**What do ONS Users Want from Quality and Methods?**

Sarah Tucker, Office for National Statistics, sarah.tucker@ons.gov.uk

Alison Davies, Office for National Statistics, alison.davies@ons.gov.uk

**Abstract**

*“There’s no substitute for talking to real users” 1*

*As National Statistical Institutes (NSIs), we must provide statistical quality and methods information that helps our users make better use of our data.*

*We decided to review our standard user-orientated quality report (Quality and Methodology Information (QMI)) to ensure that it continued to meet user needs, the first question we asked was “How can we find out what our users really need from our quality and methods information?” The simplest answer, though not necessarily the simplest thing to do, was to ask them.*

*With the help of an ONS user researcher we ran a series of user tests designed to:*

* *Discover who our main users are*
* *Help us understand which of the current QMI topics are most important to users*
* *Help create Quality Information User Profiles*
* *Gain detailed insight on what our users need from quality and methods information and what they use this information for*
* *Discover if additional topics are needed to help users make better decisions about the data*
* *Test if our interpretations were correct when redesigning the contents of the QMI*

*In this paper I will describe the methods we used to meet these goals and discuss the main findings from the user tests.*

*I’ll share our newly created Quality Information Profiles which give insight on what different types of users need from quality and methods information, to enable them to use the data with more confidence.*

*I’ll give some detail about our users and what they told us about their needs. This included a few surprises which required us to do some rethinking of our assumptions to ensure that we stayed on the right path.*

*Finally, I will share the new contents list and briefly discuss the next steps.*

**Key words: Quality, users, communication, engagement**

**Paper**

**1. Why conduct user testing on the Quality and Methodology Information (QMI) Report?**

Within ONS, Quality Centre are responsible for coordinating Quality and Methodology Information (QMI) reports. QMIs have traditionally been ONS’ standard corporate template for communicating quality information to users. They were designed to be published in .PDF format and for the use of mostly Expert Analysts. The QMIs were created over 6 years ago to sit alongside statistical bulletins and give users enough detail about the strengths and limitations of the data so they can decide on suitable uses for that data. The digital environment has rapidly advanced in 6 years and the way in which people access and use our data is also changing. To remain relevant and helpful to our users we must evolve how we communicate quality and methods information to meet their needs.

The best way to find out what users want from the QMI is to ask them, so we partnered with colleagues in our Digital Services Division to carry out some user testing.

**2. User testing 1 - What do users most value from the existing QMI?**

For our first step in user testing, we started with what we already have in the QMI and asked our users what they thought about the existing content. Participants in the first test were given a card sorting exercise and asked to rank a pre-defined set of 12 cards into categories to indicate how important each bit of information was to them. The topics on the cards were:

* Accessibility
* Accuracy and reliabilty
* Output quality
* Comparability
* Timeliness and punctuality
* Clarity
* Relevance
* Concepts and definitions
* How the ouput is created
* Output quality trade-offs
* Coherence
* Assessment of users needs.

**2.1 Who responded to our first test?**

Of the 60 responses to the user survey, 31 fully completed the task. The user types of the respondents were: Expert Analysts 41%, Policy Influencer 28%, Inquiring Citizen 19%, Information Forager 6% and Technical User 6%.

The QMI is designed to give users enough information on the strengths and limitations of the data so that they can make informed decisions on what the data can be used for. Prior to testing, it had been assumed that the main users this purpose fit was the Expert Analyst and the Policy Influencer and going forward we planned to continue to focus on these user types for the QMI, so it was good to have this assumption confirmed and our plans reinforced by the results of the user testing.

We were however, surprised by the percentage of Inquiring Citizens who responded, as we had assumed that, given the technical nature of the QMI, Inquiring Citizens would have little interest in a full QMI. While we mostly focused the review on meeting the needs of the Expert Analyst and the Policy Influencer, the usefulness to Inquiring Citizens should also be improved.

**2.1.2. What did our users tell us?**

Relevance, Accuracy, Output Quality, Comparability and Accessibility were reported by all user types to be the most important topics. Expert Analysts categorised all current QMI topics as either Very Important or Important while Policy Influencers particularly value Clarity and Output Quality. Inquiring Citizens have a wide range of topics that they require but the highest priorities are Clarity and Concepts and definitions.

**2.1.3. What did we do in response?**

We focussed later testing primarily on the needs of Expert Analysts with Policy Influencers and Inquiring Citizens following. We decided that Technical Users and Information Foragers would be lower priority for this project because they each comprised only 6% of respondents. We placed topics in the suggested content list in the order of importance to users and included all current QMI topics in the new version. We ensured that all sections are easily navigable so that all user types will be able to find the information they need.

We then used the information from this test to form the basis of Quality Information User profiles and tested those with users later.

**2.4 Our second user test – checking that we were on the right track**

We wanted to ensure that we interpreted the results of the first test correctly when creating the Quality Information User Profiles, so we set up a second survey targeted at specific user groups that assessed their agreement with our analysis. We listed the content items in order of importance given in the first user test and users in each group were asked to agree or disagree whether each item was more or less useful. Approximately 90 people responded to this user test.

**2.4.2 What did they tell us?**

**Policy Influencers**

* Policy Influencers mostly agreed with the topic areas that we listed as useful, but Relevance was found to be less important by 40% of Policy Influencers who responded
* When we asked Policy Influencers to agree the topics that were less useful, there was greater disagreement between respondents with Concepts and definitions, How the output is created and Timeliness considered to be more useful than initially thought

**Why do Policy Influencers use QMIs?**

* „To support use of the data and to be able to demonstrate more fully where it has come from”
* „To get a better understanding of data in relation to role as a councillor”

**Technical Users**

* Technical Users mostly agreed with the topic areas we listed as useful, but Assessment of user needs was found to be less important by 40% of Technical Users who reponded
* When we asked Technical Users to agree the topics that were less useful, there was greater disagreement between respondents with Accuracy coming out as more useful than previously thought

**Why do Technical Users use QMIs?**

* „To check consistency between waves of longitudinal datasets. To gain precise definitions of variables”
* „Use for teaching to show students importance of reviewing methodology when evaluating statistics”

 **Expert Analysts**

* Expert Analysts mostly agreed with previous findings when asked what topics were most useful
* When we asked Expert Analysts to agree the topics that were less useful, there was greater disagreement between respondents. Coherence and Concepts and definitions were both considered to be of much greater usefulness than previously reported

**Why do Expert Analysts use QMIs?**

* „To check on the reliability of the data I am using, so I can have confidence in any inferences I make”
* „To know that information is suitable for use in our data analysis, to know its limitations and if that would impact on the accuracy/quality/relevance of the analysis”

**Inquiring Citizens**

* Inquiring citizens mostly agreed with previous findings when asked what topics were most useful. Concepts and definitions had the most disagreement
* When we asked Inquiring Citizens to agree the topics that were less useful, there was a great deal of disagreement between respondents with timeliness showing the largest agreement with previous findings

**Why do Inquiring Citizens use QMIs?**

* „I use the information provided to help me understand the current subjects I am studying at university”
* „I use the information for interest only and like to believe that the quality and methodology criteria have been met”

**Information Foragers**

* Information Foragers also mostly agreed with previous findings when asked what topics were most useful
* Again, there was more disagreement between respondents on topics that were less useful with Concepts and definitions and Output quality showing the largest agreement with previous findings

**Why do Information Foragers use QMIs?**

* To help make decisions about public services and gaps in services
* To make sure we understand how the data is presented and any relevant assumptions/adjustments

**2.4.3 What did we do with the results from this second user test?**

The results of this test were used to check and update the decisions made in creating the Quality Information User Profiles. You can see an example of a user profile for Expert Analysts in Figure 1.

**Figure 1. Expert Analysts**

|  |  |
| --- | --- |
| **Uses quality information:** | **Motivators** |
| * To interpret the data accurately
* To assess the confidence that can be attached to the data, particularly for low level geographical areas
* To understand the reliability of the data
* To communicate data correctly
* To compare data correctly
* To support business decisions
* To fully understand data and potential differences between data
* To know whether the data is suitable for the intended use
* To understand the limitations of the data and whether this impacts on the accuracy, quality or relevance of the analysis
 | * Needs accurate statistics to provide confidence in their analysis
* Wants globally-trusted information
 |
| **Quality Information must haves for Expert Analysts:** |
| * Accessibility
* Accuracy
* Clarity
* Coherence
* Comparability
* Concepts and definitions
* How the output is created
* Output quality
 |
| **Expert Analysts also want:** |
| * Assessment of user needs and perceptions
* Output quality trade-offs
* Timeliness and punctuality
 |
| **WE MUST** | **WE MUST NOT** |
| * Make it simple to re-find quality information
* Keep pathway to quality information minimal (fewest clicks possible)
* Be consistent in presentation
 | Give the impression of dumbing-down statistics |

**2.5. User test 3 – focussing on our main users**

As stated earlier, based on a previous test we determined to primarily target the QMI for Expert Analysts. Therefore, for the third user test we mostly focused on what level of information Expert Analysts required for existing topics and how useful they thought additional topics would be.

**2.5.1 Level of detail in existing QMIs**

We asked users what they thought of the current level of detail for all existing topics. In general users expressed satisfaction with the existing level of detail, however, approximately 25% of users who responded to the third user test said that there was not enough detail given on both Comparability and Concepts and definitions. This percentage was high enough to warrant further investigation into the level of detail needed for these two sections.

**2.5.1. What other topics would Expert Analysts find helpful?**

We asked Experts Analysts how helpful or unhelpful they would consider information on the additional topics of: The purpose of the QMI, Suitable uses for the data; A summary of strengths and weaknesses of the data; Quality of the admin data sources and Explanations for the use of particular methods. Expert Analysts generally thought that all additional topics would be helpful, particularly Suitable uses for the data, A summary of strengths and weaknesses of the data and Quality of the admin data source.

We also asked if there were any other topics not previously listed that would help users when deciding how the data should be used; in particular lists of changes to definitions were cited here.

**2.5.2. Finding out more about why Expert Analysts use QMIs?**

As Expert Analysts are our main users, we wanted to get a stronger picture of why they use QMIs, here are some of the reasons they gave us:

* „For an overview of the quality of the product as well as identifying potential uses of the data”
* „I find it provides a helpful background when writing a briefing paper about unfamiliar topics. I have confidence in the explanatory notes”
* „To find out more about a set of statistics I wish to use, to understand how they are produced and any known quality concerns or relevance limitations”
* „To gain understanding of how data can and should be used, to check if anything has changed in collection methods over time”

**2.6 The fourth user test – what further detail do Expert Analysts want?**

Previous user testing on the QMI found that Expert Analysts thought that it would be helpful if we provided further detail on the Comparability and Concepts and definitions sections. In this test we gave them 2 examples of each and asked them what could be added to improve the level of detail for these 2 sections.

**2.6.1. What did Expert Analysts think about the Concepts and definitions sections?**

Whilst users acknowledged that Concepts and definitions are discussed within a QMI, this is often scattered throughout the document and not always held within the Concepts and definitions section. Some users felt that the information was of the right detail and that links to further detailed information such as Glossaries would be sufficient.

We tightened guidance to ensure that Concepts and definitions are added to the right section and also included guidance on linking to further details such as Glossaries where available.

**2.6.2 What did Expert Analysts think abut the Comparability sections?**

Users felt that it would be helpful if key aspects of comparability were listed, it was noted that we currently bring comparability issues to our user’s attention but that it would be much more helpful if we also explained what these issues were and what effect they have. Users thought that international comparisons would be helpful

We added guidance noting the need to list key changes and the dates of these changes to comparability over time and to explain what issues are and what effect they will have, where this information is available.

**3. Creating a suggested contents list for an updated QMI**

We used the feedback given from the user tests to create a suggested contents list for the new QMI. When creating the contents list we also considered the need for the document to be easily navigated and also updated by the statistical producers.

We tested a draft suggested contents list below with our users who broadly agreed with our set up. There were some minor suggestions for change, including bringing Why you can trust our data up from the Other Information which we acted on. You can see the final Contents list in Figure 2.

**Figure 2. Comparing the contents list of the original and the new style QMI**

|  |  |
| --- | --- |
| **Original QMI contents** | **New suggested contents list** |
| Executive summary | Quality summary section:* Important points about the data
* Overview of the output
* Overview of the data
* Uses and users of the data
* Strengths and limitations of the data
* Recent improvements to the data
 |
| Output Quality |  |
| About the output:* Relevance
* Timeliness and punctuality
 | Quality Characteristics Section:* Relevance
* Accuracy
* Output Quality
* Coherence and comparability
* Concepts and Definitions (Including list of changes to definitions)
* Geography (Including list of changes to boundaries)
* Accessibility and clarity
* Timeliness and punctuality
* Why you can trust our data
 |
| How the output is created |
| Validation and quality assurance:* Accuracy and reliability
* Coherence and comparability
* Concepts and definitions
 |
| Other information:* Output quality trade-offs
* Assessment of user needs and perceptions
* Sources for information and advice
* Accessibility and clarity
* Useful links
 | Methods used to create the data:* How we collect the data/Main data sources/Accuracy of data sources
* How we process the data
* How we analyse the data
* How we quality assure the data
* How we disseminate the data
* How we review the data
 |
|  | Other Information:* Useful Links
* How to cite this document
 |

**4. Piloting the new suggested contents list with the UK House Price Index (HPI)**

Once the suggested list was final, it was important to test it with our users by creating a completed version. We worked with a statistical producer from the HPI to update their original QMI to the new style QMI. We talked though the guidance and reviewed several redrafts to finalise a [publishable version](https://www.gov.uk/government/publications/about-the-uk-house-price-index/quality-and-methodology).

We then carried out some face-to-face testing on the HPI QMI with 4 users; one Inquiring citizen and three Information foragers. The users were asked to carry out some tasks and find some information on the comparability of the data. All users successfully found the information. All users understood the information given and felt that it was sufficient to help them relate to the differences.

The feedback was positive with users saying:

* The Important points tell me a lot
* The Accuracy and reliability explanations are very good
* The information given here is very clear
* Users and uses of the data is very useful

**5. Next steps**

We are now launching the new QMI guidance to all statistical producers across ONS. We have provided a lot of supporting material to enable statistical producers to successfully complete a new style QMI. We have also developed training courses based on the supporting materials and have trained quality representatives to provide additional support to statistical producers.

Statistical producers are encouraged to aspire to update to the new style QMI by November 2019 and Quality Centre will take on a monitoring role undertaking regular spot checks to:

* Monitor the take up of the new style
* Ensure that the guidance is being interpreted correctly

In addition, we will regularly review feedback on the QMIs from both users and statistical producers with the aim of creating new iterations of the guidance and suggested contents to ensure that the QMI continues to meet our user needs.