the information meets key stakeholders' needs.

Recommendations were made on the basis of QC's findings. These are summarised below.

In order to carry out this peer review, QC used information sources provided by SRB to identify evidence against each of the practice areas in the Quality Assurance Toolkit (UK Statistics Authority, 2015b) and to make recommendations. In addition, QC visited DELNI on 10th and 11th June 2015, which included meetings with two of the six FE colleges. The information learned through these discussions was also used to carry out the review. Additional information was also gathered via correspondence with SRB. QC used the Quality Assurance Toolkit as a framework to guide the review and structure the report. This was supplemented by reference to the exposure draft published by the UK Statistics Authority on the same topic (UK Statistics Authority, 2014).

The information sources were used to identify evidence for each of the practice areas set out by the UK Statistics Authority (2015b). Within each of the practice areas, the UK Statistics Authority (2015b) identifies main themes of consideration for the statistical producer. These have been used as a guiding framework for carrying out this review; however, note that these considerations are not designed to be prescriptive.

The report was structured by taking into account the four practice areas associated with data quality and their main themes for consideration as listed in the Quality Assurance Toolkit:

Practice area 1: Operational context & admin data collection

- *Environment and processes for compiling the administrative data*
- *Factors which affect data quality and cause bias*
- *Safeguards which minimise the risks*
- *Role of performance measurements and targets; potential for distortive effects*

Practice area 2: Communication with data supply partners

- *Collaborative relationships with data collectors, suppliers, IT specialists, policy and operational officials*
- *Formal agreements detailing arrangements*
- *Regular engagement with collectors, suppliers and users*

Practice area 3: QA principles, standards and checks by data suppliers

- *Data assurance arrangements in data collection and supply*
- *Quality information about the data from suppliers*
- *Role of operational inspection and internal/ external audit in data assurance process*

Practice area 4: Producers' QA investigation and documentation

- *QA checks carried out by statistics producer*
- *Quality indicators for input data and output statistics*
- *Strengths and limitations of the data in relation to use*
- *Explanation for users about the data quality and impact on the statistics*

Summary of recommendations

Following the investigation, QC stated there was clear that there is evidence of good practice in place with regard to the quality assurance of FE statistics and SRB should be reassured by this. However, they identified areas that they believe could be strengthened in order to help meet the requirements of the regulatory standard. Their recommendations are set out in terms of each of the four practice areas and are supplemented by some general comments. The following table highlights the recommendations made for each of the four practice areas.

PRACTICE AREA	RECOMMENDATIONS
N/A	Recommendation 1: In addition to the description of activities in place for each practice area, the justification of the assurance level should be further elaborated to specify why the level of assurance has been chosen and why it is appropriate based on the risk/profile matrix. Consideration should be given to making this information publicly available.
1	Recommendation 2: Use diagrams/process maps to visually describe the data collection steps and enhance users' understanding of the process for compiling the statistics from the administrative data.
1	Recommendation 3: Provide a fuller description of possible sources of bias and the impact of these biases on the statistics. This should consider possible biases at each stage in the statistical production process and should include: <ul style="list-style-type: none">• consideration of differences in data collection processes between different colleges• consideration of whether there are possible errors in registering variables in the CDR• how risks/possible sources of bias are addressed
1	Recommendation 4: As planned, continue with the development of learner pathway documentation to streamline guidance for colleges and consider how this can be regularly reviewed and updated.

1	<p>Recommendation 5: Consider whether there are key questions from the enrolment forms that could be harmonised to ensure that the information collected is more comparable across colleges.</p>
1	<p>Recommendation 6: Provide more information about the ‘Quality data adjustment policy’ and evaluate its efficiency as a means to encourage FE colleges to improve their data quality against potential implications in terms of accuracy.</p>
1	<p>Recommendation 7: Request a review of the membership of the CDR change control board to allow an SRB representative to attend.</p>
1	<p>Recommendation 8: Provide users with a summary of how changes are proposed and implemented and the impact on data quality.</p>
2	<p>Recommendation 9: Provide further information to users on the roles and responsibilities of each party in the statistical process and how they work together to address quality issues.</p>
2	<p>Recommendation 10: Consider having an SLA in place to better define working arrangements aside from the legislation.</p>
3	<p>Recommendation 11: The quality assurance carried out by colleges requires some further investigation and documentation. This should cover:</p> <ul style="list-style-type: none"> • Investigating the quality assurance checks in place at each college, including how and how frequently colleges collect and check their data • Providing further detail to users of the statistics on the nature of the quality assurance procedures applied by colleges • Considering whether the approach taken to quality assurance by FE colleges can be harmonised (possibly at a MIS meeting) • Encouraging the sharing of good practice between colleges • Investigating the strategies used by colleges to address missing data and the potential impact of these strategies on the data
3	<p>Recommendation 12: Investigate the possibility of free text fields on the CDR for colleges to provide metadata concerning particular validation checks (such as instances of validation fails that are correct).</p>
3	<p>Recommendation 13: Further investigation and documentation of the audit procedure is required. This should include:</p> <ul style="list-style-type: none"> • Investigating the background to the KPMG audit programme, the remit of the programme and establishing when and why it is being carried out • Investigating audit recommendations and following up any areas of interest or concern with the relevant college • Providing a fuller description of audit procedures and outcomes in published documentation

4	Recommendation 14: Elaborate on information already provided to ensure that a full picture of quality assurance procedures carried out throughout the statistical process is provided to users.
4	Recommendation 15: Consider the potential for comparability with other further education data to be investigated as part of the quality assurance process.
4	Recommendation 16: Consider publishing further information on specific quality indicators, for example item non-response.
4	Recommendation 17: In line with the proposed documentation outlined in the 'Preparation for Assessment Work Programme', publish further information on the strengths and limitations of the data in relation to its use.

Additional improvements

An additional unexpected benefit was the branch learning more about the internal audits the data providers have in place already and before the data reaches SRB.

Further understanding of the purpose of the QAAD Toolkit and having a fuller knowledge of the expectations in utilising it in reviewing where the data stands against the matrix and the assurance levels required.

Dissemination of results (Stakeholder engagement)

Stakeholder engagement was undertaken to inform the continued development of the project as highlighted below:

- The recommendations have been discussed at formal discussions through the scheduled monthly MIS Managers meetings.
- Statisticians within the Directorate will be informed through a Directorate meeting within DEL.
- It is scheduled to be circulated through appropriate channels to engage with our wider NISRA colleagues, for example via the STARzine e-magazine and placed on the quality section of NISRAnet as well as using the link to the GSS website so other successful project bids are be seen as well.

Improvements and Capacity building

This stakeholder engagement has been valuable in helping to inform the progression of the project over the last year, an overview of which is provided below:

- More robust data for comparative purposes are available for users
- Improved information contained within the quality report to improve the level of informed users

Key elements of this project were:

- (a) the adherence of FE College staff to definitions, standards and guidance, and
- (b) the processes in place at FE College level to collate FE enrolment information.

Any recommendations on these issues, created the possibility for new learning at FE College level.

Further coding guidance has since been issued with increased engagement from MIS Managers in colleges which will improve the data entry and understanding of the department requirements.

In addition, learning is also possible within SRB regarding the processes involved in producing statistical products.

At a generic level, professional staff are keen to learn from others in terms of processes used to collate data and to audit administrative systems which produce statistics; this includes staff within NISRA and Analytical Services (DEL).

SRB staff are more aware of college own procedures in managing data plus the internal and external audits that happen on related data over and above what is returned to the department so further understanding has occurred in the process of data collection, entry, checking and auditing of enrolment/application data.

Success of project

The visit was invaluable for the ONS staff and very useful to our own branch members in visiting colleges and listening to responses to questions we not have asked previously on the process in collating data. SRB found out more about the auditing system in colleges and this is an area further focus is required in respect of our quality documentation and providing details of external audit procedures.

Lessons learnt

If time/resource was not an issue then a visit to all data providers would have been recommended or a common workshop to talk through the processes and data collection procedures. This is something we have started to explore with all data providers in increasing our knowledge of what happens to the data before it arrives at the branch.

Work such as this underlines the need for statisticians to have an in-depth knowledge of the quality of the data they analyse. This knowledge improves the value of analysis provided to policy colleagues by allowing the strengths and weaknesses of the data to be exposed and appropriate action taken. There is an increasing need to manage the data collection process and maintain consistent approaches to definitions and coding instructions. This QIF project experience is being built upon through current work that is now being pioneering on a new data requirement project within the department.

There is a need to do more of this 'outreach' type of activity and we should incorporate this function into future resource bids, Personal Performance Agreements and job descriptions.

Next Steps

Work is underway to consider each of the recommendations and how best to address the points raised. It is planned to respond to the QC team to these recommendations and implement any changes required as a result of the consideration.

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1	<p>Recommendation 2: Use diagrams/process maps to visually describe the data collection steps and enhance users' understanding of the process for compiling the statistics from the administrative data.</p>	Recommendation accepted and actioned.
1	<p>Recommendation 3: Provide a fuller description of possible sources of bias and the impact of these biases on the statistics. This should consider possible biases at each stage in the statistical production process and should include:</p> <ul style="list-style-type: none"> • consideration of differences in data collection processes between different colleges • consideration of whether there are possible errors in registering variables in the CDR • how risks/possible sources of bias are addressed 	Recommendation accepted and action on-going.
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