Measuring the Value of Official Statistics:
case studies

Country case studies: proposed measures in practice

Introduction

Case studies in this report have been put forward by countries participating in the Valuing of Official Statistics Taskforce and other contributing countries during consultation. They were submitted in response to a call for NSOS to share methods and experiences that could support the measures that were proposed in the previous Taskforce (on Recommendations for Promoting, Measuring and Communicating the Value of Official Statistics), that would help show the value of official statistics.

As stated in the complete report, in the process of collecting the case studies and testing the utility of the framework, the Taskforce concluded that the framework of measures needed refining and further development. While some had the potential to be measures of value, a large proportion were not illustrating the "value" of official statistics because it was predominantly being interpreted both conceptually and measurably different from the way that it was intended to be shown. By this, we mean that many measures tend to reflect a "production- based approach" which bases value from the NSO's perspective". Whilst this approach is good for reporting on management and operational purposes and indeed many quality measures are based in these areas, they do not provide the "value" of outputs from a user or consumer-based perspective.

Summary

The case studies (below) were not collected at the time with the above concepts at the forefront of thinking, they were collected under the "**objective**", "**subjective**" and "**monetary**" framework of the measures that were proposed. However, in the technical analysis the measures have been retrospectively aligned to whether they are more production or consumed-based or both.

Case studies supporting a wide range of the original measures (and some additional ones) have been provided by: Mexico; Mauritius; United Kingdom, United States of America; Hungary: Canada; Armenia: Gulf Cooperation Council; Romania: Poland; Slovenia; Australia, New Zealand; Israel; Poland and Ireland. These include work around punctuality, timeliness, accuracy, relevancy, metrics around user activity, microdata usage, digital object identifiers, monetary and others.

As well as the proposed measures for testing there was also a recommendation by the previous Task Force for testing of a generic user satisfaction survey. No country had looked at this explicitly apart from Armenia and some countries such as Hungary and others used elements of the questionnaire for targeted surveys for specific use on things like, "the use, access and satisfaction of statistics". Ireland did include some elements of the user satisfaction survey which are presented in their in-depth report and Mauritius did use a satisfaction survey to help design their National Strategy for Official statistics focusing on quality aspects such as satisfaction with specific products and services up front, followed by trust and dissemination aspects. See case studies below.

Case studies focusing on objective measures

1. Mexico: Punctuality of statistical releases

As part of the Institute's quality program, a series of indicators were developed that make it possible to monitor compliance with the quality principles established by the Quality Assurance Committee.

The Institute publishes the information of the different information programs in accordance with the Annual Dissemination Calendar that is approved annually by the Governing Board with previous semi-annual version.

The objective of the indicator is to provide information on the punctuality with which statistical and geographical information programs are disseminated in relation to the dates previously established in the Dissemination Calendar of Statistical and Geographical Information and information of National Interest of the INEGI (Dissemination Calendar).

Method

The indicator is constructed from the information obtained from the process and the publication of content on the INEGI website is managed on the internet. From this system, the time at which the publication was carried out is taken and it is compared against the commitment of the previously set out in the calendar.

Information around publications are made available to users, such as methodologies, tabular data, open data, microdata, press releases, among others. This often means that adjustments need to be made to the publication process in order to integrate a series of reports and modifications to the functions of the publication on the site.

It was shown that measures are only highlighted in the last part of the process, which means if there are any delays, it falls on to the area that is carrying out the publication – who had no control over previous stages. Therefore, the process should be extended to the entire publication process.

Challenges

The process highlighted the compliance to the calendar to senior management, however, it does not evaluate the punctuality of the entire publication procedure, only the last part of the process.

It is necessary to have a punctuality indicator in each of the stages of the publication process, for this it is necessary to map the complete procedure and have delivery times and people responsible for each of the stages.

Impact

The adjustment to the system and the procedures was carried out for a year, before presenting it as a finished product to the quality assurance committee.

2. Mauritius: Punctuality, Timeliness and User satisfaction survey

In preparation of the National Strategy for Official Statistics (NSOS), the Statistics Board conducted a user survey to gather inputs from the main consumers of official statistics produced by Statistics Mauritius (SM). The survey was carried out online from November 2018 to January 2019, with an electronic link to the questionnaire sent to respondents by email. Follow-ups were subsequently done in the form of email reminders and phone calls.

Four main aspects were covered in the questionnaire as follows:

- information on types of users and uses of SM statistics,
- quality aspects,
- trust in SM and its statistics,
- dissemination.

The results presented in this report constitute a summary of the most interesting and compelling findings.

Method

A total of 175 people were surveyed, among whom 43 replies were received, representing a response rate of 25%. The sample distribution and response rate across the different user group are as follows:

Table 1: Sample size distribution and response rate

User groups	Number Surveyed	Number Responded	% Surveyed	Response rate
Academics, research institutions, students and private users	11	4	6%	36%
Banking and financial firms	14	4	8%	29%
Consultancy/advisory/legal and other professional firms	11	4	6%	36%
Foreign representation, regional and international organizations	10	1	6%	10%
Government ministry/ department/ agency	104	26	59%	25%
Press and other media	6	0	3%	0%
Trade and business	5	1	3%	20%
Trade union, consumer associations and other NGOs	7	0	4%	0%
Travel and tourism	7	3	4%	43%

| Total | 175 | 43 | 100% | 25% |

Usage

Figure 1: Importance of official statistics for users

Figure 1: Importance of official statistics for users pie chart — Essential 63%, Important 23%, Quite important 9%, Not important 5%
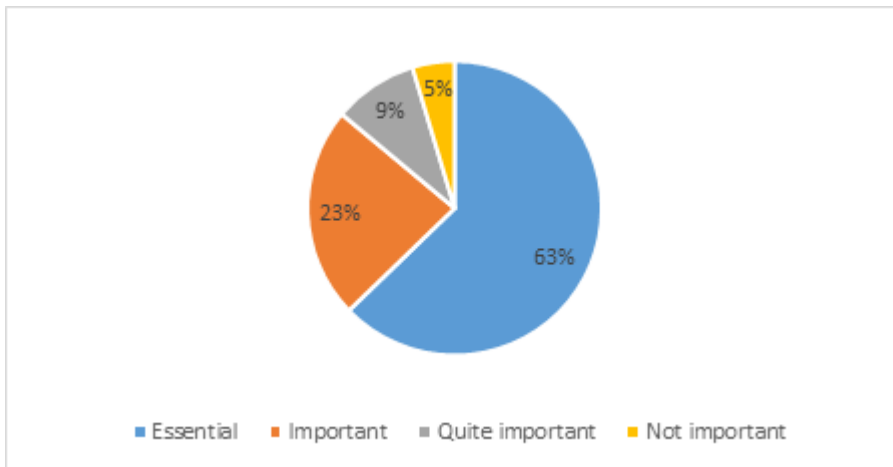
86% of those surveyed consider SM statistics as either "essential" or "important" for their work/purpose. The breakdown by purposes, shows that statistical data are mainly used for "Formulating/monitoring policy" (28%) and "Research and studies" (26%).

The main frequencies at which users consult statistics produced by SM are "a few times a year" (30%), "daily/weekly" (26%) and "fortnightly/monthly" (23%).

47% of respondents also stated that they need other statistics that are not currently being produced by SM.

Trust

Figure 2: Trust in the statistics produced by SM

Figure 2: Trust in the statistics produced by SM pie chart — Trust them greatly 37%, Tend to trust them 60%, Not sure or don't know 2%
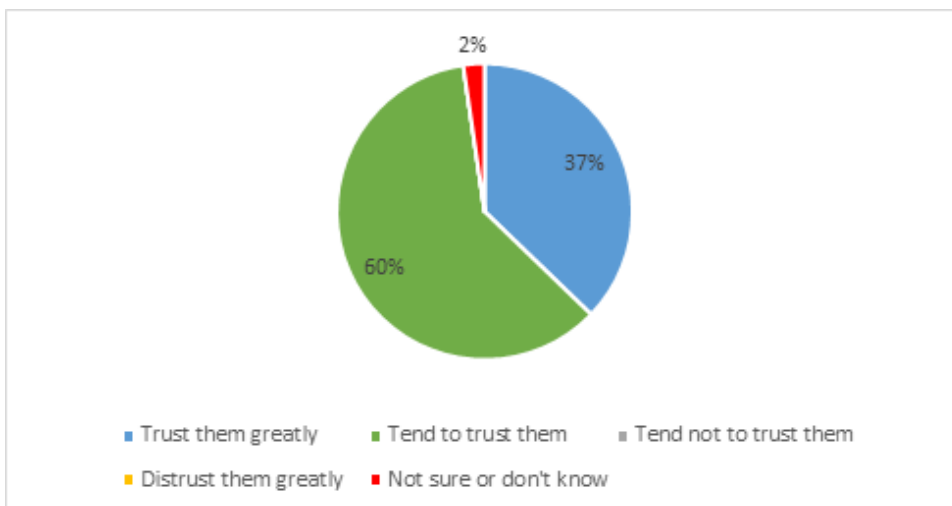
In terms of faith in statistics produced by SM, 98% of respondents either trust them greatly or tend to trust them. The remaining 2% had no opinion.

Quality aspects

The level of user satisfaction regarding the overall quality of statistics appears to be adequate, many users assessing the quality to be either "very good" (16%) or "good" (75%).

Figure 3: Percentage of positive ratings for overall quality of subject area statistics
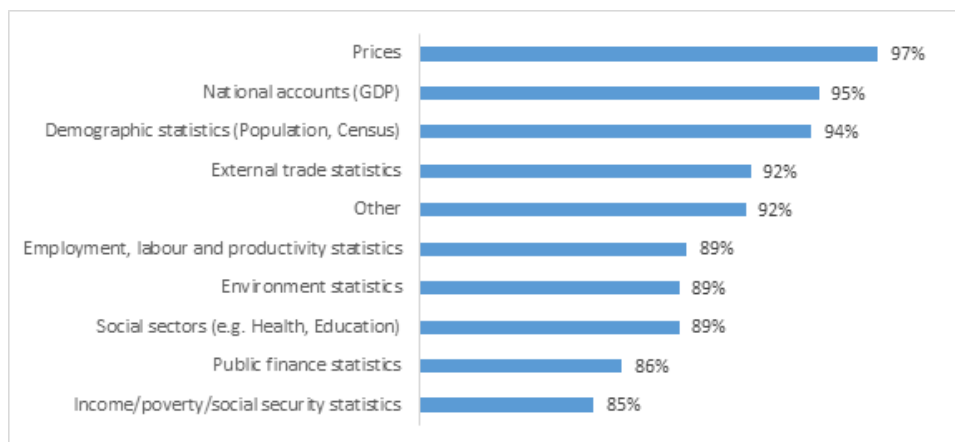
At a more disaggregated level, "Prices", "National accounts" and "Demographic statistics" received the highest level of appreciation from users, with 97%, 95% and 94%, respectively. "Income/Poverty/Social Security statistics", and "Public Finance" had the lowest share of positive views relatively at 85% and 86%, respectively.

Figure 4: In depth assessment of subject area statistics

Respondents were also asked to evaluate these statistics in terms of coverage, level of disaggregation, frequency, timeliness, accuracy, accessibility and clarity. Based on the ratings obtained, "National accounts" and "Demographic statistics" are the most performing subject area statistics, while users were relatively less satisfied with "Environment statistics" and "Income/poverty/ social security statistics".

Overall, users are pleased with how statistics being produced by SM are made accessible and easy to understand. However, they are relatively less satisfied with the level of disaggregation, the timeliness and accuracy.

Coverage

"Demographic statistics" (78% of positive rating) is considered as having the most adequate coverage, followed by "National accounts" and "Prices", with 69% and 66% of positive responses, respectively. On the other hand, "Income/poverty/ social security statistics" (52%) and "Public finance statistics" (53%) had the lowest positive coverage ratings.

Dissemination

Figure 5: Ease of access of statistical data
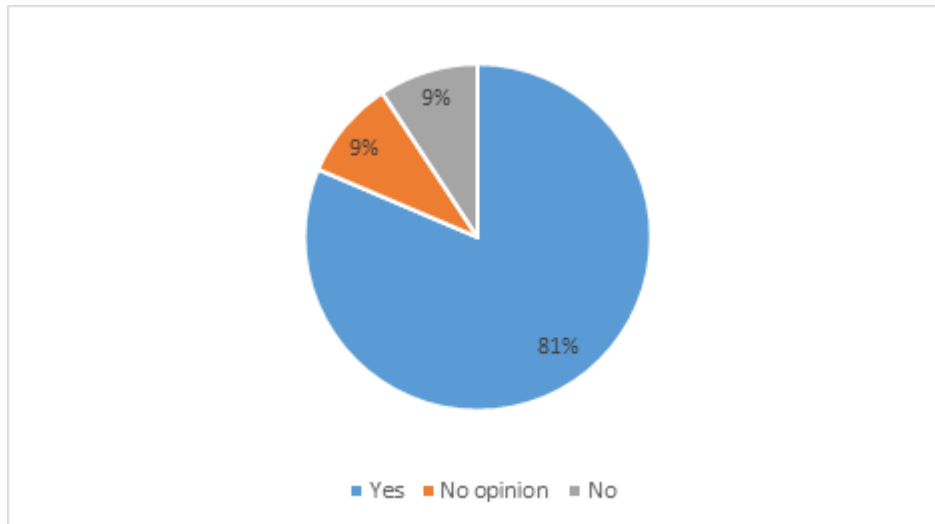
Even though most of the respondents (81%) find it easy to access statistical data on SM's website, almost half of them (47%) stated that they are not aware of the publication programme on SM's website that announces in advance the dates on which SM will release its statistics.

Figure 6: Frequency of use of metadata
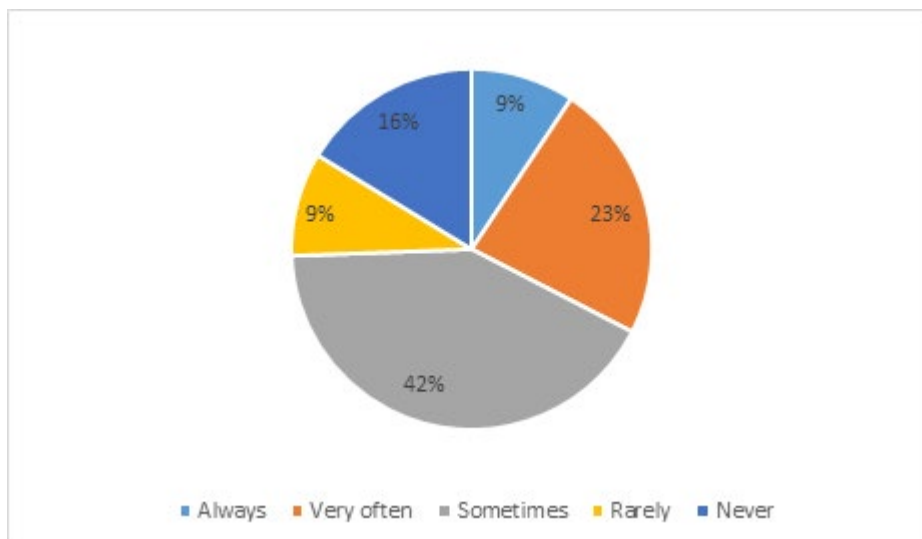
A high percentage of the respondents (84%) are users of metadata, of which 33% do so on a regular basis. 44% of users of metadata find it easy to use and 56% find it clear and adequate.

Figure 7: Existence of well-established arrangements to obtain users' feedback
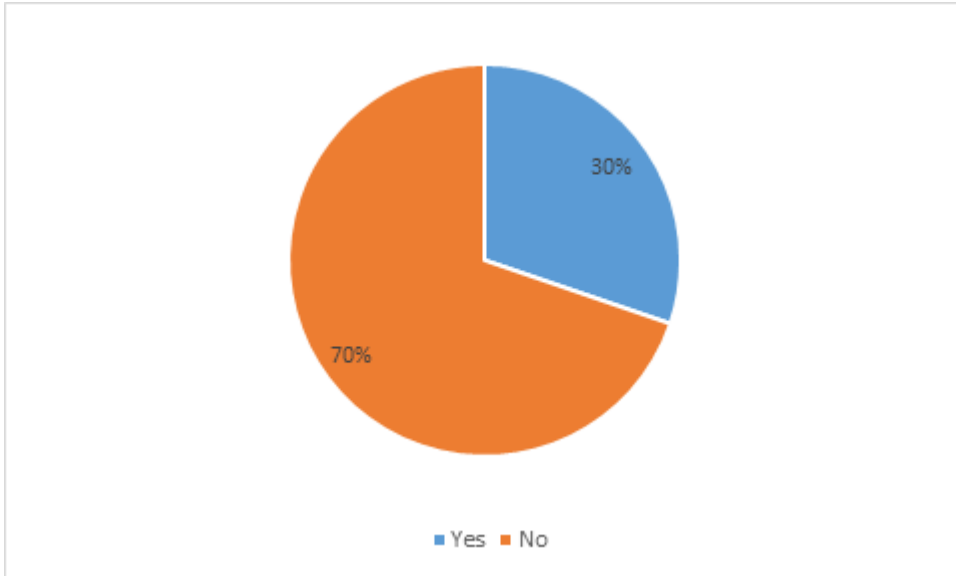
70% of respondents are of the view that SM does not have well established arrangements to obtain feedback (complaints, compliments or suggestions) of users on data disseminated.

3. United Kingdom: Measuring the impact of ONS publications – COVID-19

A short review was conducted of ONS' impact from its Covid-19 outputs published between 23 March and 19 June 2020. In the period the ONS published 119 different Covid-focused outputs. The review used existing impact measurements but also sourced new metrics where needed. The review aimed to not just measure impact of our releases but also assess how well we measure impact. The goal was to better inform future commissioning, to build positively on the collaboration and coordination during this period.

Headline findings were that:

- few of the current reported and quantifiable metrics were of value in the review

- The ONS does not routinely measure the reach of engagement of its individual digital publications, or portfolio

- The ONS has no mechanism to track usage or citation of its digital outputs post-publication

- The ONS does not track the coverage of its publications in the media in measurable terms

- Quantitative metrics are used for indication purposes rather than a measure of success or failure

Method

A review looked at 119 different Covid focused outputs and used existing impact measures but also sourced new metrics where needed. New measures were also introduced.

- Source local and national media coverage metrics per publication and broken down by news site.
- Source social media coverage metrics per publication.
- Google Analytics – use API to query reach and engagement metrics per output.
- On-site polls to get snapshot views of users.
- On-site surveys to get detailed feedback.
- Run a deep dive survey on ONS users.
- Natural Language Analytics to categorise user free-text feedback.
- Audit all Covid-19 content to assess the target audience and how well each publication met user needs.

Combined metrics to examine the characteristics of publications.

Impact

Few of the current reported and quantifiable metrics were of value in the review.

The ONS does not routinely measure the reach or engagement of its individual digital publications or portfolio

There is no mechanism to track usage or citation of its digital outputs.

Quantitative metrics are used for indication purposes rather than as a measure of success or failure.

The ONS currently captures 14 of the top 26 most important output-centric objective measures.

The ONS currently captures 9 of the top 27 most important output-centric subjective measures.

Current metrics are not suitable for effective evaluation of output.

In general, user satisfaction with published products was high. 91% of users said the most recent Covid-19 out had "met all or some of their needs". Following on from this 80% of nearly 130,000 users said the page they were reading was easy to understand, of which, specialist users were more likely to be satisfied than general users.

Because of COVID-19 publications users of the ONS website grew by 250% in 11 weeks to a total of 7.5 million users. The biggest success was the use of an area map that showed deaths from Covid-19, it is the single most used publication in the history of the ONS.

Lessons learned and recommendations

Key gaps in our measures need to be filled - from on-page engagement to media reach and post-publication tracking.

- Measures where appropriate should become engagement goals and not used as just indicators.
- Measures should be segmented by user group for different website products.
- Headline indicators and goals should be published on the ONS website.
- Improve the organizational understanding and transparency of the digital product portfolio.
- Refresh and overhaul the ONS content strategy.

Publish Analytical forward work plans by theme segmented by user. Published work plans should be used to assess the impact of our individual outputs, by measuring our progress in answering the questions and needs identified by topic and theme or user.

4. United States of America: Informing users of the accuracy and relevance of statistical data during a pandemic

The COVID-19 pandemic has led to widespread changes in U.S. Bureau of Labor Statistics' (BLS) standard practices. The mix of data collection modes in our surveys has changed. New data sources have been introduced. Response rates have declined in many surveys, but not uniformly across industries or demographic groups. Methods used in estimation have been adjusted to more accurately reflect the extremely rapid changes taking place in the economic conditions we measure.

All these methodological and execution changes pose a challenge for expert data users. "Everyone knows" that fewer responses probably mean that published estimates are not as good as they were pre-pandemic. "Everyone knows" that changes in collection modes and data sources probably mean that the new estimates are not entirely comparable with previous ones. But if accuracy has indeed declined, by how much? And are the published estimates still relevant for users' needs?

As an agency, BLS is always better off when we are transparent about all changes in operations and when we proactively alert our users to any potential measurement problems. We also want to communicate information in a common format across our many releases to help users easily find what they are looking for and make comparisons.

Thus, in late April 2020, BLS standardized a set of accuracy and reliability metrics that have accompanied almost all major data releases since May 2020. These metrics report on the operational paradata most relevant to users' questions and compare them with pre-pandemic values.

Method

As the effects of the COVID-19 pandemic on BLS survey processing first became evident in March and April 2020, BLS issued summary operational impact statements, mostly in the form of questions and answers, along with our data releases. This auxiliary information was largely ad-hoc and tended to vary programme by programme.

By late April, patterns in press coverage and user inquiries became clearer, as did commonalities and differences in programme-specific reporting. At the end of April 2020, BLS issued the following guidance to all programmes:

Any changes to data sources or estimation methods must be announced as early as possible. Full information must be provided with the first release that uses new sources or methods.

Assemble the following summary information to include with your releases:

- Collection mode(s)
- Response rates
- Variance/standard error/confidence intervals
- Imputation (counts or rates)
- Cell suppression (counts or rates)

If the above measures are not evenly distributed over industry/occupation/area/item categories/etc., document the notable outliers

In addition to current month/quarter measures, include measures for:

a) Prior month/quarter
b) Same month/quarter in prior year
c) Average over year ending in Feb. 2020 (the last period unaffected by the pandemic)

Implementation was straightforward and programmes, for the most part, appreciated having clear guidance. Examples of the resulting operational paradata reports for several programmes are listed at the end of this case study.

Challenges and solutions

We knew going into this initiative that not all programmes calculate or collect the same paradata. For example, some programmes calculate variances annually rather than monthly, or calculate variances only after the estimates are published. Thus, reporting took on a "pick off the menu of options" style, where programmes included the measures, they could provide without substantial additional work. This led to some loss of comparability across programmes.

In addition, standard errors depend on both sample size and changes in observed magnitudes. The dramatic swings in many estimates had a far greater impact on statistical accuracy measures than did the sample size reduction. Nonfarm payroll employment, for example, fell by 13.8 percent from March to April 2020, and rose by 2.1 per cent and 3.6 percent in May and June, respectively. This compares with a typical monthly change in the 0.1 to 0.2 per cent range.

The biggest challenge, however, was that the operational paradata measures BLS is now reporting regularly are conceptually complex and require reasonably sophisticated statistical knowledge to understand and use effectively. These subtleties have been swamped by a far larger and more prominent pandemic-related estimation problem: a misclassification error in the household survey used to calculate the monthly unemployment rate (see https://blogs.bls.gov/blog/2020/06/29/update-on-the-misclassification-that-affected-the-unemployment-rate/ with links to monthly Frequently Asked Questions.)

Tools and platforms

The cost of this reporting has been minimal because programmes only include measures that are available, so no substantial additional work.

Impact

In order to assess the usefulness of the information provided, BLS added a simple thumb up/thumb down indicator on each related webpage, with an option for users to add a freeform text comment to their rating.

As of late July 2020, users had viewed the webpages with this feedback box 83,476 times, left 186 ratings, and included 89 comments. The comments show that many of the ratings were unrelated to the pages themselves (though several of these comments were poignant, e.g., "I was put on a call back list 2 days ago and still haven't received a call. Dealing with covid-19 is stressful already. Now can't get any assistance with unemployment compensation. Also having to deal with bill collectors wanting to disconnect services. Please help.")

Once the unrelated ratings are eliminated, feedback has been about 80 per cent positive.

Some of the laudatory comments include:

1. Very convenient to find a "hub" for this information. Thanks.
2. It was helpful to know more complete situation.
3. Extremely helpful. Thanks for keeping this marvelous data update. Great job!
4. I sense you're on the bleeding edge of the data that's going to point us out of the COVID mess.
5. The data on this site is extremely useful and whomever put it together should get a raise. Well done, PPI.

Some critical comments include:

- The title of this page is "Effects of COVID-19 Pandemic and Response on the CPI". I was expecting a simple answer such as "The CPI change was 50% lower than had been predicted in January". Instead, there are details on the methodology. Frustrating.
- A little helpful but I was hoping for (easy to find) figures on the number of people out of work now and in recent months -- especially because of Covid-19. I have not found that information yet.

Other comments include suggestions for improvement:

- Indicate when something is new or updated. I don't know what has changed.
- I was on your site yesterday and agreed to take a survey. I did but now cannot get rid of the final page of the survey. I have cleared Chrome history and everything else. This needs to be fixed.

We redesigned some of the pages and features to address such concerns.

Lessons learned and recommendations

This initiative appears to be working well, giving users needed information in a useful format. The cost has been minimal. As time goes on and the economic and social situations change, we may find some of the current measures less relevant and determine that others should take their place. So, these reports may need to evolve.

https://www.bls.gov/covid19/consumer-price-index-covid19-impacts-june-2020.htm

https://www.bls.gov/covid19/job-openings-and-labor-turnover-covid19-may-2020.htm

https://www.bls.gov/covid19/import-export-price-indexes-covid19-impacts-june-2020.htm

5. United Kingdom: Communications and Covid-19: Assessing the impact of the ONS' messages

As part of ONS' response to the coronavirus pandemic a communications 'dashboard' was developed and implemented to monitor the impact of messages on a weekly basis. The dashboard was aimed at senior leadership and the organization's communications teams.

Media analysis, social media monitoring and website analytics already formed the basis of weekly and monthly evaluation and were therefore easily refocussed to provide a specific overview of work done by the organization in response to coronavirus. The dashboard was also an opportunity to use other media monitoring tools, better suited to tracking specific messaging.

The key purposes of the dashboard are to enable action with timely insight, and to understand and demonstrate the impact of communications across a wide public audience (and therefore underline the value of ONS as a trusted and authoritative source of relevant information during the pandemic).

Method

The dashboard was implemented quickly in response to a rapidly changing situation. However, the frequency of reporting allowed for iterative changes and (at time of writing) was currently being produced in a consistent format with established inputs.

The dashboard makes extensive use of existing data sources used for regular reporting but focuses them on this specific area of interest.

Development of the dashboard has also led to the inclusion of internal communications measures, which has made it a central resource to understand the impact of the organization's response to coronavirus across a broader range of audiences both internally and externally.

Almost all the data sources used in this reporting are numerical, objective and generated using third party monitoring and evaluation tools. They are some of the most widely used solutions across public and private sector organizations and have been relied upon for other established monitoring and reporting by the organization.

ONS made use of freely available tools as well as paid-for services to gather data.

Google Analytics is a widely used tool for measuring website use, which offers free and paid-for services. It is worth noting that regulations may vary depending on location, for example ONS is implementing a new policy that will limit the amount of data it is able to generate through this tool.

Google also offers free insight into search trends, which were used to add context around what the public in the United Kingdom had been trying to find out at various points during the response to the pandemic.

There are various established social media monitoring tools. Twitter offers its own and there are also paid-for options, such as Brand watch, which ONS used in this work.

Given the volume of media coverage, ONS made use of the paid-for media monitoring and evaluation tools it already had in place. Examples of these are Kantar and Meltwater, which can be used to gather media cuts and even run some analysis to indicate their reach and prominence on social media.

Challenges and solutions

Previous efforts to measure value and assess impact have demonstrated that the most effective way to gather intelligence and conduct analysis is in tandem with subject matter experts. This sort of collaboration across teams is therefore the approach taken in this work.

Unlike other efforts, though, this collaborative approach has been conducted at a time of significant upheaval, relative uncertainty and at pace. As part of the organization's response to the pandemic, a work-from-home model was adopted, which (at least initially) produced some challenges as colleagues adjusted to new methods of collaborating virtually.

Another challenge was avoiding duplication and creating confusion. The dashboard was one of several sets of measures rapidly implemented in responding to the situation. In response to both challenges it was important to agree a regular reporting period, which matched the reporting timeframes of other reports.

It is also important to note that the dashboard currently provides a 'limited snapshot' on a weekly basis. While it has been useful in demonstrating immediate short-term impacts, this format is not likely to be useful for assessing the longer-term impact and value of the organization's work. In response to this an initial monthly report has been created, which aims to take a more reflective view of statistical work and its longer-lasting impacts through a media and social media lens.

Impact

Through repurposing existing measures and utilizing readily available free-to-use data sources, ONS was able to implement a solution in an incredibly short amount of time.

The dashboard itself consists of easy to communicate, technically simple and easily reproducible measures given that there is enough data to make measurement possible. The dashboard has been used internally at a senior level and shared externally with central government communications colleagues, which lends some evidence to support the idea that the format is easy to use and communicate.

In terms of gauging success, feedback showed it catered effectively to business needs. Having a repository of weekly dashboards, makes any future evaluation of the organization's response to coronavirus far easier. It has certainly been useful as a record of organizational impact at various stages of the response to the pandemic.

The weekly dashboards enabled a useful reference for how official statistics were used and communicated by the media, public and key stakeholders and will be valuable in conducting any evaluation in the future.

Internally, the high-level view has been useful for demonstrating impact with senior colleagues., helps the evaluation exercise to highlight gaps and maintain efficiency. This has been important in the response to the pandemic when resources have been stretched; any time spent evaluating is time not spent on a workload that may have increased as a result of the organization's response.

It is likely that the success of this dashboard owes itself to having a clearly defined subject on which to focus, which produces significant enough impact across a variety of media to provide meaningful insight. As such, it is recommended that reporting at such a granular level on a specific area of interest

be reserved for use in instances where it is likely to provide enough useful insight to justify a relatively-resource intensive piece of work on such a frequent basis.

Weekly dashboard reporting should not be used in isolation. In order to fully understand impact, it should act as a supplement to longer-term routine reporting or to a wider-ranging analysis exercise at an appropriate time when the weekly dashboard has fulfilled its purpose.

6. Hungary: Internal dashboard tracking user activity

The internal dashboard provides concise and visual information with the purpose of supporting management decisions regarding the dissemination of statistical products with transparency on a quarterly basis.

The Hungarian Central Statistical Office has taken this approach to measuring value, because in order to best fulfil our users' needs, it is necessary to understand who requests which data, how they use data, and how satisfied they are with the products and services provided by the office.

The Dissemination Directorate processes this information and makes it available to all HCSO departments through the internal dashboard to facilitate evidence-based decisions on matters that range from the continuation or elimination of publication series to changes in the format or channels of publication.

The internal dashboard refers to these objective and subjective indicators already included in the framework:

Objective: Use of Statistics

- Number of website visits
- Downloads of statistical data by domain
- Sales/number of publications requested
- Number of followers in social media

Objective: Relevance of Statistics

- Most used/downloaded statistics[1]
- Citations in newspapers/news-websites, radio and television channels

Subjective: Satisfaction with products and services

In addition to the above indicators from the framework, the internal dashboard of the HCSO covers a wider set of data. The broad categories or 'tabs' of indicators, which are provided in detail in the next pages, are the following:

- Website traffic
- Data regarding the download of various products
- Data requests
- Paid services
- Media
- Safe Centre
- 'Under the magnifying glass' (quarterly topics in focus)

---

[1] It is important to draw a distinction between most used and most downloaded statistics. It is also to be noted that these data are broken down mainly by products, thus we can find information on how much a certain output of a statistical subject matter is used, but there is no comparison between individual subject matter statistics (because the outputs are not easily compared to each other).

- The 'Website traffic' tab in the HCSO's internal dashboard mostly overlaps with the 'number of website visits' indicator of the framework, and also features the following information:

- Number of website views
- Number of new users
- Number of sessions
- Average time spent on the website
- Average length of session
- Number of pages per session
- Rate of return to website
- Most visited pages within the HCSO's website
- Domestic geographic settlements visiting the website most frequently
- Most common ways of access to the website (channel of entry, e.g., search, social media)
- Website traffic categorized by device
- Most commonly searched terms on the website

- The 'Data regarding the download of various products' tab in the internal dashboard mostly overlaps with the indicator 'downloads of statistical data by domain' and also features:

- Downloads of summary tables[2] (in Hungarian and English)
- Downloads from the Dissemination database
- Downloads of publications (including regular publications, first releases, ad hoc publications)

In the framework, the 'sales and number of publications requested' are presented in one category. The HCSO's internal dashboard handles these separately, through a 'Data requests' and a 'Paid services' tab. The former is focused on the 'Contact Us' system, through which users get in touch with the statistical office and make their data requests.

The 'Data requests' tab displays the following information:

- Number of incoming requests solved monthly
- Incoming requests solved monthly, by type of request
  - Incoming requests solved monthly, by type of user
  - Data requests by top domains
  - Inquiries by telephone categorized by procedure

In addition to these objective measures, the "Contact Us system" tab also features the following *subjective measures*:

- Users' evaluation on the fulfilment of their requests, on a scale from 5-1
- Users' evaluation of the fulfilment of their requests, as positive or negative, citing the exact text
  - The 'Paid services' tab displays the following information:
  a) Net income from remunerated activities (by data and publication sales)
  b) Number of and income from paid data requests (by contractual agreement or other)

---

[2] One of the most frequently used products of HCSO. It is a comprehensive table-system consisting of about 1,500 tables.

c) Number of and income from purchased HCSO publications
d) Channels used for the purchase of publications (ordered via email, purchased personally, ordered via website, distributed by consigner network)

In the framework, the indicators 'Citations in newspapers/news-websites, radio and television channels' and 'number of followers in social media' appear in the respective categories of 'relevance of statistics' and 'use of statistics' of the framework. In the HCSO's internal dashboard, these indicators are blended into a single tab labelled 'Media', and further broken down into:

- Number of citations in the press, by media type (internet, national press, regional press, radio, television)
- Most frequent HCSO topics cited in the press
- Number of followers of the HCSO on Facebook, by age and gender
- Number of followers of the HCSO on Instagram, by age and gender
- Most popular posts of the HCSO on social media (Facebook, Instagram, Twitter and LinkedIn)

The Hungarian Central Statistical Office has a Safe Centre for the purpose of scientific research of statistical data in its Budapest headquarters and in its Szeged site, where access to anonymised microdata is provided in strict compliance with high-level protection rules of data protection. The internal dashboard has a 'Safe Centre' tab, where the following information is available:

- Number of ongoing research cases

The main indicators of traffic in the Safe Centre:

a. New applications (contracts signed (free and paid), and contracts that were not signed in the end), number of outputs produced in the Safe Centre, net contract value of research room services, net invoice fees for research room services, background characteristics of the most frequent users of the research room, most commonly searched topics in the research room and publications received.
b. Number of research cases per year
o Requests for datasets to conduct research in the Safe Centre by theme, further categorized by:
    - Standard datasets prepared for research
    - Custom-made datasets
- The 'Under the magnifying glass' tab presents relevant topics from the Dissemination directorate on a quarterly rotation. As an example, the current theme is "Unfulfilled data requests from 2019" and it features the following information:
    - Number of unfulfilled data requests recorded through the 'Contact Us' system
    - Distribution of unanswered data requests by user group (individuals, business sphere, research institutions, media, public sector, academic institutions, international organizations, non-profit)
    - Types of unfulfilled data requests according to the reasons why they could not be answered
    - Types of unfulfilled data requests by statistical domain

Method

The internal dashboard is designed as an intranet platform where the latest data on the use and relevance of statistical products are arranged systematically.

The information is structured into the seven tabs described above to facilitate browsing by categories. Each tab contains an explanation of the measures, complemented by easy-to-read tables and graphs. Most of the data is compared with that from the previous year to highlight trends.

A specific topic (also based on these measures) is presented quarterly to attract renewed interest from the departments.

As the internal dashboard is not publicly accessible, our element of reliability and confidence comes from an internal survey carried out by the Dissemination department with the various departments at management level for feedback (more on this in the next section).

Challenges and solutions

The internal dashboard provides a complete overview of the use and relevance of our statistical products; the main challenge now is to track its impact within the office. As an initial step, the Dissemination department carried out an evaluation survey at the management level, which showed positive responses in terms of the dashboard's design and perceived value. However, at this point we lack information on how the dashboard is actually being put to use in concrete terms.

A second challenge is that the tasks involved in obtaining and processing data for the dashboard are only partly computerised. Data has to be manually sorted for a number of fields and prepared for this purpose. Consequently, when developing new dissemination and communication tools or applications, it is important to consider the development of proper monitoring and reporting functions.

A third challenge is the ongoing issue of the reliability of data sources and the methodology for comparing data. Even well-established and widely accepted tools such as Google Analytics raise many questions in practise. In such cases, it might be beneficial to emphasize trends over individual data and pay special attention to monitoring and reporting in the planning stage.

A fourth challenge is that, for technical reasons, the dashboard is only available in a static form. The detailed data is published alongside in Excel. An interactive, filter-friendly dashboard would likely improve its usability, providing all colleagues with access to more detailed data that is relevant to them. At the time being, we are looking into the possibility of implementing this.

Impact

The departments of the HCSO have positively evaluated the internal dashboard. Prior to its creation two years ago, data on similar measures were already collected by the office, although not presented in such a systematic and accessible manner. In this sense, the impact of the internal dashboard was immediate. However, it would be worthwhile reconsidering ways of collecting evidence of use of the dashboard in order to make this tool as relevant as it can be to the management of the office.

We are mainly using the dashboard and the underlying data to make decisions on individual products and the product portfolio as a whole. Preparing the annual dissemination programme has previously been a very demanding process, with data gathered from the responsible units processed meticulously and manually with different methods (raising the question of comparability in many cases). This process has been streamlined significantly due to the availability of this dashboard.

We are currently working on overhauling and restructuring our summary table system, consisting of about 1,500 tables. Some of the issues in the data series are methodological breaks or complete stops; others are too complicated to use or for the users to find. So far, we have used weblog data to assess which tables should be kept and which could be stopped without causing significant losses to the users.

As a solution to this challenge, we will closely monitor the weblog data after the launch of the new system, as well as user evaluations in the standard evaluation box (which is currently only available for publications).

Lessons learned

Among the lessons learned from the challenges we have faced along the way, we would underline the importance of prioritising the bigger picture when methodology questions arise, namely, following trends over individual data in order to support internal decisions. Likewise, we believe tools such as HCSO's dashboard are most useful when constantly renewed and designed to be interactive.

Recommendations

At present the data that we provide under the respective headings are:

definitions of the indicators

- graphs
- tables
- underlying detailed tables.

Executive decisions are probably easier to make when brief textual information is also available.

Interactive options to make tables and graphs customisable could also have an added value.

We present below the structure of the internal dashboard in the HCSO's intranet, featuring the seven main tabs previously described in detail on the left-side menu:

A TÁJÉKOZTATÁSI TARTALMAK ÉS SZOLGÁLTATÁSOK FELHASZNÁLÓIRA VONATKOZÓ, NEGYEDÉVENTE FRISSÜLŐ, LEGFONTOSABB INFORMÁCIÓK:

- Honlapforgalom
- Termékek letöltési adatai
- Adatkérés
- Kutatószoba
- Média
- Térítéses szolgáltatások
- Nagyító alatt (negyedévente változó téma)

- Letölthető adatok
- Archívum

TOVÁBBI RÉSZLETES FELHASZNÁLÓI ISMERETEK:

- Felhasználói viselkedés- és véleménykutatás

OLVASÓI ÉRTÉKELÉS, VÉLEMÉNYEZÉS:

- Értékelés, véleményezés

Definitions of the presented indicators on one of the tabs:

A **Google Analytics** a Google óriáscég ingyenes szolgáltatásaként egy olyan összetett funkciókkal rendelkező, internetes elemző program, ami aktuális képet nyújt számunkra arról, miképp érik el, hogyan és mennyi ideig használják a weblapokat a látogatók. A KSH honlapjára vonatkozó riportok csak a **külső felhasználókra vonatkozó információkat összegzik**, így célzottan róluk prezentálnak részletes statisztikákat.

Forrás: a webhelyre történő hivatkozás eredete.

Direkt (médium kategória): olyan munkamenetek, amelyeknél a felhasználó beírta a böngészőbe a webhely URL-címét, vagy amelyeknél a látogató könyvjelző használatával érkezett a webhelyre .

Médium: a forrás általános kategóriája, például organikus keresés (organikus) vagy webhivatkozás (hivatkozás).

Munkamenet: az az egybefüggő időszak, amely alatt a felhasználó aktívan végez valamilyen tevékenységet a vizsgált webhelyen.

Munkamenet átlagos hossza: kifejezi, hogy mennyi időt töltenek az oldalon átlagosan egy munkamenet alatt.

Oldalmegtekintések: a megtekintett oldalak összesített száma.

Oldalon töltött átlagos idő: az átlagos időtartam, amit a felhasználók egy adott oldal megtekintésével eltöltenek.

Organikus keresés (médium kategória): bármelyik keresőmotor nem fizetett kereséseiből érkező forgalom.

'Referral' (médium kategória): nem közösségi hálózatokhoz tartozó webhelyekről érkező forgalom.

Social' (médium kategória): körülbelül 400 (hirdetésként meg nem címkézett) közösségi hálózatból érkező forgalom.

Új felhasználók: az adott időszakban újonnan megjelenő felhasználók.

Visszafordulási arány: az egyoldalas munkamenetek százalékos aránya.

A témával kapcsolatos fogalmak részletesebb ismertetése a fogalomjegyzékben érhető el.

Content in visual and table format on website traffic, data requests and data visualisations: The main website traffic indicators for www.ksh.hu
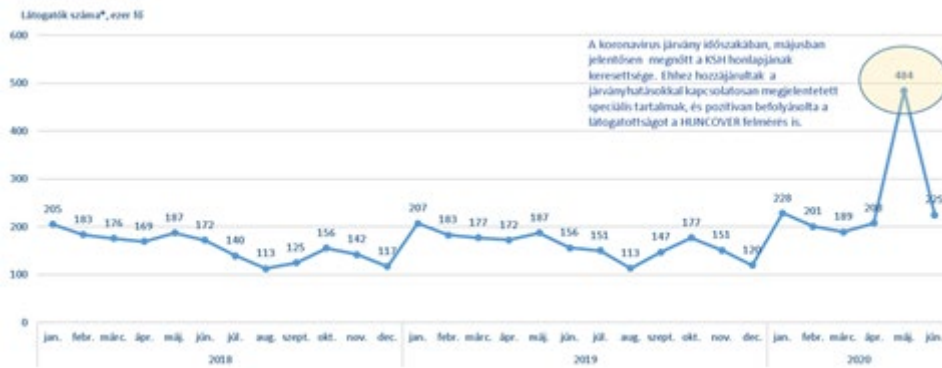
Most in-demand statistics in data requests, by user group, 2nd quarter 2020

The most frequently searched terms on the HCSO website, 2nd quarter 2020

Source: Google Analytics

Users' evaluation of the fulfillment of their requests

Megnevezés	2019. II. negyedév	2020. II. negyedév
Értékelések (1-5) átlaga	4,9	4,7
Értékelések száma összesen	183	85
Szöveges értékelések száma**	83	38

Megjegyzés: a számszerű értékelés az iskolai osztályzatoknak megfelelő módon történik.
*Technikai okból változás történt az adatbázisban 2019. októberétől. Ez a korábbi adatok módosulását is okozhatja!
**Egyszerű köszönetnyilvánítások nélkül.
Adatforrás: „Lépjen velünk kapcsolatba" rendszer.

Textual user feedback on the fulfillment of incoming cases,

2nd quarter 2020*

Negative (2)	Positive (36)
lack of requested data, missing information about IT-related changes	quick, precise, concise, thorough, informative, professional, beyond expectations

* The figures in the table indicate case numbers.

The table does not include simple expressions of gratitude

Source: HCSO's "Contact Us" system

Data visualisation

25

7. Canada: Measuring visits to Statistics Canada's website

We view this as an excellent indicator as it measures the number of times our NSO's primary dissemination vehicle was visited. It allows us to quantify those visits and provides us with a metric that is easily understood by most of our key stakeholders; for example: last year, Statistics Canada had over 25M visits to its website.

For multiple years, Statistics Canada has reported on the number of unique visits to its website. This information is one of the agency's key performance indicators and is used to report performance metrics to the Parliament of Canada and to Canadians. Every year, it is included in our Departmental Performance Report.

Website visits are provided at the departmental level when reporting externally. When reporting internally to the organization, the data is broken down by the statistical program, and then at the statistical product level.

Method

- Statistics Canada uses a software called Adobe Analytics to compile the metrics.
- Statistics Canada uses Adobe Analytics to aggregate the data and produce monthly reports for each program area. The software is also used to produce an annual report at the departmental level.
- Visits are defined as a unique visit from one IP address.
- In order to mitigate issues with connectivity for the users or the website, multiple visits from the same IP address in a 30-minute period is considered a single visit.
- Traffic created by bots is removed.
- Visits from Statistics Canada's network are also removed to ensure that only external users are counted.

Challenges and solutions

- Certain other government departments and international organizations challenge the use of website visits as opposed to page views.
- Page views can be misleading, as users clicking on multiple links can artificially increase the indicator.
- Canadian government practises prohibit the use of cookies and gathering of detailed user profiles. This limits our ability to use this metric to understand if our products are reaching the targeted audience. Although we know that we have had X thousands of visits to a certain statistical product, we are restricted from gathering details about the users.
- This requires us to use other methods, such as a website evaluation survey and a client satisfaction survey, to gather the missing information.

Impact

- This measure is a good metric as it is easy to communicate and easy to understand.

- We have been using these metrics for many years. Historical comparability allows us to report on trends and to complement our reporting with historical information. For example, every 5 years when we disseminate the Canadian census information, we see a spike in website traffic. This spike can then be explained.
- As the metrics provide daily information on traffic, we can assess (in almost real time) the impact of various communication initiatives on website traffic.
- We can then use lessons learned from this analysis to shape future communication initiatives.

Relevance/value to the customer/stakeholder feedback

- As described in the previous section, we use the information to assess our communication strategy.
- When collaborating with other organizations in the release of official statistics, this indicator is frequently used to describe the success and reach of the data release.

Lessons learned

- Many commercial products can be used to calculate this metric. These products reduce the need to develop in-house solutions and provide a large range of custom reports.
- Helps identify popularity of historical content. Some training material or papers disseminated in our scientific journals have lasting value and remain relevant today.

8. Mexico: Measuring value though website monitoring and evaluation

The study of the INEGI Website on the Internet focuses on four main indicators:

- **Accessibility:** Ease of the user in terms of access and location of information of interest.
- **Level of detail:** Satisfaction with the level of disaggregation of the information obtained.
- **Navigation:** Satisfaction with navigation on the portal.
- **Site Rating:** Rating given to the INEGI Site on the Internet in general.

The study of the INEGI Site on the Internet is carried out through three sources of information:

On a quarterly basis, we apply a questionnaire to approximately one out of every 5 users on the site www.inegi.org.mx to know the perception of users regarding accessibility, navigation and level of detail of the information offered by the Institute in its website, this in alignment with the institutional strategic program. In addition, we have a permanent form on the website so that users can issue their opinions at any time, generating a monthly report. We also obtain usage statistics obtained from Google Analytics. The results of these studies contribute to institutional strategic planning and to support design actions to improve the usability of the website.

Method

For the quarterly study of the INEGI Site on the Internet (numeral A of the previous question), the following methodology is used:

Application of a quarterly online questionnaire that randomly captures a representative sample of 1,000 forms, with criteria differentiated by age and sex, based on the National Survey of Availability and Use of Information Technologies in Households ENDUTIH 2020 prepared by the INEGI.

From the main results, it stands out that, in 2020, 74.6% of users considered that it is easy to locate the information; 83.8% like the navigation and 83.3% are satisfied with the level of detail of the information. The overall rating given to the site is 7.6 on a scale of 1 to 10.

The results of these quarterly studies can be found in the executive document on the INEGI Intranet:

http://intranet.inegi.org.mx/Servicios/Difusion/voz_usuario/SitePages/default.aspx

Challenges

To define the best way to measure what our users think, the best international practices were surveyed, and the results issued by the ENDUTIH 2019 were taken as a conceptual reference.

The evaluation instrument has been updated to refine the indicators and more accurately measure user opinion.

The results obtained have supported making improvements in the usability of the website and provide elements for strategic planning.

Impacts

With this evaluation, INEGI knows the evolution of the satisfaction levels of its users on the most relevant aspects of usability in the main institutional service channel, which is the website.

The results are disseminated to the areas in charge of web design within the Institute, providing very useful elements mainly for usability design. Because it is carried out on the technological basis of internal development, it also contributes to the optimization of financial resources.

In general, the complementary use of the results of the quarterly evaluation, those of the permanent suggestion form and the analytics of Google Analytics has been successful to complete an overview that allows a better understanding of the satisfaction phenomenon.

Based on the success of the continuous analysis of these indicators, a Monitoring System for the Satisfaction of the Users of the Public Information Service was conceptually developed, which will be fully developed and operational in 2022.

The results of these evaluations are reported as part of the Annual Statistics and Geography Program (PAEG), in the area of identifying satisfaction regarding accessibility and level of detail; In addition, they contribute elements to the different areas that produce, integrate and disseminate information of INEGI, for their strategic planning.

The results can be found at the Deputy General Directorate of Diffusion and Public Information Service and are shared through the INEGI Intranet: http://intranet.inegi.org.mx/Servicios/Difusion/voz_usuario/SitePages/default.aspx

Since it is sensitive data on the internal institutional performance of each ONE, we do not have comparability studies at the international level.

On the other hand, we have the year-to-year comparison. In the case of the years 2019 and 2020, there is a tendency to positively evaluate the accessibility, level of detail and navigation indicators; although the global rating indicator has decreased, probably due to the perceptual correlation with the government's performance during the peak of the COVID19 pandemic.

INEGI Periodo	Accessibility	Detail level	Navigation	Clarification
2019	68.7	78.2	79.4	7.9
2020	74.6	83.3	83.8	7.6

Source: INEGI website evaluations, 2019-2020.

Lessons learned

- Technology changes continuously and evaluation mechanisms have to adapt to these advances.

- Care must be taken to include comparative strategic indicators over time, generating a historical trend for decision-making in the short, medium and long term.
- Do not rule out the application of fixed forms on the website to retrieve qualitative opinions and suggestions for improvement, as well as the application of qualitative studies focused on specific user segments.
- All indicators are better when they are integrated into a consultation system that allows the integrated visualization of the different satisfaction dimensions.

Recommendations

- Complement the fixed questionnaires with random forms that allow obtaining more diverse information from the user; as well as complementing with qualitative studies to obtain elements that support the usability of the portal.
- Periodically review the operation of the strategic indicators, in order to integrate them in the different information surveys in their most refined form.
- It is recommended to have a system of satisfaction indicators to communicate the results in a timely manner to those involved in the process of generation, integration and dissemination of information.
- In addition, we have a permanent form on the website so that users can issue their opinions at any time, generating a monthly report.
- Likewise, we obtain usage statistics obtained from Google Analytics.

The results of these studies contribute to institutional strategic planning and to support design actions to improve the usability of the website.

9. United States of America: Digital Object Identifiers: Assessing the impact of our long-form analysis

Digital Object Identifiers (DOIs) are alphanumeric strings that can uniquely identify an article, document, or dataset. These strings provide a form of "permalink" to the referring object. DOIs are becoming more commonplace in academia as a way of citing research and data. The U.S. Bureau of Labor Statistics (BLS) began researching DOIs because it had been informed by two indexing services that the *Monthly Labor Review* would be dropped from their indexes for not using DOIs. To start, our primary objective in using DOIs was to maintain our publication's ability to be indexed.

More recent research pointed to more extensive use of the indexing service to help inform us of the value of the articles published in the *Monthly Labor Review*. The *Monthly Labor Review* is the BLS flagship publication, publishing long-form data analysis for over a century. Though BLS does collect basic web metric information on each article, DOIs provide an opportunity to delve further into the use of articles as well as glimpse who is using the research. This information could help BLS to perform more targeted promotion of relevant research.

Setting the framework for using DOIs

As part of our research to understand how to use DOIs, we looked at other journals that used DOIs and also other government agencies such as the National Oceanic and Atmospheric Administration (NOAA). NOAA uses a much more extensive set of DOIs, as they not only use such identifiers for research articles but also for research datasets and imagery. NOAA staff underscored that it is important to have a central body to act as the clearinghouse—to have a metadata strategy and set things up so that there's a predictable DOI rather than a randomized one.

We selected a DOI provider that had a fairly easy user interface. Because the DOI needs to be shown on the article page, we decided to only put DOIs on the articles that we had fully in HTML (a catalogue back to 2013). Prior to 2013, all of our articles were published in PDF-only format. We decided that the work to go back further would be too large of a lift for our relatively small number of staff. In addition to creating a space to display the DOI on our article pages, we had to make a few minor modifications to our CMS to add in the DOI.

To create a DOI, BLS deposits metadata into an online portal, and that content is assigned a DOI. It's encouraged that DOI creators ensure that URLs are maintained, and metadata are added at any time post publication (if additional metadata are available). At the time of implementation, BLS only added the title, author, publish date, URL, and journal-identifying information as the metadata.

In terms of costs, there is an annual fee for the service that covers a set number of DOIs per year. If the subscriber goes over the set amount, a nominal fee is charged per overage. There is, however, no cost to authors to register and tag their own work.

We had considered asking all authors to register themselves in DOI database, but we didn't wish to place any further burden upon the authors at the time. The benefit to the agency in having authors perform this function is not clear other than ensuring that authors are named consistently (for example middle initial vs. full middle name).

Outcomes

The process of creating a DOI for an individual article is minimal. There was a start-up cost of back loading old articles and understanding and developing a process that worked for our organization. However, in the day-to-day production, creating a DOI is something that takes a few additional minutes by our editors.

Our original goal of getting relisted by indexing agencies was achieved. When setting up the DOIs, there was an inkling that BLS could get more in-depth information about the use of our articles by following up on citations. The DOI service allows agencies to keep track of how often a work is cited. This is something that needs a bit of time to develop. Among research communities, it may take a few months or longer for another researcher to cite your work. We left the citation portion as something to return our attention to in the future. Unfortunately, we forgot to circle back to investigating this potentially useful metric until this year.

Impact

Citations can provide a much more in-depth look at measuring the value of our long-form analysis. Google Analytics can provide views and downloads, but these measures are incomplete. We don't know how meaningful the article is to the customer or if it helped provide a foundation for further research. Citations can tell us not only how many customers are citing the research but also can put a name to the researchers who are using our information.

This type of information can help us better understand the reach and the spaces where our research informs further research. In terms of marketing and outreach, this also gives us further insight in to the "who" is using the work and could springboard more targeted marketing. This type of information could help construct more qualitative measures on the relative prestige of the citation. Agencies may consider a measure of prestige in terms of how well-known the researcher citing the work is or how well-regarded the journal is.

Lessons learned

Account setup and default settings

Our DOI provider has three account status options: open, limited, and closed. These options regulate how much of the metadata you provide is searchable. In January 2018, there was a change in our DOI provider's default account status, although we were unaware of the change. Our account had inherited a default status of "closed," thus making it more difficult for anyone using the DOI search to find our content. We have since rectified this and set our account status to open.

After we had procured the product, we didn't stay abreast of new features and changes that the service was implementing. Going forward, we intend to stay more on top of this aspect of using the DOI service which includes a decision-making board and open meetings,

References

Cited-by research is compiled from references that authors note in their research. In order to compile that information, DOI providers need publishers to also load that information as part of a metadata

load. This is something that BLS editors had not been doing. Because we had not been loading this as part of our metadata, we cannot access any further citation information for our journal.

At the time of writing this report, we are currently investigating how much additional work cited-by listings would be for editors. We are also considering if authors could assist and supply the reference DOI information for their referenced material as part of a submission requirement.

Author registration

As previously mentioned, authors may register themselves for no cost. When editors log articles into the DOI service, they use the name that the author provided. In our own index, we notice that authors don't always give the same variation on their name. Before we migrated our content to a content management system, the Monthly Labor Review did not have an author index. We relied upon institutional memory and topic to either view the author's preferred name variant, or editors would simply use the submitted name. Once we did the work to compile this information into a database, we discovered that there were many name variants (our own deputy commissioner had six different variations on his name). Because we know that authors tend to be inconsistent, editors perform a search in the DOI database to see if the author has previously published with us, and we try to use the name variant we've used in the past. Searching the DOI database (or even our own) has its own set of difficulties. It tends to be time consuming, and it's not always clear if it's the same author or a different author with the same name.

By requesting that authors register with the DOI service and provide their author ID, it could help enforce consistency. It also provides a benefit to the author as their desired name is displayed, and they can build a collection of material across all publications where they have published.

Expanding beyond the Monthly Labor Review

As previously mentioned, BLS started down the DOI path because it wanted to be reinstated to the indexing services. Therefore, our focus was only on the Monthly Labor Review. In our research, we've noted that other entities, such as the National Bureau for Economic Research (NBER), employs DOIs on their working paper series. Our agency also produces many working papers each year; this may be an avenue worth exploring for expanding our DOI work.

Recommendations

Though it's unclear at this point how robust the citation data will be, we will assume it has at least some value. We recommend the following for agencies considering using DOIs.

1. *Be patient.* DOIs will not have the instant gratification of your page view counts. It takes time for research to be consumed, pondered, and then built upon in other research. The time horizon needed to view the value may be in years, rather than in months.
2. *Invest time in learning about the DOI provider services.* As we discovered with our provider, submission mechanisms changed, and new features were added. The investment in learning what your provider offers doesn't stop with the procurement.

Links

CrossRef is the DOI provider BLS uses: https://www.crossref.org/

Participation report for BLS: https://www.crossref.org/members/prep/9379

More information on cited-by and mechanics of using them: https://www.crossref.org/education/cited-by/

A registered author page: https://orcid.org/0000-0003-4075-6235

10. Canada: Exploration of Digital Object Identifiers to monitor use and impact of online publications

- This feature was introduced to Statistics Canada's web products in 2019. The digital object identifier (DOI) appears as an alphanumeric string of characters that acts as an active link to the original digital object.
- It is used as a way to cite a digital reference.
- It also allows the organization that owns the DOI to retrieve metrics on the number of times the DOI was used.
- Although still at the experimental stage, the DOI could be used to measure the number of citations of statistical products.
- Statistics Canada does not currently use this indicator in any of its official reports.

Method

- DOI are found on all newly published statistical products.
- Statistics Canada is provided a URL range from the Registration Agency to use for DOI generation.
- A product's DOI is assigned using our internal registration process.
- Once the DOI is assigned, it is then added to the HTML (web page) version of the product.
- Tools are available to retrieve (via an API) the metrics from the external central DOI repository maintained by the Registration Agency on volume of utilization.

Challenges and solutions

- Although the DOI process is easy to use, it is still in its infancy, as such it does not yet have widespread acceptance as an instrument to cite.
- Relying on this indicator would limit the scope to only those researchers/publications that use DOI and would exclude certain data users.
- As the use of DOI becomes more widespread, this issue may be mitigated.
- The DOI is limited in scope. It is currently only used in academic areas but is not used in other areas (such as journalism). This may limit its potential for use as an indicator.
- There are very few safeguards in place about who registers DOIs. Other organizations can register DOIs against your products, therefore, reducing the number of citations you have from "your" DOI as more than one DOI can point to the same URL.

Impact

This indicator is still in the experimental stage and is not officially published at this time.

There is a multiplicity of potential in the use of this indicator as it would allow us to know the breadth and depth of the use of our products in academic and scientific journals.

It will also allow us to track the continued use of statistical products over time.

Lessons learned

There are some efforts that are required within each statistical office in order to establish a process to assign DOI to products that are published. The level of effort should not be trivialized or underestimated.

There are very few safeguards that are put in place about who registers DOIs. Other organizations can register DOIs against your products, therefore reducing the number of citations you have from "your" DOI as more than one DOI can point to the same URL.

11. Armenia: Measuring value through the number of agreements to use microdata for research

The number of agreements to use microdata for research is a key performance indicator and reported in the annual report on implementation of the annual statistical program. It shows the use of microdata for research and collaboration of Armstat with the research community. It helps to increase the use and access of statistics and improve cooperation and communication with researchers, to better meet users' needs and facilitate better access to microdata.

It is important measure as the collected databases contain richer data than the published results (users may generate other additional outputs for their specific requirements using microdata files).

Method

The Law on Official Statistics of the Republic of Armenia that is fully based on GLOS (entered into force on 9 April 2018) enables Armstat to release microdata to users for research purposes (as stated in "Article 26 - Access to confidential data for research purposes and governed by the supplementary regulation on approval of statistical confidentiality procedure).

The applicant makes an application for obtaining microdata. Then the unit prepares the database with the relevant documentation that is discussed at the State Council on Statistics (the supreme body of governance of the NSS) for approval.

To better meet users' needs, Armstat has also developed online platforms for public use microdata files covering databases with datasets from Households Surveys, Population Census and Demography, Labour Market and Agricultural Census; Microdata on ILCS and LFS included in the World Bank Microdata Library; National Data Archive (NADA) tool for Microdata Library.

The Microdata Library is a collection of datasets on ILCS, LFS, Population Census and Agricultural Census and linked to National Reporting Platform for SDGs statistics

NADA is an open-source microdata-cataloging system, compliant with the Data Documentation Initiative (DDI) that serves as a portal for researchers to browse, search, compare, apply for access, and download relevant census or survey information.

Challenges and solutions

Researchers need quick data, but some databases such as ILCS, LFS are collected annually. Researchers ask more detailed and disaggregated data that could be a challenge for sampling tools and statistical confidentiality. This requires additional explanations from Armstat to satisfy researchers.

The lack of trained highly skilled specialist in microdata protection and security (knowledge of security standards for microdata dissemination).

Confidentiality risks are possible.

The legal arrangements and procedures are in place and publicly available to ensure that confidentiality of the released microdata is protected, to increase public confidence that microdata will be used appropriately.

Impact

All researchers are treated equally; Rules and procedures are transparent and publicly available; The microdata are released at no cost; The measure supports to increase the overall trust, quality of data, usability, and usefulness, transparency, as well as to decrease the number of requests by researchers; The measure facilitates the user-producer communication and user's feedback and helps to more effectively address users (researchers) demand; This measure supports sustainable cooperation and knowledge sharing. It provides the savings of resources and reduction of bureaucratic administrative procedures and promotes data use and analysis.

Comparability

The IPUMS project is a collaboration of the University of Minnesota with National Statistical Offices and international organizations.

Lessons learned

It is considered an important measure for Armstat, showing that data collected by Armstat benefits society by providing the basis for research and policy analysis. The researchers play an important role in policy analysis, and this requires access to quality official data to ensure the quality for research results.

Lack of access to microdata may lead researchers to conduct their own data collections, which are usually of lower quality than the surveys conducted by Armstat. In this respect, the role of Armstat is crucial, as a trustworthy official source of high-quality data produced based on international standards.

References

- Law on Official Statistics of the Republic of Armenia (https://www.armstat.am/file/doc/99514643.pdf)
- Regulation on approval of statistical confidentiality procedure (https://www.arlis.am/DocumentView.aspx?DocID=73021).
- Armenia Population Census microdata for 2001 (https://international.ipums.org/international-action/sample_details/country/am#tab_am2001a).
- Armenia Population Census microdata for 2011 (https://international.ipums.org/international-action/sample_details/country/am#tab_am2011a).
- IPUMS International - University of Minnesota Population Center (https://international.ipums.org/international/).
- Microdata database (https://www.armstat.am/en/?nid=15)
- Microdata on ILCS and LFS/the World Bank Microdata Library (https://www.armstat.am/en/?nid=716).
- Armstat Microdata Library (http://microdata.armstat.am/index.php/home).

- National Reporting Platform for SDGs statistics (https://sdg.armstat.am/).
- Armstatbank (https://armstatbank.am/pxweb/hy/ArmStatBank/).
- National Summary Data (https://armstat.am/nsdp/)

12. Mexico: Number of projects with access to microdata services

We use this indicator to follow up on the demand of the microdata access services, and which type of service users prefer. This indicator only looks at the number of projects that get registered that need application format that INEGI offers for either of the two microdata services; remote processing and microdata laboratory.

Method

The indicator is generated from a system report, where users have applied to use microdata services. Only those whose applications are accepted are used in the final indicator.

There are two types of services used to access microdata:

1. Remote processing - the user sends a file to INEGI to process and check to makes sure has not breached confidentiality.

2. Microdata Laboratory - the user has direct contact with the microdata through a terminal in a secure room. Users carry out their own processing and then request the revision of output that is checked and cleared if it does not breach confidentiality.

These services are built following 5 "S" risk management model develop by UK ONS.

It is important to know how the demand of these services for microdata access behaves and, to be able to create the proper infrastructure. For example, we only just one Microdata Laboratory in Mexico City, and after receiving many application from users from the centre of the country, we realized that it was important to open another Microdata Laboratory in the city, where INEI headquarters is located. Being in the middle of the country, it meant users will not need to travel to Mexico City, making the service more accessible to postgraduate students and researchers that live in that region.

Impact

The indicator shows that users value information because they are requesting it, it also shows they value this specific way of having access to statistical information to be able to carry out research that would not be possible without microdata access services.

It is a straightforward indicator, very easy to understand. The only thing that must be considered is that numbers won't be big, because these services are only for expert users and very specific to certain types of research.

The performance of the indicator also depends on the context, if users have the expertise required and are interested in research topics that require analysis with microdata.

Relevance/value to the customer/stakeholder feedback

In our case the indicator shows us clearly that users, when is possible prefer Microdata Laboratory to Remote Processing. With COVID19 it showed clearly how new users switch back to Remote Processing as second-best choice to be able to continue with their analysis., because the Microdata Laboratory has been closed due to the lockdown.

Value from different customers (useful quotes, impact on business, decisions made because of it, any monetary value attached)

In our case the indicator together with provenance of users showed us we need to open a Microdata Laboratory in another geographical location in the middle of the country.

Comparability

We do know other statistical offices use this measure. But in terms of comparability things can be tricky due to the heterogeneity of countries regarding local conditions, size of statistical information offer, number of expert users, number of research institutions, complexity of the application procedure due to legal regulations.

Lessons learned

Data from application registers should be structured with control of catalogues so it can be useful to develop indicators

Recommendations

It could prove useful to have a clear codification of the types of services, to be able to follow up users' preferences.

13. Armenia: Measuring the value of microdata access through National Data Archive

Armstat proposes to measure value through these indicators as they will help guide us in introducing new solutions to disseminate microdata; ensure the broader use and utility of data and enable us to better meet users' needs and facilitate better access to microdata, so that users may obtain additional results using microdata files.

These measures will contribute to Armstat's goals and performance indicators, as they show how Armstat meets users' needs and quantify the extent to which access to microdata contributes to users' research.

Method

Users have become more interested in statistical databases and survey microdata. It is therefore important to improve access to microdata and to provide this access from an online platform.

The National Data Archive (NADA) is an open-source microdata-cataloguing system, compliant with the Data Documentation Initiative (DDI) that serves as a portal for researchers to browse, search, compare, apply for access, and download relevant census or survey information.

Challenges and solutions

Researchers need data quickly, but some surveys such as the Integrated Living Conditions Survey (ILCS), Labour Force Survey (LFS), etc., are collected annually. Researchers are increasingly asking for more frequent, more detailed and more disaggregated data. This poses challenges in relation to sampling tools and statistical confidentiality, leading to the need for additional explanations from Armstat to satisfy researchers.

As the NADA platform was originally designed to present information in one language, difficulties arose during the work in presenting the website in Armenian. To present the website in Armenian there was a need to create a separate server.

Tools and platforms

Armstat has developed and launched NADA tool for Microdata Library (http://microdata.armstat.am/index.php/home), with the support of the Food and Agriculture Organization of the United Nations (FAO) within the International System for Agricultural Science and Technology (AGRIS) programme.

The Armstat Microdata Library is a collection of datasets on ILCS, LFS, population census and agricultural census and linked to the National Reporting Platform for Sustainable Development Goal (SDG) statistics (https://sdg.armstat.am/), Armstat (https://armstatbank.am/pxweb/hy/ArmStatBank/) and National Summary Data (https://armstat.am/nsdp/).

Microdata on ILCS and LFS are included in the World Bank Microdata Library.

Impact

The NADA microdata cataloguing tool gives the possibility to present microdata in a common format. The main advantage is that in addition to microdata, it is possible to display questionnaires, reports and other information related to surveys.

Relevance/value to the customer/stakeholder feedback

The NADA Data Catalogue is an open-source software designed for researchers to browse, search, compare, apply for access and download research data.

Comparability

NADA is an online cataloguing and dissemination tool of survey and census microdata and metadata that allows data producers to disseminate survey and census information in a secured environment, in compliance with their confidentiality regulations.

Lessons learned and recommendations

The NADA survey cataloguing software promotes the use of microdata and makes detailed metadata available in the form of a searchable online catalogue. It helps to place a focus on domains that are in high demand and hence aids efforts to inform the public about the publicly available files.

It helps to increase and improve data access, to obtain users' feedback.

The measures of value are important as the collected databases contain richer data than the published results (users may generate other additional outputs for their specific requirements).

The growing number of users and their positive feedback promotes the cooperation of Armstat with research community.

14. United Kingdom: Mentions of ONS outputs in Parliament

The overall aim of this form of measures is to measure the impact official statistics has on debates in the house of Parliament. By measuring the number of mentions, by implication, the measure shows how often official statistics are used in order to bolster arguments for and against policy.

Method

From the speeches made in Parliament, a transcript is written up and recorded in Hansard. This allows the transcript to be converted into an xml file format. This is important as it can then be scraped using a coding language such as R or Python. In this case, Python was used. The data is cleaned and processed to make sure there are no errors in the transcript such as repeated words or sentences. After this, a topic classification system was built to count how many times the ONS was mentioned during discussions in certain topics. Finally, using this information, a dashboard is created that displays the information clearly for users to see. Examples of the dashboard are below.
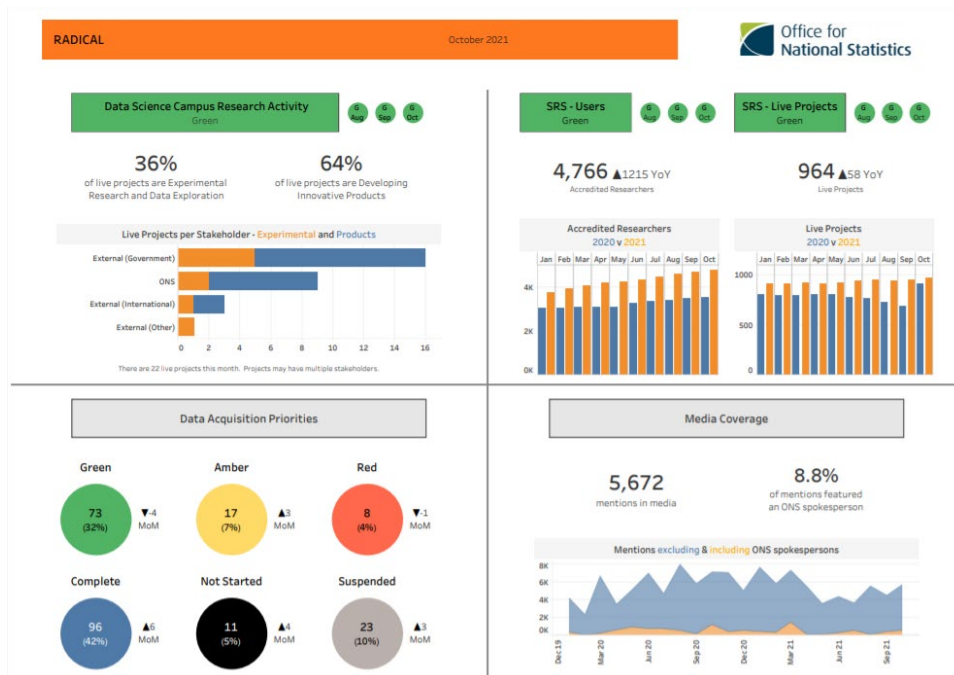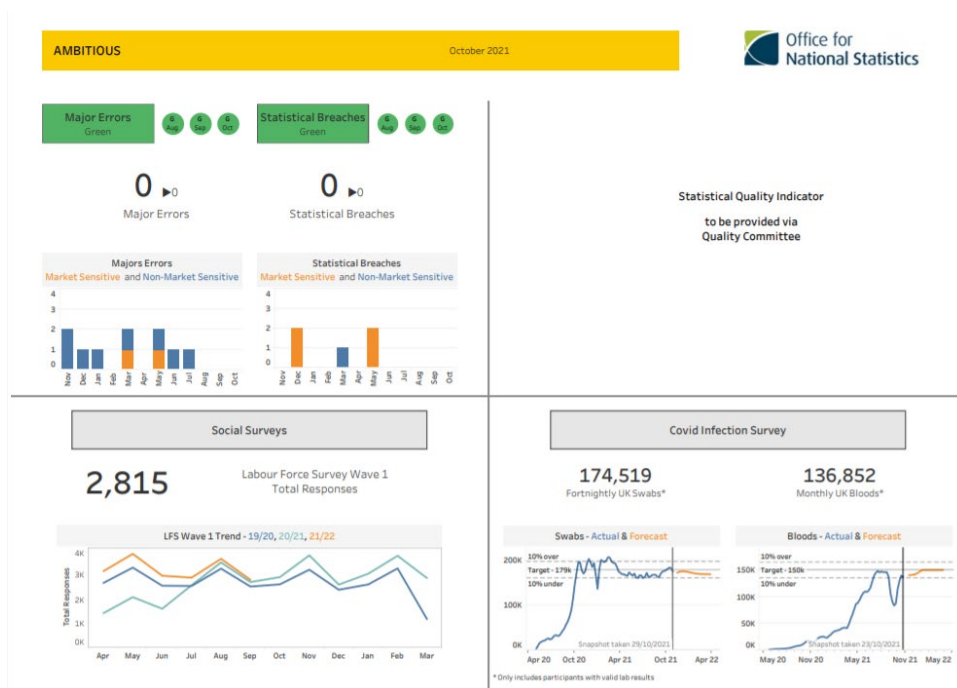
Challenges

Accessing data – overcoming network challenges

Early user engagement – sentiment not very useful

Natural Language Processing – learning & application

Topic classification – designing & evaluating models

Tools and platforms

Hansard; Python; Tableau

The dashboard is open primarily for internal management usage

Lessons learned

- Productionise dashboard – weekly updates, live data
- Include all data from UK Parliament, then add in NI Executive, Scottish Parliament & Welsh Senedd
- Automatic identification of topics with frequent/infrequent mentions
- Link up with OSR to look at how we might evaluate how our stats are used in parliament
- Expand approach to include govt policy papers
- Cross government possibilities
- Could be adapted to suit other government departments
- Evaluating use of our economic stats in private sector - board reports/annual reports

Long term trend

Monthly totals over time
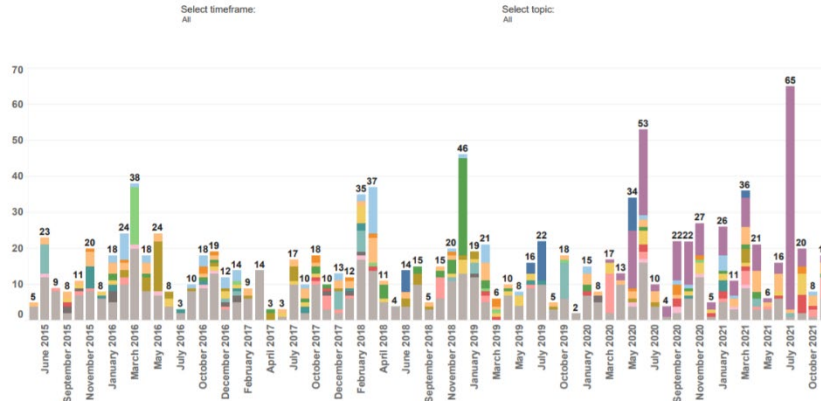
Long term trend

Monthly totals over time
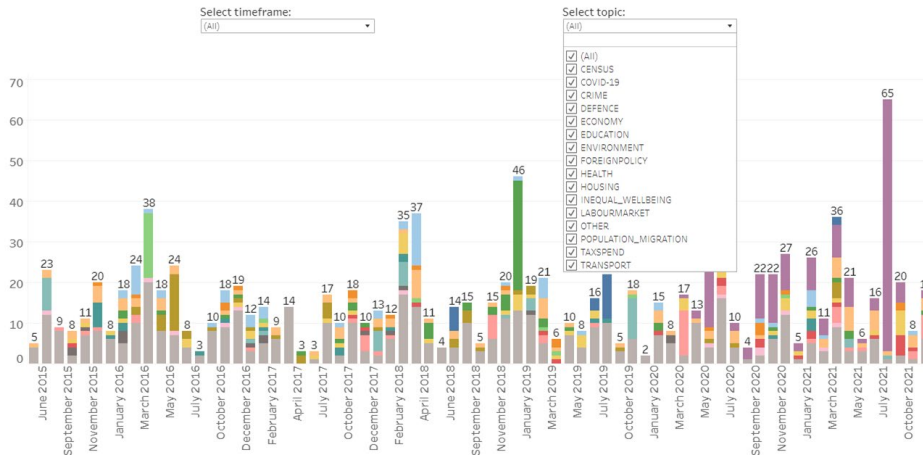
Mentions in Parliament graph from 2015 – current by month.

Mentions in Parliament graph from 2015 – current by topic.

15. Poland: Measuring value through educational activities

Number of participants in national and international statistical competitions in schools the implementation of educational projects by Statistics Poland is dictated by the need to popularize official statistics. Official statistics become more valuable to users if those users have a good understanding of them—for which educational activities are needed. Both quantitative and qualitative assessments are made to evaluate the quality and effectiveness of these educational projects. Reports are prepared on the projects and summarized in the organization's Annual Report on the Statistical Education Plan. The report covers the qualitative and quantitative aspects of the implementation of these educational projects. During systematically organized meetings, we share good practices and experiences from the implementation of individual activities and projects.

Method

Every year Statistics Poland prepares a Statistical Education Plan. The plan outlines the annual statistical education activities to be carried out nationwide by Statistics Poland headquarters and 16 regional statistical offices. Due to the special dimension of nationwide activities, they are subject to evaluation. Each of the projects, namely the Statistical Olympics and the European Statistical Competition, has specific goals, indicators and methods for assessing their implementation. Both objective and subjective indicators are produced, and assessments are both quantitative and qualitative. Both organizational and substantive parts of the projects are assessed. Evaluation is carried out at different stages and considers different aspects.

In the case of the Statistical Olympics (a competition dedicated to Polish secondary school students), surveys are conducted after each stage of the competition. Questionnaires are filled in by students and teachers. Additionally, quantitative reports on participants are prepared. At the end of the project, a report is prepared based on the questionnaires. The second dimension is the assessment of organization. In this case, the event is approached from the organizational and financial side. Finally, a report is prepared. Additionally, the number and structure of goals achieved is reported once a year. Organizational aspects are also discussed and improvements for the next edition of the event are analysed.

Challenges and solutions

The challenge is to select the right indicators and select data collection methods to match them. Surveys do not always meet all needs. Another difficulty is the inability to mobilize participants to fill in the questionnaires. As the response rate of the questionnaires declines (despite the fact that they are carried out online), the possibility of using them as a reliable source of information also decreases. Ultimately, attempts are made to mobilize participants to complete questionnaires.

Impact

All evaluation methods show us where are the areas to work on, or at least to analyse them again.

Engagement is relatively easy to measure and permits us to demonstrate the value of the educational projects using objective indicators. And the methods are effective. The numbers do not lie, and we

can observe an increasing tendency (year on year) when it comes to young people interested in statistics and taking part in our initiatives (besides the two competitions mentioned above, we organize hackathons and we participate in book fairs, scientific events and other initiatives organized by Polish cities in which statistical offices are located).

Shaping a positive image of official statistics, building relationships with teachers, promoting statistics among students, some of whom may become ambassadors for official statistics, and eventually professional users of official statistics, understanding statistics and its values – these are some of the direct results of the educational projects which demonstrate the relevance of those projects.

We have already carried out four editions of the Statistical Olympics and three editions of the European Statistical Competition. Each year we introduce improvements in the organization of these endeavours and receive positive feedback from participants and teachers.

Comparability

For the European Statistics Competition, Eurostat monitors the engagement of member states.

Internally, we draft reports each year, so we can see progress over time.

Lessons learned

It is worth making the effort to create indicators. This facilitates the evaluation of work and the improvement of projects for the future. Additionally, it is a valuable source of knowledge about how official statistics are perceived by a given group of users. In the case of statistical education, we focus on young people and teachers. Ultimately, we achieve the goal: popularization of official statistics. It is definitely worth building relationships with participants and teachers, creating a network of contacts. This pays off and increases the availability of our projects.

Recommendations

Assessment should be done regularly, be complete, relevant, and produced in a user-friendly form.

Case studies focusing on subjective measures

16. GCC-Stat: Satisfaction with products & services

GCCSTAT ensured the provision of statistical data to decision-makers and the public based on its annual plan. During the pandemic in 2020, GCC-Stat adapted its work by placing the priorities of decision-makers in its plan, which resulted in the creation of many related products. One such products of interest was the report on the impact of Covid-19 on the sustainable development goals in the GCC countries, and the impact of COVID-19 on health, social and economic aspects. The centre also created the Covid-19 Severity Index, which was meant to provide a simple and understandable measure of the trend and relative magnitude of 'severity', i.e., the severity of the situation today.

The numerous outputs produced by the centre were proportional to the periods of lockdown and the amount of time spent at home, whether these end-products were related to the pandemic or preparation of short summaries as an alternative to long detailed versions to make it easier to be read through smart devices. Additionally, the Covid-19 platform was set up internally in the centre to ease monitoring activity through smart devices.

Therefore, the importance of these efforts and outputs are required to be measured through monitoring the satisfaction and interest in these products from a beneficiary's viewpoint to understand the product values to the beneficiaries involved.

One of the most essential and core competencies of GCC-Stat is the preparation and provision of statistical data, information and indicators regarding GCC countries on a regional level that encompasses all of the GCC, rather than at a countrywide level. Therefore, those interested in aggregate data at the regional level are limited, which involves mostly policy and decision-makers, and a number of researchers and academicians. As for the major segment, the public, their interest depends on the occasion or event related to the requirement of statistics. Accordingly, customer satisfaction survey is the method of choice to reach the general public segment denoted above and to understand the extent of their satisfaction and the importance of the data provided to them.

Method

GCC-Stat used a questionnaire to survey customer satisfaction, and it was distributed in various official communication channels, namely, Twitter and WhatsApp to the public. As for the decision-makers, which are the beneficiaries of the specialized levels, they were provided the survey through e-mail.

Challenges and solutions

The major challenge faced was the high rate of no-response received from the questionnaires, which targeted segments of the audience (policy-makers and decision-makers) that did not fill out the questionnaires, and the only feedback we could receive from them were letters of thanks and appreciation, and thus monitoring the correctness of the decision to prepare and choose products and evaluate them with appropriate accuracy was considered another part of the challenge in addition to the no response of the survey.

In order to address this problem, it is possible to start reducing the number of questions to the bare minimum objective questions and to direct the questions more precisely to specialists of those segments only.

Impact

Communicating with customers to obtain the importance and value of these statistics by knowing the extent of their satisfaction and the ease of their access to information using the questionnaire it limits the decision may take to go ahead or not to continue producing these statistics in specific subject.

Yes, it may not bring about the desired result, but it can allow measuring the value of it from receiving numbers of additional requests and needs, whether from the GCC General Secretariat as requested services to display these statistics in platforms that can reach easily & clear or from regional Gulf or international organizations requesting building future cooperation

partnerships, or from news channels for interviews regarding one of the published information that caught their interest.

Lessons learned and recommendations

There should be selective measures and segmented as per regional and national used to measure the value of the statistics.

17. Romania: Official statistics evaluation

The National Institute of Statistics conducted an opinion survey in January-March 2019 addressed to users of statistical data. The survey aims at identifying the reaction of the users to the degree and the modalities of using the statistical data disseminated by the institute, as well as the confidence they have in the official statistics. The questionnaire aimed at receiving answers to a number of twenty-one questions, some of them optional, on how the NIS disseminates the results of its work in the media, but also questions regarding the ways to improve our institute's activity or questions about the image that the main producer of statistical data has at this moment. In this research, 105 respondents out of 164 persons to whom the request was addressed have send their answers. Respondents' structure includes pupils, students, PhD students, professors, researchers, journalists, members of commercial companies or NGOs as well as other unreported users of statistical data. It should be noted that all participants have previously accepted (according to the GDPR) to benefit from various means of communication of press releases, statistical publications, surveys, etc. and to be included in the database of the INS Communication Department. The questionnaire was developed using the framework provided by the GOOGLE DRIVE platform and was afterwards posted on the institution's website. The processing was carried out in March 2019.

II. Research results
2.1. Respondents

105 people responded the survey, out of whom 33.3% are in the age group 45-59 years, 25.9% were aged 35-44 years, the percentages dropping to 7.4% in the 15-24 years segment consisting of students in lower and upper secondary education, as well as Bachelor's and Master's level students. Moreover, most of the participants in the survey are women (about 52%).

1. Please tell us about you (we will not publish personal information)
   Age group:
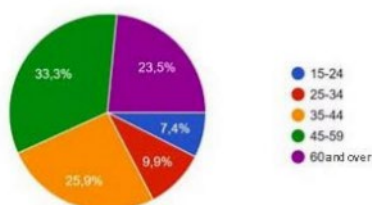
From the standpoint of the education attainment level, 38.3% of respondents graduated Master's degree or are in the process of completing this form of education, 32.1% have acquired a doctoral degree, 24.7% are Bachelor's degree graduates and a 2.5% have only secondary education.

2. Sector/Domain:
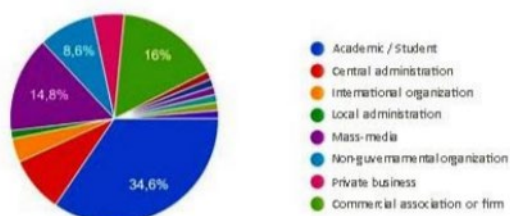
Method

The vast majority of the collected answers proved that 50.6% of respondents used the statistical data necessary in their activity due to data demanded by the nature of their jobs (this category includes journalists), followed by those which use statistical information in the education process with a share of 34.6%, and by those belonging into scientific research at a rate of 33.3%. About the same level, namely 32.1% is found for the respondents using statistics for reporting or analysis purposes, followed by those using information for market and business analysis (28.1%) and personal interest (16%). A relatively small percentage of 1.2% stated that they use statistical data or require the assistance of NIS in particular for obtaining industrial classification codes in view to classifying the economic activities in sectors corresponding to their specific activity.

In a brief analysis, one could notice that the majority of the respondents chose the "satisfied" option to questions referring to statistical data:

(correspond to your needs 43; are accurate 41;- are trustworthy (34 marked the "very satisfied" option);- are not influenced by the political environment 39; are data presented in a clear manner (32 marked the "very satisfied" option); are easy to find (accessible) 31; are easy to understand 36; are published in due time 37; are sufficiently detailed 43; allow for comparisons 40; are updated 41; are frequent enough 41).

The following answers were recorded regarding the additional question on how to improve the statistical data: - Providing Population and Housing Census data at the level of the villages that are part of communes and of the settlements that are part of the municipalities and towns. - Demographic information should be more diversified and persuasive. - I would like the statistical data to be published much more quickly, there should be no major time lag between the publication and the reference period of the content. I am also dissatisfied with the fact that in 2019 are published relatively old data (2017).

Comparability

UK, Ireland and Armenia have carried out similar evaluation surveys

III. Final conclusions

Given that the research was aimed at the institutional framework established for the evaluation of official statistics, the opinions collected from the respondents regarding the public perception about NIS can be also derived from the answers below:

18. How would you describe your overall opinion about NIS?

- I would speak well about NIS without being asked
- I would speak about NIS if somebody ask
- I would be neutral about NIS if somebody ask
- I would be critical about NIS if somebody ask
- I would be critical about NIS without being asked

Approximately 52% of those interviewed replied that "they will speak well about the NIS if someone asks about" and about 30% "would speak well about the NIS even unrequested", which proves the high level of trust that our institution enjoys in the present.

A share of 14.8% said they "would stand neuter" if they have to express an opinion about the official statistics from Romania. Only 3.7% consider themselves to be critical regarding the NIS.

The perception of the NIS and official statistics is also reinforced by the responses about the likelihood of recommending NIS as a source of information and trust to others.

19. How probably is to recommend the statistical data and services provided by NIS to a friend or a collegue (using a scale of 1 to 10)?
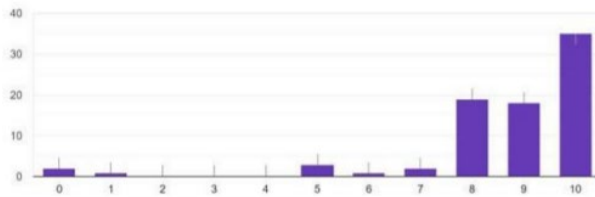
18. United Kingdom: Awareness of brand and messaging

The ONS required a more timely and relevant measure of its impact and value amongst public audiences. An existing study 'Public Confidence in Official Statistics,' commissioned by the UK Statistics Authority, runs once every two years, which although established and well regarded is less focused on the ONS and is not frequent enough to generate the timely recommendations this measurement aims to inform.

While the measures at this time do not directly contribute to headline Key Performance Indicators, they have been used to develop recommendation and work is underway to incorporate more direct evaluation of project and programme performance.

The measures are gathered in a public survey, produced by an external agency commissioned by the ONS.

Method

The ONS 'Brand Survey' is a questionnaire, commissioned by the ONS, repeated on a quarterly basis (April, July, October, January) with a sample of around 2,000 respondents. The questionnaire is included as part of an omnibus survey conducted by a reputable external agency. The sample is nationally representative and is selected from a large panel of participants, registered with the external agency.

Challenges and solutions

A prerequisite to defining an appropriate question set was establishing an agreed understanding of desirable audience attitudes and behaviours to measure success against. To do this the ONS defined a high-level list of audiences and 'think, feel, do' statements for each. The public was split into two: 'public users' and 'public providers' to represent the two main ways in which the public interacts with the ONS; as users of its data and providers of data respectively.

Another challenge was to recruit and retain a large enough panel of participants, which also reflected the nation's demographics. This was resolved by outsourcing the fieldwork to a reputable agency with an established list of participants from which we could ensure a sufficient sample size (2,000 respondents) consistently.

To coordinate a consistent approach, and to ensure ongoing funding for the measurement, work is underway at the time of writing to develop a consistent organization-wide approach to conducting this study. This will allow greater flexibility within the survey to include questions relevant to projects, programmes, and any work carried out in response to developing situations, for example the organization's response to the COVID-19 pandemic. It will also ensure value for money by ensuring that the survey work is focused on strategic objectives; the measurements must have a purpose.

Impact

This has proven to be a useful approach to measuring value as it directly asks the public questions around their perceptions of the ONS' value.

The measures are easy to communicate across the organisation and are simple to understand, providing a clear picture of organizational reputation and perceived value, which is accessible at all levels of the organization.

Once established, the measure has been consistent and easy to replicate without being prohibitively expensive.

Lessons learned

The main limitations of the approach that the ONS has adopted are:

- The fieldwork is conducted online, which excludes audiences without internet access
- The panel is signed up to an external agency to take part in surveys – the respondents are already engaged with survey work so might not represent disengaged audiences
- The measure is designed for internal use only and should not be used to demonstrate value to stakeholders or public audiences (although the less frequent Public Confidence in Official Statistics study is published publicly
- The measure alone may not be enough to indicate what action is needed to correct any undesirable deviation from expected measured results, although this can be remedied with follow-up focus groups, workshops, or investigation albeit usually at additional cost.
- These measures have direct relevance to value to the customer and gathers public audience feedback.
- It is designed to understand and demonstrate perceptions of value amongst public audience groups. As an internal-only measure, the measurement is designed to be useful to decision makers within the organization to measure performance and inform action.
- Since its introduction the Quarterly Brand Survey has grown in profile within the organization, particularly as work continues to centralise the approach to conducting the measurement. While primarily useful for senior leadership to gain an overall view of organizational impact, the structure of the question set looks to unpick elements of value to inform action at a working level.
- A large part of the success of these measures is down to its accessibility in how easy the measures are to understand. By using a variety of platforms to share the measures through internal news and in presentations at meetings, the measures draw on wider organizational capability and experience to generate action.
- As an example of drawing on wider organizational capability: in the early stages of implementation, it was particularly useful to work with colleagues with expertise in social research to ensure the question set and overall methodology were appropriate.

19. Armenia: Measuring users' perceptions of political independence and trustworthiness of official statistics

Armstat proposes to measure value through how statistics are perceived as objective, impartial and transparent and that they are free from political influences. They also show how Armstat is implementing the UN Fundamental Principles of Official Statistics, the European Statistics Code of Practice and the ISI Declaration on Professional Ethics.

Method

Official statistics in the conditions of huge information flows, growing new non-traditional data sources and advanced information and communication technologies needs to have a strong modernized legal and institutional setting to guarantee the independence, integrity and accountability and assure data quality and data security according to international standards.

Statistical legislation is a key condition for an efficient statistical organization that supports the exclusive position of Official Statistics while strengthening its professional independence, based on the UN Fundamental Principles of Official Statistics.

Modern statistical legislation supports in further strengthening of national statistical systems, modernizing of official statistics and presenting the full value of official statistics. In this respect the Generic Law on Official Statistics (GLOS) developed jointly by the UNECE Statistics Division, UN Statistics Division, EFTA, Eurostat and experts from several countries, provides a model law that could be adjusted to national circumstances.

Challenges and solutions

Independence requires adequate resources, which is always a problem.

Tools and platforms

Armstat introduced the new Law on Official Statistics on 9 April 2018 that is fully based on the GLOS. Armstat is a state body implementing functions aimed at public interest that is independent in its activities, and is radically different from state institutions with certain political orientation. The guarantees for not involving official statistics in conflicts between political, administrative and departmental interests are defined by the Fundamental Principles of Official Statistics. The Law provides a strong legal basis for Armstat with regard to political and professional independence through a higher degree of managerial independence of the statistical system.

Impact

The State Council on Statistics is the supreme body of governance of the NSS, including Armstat, for the development, production and dissemination of official statistics. The State Council on Statistics is actually composed of producers of official statistics.

- The State Council approves the principles of the development, production and dissemination of official statistics, adopts legal acts in statistics, which are subject to mandatory implementation across the country and approves an annual and five-year statistical programs and reports on programs implementation.
- Having a supreme body of governance with the right to adopt legal acts in statistics provides a high position for statistics in public administration. The Law grants a strong managerial autonomy in the planning and implementation of statistical work.
- The law protects the President of Armstat and Council members against an inappropriate dismissal during their term of office, as they are appointed for a six-year term and Government changes have no influence on them, and this is an institutional safeguard of political and professional independence. President and Council members may not be members of any political party.
- Relevance/value to the customer/stakeholder feedback
- It is relevant and value for the public, since the goal of politicians is regular elections, those goals may not coincide with public goals.

Comparability

It is a great advantage to have a State Council on Statistics having the right to approve annual and multiannual statistical programmes.

Lessons learned and recommendations

The GLOS provides the strong foundations for building public trust.

It is recommended to countries to use the GLOS as a standard that could be adapted to their legislative peculiarities, considering countries Constitutional order, culture, traditions, etc. Plus, it is recommended to have a Governance Model with a supreme body of governance as the State Council on Statistics (the Managerial Board) having a strong managerial autonomy.

Links and references

GENERIC LAW ON OFFICIAL STATISTICS for Eastern Europe, Caucasus and Central Asia, UNECE, UNITED NATIONS, New York and Geneva, 2016 (https://www.unece.org/index.php?id=45114)

Guidance on Modernizing Statistical Legislation, UNECE, UNITED NATIONS, 2019 (http://www.unece.org/index.php?id=51141)

Law on Official Statistics of the Republic of Armenia (https://www.armstat.am/file/doc/99514643.pdf)

Objective reasons of the lack of trust in official statistics (https://www.armstat.am/file/doc/99476558.pdf)

20. Ireland: Users of official statistics

Method
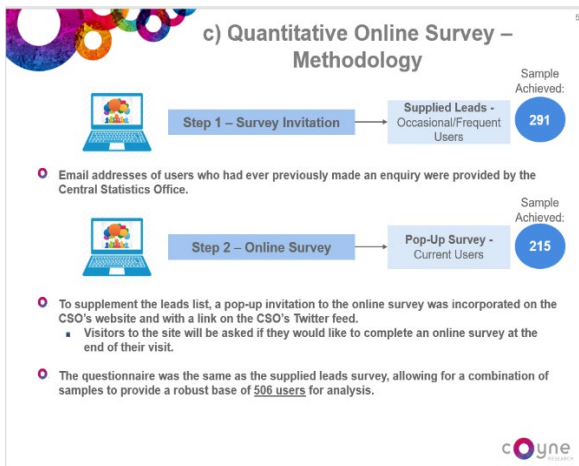
Impacts

Section 1: Customer profile. This section looked at the customers using official statistics including attributes such as:

- Their last contact with CSO
- The means by which they previously contacted CSO (website, email, phone etc.)
- Nature of the last enquiry (Research, Academic studies, Business or market analytics etc.)
- Current employment status of users
- Type of industry the users work in e.g., Finance, politics, academics etc.

Section 2: Frequency of using statistical information

- Rating of ability to calculate, interpret and manipulate statistical data.

- Repertoire of statistical source used
- Brand momentum pyramids (See below)

Section 3: Usage of CSO statistics

- Reasons for contacting CSO
- Devices used to contact CSO
- Channels used for alerts for new CSO statistics
- Satisfactions with CSO statistics
- Reasons for dissatisfaction with CSO statistics
- Reaction to CSO website and publication

Section 4: Attitudes towards CSO

- Influence of CSO on personal/ organizational decision making
- Net promotor scores (see below)
- Likelihood to recommend CSO
- Brand image association

Comparability

UK, Mexico and Armenia have carried out user surveys

21. Mexico: Measuring value through social perception

Through the Study Social Perceptions of INEGI, we measure three dimensions that provide three different indicators:

- **Knowledge:** Knowledge of institutions including INEGI, what have you heard? and where have you heard?
- **Use:** Use of INEGI Information, What INEGI Information have you used the most; What have you used it for; frequency of use, usefulness of INEGI Information as well as where you obtained the Information.
- **Trust:** Social trust, trust in INEGI information, usefulness of information for the design of public policies, perception of veracity in INEGI information, perception regarding the independence of INEGI, transparency of information published by INEGI, evaluation of INEGI by other institutions.

The Social Perceptions of INEGI study is carried out following the international recommendations of the OECD for statistical institutes on confidence in official statistics, which is carried out every four years by an agency other than INEGI, in order to give greater reliability to the data obtained. It was first held in 2017, with continuity in 2021.

Method

The Social Perceptions of the National Institute of Statistics and Geography study (PSINEGI) was carried out in 2017 and 2021, by the National Autonomous University of Mexico (UNAM), at the request of INEGI.

This study seeks to measure social perception of INEGI in three dimensions: knowledge, use and trust, through the application of research techniques and tools, which are detailed below:

Household survey, probabilistic at the national level and aimed at population 15 years and older, with a sample with confidence levels of 95%, a design effect of 3.5, a proportion of 14%, a relative error of 15% and an expected maximum non-response rate of 35%.

B. National survey of heads of the economic units of the domains of large companies: micro, small and medium-sized enterprises, as a whole (MIPyMES); educational services; and financial and insurance services. With a confidence level of 95%, a relative error of 10%, an expected non-response rate of 40% and a differentiated proportion by study domain: for large companies, 36%; MSMEs, 9%; educational services, 39% and for financial and insurance services 26%.

C. As a complement to the project, through qualitative method techniques, 27 focus groups and semi-structured interviews were carried out in specific cities representative of each user segment represented.

The complete results and detailed deliverables of the Social Perceptions Study on INEGI 2017 can be downloaded and consulted on the https://ijpc240.juridicas.unam.mx/ site. The 2021 results are still being prepared (November 2021).

Challenges and solutions

In 2017, we did not have a reference point to design the conceptual framework of the surveys, so it was decided to carry out the 27 focus groups, from whose results a reference framework was obtained to conceptually design the surveys, both in households and in establishments.

In 2021, the COVID19 phenomenon forced the investigating team to adapt the field tasks times, to adjust the work schedule and incorporate the new sanitary measures in order to obtain reliable results comparable to those of 2017.

Impact

INEGI was able to know the social perception in its dimensions of knowledge, use and trust, with which it was possible to identify the value arguments to be taken up for the contents of communication campaigns and promotion of the use of information.

In addition, the results obtained in 2017 were adopted by the institute's senior management as an input for the institutional strategic planning of the following years. We plan to do the same with the 2021 results.

With the results obtained by this study, the international recommendation by the OECD is complied with and, in addition, we've started a series of time that will allow us to monitor our performance before the eyes of the Mexican society.

The results of the 2017 study have been used as part of the strategic planning for the years 2018, 2019 and 2020 by the senior management of INEGI, specifically in the Institutional Strategic Program.

For transparency purposes, the results of the INEGI Social Perceptions Study were made available on a website administered by UNAM: https://ijpc240.juridicas.unam.mx/

Below is a comparative table with the main results of the 2017 study, showing the results obtained by some peer organisms:

KNOWLEDGE, USE AND CONFIDENCE IN OFFICIAL STATISTICS, INEGI VS WORLD

NSO	KNOWLEDGE	USE	CONFIDENCE	SOURCE
INEGI	82.4%	14.2%	85.6%*	Percepciones sociales del INEGI, UNAM, 2017.
UK National Statistics Institute	71%	25%	90%	Public Confidence in official statistics – 2016 Ian Simpson. NatCen Social Research, UK.
Statistics New Zealand	97% *	31%	80%	http://archive.stats.govt.nz/about_us/what-we-do/our-

				publications/use-trust-in-oss-2017.aspx
Denmark	-	-	97%	Public Confidence in official statistics – 2016
Australia	-	-	93%	
Sweden	-	-	84%	Ian Simpson. NatCen Social Research, UK.

* Percentage of people that approve of the NSO in terms of confidence (6 or more in a 1-10 scale). Other countries ask directly if people trust or not in the NSO.

Lessons learned

It is very positive to carry out this type of studies through a third party, since this generates more confidence in the results.

It is good to measure separately the perception of the population in households and that of economic units. It is worth complying with the international recommendation (OECD) to measure the three indicators (knowledge, use and trust), and also to measure those dimensions that by the national reality itself add value, asking specific issues.

Having qualitative exercises such as focus groups serves as a basis for verifying the evaluation requirements of the quantitative ones.

This exercise allows to profile in greater detail the users of the Public Information Service, as well as to lay the foundations to reorient the design of information products and services.

Recommendations

- Continue with the surveys through an external body to the NSO to guarantee impartiality in the results.
- Complement the surveys with qualitative evaluations in order to refine the evaluation instruments to be applied in the field in housing and economic units.
- Conduct surveys separating the areas in households and economic units.
- Cover basic dimensions of knowledge, use and trust.
- In the surveys, include topics relevant to the national statistical agency in accordance with the national reality and the objectives of statistical literality and the others that the organization has.
- Refine the classification of user segments to better guide the design of the study.

References

The complete results and detailed deliverables of the Social Perceptions of INEGI 2017 study can be downloaded and consulted on the https://ijpc240.juridicas.unam.mx/ site.

22. Poland: App game

Poland's Geostatistics Portal is a modern solution for the cartographic presentation of data obtained in censuses, namely the Agricultural Census 2010 (PSR 2010) and the Population and Housing Census 2011 (NSP 2011) and also from the Local Data Bank. It is designed to collect, present and provide information to a wide audience, including public administration, entrepreneurs, individual users and research institutions.

This comprehensive solution is tailored to European standards, and all data, by way of processing, is presented in a depersonalised form, preserving statistical confidentiality.

Method

Portal Geostatystyczny (GEO.STAT) is a mobile application that gives access to statistical information provided by the Central Statistical Office of Poland.

The application makes it possible to:

- determine your current location,
- access popular statistics in a specified location,
- select or search for topics from the Local Data Bank (BDL) in an intuitive way,
- create customizable choropleth maps,
- view the thematic map's legend,
- customize the map composition,
- display background data such as administrative boundaries,
- present population distribution in a kilometre grid,
- present external Web Map Services (OGC WMS).

The number of users of the app is measured in order to give an indication of how many people are using official statistics.

Tools and platforms

Portal Geostatystyczny (GEO.STAT)

Users of the app can leave reviews to give feedback on it. This is useful as the users can request updates on the statistics in the app which may give an indication of how often statistics should be produced for the general public. If not, many people are using the app and aren't asking for regular updates then it may be that official statistics might not be in demand when looking at the general public. One area where the app may fall short is that professional or academic users may go straight to official sources such as websites rather than look into the app. Therefore, the app only really reflects the use of official statistics by the general public and not academic or professional users.

The user manual can be found here: https://geo.stat.gov.pl/documents/20182/0/Podrecznik_uzytkownika_v1.pdf/f2191de7-565a-4cd2-96d0-4c05a993ca8f

Narzędzia dostępne w Edytorze wydruków

Dodaj prosty tekst — - dodanie prostego tekstu do kompozycji mapy

Dodaj zaawansowany tekst — - dodanie tekstu, dla którego można zmienić wielkość, kolor i krój czcionki, styl, położenie, itp.

Tekst – menu kontekstowe — - usuwanie wybranego tekstu

Tekst

Przeglądarka Danych Geostatystycznych

Prosty tekst

Zaawansowany tekst

Dodaj prosty tekst | Usuń

Dodaj zaawansowany tekst

Dodaj mapę — - dodanie nowej ramki mapy z bieżącym widokiem mapy w aplikacji

REGION PÓŁNOCNY woj. kujawsko-pomorskie

REGION PÓŁNOCNO-ZACHODNI

woj. mazowieckie

REGION CENTRALNY

POLSKA

woj. łódzkie   woj. lubelskie

woj. świętokrzyskie
REGION WSCHODNI

REGION POŁUDNIOWY
woj. śląskie

woj. podkarpackie

Screenshot of the app in use as per the user manual

Comparability

Netherlands also has a statistical app.

23. Slovenia: Statistical app game 'Heroes of Slovenia'

Description of the game: "Heroes of Slovenia" is a multiplayer game based on Slovene and Slavic mythology. The goal of the application is dissemination and popularization of statistical data (especially among young people as potential future users of our data). The main purpose of the game "Heroes of Slovenia" is to bring Urban Audit data about our two largest cities, Ljubljana and Maribor, closer to younger people and at the same time to increase the awareness of the official statistics. The content in the game consists of general knowledge, Urban Audit data, and statistical theory (for example: "What is modus?"). There are two reasons why we decided to include additional content and not just official statistics. The first reason is that we want to encourage our application users to learn more about Slovenia, not only about its statistics. The second reason is more practical. We did not want to overwhelm the users with purely statistical content, because that could lead to premature abandonment of the game.

The only thing we measure is number of downloads of the app.

Method

As mentioned before: the only thing we measure is number of downloads of the app. This method is simple, reliable and cost-free.

We also monitored media references of the app (number of articles, mentions in the media about our app). This is for internal use only as this is very subjective indicator, which is difficult to define and evaluate.

This measure is not so important for SURS as an organization but is a good to know whether/how much the app is in use.

The most logical measure to compare is the number of downloads. But there is dilemma of comparing different apps: can we compare number of downloads for apps that are probably very different? They can be similar, but can we compare them?
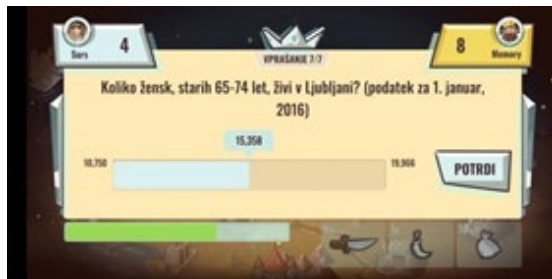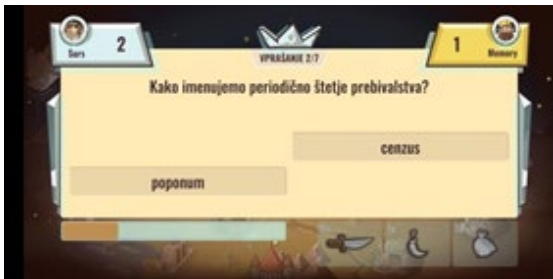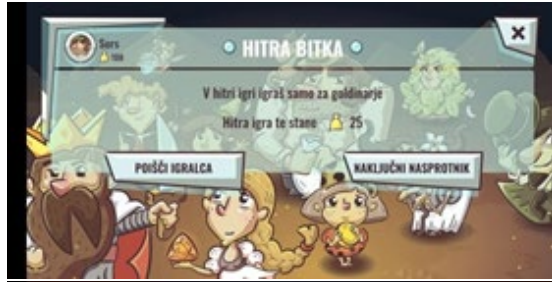
Case studies focusing on monetary measures

24. United Kingdom: Census benefits valuation of the 2011 Census

As producers of official statistics there is a need to put together robust business cases setting out the value and benefits to obtain funding and justify work. The logical and qualitative benefits of producing statistics are often clearer and it's easier to point out a number of essential uses for them, which are often underpinned by legislative requirements. However, statistics producers often need to go further than this by quantifying the benefits delivered in cash terms. This is a challenging area because "statistics in themselves don't deliver benefits - it's the use of statistics that delivers benefits through better, quicker decisions by governments, companies, charities and individuals.

 A full business case approval was provided in July 2019, covering the Census and wider transformation programme activity

The vast majority of benefits identified are user benefits of Census data

Method

The economic appraisal for the business case was aligned and developed on "The Green Book" best practice (HM Treasury's central government guidance on appraisal and evaluation). With benefits identified in line with ONS and wider Government project delivery best practice. This case study focuses on looking at the Census business case and its benefits.

Identifying the benefits

There were four types of benefits categorised in the business case:

- Stakeholder Value – received by users as a result of having Census data; also reduced respondent burden benefits
- Cash releasing benefits – as a result of more efficient processes in data collection
- Costs avoided – as a result of wider transformation and technology re-use
- Income Generation – through wider Programme transformation activity.

The Full Business Case sets out that the Census and wider transformation activity will derive benefits to society of £5.6 billion through to 2031 (post-optimism bias); a return on investment of almost 6:1

The benefits of Census data to users comprise 97% of these benefits.

Different users of census data

To inform the economic case, a stakeholder consultation exercise was undertaken in 2017/18, identifying the potential users of data and how they derive benefit from data (theory of change approach)

Three main groups identified:

- Central Government
- Local Government
- Private Sector organizations

Within these groups, the techniques used to value the potential impact varies on a case-by-case basis.

Three main benefits identified:

- Application of data to allocate resources and funding
- Use of small area data in public policy research
- The role of Census data in capital investment decisions

A further benefit on macroeconomic decision making was included in an earlier iteration of the business case, but later removed due to insufficient evidence of attribution of impact to Census data

Central Government benefits estimated at £472m through to 2031/32 (post-optimism bias).

Valuation Techniques

Application of data to allocate resources and funding	Drawn upon research undertaken as part of the Beyond 2011 programme Testing the net welfare loss of spending misallocation compared to where it is needed
Use of small area data in public policy research	Assumed that the research is worth at least the funding devoted to it Consultees asked to identify how much was spent on public policy analysis, dependent on small area data
The role of Census data in capital investment decisions	Two main approaches used: the costs of delay that absence of Census data would have on major investment programmes The value placed on data in the location of capital investments in the right area; and the proportion of the data used which is Census data

Local Government

Stakeholder consultation with a sample of local authorities to verify/refresh previous research undertaken in 2012 regarding the use and value of Census data

Calculation approach drawn upon CEBR research on the value of big data to UK; capital and revenue expenditure by local authorities in England and Wales; and a sector-by-sector approach on reliance on Census data on decision making

Local government benefits estimated at £1.66 billion through to 2031/32 (post-optimism bias).

Valuation approach

CEBR report on the value of Big Data to the UK economy was estimated at £1.7 billion per annum across Central and Local Government (2016). Local government was assumed to be half of this.

Identification of policy areas where consultees have indicated where Census data is used to inform spending decisions

Allocation of a greater weighting to policy areas where there was a greater reliance on Census data compared to other sources. Identifies a greater reliance on data, for example on healthcare compared to waste services and library provision.

Private Sector

Stakeholders from 11 industries contacted to understand how Census data is used to inform decision making, working in partnership with the Demographic User Group

Benefits from individual organizations upscaled to a rough order of magnitude for the relevant sector, taking account of firm's market share and similarity of activity to other businesses in the sector

Total private sector benefits estimated at £3.37 billion through to 2031/32 (post-optimism bias).

Valuation Techniques

Three main categories of benefits:

Census data being used to inform decision making	Sectors such as retail banking, utilities, insurance, on where to locate services
Census data as an input to geo-demographic resellers, market researchers and other consultancy firms	The use of data for firms in these sectors who then derive value added from it
Census data used to inform marketing and advertising of products	The contribution of Census data to all data used in marketing and advertising

Each individual sector was appraised with its own method, drawing upon stakeholder consultations and understanding how firms used and derived benefit from Census data

Optimism Bias and Non-quantifiable benefits

To align with best practice, optimism bias has been incorporated for all benefits

Using an approach based on Scottish Enterprise guidance, aligned to the Green Book, the confidence respondents held on the assumptions used to develop their stated benefit value was tested

A range of optimism bias estimates between 0% and 40% was used

Across the different stakeholder groups, optimism bias ranged between 16% and 27%

Similar to optimism bias, respondents identified a range of other potential benefits they could derive from Census data, but could not easily quantify

An uplift ranging between 0% to 30% was applied for each stakeholder, averaging between 14% and 21% across the stakeholder groups

Finally, range of sensitivity analyses were undertaken testing various assumptions on optimism bias and non-quantified benefits

Evaluation Activity

Longitudinal follow-up surveys with stakeholder departments, local authorities and private sector companies expected to take place from 2023/24 onwards

Evaluation planning to be undertaken in more detail from Autumn 2019, developed in line with Magenta Book guidance (HM Treasury's guidance for evaluation).

25. Australia: Valuing the Australian Census

This work was undertaken independently of ABS by Lateral Economics. ABS assisted in the research by providing data but did not influence Lateral Economics in any of their decision making. The measures employed are useful to ABS, as it shows investment in carrying out the census has some value and most likely returns far more than its cost. The proposed method of measurement has been used by Statistics New Zealand and ONS.

Method

This case study looks at the benefits of the Census in three categories:

1) Major uses of economic value

2) Minor uses of economic value (what is being called 'the long tail')

3) Predominantly non-economic uses.

As with similar studies elsewhere, most of our effort has involved providing an indicative valuation of the first category of benefit. An economic value has been imputed to the second category more summarily. The value of the third category cannot responsibly be quantified but is of major significance. The Census provides politically independent informational infrastructure that helps safeguard the integrity of our federal system of government and thus the capacity of Australia's democracy to represent its people fairly.

The process included: Desktop research (UK and NZ studies on the value of a Census, ABS resources on the Census, websites and reports documenting the uses of Census data, etc.); engaging widely within the ABS, including with members of the senior executive.

Speaking with a broad range of stakeholders (45+), in the public, private, and non-governmental sectors across Australia and internationally (see Appendix A for more detail), including: Federal government policy and program areas, State government policy and program areas, o Private sector firms and industry groups, Academics, and Office for National Statistics, UK.

We calculated the value of the Census by comparing it to a world in which the Census ceases being compiled and as a result, those currently using the Census make use of the next best existing alternative data series obtainable. This was consistent with the methodology of earlier studies in the UK and New Zealand, so it facilitates comparison. Further, the specification of an alternative scenario in which, over time, alternatives to the Census were developed, would have been a considerable undertaking, only possible in close collaboration with ABS and other stakeholders. Not only was this quite unrealistic given the resources and time available for this project, but the right place for such a project would be in the context of much wider strategic considerations for the ABS and Australia's data services.

It should be recognized that this counterfactual was explored by us as an analytical construct rather than a practical option being considered by us or the ABS. While statistical agencies worldwide are exploring ways in which Census-equivalent data could be generated, the ABS made it clear to us that there are no plans to change the nature of Census taking in Australia by, for example, moving away from the current 5 yearly Census model.

In our analysis, a widely reported benefit of the Census is more accurate Estimated Resident Population (ERP) figures at the small area level. If the Census was terminated, the ABS would continue to produce ERP estimates, but their accuracy would degrade without Census revisions. As illustrated in Figure 1 below, we group major quantifiable value into five categories, albeit with some cross over between them: The methods build upon previously employed officially commissioned studies in New Zealand and the UK.

Figure 1 – Flow chart of Census value streams

Source: Lateral Economics based on research and consultations
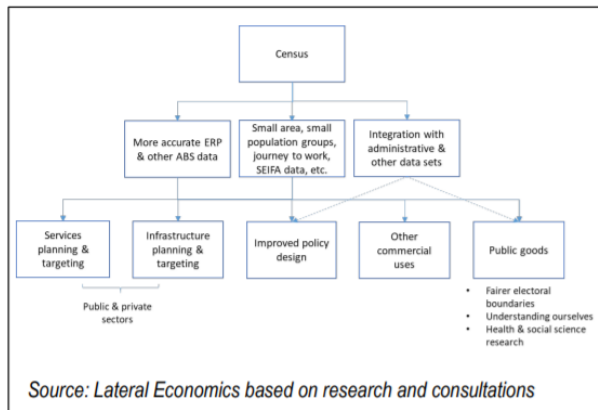
Challenges and solutions

Although it is impracticable to estimate each of the 'long tail' of Census uses directly with any kind of precision, their aggregated benefit could be high for several reasons.

• the Census is highly accessible to non-specialist researchers and users

• Census-related data is used with great frequency whenever anyone seeks to describe or understand aspects of small Australian communities or geographies.

• While many of these uses would be of low and very low value, some would be used in research which could give rise to new knowledge (and/or greater confidence in existing knowledge) of unpredictable and sometimes considerable value. We assume, somewhat arbitrarily that the long tail generates 25% of the value of other uses, though we think this is conservative. It could easily be several times this figure*.

Figure 2 – Stylised illustration of a long tail relationship

Value from individual uses of Census data

20%

Proportion of individual uses of Census data
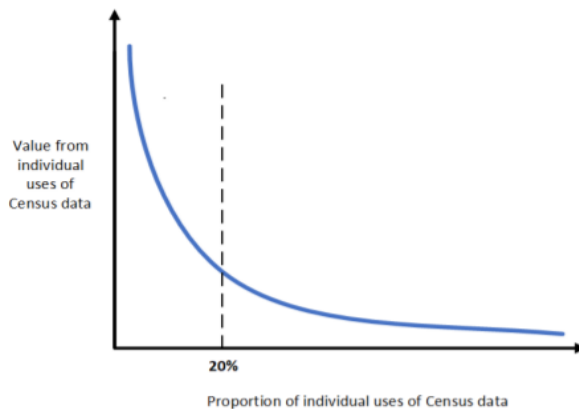
*This may be justified by the so-called 80-20 rule first articulated by the Italian economist Vilfredo Pareto who documented his surprising discovery of a range of economic distributions following a power law. As he showed in a range of countries, approximately 80% of the land was owned by 20% of the people. If this relationship holds, the benefits arising from the 80% of (more minor) uses will generate around a quarter of the value generated by the 20% of major uses which we have quantified

Impact

This independent report by Lateral Economics found benefits of Census substantially outweigh its cost. The estimations suggest that the benefits of running the census outweighs the costs in the order of $6 of economic value for each $1 it costs. This does not include unquantifiable benefits associated with fairness and integrity of government and society. The report demonstrates a clear link between the census' value and public perception of official statistics.

The approach used is effective as it breaks up value into 3 sectors (Major, Minor and non-economic) with each section providing its own strengths and weaknesses with the overall measurement approach. For instance, Major sectors rely more on official statistics than minor sectors, this is useful information as we can then investigate who minor sectors rely on for information (If at all) and could these alternative sources be useful for major and non-economic sectors.

A short fall of this approach is the difficulty in communicating the measurement and its use in the future (i.e., is the approach consistent?).

Relevance/value to the customer/stakeholder feedback

Data is valuable when it is used and generates new and useful knowledge. Stakeholders use census data when they are trying to understand size and distribution of population and the statistics within sub-group. The census can also be used to see why policy changes have been made – being able to set a value of statistics makes understanding statistics easier for stakeholders. However, understanding how it has been valued and communicating that might be an issue to consider, as if the valuation is not understood then it may affect the public's perception of its reliability. The census generally is better for stakeholders as other state government administrative data has more restrictions and therefore not as readily available. With the inclusion of aboriginal people in the Australian census in

1971, the valuation of statistics could be useful to them in understanding social policy changes and their demographic.

Comparability

Stats NZ and ONS (UK) have both taken similar approaches of valuation to the ones carried out in this report.

Lessons learned and recommendations

We estimate around $666 million of gross annual value in total. Adjusting this by an additional 25% to take account of the 'long tail' provides an annual estimate of over $800 million. It should be considered indicative rather than definitive, given the assumptions that were necessary to generate the results. Against these estimated benefits, we estimate the Census has an economic cost of around $670 million every five years. This comprises:

• the direct resources utilized measured by the budgetary cost.

• a deadweight loss associated with the ABS' taxpayer-funded costs; (this was not included in either the analyses of the costs of UK or New Zealand Censuses.)

• the time used by Australian households to complete Census forms, whether in paper or online. (The UK study did not appear to account for this cost.) Our more comprehensive accounting for costs makes our ultimate calculation of the benefits of the Census relative to its costs more conservative than the previous NZ and UK studies.

Our methodology of progressive deterioration in the accuracy of ERP estimates based on the declining timeliness of census data is also conservative, as it is based on the data point, we have, which is the inaccuracy of five-year-old census data. As it gets older, its quality would deteriorate.

26. New Zealand: Valuing the Census 2021

The valuation developed in this report builds on the methods used to provide the previous valuations of the census – Valuing the census (2013) and Value of the census for Māori (2019).

Method

A technique typically used by economists and financial analysts to value income streams over time is to compute a net present value (NPV). This sums up the expected future payments but reduces payments in future years by a factor that represents the interest that could have been earned if the payment was received earlier (the discount rate). There are significant debates around what discount rates to apply, particularly for long lived investments like the census, but for simplicity this analysis has used a consistent discount rate of 6% which is the rate currently specified by the Treasury when undertaking NPV calculations for telecommunications, media and technology, IT and equipment, and knowledge economy (R&D) investments. Given the overall patterns of the flows of costs and benefits considered in the report, the discount rate is not expected to make a material difference to the ratios of costs and benefits, but a small sensitivity is provided. Costs and benefits are generally estimated for a 25-year period. Of significance is the assumed cost profile for census data collection and analysis.

Benefit estimates are subject to considerable uncertainty and are conservatively scaled so are more indicative of the lower end of possible benefits. To keep the level of effort manageable this valuation also only chooses a few reasonably tractable benefit areas so the final estimate total in this report should not be seen as an estimate of the full value derived from census data use. Rather the benefit identified represents a conservative lower bound of the possible value generated.

Many areas do not have near substitutes as stated above so a fair number of calculations involve heavy assumption and therefore are less valid. The method shows that official statistics has value far in excess of its cost but struggles to quantify the value due to a wide range of uncertainty in the calculation i.e., population size.

Valuation is complex, therefore not easily applicable internationally.

Impact

The method compares the data available from alternate sources and calculates the impact on sectors if other data was used rather than the growth observed when using Statistics New Zealand. It is a useful approach to use as it uses historical cost calculations from International Accounting and Financial Reporting Standards (IAS and IFRS) combined with economic measures of value. These measures provide a clear analysis that official statistics provide value far greater than its cost.

Comparability

ONS and Stats Australia and Canada have both looked at cost benefit analysis and willingness to pay, similarly to this paper. As well as the previously mentioned NZ case studies in 2013 and 2019.

Lessons learned and recommendations

Total benefits of some $2,840m have been identified, of which around $1.8 billion or 66% arise from Measured benefit categories. With a total cost of about $640m, this indicates net benefits to New Zealand from the use of the census of close to $2.2 billion, or around some $4 of benefit for each dollar spent. Given the approach was deliberately conservative and limited to areas with expected higher benefits this return is almost certainly a significant understatement for full returns to New Zealand.

- Census costs have moved sharply. On a real comparative basis, they have moved from $104m for the 2013 Census, to $138m for 2018 and currently $225m for the 2023 Census. This report makes no comment on whether census outputs could be achieved more cost effectively, but ongoing real cost increases will continue to reduce the proportionate gains, although gains are still significant.
- Users will legitimately be concerned, and value lost, if census data are not made available promptly, and to a high standard of accuracy. Expectations on the speed of release have been raised with some of the Covid-19 experience of much more frequent updates and refreshes of IDI data for instance.
- The census is particularly valued in its unique role as providing a comprehensive frame that connects people and household information at a granular level, and through time. Several users described their reliance on census "as the ultimate source of truth" that provided a frame against which administrative and other sources could be measured. This will need to be balanced against use of administrative data to supplement census data to ensure the framing accuracy is not lost.
- Wider data trends have massively increased the availability of data, both in terms of scope, timeliness and detail, and the ease with which it can be accessed and manipulated.

It seems unlikely that the usefulness of the census will be substantially reduced because of this increase in availability of alternate data, but this is crucially reliant on the provision of accurate and timely census related data. It also points to the benefit from making that data quickly available digitally to users who can then themselves carry out further linking and analysis – potentially further reinforcing the underlying value of the census data frame. The discount rate used for this analysis is that recommended by the Treasury, 6%. We have tested the overall valuation results which indicate relative stability to changed rates. At an 8% discount rate, total benefits for the general valuation drop to $2,720m, with benefits of around $5 for each dollar spent. At 4%, total benefits rise to $2,950m with $4 returned for each dollar spent.

27. New Zealand: Valuing the Census in New Zealand

The rate of change of global market opportunities has and continues to increase. From this, information and innovation are needed to exploit these opportunities meaning more information sources are spawning which may potentially threaten the prevalence of census data in the future.

This report claims that the biggest reason why these new data sources are not replacing census data is that the census is in large part free, whereas these new data sources are not. If the external data sources continue to grow, the value of census data diminishes so being able to link the census data to a monetary value gives opportunity to increase it. These measures help users understand present and future value of the census, thereby contributing to Statistics New Zealand's goals of helping the public understand the value of official statistics.

Method

Use of accounting and economic approaches to value used to give a mixed method of valuation of the census. Willingness to pay/revealed preference is the chosen method. Observing the amount spent on near substitutes reveals a willingness to pay. In areas where near substitutes aren't available, willingness to pay is calculated by comparing the accuracy and completeness of the census data to the next best alternative.

	Areas	Main activity where census data are used
Note: this table is not comprehensive, but includes the main items where some quantification or case study material seemed possible		
Resource Allocation		
Central Govt	Health	Overall health spending is allocated on a census based demographic basis, plus a variety of targeted funding streams
	Education	While main funding is off own roll numbers, some targeted components require census data
	Treasury	Relied on for long-term fiscal modelling and forecasting to inform broad expenditure and revenue choices
	MSD	Largely around benefit for longer-term forecasting, plus some targeted funding and service forecasting
	TPK	Relied on for some targeted funding
Capital investment planning		
Central Govt	NZTA/MoT	Estimating the impact of demographic forecast data for major investments, use of travel to work times for roading investment
	Education	Estimating the impact of demographic forecast data for major investments
	MBIE/HNZC	Estimating the impact of demographic forecast data for major investments
	Infrastructure providers	Estimating the impact of demographic forecast data for major investments
Local Government	Infrastructure	Planning new infrastructure for growth areas
Private sector	Retail: new stores	Estimating the level, location and type of demand for new investments

This method identifies major areas of the census that could be amended to form some quantification and therefore value.

The method takes into consideration 3 things:

1) An estimate of the relative accuracy of the alternative data sources

2) The extent to which spending/investment relies on census material

3) The underlying or contextual pattern of change or uncertainty in the area. An example being areas with rapid population change receive greater weighting.

This method has some reliability, however its methods should be used in conjunction with others as the outputs aren't solely reliable but gives good indication of value.

Challenges and solutions

Many areas do not have near substitutes as stated above so a fair number of calculations involve heavy assumption and therefore are less valid. The method shows that official statistics has value far in excess of its cost but struggles to quantify the value due to a wide range of uncertainty in the calculation i.e., population size.

Valuation is complex, therefore not easily applicable internationally.

Impact

The economic value was calculated based on a thorough review of the main uses of census data in health, education, social development, resource allocation, policy making and research by central and local government, the private sector and the academia.

Despite difficult quantification, census delivers benefits well in excess of its direct costs (a net present value of close to $1 billion over the following 25 years).

Every dollar invested in the census generates a net benefit of five dollars in the economy.

The method compares the data available from alternate sources and calculates the impact on sectors if other data was used rather than the growth observed when using Statistics New Zealand. It is a useful approach to use as it uses historical cost calculations from International Accounting and Financial Reporting Standards (IAS and IFRS) combined with economic measures of value. These measures provide a clear analysis that official statistics provide value far greater than its cost.

Relevance/value to the customer/stakeholder feedback

- Provides evidence of valuing official statistics.
- The evidence is shown across multiple sectors.
- The report is relevant to all stakeholders, although perhaps hard to understand for the general public due to complexity of valuation calculations.

Comparability

The UK, Australia and New Zealand have all looked at cost benefit analysis and willingness to pay.

In terms of outcome the fiscal return identified $6 return on each $1 invested and $8 returned in the case of the Māori census. This compares with $6 in Australia.

Lessons learned and recommendations

The report gives a lower bound estimate based on the current assumption that data will become more valuable in the future. The valuation given in the report uses the current default discount rate of 8%.

28. New Zealand: Value of the census for the Māori community

The report is the first stage in a process designed to provide an estimate of the value of the census for the Māori community in New Zealand. It was concluded that the Census delivers considerable value for Māori, well above its costs and proportionately somewhat higher than for other New Zealanders. Estimated conservatively, the benefits for Māori are around eight times the costs and provide a net present value gained from use of the census of around $500 million.

The use of rich census data provides a better understanding of major areas of funding and potential benefits that have shaped policies and services to improve Māori wellbeing. It captures authoritative data on numbers of Māori descent (some 16 percent higher than those choosing Māori ethnicity) and with the survey of wellbeing provides the sole reliable collective source of information that connects information about individual Māori with whanau/iwi and their household characteristics.

The report builds on a previous valuation of a census in 2013. Value is measured here as willingness to pay, and price paid as this appears to be the most accurate method of measurement. Similar to the 'Valuing the Census for New Zealand' report, the overarching method for valuing is cost benefit analysis.

Method

It uses a mix of valuation approaches, requiring a range of techniques to estimate values where explicit prices/willingness to pay are not available, and as a result the valuations are necessarily less precise than those developed in commercial settings, but can be viewed in groups which provide varying levels of rigour around the level of benefits assessed.

There are four benefits used for the valuation of statistics:

- Measured benefits use some form of externally determined milestones. In this report this includes the accuracy of health funding and Stats NZ frame-setting categories.
- Assessed benefits, measured using market norms and plausible impact assessments: all investment planning, census-based analysis, and market research categories.
- Proposed benefits, where expert opinion is used to propose a range for the value of the benefits, but that range cannot currently be independently tested; all the other categories in the summary table.
- Unquantified benefits, which are likely to be significant, but there is really no way at present of giving a reasoned range for their likely value.

Challenges and solutions

Because the report aims to measure the benefits of estimated welfare and wellbeing of Māori specifically, the report considers some non-quantifiable benefit areas but does not estimate whether the value comes from the most appropriate Māori programmes. In terms of challenges faced in the valuation itself, many areas are difficult to value because of a lack of observable prices.

 A deliberately conservative approach has been adopted to counter uncertainty. Benefits arise from gains achieved as a result of policies or services that contribute to improved wellbeing for Māori for example in improved educational outcomes or reduced household crowding. In the areas covered, the

design and execution of services and policy has been improved through utilization of data and insights from census information.

Impact

The use of rich census data provides a better understanding of major areas of funding and potential benefits that have shaped policies and services to improve Māori wellbeing. It captures authoritative data on numbers of Māori descent (some 16 percent higher than those choosing Māori ethnicity) and with the survey of wellbeing provides the sole reliable collective source of information that connects information about individual Māori with whānau/iwi and their household characteristics.

Even on the basis of the most rigorously measured benefits (measured and assessed groups), benefits are more than double the costs attributed.

There is currently no better alternative to this method of measuring value and the census it is applied to. This kind of evaluation is the only one of its kind in terms of measuring value specifically to Māori, although currently there is not a strong understanding of economic statistics and its impact on them (from survey).

 While many of the valuations are subject to significant uncertainties, given the conservatism in the approach adopted in this report it can be confidently assumed that benefits to Māori from accurate census data are very much greater than the costs of data collection, and that in most cases inaccurate data could impose losses well in excess of the costs required to ensure accuracy. This report though does not identify the most efficient ways of collecting the data, nor evaluate the extent to which current census techniques provide the most efficient means of obtaining the necessary data

There is specific value to be derived from the Census for Māori, and indeed any other indigenous community, or sub-sets or minorities of the community. These minority groups are often invisible. This report counters the invisibility issue and enables value-add decisions to be made.

Relevance/value to the customer/stakeholder feedback

The aim is to value statistics in order to understand economic statistics' impact on Māori people. In showing the monetary value of statistics, it is easier for stakeholders to understand the value of the census and their representation in it. One challenge might be accessibility and understanding the complexity of how the value has been calculated.

 It uses a mix of valuation approaches, requiring a range of techniques to estimate values where explicit prices/willingness to pay are not available, and as a result the valuations are necessarily less precise than those developed in commercial settings, but can be viewed in three groups which provide varying levels of rigour around the level of benefits assessed. To counter the uncertainty a deliberately conservative approach has been adopted.

Comparability

The UK and Australia have both looked at cost benefit analysis and willingness to pay. However, this report provides a value perspective for a targeted minority group in New Zealand's society. As such, it has increased value as it enables targeted decision making.

As such, the approach is applicable in other jurisdictions where the value to indigenous communities (or sub-sets of community) could also be measured.

Lessons learned and recommendations

Valuing the benefits derived by Māori from use of the census is a complex challenge. It combines the difficulty of placing a value on a set of services which are unpriced with the additional complexity of applying a set of wellbeing domains that at times reflect a particular the Māori understanding and perspective. While an area of active analysis and discussion, the lack of a clearly unified and agreed Māori or wellbeing framework across the domains and with-it indicators that provide for measurement, means any valuation at this stage must be evolutionary.

A critical determinant of value for the census (including The Kupenga) for Māori is its unique role in providing a comprehensive (and independent) count of Māori together with their iwi connections, location, and many associated household characteristics. There is no comprehensive and reliable alternative, and the value of this information is increasing at this time as the Government places stronger focus on shaping some service delivery so that it can best deliver desired outcomes within an iwi-based framework.

This first stage report does provide an overall value estimate, focusing at a relatively high level on the value and impact of flows of services and resources that derive value from use of census data. It builds from the techniques used for the valuation of the census, for all New Zealanders, carried out in 2013.

More rigorous benefit assessment: Many benefit areas in the report have wide ranges and only a small number of areas are directly quantifiable. Further effort could be put into key benefit areas that would involve target surveys or discussion amongst key users to provide greater assurance.

- *Exploration of alternatives:* Exploring alternative means of producing the same set of outputs and methods which changes aspects of range, quality and timeliness. Cost and reliability can be investigated if there are not drastic changes to these aspects.

29. Armenia: Assessing the cost of traditional and combined methods for conducting the census

Armstat conducted two traditional Population Censuses in 2001 and 2011 that required exhaustive field operations. For 2020, Armstat decided to use the combined census approach for the Census as a strategy to move from a traditional census to a fully register-based census in the future. The Population Census was planned for 2020, but it was postponed to 2021 because of the COVID-19 pandemic.

This approach will contribute to Armstat's goals/performance indicators, as it increases effectiveness and efficiency, and will allows reduction of the cost of the census.

Method

For the first time the 2021 combined Population Census was conducted based on the Population Register with a 25 per cent sample collection of additional data by tablets.

The Pilot Population Census was carried out on October 3-12, 2019, covering 1 per cent of the country's population, in the town of Artik (Shirak marz) and in four villages of Kotayk marz. The combined approach to conducting a population and housing census was tested: the basic data from the State Population Register were updated with the relevant data from the Border Electronic Management Information System, and the additional data according to the census programme (content of the questionnaire) was collected by a 25 per cent sample survey.

In the town Artik and in one village, 100 per cent of the population was covered by interviews to test the sampling method and the weights, and in the remaining three villages, a 25 per cent sample was tested.

Challenges and solutions

Lack of knowledge and experience meant that there was a need for training and expert support, sharing of skills with countries which have experience in conducting a combined census.

Armstat applied for technical support from UNFPA, the US Census Bureau and EFTA.

Tools and platforms

During the Pilot Census in 2019, the combined census approach was used. Combined census is based on data taken from administrative registers and combined with other data obtained from a limited field collection.

We have compared the cost of a traditional census (6,934.7 thousand United States dollars (USD)) and a combined census (3,082.3 thousand USD), and our calculations have shown that combined method allows reducing the budget by 55.5 per cent.

Impact

This measure has not only the monetary value, but it also increases overall governmental efficiency.

The combined pilot census helped to increase the [coverage](#), coherence, comparability and quality of administrative registers, in particular the Population [Register](#) and the Border Electronic Management System Register.

The combined method has several advantages over a traditional census as it has reduced response burden, cost-effectiveness/reduced cost, efficient public administration, etc. It also has the advantage of having a shared interest in working together with stakeholders for quality assurance and exchange of quality information, and to reduce the overall response burden for respondents.

Lessons learned and recommendations

Improved quality of administrative registers, increased use of administrative registers for improved statistical production and statistics at low cost.

Combined census method contributes to integration of data of different administrative registers and quality increase, and it brings benefits for both the statistics and administrative authorities.

We recommend other countries using register data combined with a limited field collection to produce census results, as it provides financial saving and reduces the burden on respondents by using data originally collected by administrative authorities for their own administrative purposes.

30. United Kingdom: Valuing Official Statistics with Conjoint Analysis

A pilot study undertaken by the ONS looked at developing an innovative experimental approach for valuing official statistics using conjoint analysis methodology.

Conjoint analysis is a widely used technique in marketing studies and is a survey-based approach that asks respondents to "consider jointly" their preference between a number of products described by underlying attributes. This approach comes from economic valuation methods and attempts to quantify value by using a revealed preference approach and derives willingness to pay from underlying attributes.

Method

In economics, utility theory is used to model value or worth. It explains the behaviour of individuals on the premise that they can make rank-ordered choices depending on their underlying preferences. As the concept of utility is fairly abstract, it is generally thought that it cannot be measured directly. Conjoint analysis is a revealed preference approach to estimating preferences by describing a product by its attributes and asking a series of questions to respondents, each time to choose their preference between different products with varying levels of each attribute. These questions are typically called "trade-off" questions where attributes and levels are "considered jointly".

These preferences can be used to infer relative "utilities" that represent the relative value an individual has for each attribute and its levels. Adding these utilities for each attribute leads to the utility for the overall product. For example, a television might be described using three attributes: "brand", "screen-size" and "price". A specific television might have a brand level of "Panasonic", a screen-size level of 54 inches and a price level of £1,000. The utility a customer has for this television will simply be the sum of their utilities for each appropriate level of these attributes.

One main use of relative utilities is to derive "preference shares" where each respondent's preference for a specific product, among a set of products, is modelled. With appropriate weighting it is possible to create preference shares representing the population. With certain assumptions, these preference shares are used to denote actual market shares that should be expected given a set of products defining the market. Furthermore, with price as an attribute, relative utilities may make it possible to calculate the "willingness to pay": the maximum amount a respondent is willing to pay for a certain level of an attribute (over a baseline level).

The pilot study used the value of "official" earnings data to identify relative utilities (namely, source, frequency, geography and cost). The study consisted of two linked parts: a conjoint questionnaire, built using the software Conjoint.ly, followed by interviews with respondents. Four separate conjoint exercises were conducted to test how respondents reacted to the introduction of price and whether they had a constrained or unconstrained budget. Each conjoint exercise generated respondent's utilities from their responses to trade-off questions using the software's internal hierarchical Bayesian modelling.

Validation checks on these utilities suggest that the order of utilities is good within each conjoint study and that the distribution of utilities for each attribute are reasonably consistent across Conjoints 1 to 3. The utilities for geography and frequency appear similar for both official and non-official statistics.

Conjoint 4, involving a constrained budget setting, had lower utilities for official data although correspondingly higher for regional data. The concept of constrained and unconstrained budgets is not thought to have been a major factor in this as there was nothing from the qualitative questioning to suggest that respondents suddenly valued attributes differently depending on the source. It is suggested that the small sample in conjunction with hierarchical modelling and the challenge of calculating separate utilities conditional on the source of the data might be the main factors in this variability.

Estimates for the willingness to pay for official data over non-official data are created using respondents' relative utilities although it is difficult to validate them as there are difficulties in identifying current market shares for earnings data.

Preference shares simulated for various product scenarios reflect the underlying utilities derived across the respondents and can be used to understand the value of official data and help producers of official statistics identify the most important areas for improvement.

Finally, the concept of constrained and unconstrained budgets could not be tested reliably given the perceived distortion in results from Conjoint 4 which tested the constrained budget. However, results from budget holders did not differ from non-budget holders throughout the four conjoint exercises, giving some indication that budget control did not affect decision-making on value judgements.

Challenges and solutions

The design provides some challenges, and a future survey design will look to testing different price ranges, removing the concept of constrained and unconstrained budgets; exploring different templates of Conjoint.ly's and using a much bigger sample of a wide range of stakeholders to help the reduce the variability in the modelling. More work is needed in understanding how the hierarchical Bayesian model works and its pros and cons from other modelling methods and greater thought on how to define the market and to validate the preference shares generated from this study.

Although it is not clear if results are distorted by including a cost for official statistics, the qualitative study did indicate that respondents had to consider their responses more carefully, demonstrating a more thorough evaluation exercise.

Tools and platforms

Conjoint.ly and their survey tools were used to apply this method.

Impact

The study was an attempt to test the method which has a strong base in economic utility theory and willingness to pay. It is also possible to validate the results of the analysis. Although it is not clear if results are distorted by including a cost for official statistics. The qualitative study did indicate that respondents had to consider their responses more carefully, demonstrating a more thorough evaluation exercise. The use of qualitative and quantitative analysis together is useful for validating results and providing a robust model to measure value.

A second phase is being developed and as a result a leading academic is also following the study recommendations and developing testing of the approach independently etc.

The use of Conjoiny.ly is useful in respect to stakeholder communication in valuing statistics as they have useful videos online that goes through their methods of analysis making it easy to understand. The results from the analysis are easy to understand and the measures are repeatable. The main issue is trying to grasp the concept of Hierarchical Bayesian models and understanding the core details of how conjoint analysis works.

Lessons learned and recommendations

The use of conjoint analysis is new but has already provided some promising results. The mixture of qualitative and quantitative methods allows for a robust analysis. The next stage in developing this method as stated above in the challenges and solutions is to gather a bigger sample and more respondents from a wider range of backgrounds in order to capture reliable results. As well as the additional points highlighted above in the challenges and solutions.

31. United Kingdom: Experimental economic evaluation - An economic assessment of a secure research service

This case study contains the results of the experimental economic impact assessment of the Secure Research Service (SRS). The SRS is a research data infrastructure that facilitates access to secure microdata for researchers from across government, academia and the private sector to conduct research with a public benefit. This assessment focuses on three key statistics; full-time equivalent (FTE) jobs supported in the research community, the wages these jobs earn, and the estimated gross value added (GVA) spill over impact of the research conducted in the SRS on the wider economy.

Firstly, an estimate of the number of full-time equivalent (FTE) research jobs supported through work within the SRS' secure environment and work related to SRS projects outside the environment (examples include *inter alia* grant application, literature reviews, project planning, results dissemination and engagement). Secondly, an estimate of the value of the wages paid for these jobs and finally, the estimated spill-over impact into the wider economy of the research conducted in the SRS by the academic sector (data and methodology were not available to calculate this for other sectors).

Research in the SRS has supported an estimated total of 162.9 full-time equivalent jobs in the research community during the 2019-20 financial year. Figure 1 shows how this is disaggregated across the three key sectors of SRS research[3]. It demonstrates that the number of jobs supported is highest in the academic sector, with more than the other two sectors combined. This reflects the user base of the SRS.

Figure 1 – Full-time equivalent research jobs supported by projects in the SRS
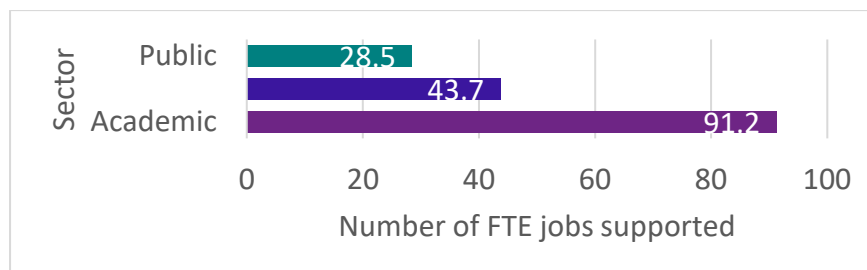
Wage contribution - Using data from the Annual Survey of Hours and Earnings (ASHE), we estimate that these research jobs would contribute a total of £6.6 million in wages to the economy. The average hourly wage (excluding overtime) for researchers in each sector can be found in Table 1. The contribution to the total by each sector can be found in Figure 2[4]. This is the result of the interaction between the wage differentials of each sector and the proportion of SRS users from that sector.

Table 1 – Hourly wages by sector

---

[3] Background tables and further information for full-time equivalent calculations can be found in Annex B

[4] Annex B also contains data on wages supported calculations

Sector	Mean wage	Sample size
Academic	£26.58	1,197
Public	£23.13	238
Private	£20.95	182

Source: Annual Survey of Hours and Earnings

Figure 2 – Wage contribution by sector
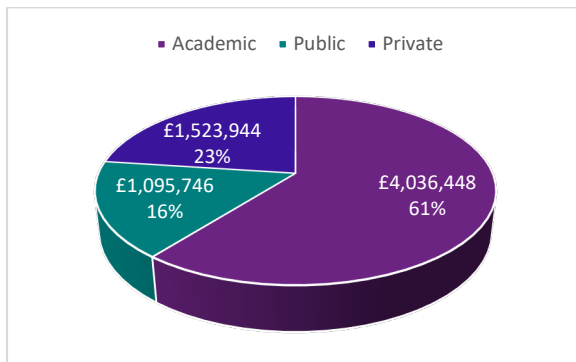
Based on survey data, it is estimated that the value of research contracts and grants in the academic sector facilitated by the SRS is £27.9 million across 175 active academic projects. Moreover, there is strong evidence that research investment leads to spill over effects into the wider economy from university research (see Annex A). Therefore, we can estimate that academic research conducted in the SRS will have a spill-over impact of £153.7 million.

Method

A methodology document provides information on the data sources utilised to provide these estimates, how they were calculated, the limitations of the work and anticipated future extensions.

Data Sources and specification

Four data sources were utilised in this study, each providing key information these are summarised in Table 1:

Table 1 – Sources and key information for this study

Data Source	Key information provided
Session tracking data from the SRS monitoring system	Service usage data

The SRS Annual User Experience Survey	Time spent outside the secure environment working on SRS project related activity and research project funding
Management Information from the Research Accreditation Service (RAS)	Sector of origin for each project running in the SRS in the recently ended financial year
The Annual Survey for Hours and Earnings (ASHE) 2019	Average (mean) researcher wages in three key sectors (government, private and academia)

The scope of this inquiry was SRS service usage for the financial year 2019-2020.

Time spent in the SRS was calculated on a daily basis per user login by calculating the time difference between a researcher's first login and their final logout time on any given day (administrative users were excluded from this analysis). This was necessary to represent the common usage pattern in the SRS of logging in, starting analytical code running and locking the session whilst the code runs. This action ends the session on the SRS monitoring software, but the user is still using the service. Whilst this may result in an over-estimation of service usage, it is a necessary compromise to allow estimates to capture this type of activity. These data were then aggregated to provide total usage estimates of the secure environment for the period under study. Furthermore, this could be disaggregated by individual user and by sector through linking to RAS management information. The organisation of the lead researcher on a project was used as the sector for all researchers on that project due to limitations with the management information and linking methodology. Furthermore, a very small proportion (approx. 1%) of the SRS user base during the financial year under study is from the charity sector. However, as wages data were not available for the charity sector data, these users were included in the private research group as it covers our non-governmental and non-academic user base and had the lowest wage differential of the three groups. Charity sector users represent only 1% of service usage.

Researchers in the ASHE dataset were identified using the Standard Occupational Classification (SOC) codes and their average salary was calculated using the hourly pay excluding overtime variable. They were disaggregated into sector using the Standard Industrial Classification (SIC) codes. The SOC codes identifying researchers can be found in Table 2 and the SIC codes included for each of the three sectors under study can be found in Table 3. A small number of research profession SOC codes were excluded from the analysis, as they represent occupations which are highly unlikely to use the SRS (e.g. chemists, physical scientists and engineers). SIC codes were initially identified through a line by line sift and then supplemented by searching key SRS client organisations on Companies House to verify coverage of key organisation SIC codes.

Table 2 – Standard Occupational Classification codes for researcher occupations

SOC 2010 code	Title
2114	Social and humanities scientists
2119	Natural and social science professionals
2150	Research and development managers

2311	Higher education teaching professionals
2425	Actuaries, economists and statisticians
2426	Business and related research professionals
2429	Business, research and administrative professionals

Table 3 – Standard Industrial Classification codes by sector

Sector	Code	Examples of activity or organisations active in the SRS
Academic	85421	Higher Education
	90010	Lecturers
Governmental	84110	Fundamental research administration Financial services
	71112	Town Planning
	64110	Bank of England
	71200	Public analyst
	84120	Gambling Commission Government administration
	84130	Economic services administration and regulation (public sector)
Private	72190	Research Institution
	70229	Economist Policy formulation
	72200	European Social Research Council, National Foundation for Educational Research, Institute for Fiscal Studies
	73200	Public opinion polling Market, social & economic research services
	74909	Oxford Economics, Simetrica
	85600	Educational consulting, Educational testing evaluation activities
	85590	Other educational activities not elsewhere classified (e.g. private education research)

The aggregated ASHE data were provided for by the ONS Earnings Team who deal with ad-hoc data requests for the ASHE dataset. The aggregated statistics included standard filters to exclude records

for people whose pay was affected by absence. Furthermore, bespoke filters for this work were applied to exclude records with no entry for hourly pay excluding overtime, and those with weekly hours below one. This was to try to ensure the data were more representative of those for whom research was their main job. The total number of individuals from any of the identified SOC codes within each of the sectors in the ASHE dataset are:

- Academic - 1,197
- Government- 238
- Private - 182

To provide estimates of the time spent by researchers working on SRS projects outside the secure environment, three optional questions were added to the Annual User Experience Survey. Participants were asked to answer one of the following three questions:

1. For every hour you spend in the SRS, how many hours do you spend on work related to your SRS project outside the SRS environment?
2. In an average week, how many hours do you spend on work related to your SRS project outside the SRS environment?
3. Over the past year, how many hours have you spent on work related to your SRS project outside the SRS environment?

Response rates to option three were too low (only ten unique responses) to provide a reliable estimate and therefore excluded from the analysis. Options one and two were used to calculate separate estimates to triangulate evidence, improving validity. The average of the two methods was utilised for the final estimate (note: outlier control was utilised for option one as the highest and lowest responses were excluded from the analysis). Where respondents provided a range for their response (e.g. 3 to 4 hours) the centre point was used (e.g. 3.5 hours). Finally, respondents were asked to provide the value of any external funding the project had attracted (e.g. research council grants, government contracts or other similar funding sources).

Analysis

This section specifies the formulas used to calculate the three key metrics for this analysis (FTE, wages supported and the GVA of the academic research in the SRS). The full-time equivalent jobs supported in the research community by the SRS was calculated as follows (this was also calculated by sector):

FTE = (t + σ) / h

Where:

- t = the total amount of time (hours and minutes) researchers spent in the secure environment
- σ = the estimated total time (hours and minutes) spent by all researchers working on SRS projects outside the secure environment
- h = annual full-time equivalent hours*

*Annual full-time equivalent hours for this study were calculated as: 45 weeks * 37 hours a week = 1665 hours a year. This assumes 7 weeks off annually for a combination of annual leave, bank holidays and sick leave.

Wages supported (w) was calculated for each sector (academic, government and private) by:

w = y(t + σ)

Where:

- o   t = total hours spent by researchers from that sector in the secure environment
- o   σ = estimated total hours spent by all researchers from that sector working on SRS projects outside the secure environment
- o   y = The mean hourly wage of the research occupation

The spill over impact on the UK economy of academic research conducted in the SRS was estimated by applying the weighted average multiplier of 5.5 calculated by London Economics in their analysis of the economic impact of Russell Group University's research (Halterbeck et al. 2017). This multiplier was based on previous work from two key research papers. Firstly, Haskel and Wallis (2010) established the market sector productivity spill overs from public research and development (R&D) expenditure originating from UK Research Councils. Secondly, Haskel et al. (2014) investigated the economic significance of the UK science base.

The estimate for GVA of the spill over impact was calculated as follows:

$$GVA = \lambda(\alpha * \beta)$$

Where:

- o λ = the spill over multiplier (5.5)
- o α = average funding value from survey
- o β = number of academic projects conducted this financial year.

Limitations

Survey response rates to both hours (63 and 50 responses to the two question options respectively) and funding questions (32 responses from academic sector) were relatively low which may make estimates unreliable. Moreover, this does not capture the activity of external support staff or researchers on projects that are not directly involved in work in the SRS. Further work to improve data quality through additional collection tools is underway, improved data coverage will lead to enhanced accuracy and reliability of estimates.

Whilst the multiplier utilised for estimating economic impact of research was calculated for Russell Group universities, the initial work this was based on was for all funding council and other R&D work more broadly. However, the weighting methodology applied by London Economics was not available and this may be different in the context of SRS projects. Nonetheless, it was demonstrated by previous analysis that the proportion of academic projects in the SRS that are conducted by Russell Group universities historically is approximately 67%.

Furthermore, the number of projects academic organisations run in the SRS correlates strongly with their ranking for research quality in the Good University Guide (-.569, p<.001). Therefore, it was determined that this was the most appropriate multiplier for this preliminary assessment. However, in Heskell and Wallis' and Haskel et al's work, effects are not disaggregated by research discipline (or research council). This was not possible due to high collinearity between research council spending (Haskell and Wallis, 2010). Research conducted in the SRS is a specific sub-set of university disciplines and is likely to be mainly funded by the European Social Research Council. Whilst the application of this multiplier is the most appropriate to the academic research conducted in the SRS, future developments may seek to refine the multiplier to the specific context of the SRS.

This economic assessment does not currently estimate the impact of non-academic research in the SRS as an appropriate methodology was not available at this time. Future assessments will seek to develop options to add coverage for this type of research.

References

Halterbeck, M., Conlon, G., & Julius, J. (2017). 'The economic impact of Russell Group universities Final Report for the Russell Group'. London Economics. https://londoneconomics.co.uk/wp-content/uploads/2017/11/LE-Economic-impact-of-Russell-Group-universities-19-10-2017-FINAL.pdf

Haskel, J., Hughes, A., & Bascavusoglu-Moreau, E. (2014). 'The economic significance of the UK science base: a report for the Campaign for Science and Engineering'. http://sciencecampaign.org.uk/UKScienceBase.pdf

Haskel, J., & Wallis, G. (2010). 'Public support for innovation, intangible investment and productivity growth in the UK market sector'. http://ftp.iza.org/dp4772.pdf

Background tables and data

This annex provides the background tables and aggregated data used in the calculation of the FTE and wages supported statistics in this study. The SRS was accessed by 482 individual researchers across 290 projects during the period under study. Usage data was combined with aggregated estimates of activity directly related to SRS projects outside the environment from two different survey questions. The estimates for FTE and wages supported by time spent in the Secure Environment calculated from the aggregated raw user data can be found in Table 1. Tables 2 and 3 provide these estimates resulting from the hours outside the SRS per hour spent in the SRS and the weekly average questions from the Annual User Experience survey added to the user data.

Table 1 – Raw user data estimates

	Academic	Public	Private	Total
Minutes in the SRS	943061	278649	472350	1694060
Hours	15717.7	4644.2	7872.5	28234.3
FTE	9.4	2.8	4.7	17.0
Wages	£417,776.02	£107,419.19	£164,928.88	£690,124.09

Table 2 – Estimates using the hour per hour multiplier of 9

	Academic	Public	Private	Total
Minutes on SRS projects	8487549.0	2507841.0	4251150.0	15246540.0
Hours	141459.2	41797.4	70852.5	254109.0

FTE	85.0	25.1	42.6	152.6
Wages	£3,759,984.21	£966,772.71	£1,484,359.88	£6,211,116.79

32. United Kingdom: The Value of Economic Statistics: Baseline Report

This research was undertaken by (Economic Statistics Centre of Excellence) in response to the framework on the "Recommendations for Promoting, Measuring and Communicating the Value of Official Statistics" and presents the initial findings of a baseline survey and qualitative research that looked at the value of economic statistics. The research looked to provide support to evidence the value of ONS economic statistics to society.

Method

This research explored possible ways of measuring and monetising the value of economic statistics. Through survey and focus groups methods, 'stated preference', 'revealed preference' techniques, were explored as well as the impact on policy and decisions and non-monetary value of economic statistics. Users were also asked about 'willingness to pay' and to conceptualise the value of economic statistics.

Users attached great importance to ONS economic statistics, but they struggled to place a monetary value on it. Both 'stated' and 'revealed preference' questions ultimately failed, both in survey and focus group settings, as participants had difficulties conceiving of a budget for ONS economic statistics, either in itself or in comparison to other resources such as subscriptions. This is partly because they use them in their capacity as employees and unable quantify the value of the work, they produce either as individuals or by their organization. Respondents characterised economic statistics as the ultimate public good and as invaluable for informed decision-making, and as such claimed that it cannot be reliably measured.

Survey respondents described how ONS economic statistics impacted on policy development and evaluation, economic forecasting and modelling, and business decision making. Around 4 out of 5 of those surveyed believe that the statistics were essential for their work and that their loss would have a major or severe impact. In the focus groups, participants suggested to conceptualise the value as the cost of poor and uninformed decision-making arising from the absence of (high quality) ONS economic statistics. Some participants, mostly from the financial sector, suggested that a proxy value for ONS economic statistics might be derived through exploring how many organizations would value gaining early access to economic statistics.

Challenges and solutions

The research looked at possible ways of measuring and monetising the value of ONS economic statistics by exploring 'stated preference' and 'revealed preference' techniques which provided a useful insight. However, the techniques were not found to be useful through the use of focus groups and surveys, this was partly due to those taking part not being involved in their organization's budgetary priorities. There were several challenges with hypothetical willingness to pay with some believing it would be wrong for the ONS to introduce charges for data, except for specific services and possibly for early access and it could encourage marketisation of ONS services. It was recommended to undertake further work with those in a position who understand their respective commercial budgets.

Impact

Official economic statistics were found to be highly valued by users in both the survey and focus groups and most likely far exceeded the cost of providing the statistics. Users found that it was invaluable to their work and instrumental in informing policy decisions.

33. United Kingdom: Valuing Economic Statistics: Policymaking in the UK

This research was undertaken by the Economic Statistics Centre of Excellence.

Reliable and timely economic data are essential for policymakers. A cursory glance at the Budget documents from HM Treasury or the different monetary policy publications from the Bank of England reveals the direct and immediate use of a wide range of macroeconomic data for policy. Those fiscal and monetary policy decisions, in turn, impact on every household and business and therefore policy that is based on inaccurate statistics is costly to people in Britain. In this paper we estimate the macroeconomic impact of revisions to official national accounts data. Monetary, more than fiscal, policy is the rapid response tool in the macroeconomic policy arsenal that is designed to react to economic developments. Also, we know that there are large output effects of monetary policy in the United Kingdom (Cloyne and Hürtgen, 2016; Mountford, 2005). We ask, how might the Monetary Policy Committee (MPC) have responded had it known the true scale of the recession in 2008 and would that have made a difference to the performance of the economy as measured by GDP growth and employment? Similarly, we create a counterfactual policy rate and analyse how this path of monetary policy might have impacted the British economy between 1997 and 1999, the period corresponding to the Asian Financial Crisis. For both exercises we use the National Institute Global Econometric Model (NiGEM).

Method

The paper builds a counterfactual scenario using the final vintage of data. How would the MPC have set policy had they been presented with this information in real time? We start by estimating the monetary policy reaction based on a Taylor Rule specification and then deploy NiGEM, a global macroeconomic model, to simulate the response of real GDP, inflation and employment using the counterfactual policy rate path.

Below are a few extracts from the case study showing the models used.

Challenges and solutions

The case study is highly technical, and some assumptions are made as with most economic theories e.g., 'we have assumed that the MPC would have stopped once Bank rate reached 0.5%'. While there is no direct solution to this, it does imply that the report is useful as supporting evidence alongside other case studies.

Impact

Few can dispute the economic benefit of accurate and timely data, especially for monetary policy which is required to anchor inflation and stabilise output. Early estimates of data on which policy is based are subject to revisions as the underlying sample size increases and also because of subsequent improvements in methodology. This paper tries to quantify the benefit to the economy of more accurate real-time data by identifying two episodes when real GDP data were either revised materially higher or lower. We show that output would have been more stable if the MPC had access to data in real time as we see it today. We also show for the period around the Global Financial Crisis that the

policy rate would have been lowered earlier and more aggressively, raising output by £12 billion or 0.8 per cent in 2009. Employment would have been higher by more than 150,000 as a result.

Overall, this case study is useful as a supporting piece of evidence rather than a standalone report in which to base the value of statistics. It provides a solid foundation of economic theory but also makes assumptions that may not be entirely accurate in reality.

34. Israel: Measuring Value Through Tailor-Made Statistics

We publish a yearly report because of the "Freedom of Information Act", which relates to all modes in which the Bureau disseminates data.

We measure orders of tailor-made statistics by using two measures, number of requests and purchase price. The number of requests is counted per subject. Purchase price is calculated per hours of work necessary to produce the statistics.

Challenges and solutions

Estimating price is difficult because it is performed prior to the actual work. During the work itself issues can arise that change the amount of time needed. This means that the monetary value is not an exact representation of the work involved. In addition, the number of requests does not reflect trends over time regarding complexity of requests.

Impact

Measuring the requests for tailor made statistics provides the following information:

- There is a need for data which isn't met by our regular production schedule
- Contributes to our long-term production planning
- Areas of statistics that are being used for research and decision making
- Repeating requests are evaluated as to their potential wider need by the general public, and possibly included in the regular production schedule

The purchase of tailor-made statistics shows that this indicator is relevant. Tailor made statistics are based on the most up to date data, but production time can cause the data to lose its relevance.

At this point in time, we do not prioritize. Tailor made statistics are available to all.

Lessons learned

The interactions with customers who order tailor made statistics is invaluable. It enables opportunities for hands-on discussion with stakeholders regarding their needs and expectations from the National Statistics Bureau.

35. United Kingdom: Measuring the economic value of the Secure Research Service (SRS) through its research projects

In order to understand the value that the Secure Research Service (SRS) offers to its researchers, ONS invites researchers to complete a satisfaction survey. Across 2 years of the survey, (2019 and 2021), a small set of questions around value of the research undertaken through using the SRS were added. The goal of these questions was to derive a measure of impact of the service around value.

The assessment focused on calculating three key statistics:(i) an estimate of the number of full-time equivalent (FTE) research jobs supported through work in the SRS; and work related to SRS projects outside the environment; Iii) an estimate of the value of the wages paid for these jobs and (iii) the estimated spill-over impact into the wider economy of the research conducted in the SRS in the academic sector.

Method

The SRS added questions to its user survey sent out to SRS users on an annual basis, asking them to provide some information relating to their research projects. Respondents were informed that we were seeking to understand the value of the ONS SRS as part of economic impact assessment work. We asked about: how much time they spent outside of SRS environment while working on their projects; or time spent outside of SRS in comparison to time spent on SRS.

The resulting data were averaged and combined with overall SRS usage data (time spent in the secure research environment) to calculate the total amount of time spent working on their project. Survey respondents were also to provide the value of their research grant to establish how much the projects were roughly worth in monetary value.

Challenges and solutions

The biggest problem with this study was the low response rate. We anticipate that the response rate was low because not all researchers have access to the workforce or budget for the research. The low response rate makes the results unreliable. While the questions were sourced from established approaches to gaining information on value, the questions were likely difficult to answer. A number of answers were either unusable or required manipulation, leading to unreliable results.

The third issue was that the survey respondents were not asked for their names or project titles/IDs, so we could not match up their answers with their actual usage data. This would have bene very useful.

We would like to try another approach where we undertake an exercise to look at value separately. We would use similar value questions but collect their details so we can combine with characteristics of their project and usage (number of researchers on the project, time spend on our platform, time spent servicing the users, and demand on our service, e.g., number of outputs cleared for disclosure risk). Our short investigation will target project leads who are more likely to be aware of monetary value of the project and its conduct.

Moreover, as we have a significant number of high-profile economists using our data and platform, we will seek opinions as to what questions might work best; and road test on them.

Impact

Gathering information from informed respondents who run research projects in a secure environment, together with collating their actual usage data allows us to look at value of the research 'work' that the service enables. The response rate would need to be boosted to get more reliable results, and hopefully, targeting more senior respondents, i.e., managers would result in less missing data.

In the future, SRS project application forms will be asking about grant value, so this value will not have to be gleaned from a voluntary survey. The questions on time spent outside the environment is hard to judge and is a best guess measure. The question asking about what % of work could you not do if the service did not exist allows a powerful way to assess value. Such estimating value questions can be subject to poor response rates, which can lead to unreliability.

Currently the method and analysis were only used as a test, so no dissemination was undertaken externally.

Lessons learned

We believe that these questions probably should not have been placed in our annual satisfaction survey but merit their own investigation. They are very useful value- based questions, but need to be combined with actual usage data, if this is available in other data services.

Respondents should be precisely targeted towards those who manage the projects, know the grant value, number of staff working on it and are aware of their team's time usage on the project, outside of the data environment (I.e., the Principal Investigator).

36. United Kingdom, HM Land Registry: Valuation of HM Land Registry bulk datasets

The UK Government believes using data can support economic growth and demonstrate transparency. HM Land Registry (HMLR) holds a rich variety of data of potential interest to organisations particularly those within the land, property, and financial sectors. HMLR is therefore keen on supporting this cross-government programme of work which aims to ensure value for money and derive maximum value from public sector data. This process will drive greater data sharing across government and industry, making data more accessible to allow organisations to carry out research, use for internal purposes or develop products and services. The work conducted was designed to allow us to understand the economic value of making data more accessible, and therefore how much we want to invest in this process.

The primary purpose of the valuation of data work was to support our assessment on the current value to HMLR and society of a portfolio of published datasets, and then suggesting how this value might be increased by enhancing them and making them more accessible and reusable. The work supports our wider Government contributions and aides long-term strategic planning.

Method

HMLR worked with a consultancy firm on the project with the primary aim of a data valuation framework being designed for our on-going use.

We followed a 6-step process with the consultants which included:

- Understanding the datasets
- Assess how they are used
- Define the impact
- Identify what metrics are required to capture this impact in a quantifiable manner
- Data Collection
- Valuation

The valuation model created is excel based and requires the input of information which is a mix of desk-based research, internal expertise and knowledge about our users, and working with our key stakeholder customers.

The methodology was tested on key published datasets through external user engagement and presented the value of the datasets as they are now and what the potential value will be when we complete the FAIR data principle (findable, accessible, interoperable, reusable) enhancement work later in 2022.

There are quality assurance and sensitivity analysis steps built into the model that help in terms of testing the reliability of the results and it produces three key outcome valuation estimates:

- For private sector organisations: Revenue generated and GVA / aGVA
- For both public and private sector organisations: Cost savings made

Two versions of the model have been created depending on whether the dataset has known users or those we don't know due to the data being available under Open Government Licence (OGL).

There are also some limitations worth noting which is the model only looks at business users and only accounts for the benefits and value to direct consumers. It does not account for the benefit flow through to secondary beneficiaries or potential new users, although this extension is something we can consider moving forward and the model is structured to allow for this.

Impact

It is a well-known fact by organisations and projects looking to invest in the creation, improvement or sharing of data that it's challenging to articulate the impacts and benefits of doing so. This is because valuing data isn't easy. It's a technical area, it's tricky to unpick and often the context is quite abstract. Many of the known issues are:

- Location data value can often only be realised when combined with other datasets. Many users combine data and embed it in end products
- Value differs. Not one size fits all. There are various uses, traits, and characteristics of the data
- Heavy reliance on customer feedback. Thoughts around value must be ratified and there's a reliance on customers spending their time on providing feedback on how they use and rely on the data
- Lastly, there is no definitive approach to follow when valuing data across either the public or private sector.

HMLR have attempted to explore the value of data before and encountered many of these challenges. Being aware of these led us to seek external advice and guidance on the best approach to take with our published datasets. We were provided with a variety of approaches, had the opportunity to review the challenges and benefits of each, and decided on the value model which struck a balance between informing our decision making and being practical to undertake.

The project assessed several potential methodologies. The three primary approaches that are most common in literature are the Market, Cost and Income based approaches. The Market approach was not viable as we are unique in the data we create and hold and don't have competitors, and the cost-based approach wouldn't give us the transparency and view across the marketplace we required.

The Income based approach has been successful as it helped us achieve our primary aim of assigning a monetary value to our land and property datasets. The figures provided as outputs from the model have been robustly tested through both user engagement, quality assurance and sensitivity analysis.

The valuation process has been well documented and positively shared across the business, with the Geospatial Commission and the valuation results have since been used as quantifiable evidence in a range of documentation and strategic planning.

External engagement is required in order to ensure the assumptions made about the use cases of customers are correct and the calculations robust.

With the work we conducted on our published datasets we reached out to a range of customers from different sectors. One to one meeting's proving the most successful medium. The focus was on understanding and qualifying the datasets they use and why they use them. For the private sector we also looked to understand to what extent annual revenues were reliant on our data and how dependent they are using set dependency ratings. We also chatted through the potential areas for enhancement we have identified to better align our data to the FAIR data principles, discussed what

is interesting to them and how important the areas are linking back to revenue, time savings and a potential increase of use.

The key learnings we identified through the engagement were:

- Organisations use the datasets in combination so the factoring we used in the model was important
- HMLR datasets are considered very important – dependency ratings and efficiencies were high
- The estimates of the proportion of staff linked to using the datasets was lower than we predicted
- The FAIR data principal enhancements will add a lot of value, particularly the addition of attributes, visualisation tools and increasing the frequency the data is made available
- Several societal and environmental impacts of HMLR datasets were raised.

Lessons learned & recommendations

It's important to review the best methodology to use for your business and datasets and it's important to already have an existing knowledge of your users and their use cases. Without strong relationships with those users, it is difficult to ensure the model findings are robust.

Published datasets which have been in the marketplace for some times are easier to review than unpublished data. The users have established their use cases, the data is usually embedded in successful products and services, and they have a good sense of the benefits and can provide thoughts around value.

External engagement with users is important to make sure assumptions and model findings are robust.

Annual company accounts were key to identifying financial information and staffing costs about organisations using the datasets.

ONS Annual Business Survey of 2018 was a key source of information used to feed into the model.

37. United Kingdom: A user-centred approach to transforming the UK Labour Force Survey

This case study has been included to highlight the relevance and importance of having users at the centre of what we do and highlights the importance of the user in the data collection process to ensure we have good quality and fit for purpose data, with higher response rates leading to better value.

It looks at transforming the UK Labour Force Survey with a "Respondent Centred Design" (RCD) an adaptation of a well-established "User Centred Design" (UCD) approach which has its roots in user experience and interface design from the computer technology world - where users of a service or product are firmly put at the heart of the design process by building to meet their needs.

In data collection terms for example, a user may be a respondent taking part in a survey. When applying UCD to survey design, the needs of the respondent when interacting with the survey are established through research which focuses on exploring their habits, thoughts, questions, behaviours and expectations. Those insights are then used to inform and drive each step of the design of the survey, from the invitation communications through to the questions and survey tool. This is known as Respondent Centred Design (RCD). Needs based development ensures that the survey remains user centred and not built based on assumptions. In RCD, although the needs of the data users and analysts are accounted for, they do not drive or influence the respondent experience of the survey and its accompanying products.

We have been working with a transformative, respondent centred design approach for several years now. Throughout the development of the mixed mode Labour Market Survey (LMS) we have undertaken large quantitative tests to gain statistical insights. For example, a Private Beta test was run between October 2018 and April 2019 and involved 18,673 responding individuals. It was a mixed-mode design, comprising of both an online and face-to-face mode. The purpose of the test was to gain assurance on the data quality of the transformed designs and to identify potential mode effects in the data. The test explored the socio-demographic characteristics of the responding sample to the LMS and compared them to the responding sample for the Labour Force Survey (LFS) over a comparable data collection period. It also replicated several core statistical estimates currently produced from the Labour Force Survey (LFS) and compared them with those produced from a comparative LMS dataset.

In summary, the evidence gained from these quantitative tests is promising, demonstrating that data received is of good quality, response rates are higher than expected and attrition rates are low. Because of this, the approach continues to be pursued. However, it should be noted that the product is still in the experimental stage. The Research Outputs from the LMS are not official statistics relating to the labour market. Rather, they are published as outputs from research into an alternative prototype survey instrument (the LMS) to that currently used in the production of labour market statistics (the LFS).

Method

The Respondent Centred Design Framework (RCDF) compliments existing literature and recommendations such as the afore mentioned Government Design Principles. It consists of 10 components:

1.   Gather the data user need

2.   Understand mental models

3.   Understand the respondent experience and needs

4.   Use data and insights to design

5.   Create using appropriate tone, readability and language

6.   Design without relying on help

7.   Take an "optimode" approach to design

8.   Use adaptive design

9.   Conduct "Cogability testing"

10.   Design inclusively

The framework is used with a cyclical, Agile development process where each question may be taken through several iterations before a final design is reached. Each of these iterations is qualitatively tested to explore both understanding and usability. This can be achieved during Cogability testing sessions, which combine traditional cognitive interviewing with usability testing.

The qualitative testing allows you to gather insights about how each question is performing. This means you can create questions which collect the data required by your data users, and you can be confident in the accuracy of this data.

The process also involves designing with accessibility and inclusivity as a core component. For example, each question should be tested for readability. There are free online tools which are available to enable this. It is also recommended that an adaptive approach to design is used, whilst thinking "mobile first". This ensures that all content is justified by a user need, which avoids screens becoming cluttered and burdensome.

Challenges

We experienced many challenges implementing a new survey design approach. One of which was around resource and to progress the work of the programme we needed to expand the team from 3 to 15 researchers.

The processes can largely be run with very few tools. However, there are benefits to perhaps outsourcing for services around qualitative testing (to cut down on resource and time) and for readability and accessibility checkers for transcriptions. There are some free readability checkers available online, such as the Hemmingway app and accessibility checkers/software to assist designing in an inclusive and accessible way, such as "Seeing AI".

Prototyping software: the first step in running a good Cogability test is making it as realistic as possible and for an online survey that means programming it into a prototype which, ideally, has the look and feel of the software which the live version will be hosted in.

Impact

We have now completed several large quantitative tests of transformed surveys developed using the RCD process and provided evidence to demonstrate that the new data collection tool is collecting good quality, fit for purpose data. In addition, it is obtaining response rates higher than typically seen, with minimal attrition and item missingness. These figures have led to attention from our peers during UK and international conferences. Many have been struggling with their own decreasing response rates in recent years and now seek to pursue our approach.

Lessons learned and recommendations

1.   Engage stakeholders from beginning to end. Let them see the process first-hand and any issues respondents are facing.

2.   Use evidence-based design. Make sure that every design decision you make refers to a user need. These should be based on real insights gained through testing directly with your users. This will help you to avoid designing based on assumptions or the opinions of yourself and/ or your stakeholders.

3.   Create the online mode first. Within this, challenge yourself to think "mobile first". This will mean you make sure to justify every piece of content on the screen so that it doesn't become cluttered. Make sure this mode is working optimally before moving on to other modes. You can then use the online as a start point to develop your interviewer versions. If a questionnaire works in a self-complete online mode, it will likely still work when an interviewer is present. However, be prepared to make small changes so that each mode is optimal. Collecting the same data doesn't always mean using the exact same question in different modes.

4.   Make sure your design is inclusive and accessible. Ensure that all users can access your service. Designing in this way usually helps all users anyway since it generally leads to simpler and clearer content

5.   Use recruitment and transcription services to be more efficient. Although these may come at a cost, they free up your researchers to do other tasks. Make sure you are using the right staff for the right jobs

6.   Test end-to-end process from invitation letter to suite of questions Avoid testing handfuls of questions in isolation. Test a suite of questions even if you focus your questioning on only some of them. The understanding of a question and response to it can be affected by questions which come before and after it.

7.   Consider all aspects of the user journey - don't forget the "small" things, from the design of the invitation letter to the envelope to!

8.   Be prepared to start again. Don't get wedded to a design. Be prepared to throw it away and start again if it isn't working. Therefore, it's important to test early and iterate design.

38. United Kingdom: Office for National Statistics, The value of SDG reporting and data dissemination

The SDG team within the Office for National Statistics (ONS) are responsible for sourcing and reporting the UK data towards SDGs in a way that is meaningful and supports decision-making. To do this successfully, we needed an effective way of storing and disseminating relevant SDG data and having all SDG data together in one place. Therefore, we launched our National Reporting Platform (NRP) www.SDGdata.gov.uk and are continuing to develop it. Our NRP was created using the GitHub web service so that it is open source and free to re-use.

The objective measures on our website and SDG data are still in a development stage, though we already capture many of these objective measures though monitoring of media, social media, and using Google Analytics to monitor usage and users of our website. Not only will monitoring traffic inform us on site usage and how to improve the site, it also means that we meet one of the criteria for the Internal Service Standard assessment.

This is ongoing work; the NRP was launched in 2017 but has continuous, iterative updates and developments. There are now more than 18 different countries, regions and cities using a version of OpenSDG and more in the pipeline. Some of these are already officially launched and some are still in development.

Method

The NRP mostly uses existing data sources from across the UK, which are examined by the SDG team and topic experts for reliability and relevance to the appropriate SDG indicators.

Google Analytics is a reliable way of monitoring website usage. It works by tracking code added to website code, and this records user activity and information.

Challenges and solutions

There are some challenges with using Google Analytics, for example it can be blocked by browsers, browser extensions, and firewalls and other means. However, this was outweighed by it being easy and free to use. It is also difficult to track what users are doing with the information they accessed on our website, for example we currently have no way of tracking how people are using data they downloaded – if it just for information or if they are analysing it for use in a publication.

We anticipated potential challenges in distinguishing users from within our team and external users. We overcame this by setting up a way in which internal ONS users could be excluded or counted separately; for context on 21/01/2019 we had 127 users visit the site, 14 of which were internal users.

Our website was created using the GitHub web service so is open source and free to re-use.

Google Analytics are being used to capture objective measures, which is a free web analytics service. It tracks and reports website traffic, is relatively easy to set up and use. It can also track real time users, enabling insight about visitors currently on the site.

Impact

The website itself provides a way of easily communicating and disseminating SDG data to different types of users. Data are able to be downloaded and disaggregated and use readily available free-to-use data sources. It is accessible, customisable and can be cloned by other countries. Currently, there are 18 different countries, regions and cities using a version of our website and more in the pipeline. Some of these 18 are already officially launched and some are still in development.

In 2020, the NRP was assigned a.gov.uk domain name, sdgdata.gov.uk. The UK is seen as world leading in (a) the amount and quality of our data; (b) extent to which we are able to disaggregate and are striving to do so; and (c) development of the reporting platform.

In terms of measuring the value of our website, using Google Analytics is free to use, meaning there is a good cost/benefit trade off. It can monitor website usage graphically which makes it simple to understand and track traffic on our website. It is relatively simple to set up and use, requiring little technical skills.

However, it does not allow us to do our own calculations e.g. for year on year/month on month comparisons – this is not possible in Google Analytics dashboards.

As part of our ongoing commitment to meet UK Government's Digital Standards, we have established a process of user testing and user research. This work is still in early stages but will provide evidence of the value to users.

Lessons learned and recommendations

Setting and understanding priorities and deadlines, having a clearly defined focus – in this case measuring and reporting UK data for SDG indicators, and what users of our site are doing.

You can find the UK data for SDGs on our National Reporting Platform which has a new URL: www.sdgdata.gov.uk

39. Ireland – Central Statistics Office, customer satisfaction survey report

Ireland Central Statistics Office: User Research

Slide 1 — Profile of Employed/Academic Users

Profile of Employed/Academic Users

Base: All who are employed/studying 453

	%		%		%
Politics/Public Bodies	40	Business/Finance	19	Education	
Central Government/ Public Administration	21	Financial Services	6	Lecturer/Academic	
Economic Research	10	Consultancy	6	Student	
Local Government	4	Market Research	3	Third Level Education	3
Public Policy Research	4	Travel Hospitality	3	Adult Education	1
EU/Institution Agency	1	Other	2	Other	1

2 in 5 of employed/academic users were employed in politics/public bodies, with circa 1 in 5 in business/finance and just under 1 in 6 involved in education.

Q.5/8

Slide 2 — Frequency of Using Statistical Information (17)

Frequency of Using Statistical Information

Base: All users- 506

%

	%
Daily	30
2-3 Times a Week	22
Once a Week	8
Every 2-3 Weeks	12
Monthly	12
Quarterly	8
Annually	4
Less Often	4

Weekly 60%

Monthly 24%

Highest Amongst
Aged 25-34 – 75%
CSO Phone Users– 71%
Males – 66%

3 in 5 of all users claim to access statistical information on a weekly basis, rising to circa two thirds of males and those who have contacted the CSO through phone.

Q.9a

Slide 3 — Frequency of Using Statistical Information (17)

Slide 4 — Rating of Ability to Calculate, Interpret and Manipulate Statistical Data (18)

Rating of Ability to Calculate, Interpret and Manipulate Statistical Data

Base: All users- 506

%

	%
Expert at Manipulating Statistical Information (5)	28
(4)	29
Comfortable with Statistical Information (3)	36
(2)	5
No Understanding of Statistical Information (1)	3
Mean Score	3.8

Comfortable Users **93%**
(Base: 470)
Self Rating As Expert (5)– Comfortable (3)

Uncomfortable Users **7%**
(Base: 36)
Self Rating As Low (2)– No Understanding (1)

Circa 9 in 10 profile as 'Comfortable User' and all others classifying as 'Uncomfortable Users' (7%).

Q.9b

Slide 5 — Repertoire of Statistical Source Used (19)

Repertoire of Statistical Source Used

Base: All users- 506

	Most Often %	Ever Used		Most Often %	Ever Used
Central Statistics Office (CSO)	76	100	Revenue Commissioner	4	35
Eurostat	25	76	Wikipedia	7	35
Organisation for Economic Cooperation and Development (OECD)	9	55	International Monetary Fund (IMF)	3	32
Central Bank	12	50	Ordnance Survey Ireland (OSI)	3	30
Department of Finance	8	48	(WHOSIS)	3	22
Europa.eu	4	42	Sustainable Energy Authority of Ireland (SEAI)	2	19
StatCentral	7	41	Other Online	2	6

* All other reasons 6% or less

Circa 3 in 4 of users claim to use the CSO most often for statistical information, with Eurostat, the OCED, Central Bank and Dept. of Finance also popular scores for statistics.

Q.10a/b

Slide 6 — Brand Momentum Pyramids Explained (20)

Brand Momentum Pyramids Explained

What is this? Brand Momentum can be described as the success in bringing customers through the journey from brand awareness to becoming their preferred brand.

Q.11a To access the CSO, which of the following are you aware of?
Q.11b To access the CSO, which of the following have you ever used?
Q.11c To access the CSO, which of the following do you use most often?

Q.11c Use Most Often
Q.11b Ever Used
Q.11a Awareness

Conversion Ratio

Brand Momentum is calculated as an average of all the conversion ratios achieved at each stage of the customer's journey.

Average Conversion Ratio = Momentum Score

Satisfaction with Channels

Base: All those who have ever used each of the following

| Satisfied %4/5 | Dissatisfied %1/2 | Neither/Nor %3 |

Email (Base: 305) %	Phone (Base: 227) %	Website (Base: 419) %	StatBank (Base: 265) %
90 / 5	89 / 7	85 / 11	84 / 12
Mean Score: 4.4	4.4	4.2	4.2

SAPMAP (Base: 82) %	StatCentral (Base: 159) %	AMF's (Base:80) %	RMF's (Base: 93) %
76 / 20	72 / 25	64 / 9 / 27	58 / 12 / 30
Mean Score: 4.1	4.0	3.8	3.7

Overall very high satisfaction across all channels amongst those who had previously used. Highest dissatisfaction (circa 1 in 10) for AMF and RMF users.

Q.13

Reasons for Contacting CSO

Base: All users- 506

Most Often ↓	%	Ever Used ↓
Research	7	59
Reports/ Publications	5	47
General Work Reasons	15	46
Academic Projects/Studies	40	42
Policy Formulation Monitoring/Evaluation	3	35
Business or Market Analysis	16	30
Modelling or Forecasting	3	28

Most Often ↓	%	Ever Used ↓
Personal Interest	5	27
Regional Analysis	1	27
Media Use	3	12
Service Planning	1	9
Legislative work	1	7
Other	-	1

The majority are contacting the CSO for a range of reasons, the most frequent being for academic, general work or business/market analysis. 2 in 5 contact the CSO for academic projects/studies most often.

Q.14a/b

Devices Previously Used to Access CSO

Base: All users- 506

%

Desktop	Laptop	Mobile	Tablet/iPad
83	63	30	21

*All others less than 1%

Just over 4 in 5 have used a desktop to access CSO statistics, with 3 in 10 accessing via mobile and 1 in 5 via tablet.

Q.15

Channels Used to Become Alerted to Latest CSO Statistics

Base: All users- 506

%

CSO Website	65
Press/Newspaper	36
CSO Email Contact	32
TV	22
Other Printed Publications	11

CSO Twitter	9
Other Social Media	4
CSO Facebook Page	3
I Don't Get Alerted	3

*All others less than 1%

Majority became aware of latest CSO statistics directly on the website, with just over a third finding out in the press/newspaper. Social media statistical awareness is low for each of the available channels.

Q.16

Reasons for Contacting CSO – Summary of Key Statistics Used

Base: All users- 506

Key Statistics Used

% Used Most Often

Population
Labour Market
National Accounts
Key Economic Indicators
Prices Housing and Households
Births Deaths and Marriages
Social Conditions
External Trade
Earnings
Health
Tourism and Travel
Transport Construction
Industry Balance of Payments
Multi-Sectoral
Business Sector Education
Crime and Justice
Agriculture and Fishing
Information Society Business Sector Services
Science and Technology
Climate Environment
IMF Summary Data Pages

% Ever Used

*Question Breakdown in Appendix

Statistics about the Population are most frequently accessed by all users just under 2 in 5 using these most often.

Q.17

Satisfaction with CSO Statistics - I

Base: All users- 506

	Dissatisfied (%1/2)	Very Dissatisfied (1/2) %	(4)	Very Satisfied (5)	Satisfied (%4/5)	Neither/ Nor (3)	Mean Score
Trustworthy	(3%)	2	28	63	(91%)	6	4.5
Free From Political Interference	(3%)	2	21	70	(91%)	6	4.6
Accurate	(4%)		32	56	(88%)	8	4.4
Meet your Needs	(5%)	4	45	37	(82%)	13	4.1
Clearly Presented	(8%)	2 6	37	39	(76%)	16	4.0
Easily Understood	(7%)	1 6	38	32	(70%)	23	3.9
Clearly Documented	(10%)	7	41	27	(68%)	22	3.5

Highest satisfaction with trustworthiness, unbiased nature and accuracy of CSO statistics (circa 9 in 10). However, 1 in 10 are dissatisfied with clarity of documentation of the statistics on offer.

Q.18

Slide 31 — Satisfaction with CSO Statistics - II

Base: All users - 506

	Dissatisfied (%1/2)	Very Dissatisfied (1)(2) %	(4)	Very Satisfied (5)	Satisfied (%4/5)	Neither/ Nor (3)	Mean Score
Are Detailed Enough	(13%)	3 10	44	21	(65%)	22	3.7
Enable Comparisons	(11%)	8	39	26	(65%)	24	3.8
Are Timely	(18%)	14	38	25	(63%)	19	3.7
Are Up to Date	(17%)	14	38	25	(63%)	20	3.7
Are Easy to Find	(17%)	13	36	26	(62%)	21	3.7
Are Frequent Enough	(16%)	13	37	25	(62%)	22	3.7
Are Visually Appealing	(15%)	11	35	19	(54%)	31	3.6

Just under 1 in 5 claim some dissatisfaction with CSO statistics being timely, up to date and easy to find. Whilst 15% claim to be dissatisfied with the visual appeal of the statistics, 3 in 10 fall within 'neither/nor', indicating scope for improvement

Q.18

Slide 32 — Reasons for Dissatisfaction with CSO Statistics Being 'Easy to Find'

Base: All who are dissatisfied with CSO statistics being easy to find - 92

%

	%
I Am Not Sure Where to Get the Information I Want	66
The Search Tool is Not Accurate	31
The Drop Down Menus Are Too Confusing	28
The Homepage is Too Cluttered	26
Certain Statistics are Vague	3
Other	8

38

*All others 1% or less

Majority of those who are dissatisfied with ease of finding statistics are unsure of where to go to find the information they want (66%) with circa 3 in 10 considering the search tool inaccurate and/or the dropdown menu confusing.

Q.18b

Slide 33 — Reaction to CSO Website

Base: All who have used the website - 419

	Negative (%1/2)	Very Negative (1)(2) %	(4)	Very Positive (5)	Positive (%4/5)	Neither/ Nor (3)	Mean Score
Visual Look and Feel (Colours)	(7%)	- 7	44	24	(68%)	25	3.8
Overall Layout of Website	(7%)	- 7	40	23	(63%)	30	3.8
Ease of Using Website	(12%)	11	39	21	(60%)	28	3.7
Ease of Finding Information	(17%)	14	36	17	(53%)	30	3.5

Highest positivity towards the visual look and feel of the website. However, just under 1 in 5 are negative towards ease of finding information and circa 1 in 10 towards ease of using the website.

Q.19a

Slide 34 — Ratings of CSO Publications and Releases

Base: All who have used the website - 419

	Negative (%1/2)	Very Negative (1)(2) %	(4)	Very Positive (5)	Positive (%4/5)	Neither/ Nor (3)	Mean Score
Overall Layout of Releases/Publications	(6%)	5	43	27	(70%)	24	3.9
Visual Look and Feel (Colours)	(7%)	6	44	23	(67%)	26	3.8
Ease of Navigating Releases/Publications	(8%)	7	42	22	(64%)	28	3.8

Overall, very positive ratings of CSO publications/releases with the majority positive towards overall layout, look and feel and ease of navigation.

Q.19b

Slide 36 — Influence of CSO On Personal/ Organisational Decision Making

Base: All users - 506

"Have CSO Statistics and service helped inform any decisions made?"

%

Don't Know 18
Yes 73
No 8

	%
Total	73
Employment	
Government/Politics	81
Business	79
Science/Building/Technology	75
Education	61
Users	
Website	73
Email	81
Phone	86
StatCentral	83

Just under 3 in 4 claim that CSO statistics have helped them make a personal/organisational decision, rising to circa 4 in 5 of those in government/politics or in business. Those who access via email, phone or StatCentral are also more likely to make decisions based on CSO statistics.

Q.20

Slide 37 — Net Promoter Score (NPS)

What is this? The Net Promoter is a key customer satisfaction metric that allows companies to get a clear measure of their performance based on their consumers willingness to recommend the brand

Q.21 "How likely are you to recommend (the CSO) to a friend or family member using a scale of 0-10, where 0 is not at all likely and 10 is extremely likely."

Based on the customers response they are categorized as follows:

1. Promoters (score 9-10) are loyal enthusiasts who will keep buying and refer others, promoting growth.
2. Passives (score 7-8) are content but enthusiastic customers who are vulnerable to competitive offerings.
3. Detractors (score 0-6) are dissatisfied customers who can damage your brand and hinder growth through negative word-of-mouth.

TOP UK SCORES

Sector	Brand	NPS®
Auto Insurance	LV	34
Banking	First Direct	73
Brokerage/ Investments	Hargreaves Lansdown	34
Cable/ Satellite TV Service	Freeview	38
Cellular Phone Service	Tesco Mobile	38
Credit Cards	Santander	28
Health Insurance	Simply Health	25
Home/Contents Insurance	Aviva	7
Internet Service	Plusnet	37
Life Insurance	Prudential	7

DETRACTORS 0 1 2 3 4 5 6   PASSIVES 7 8   PROMOTERS 9 10

To calculate your company's Net Promoter Score (NPS), take the percentage of customers who are Promoters and subtract the percentage who are Detractors.

Net Promoter Score = % Promoters - % Detractors

Slide 38

Likelihood to Recommend CSO – NPS

Base: All users- 506

%

Promoters
Very likely to recommend (10 – 9)

68

Passives
(8 – 7)

23

Detractors
Not at all likely to recommend (0-6)

9

Net Promoters Score: +59

NPS x Key Demographics	
Total	+59
Weekly Users	+68
Website Users	+63
Email Users	+67
Phone Users	+67
StatCentral Users	+65

Overall, positive NPS score of +59. Highest amongst weekly, email, phone and StatCentral users.

Q.21

coyne RESEARCH

Slide 39

Work and Contribution of the CSO

Base: All users- 506

How Informed You Are About the Work of the CSO

%

Very Informed (5) — 23
Somewhat Informed (4) — 49   72%
Neither/Nor (3) — 23
Somewhat Informed (2) — 4
Not at all Informed (1) —] 5%

Perceptions of Contribution the CSO have to Understanding, Wellbeing and Life in Ireland

%

Very Significant Contribution (5) — 51
Contribute Somewhat (4) — 37   88%
Neither/Nor (3) — 9
Contribute Somewhat (2) — 2
Not at all Significant Contribution (1) —] 3%

Overall, high claimed awareness of work of the CSO with just under 9 in 10 holding the perception that the CSO contributes towards understanding wellbeing and life in Ireland.

Q.22/23

coyne RESEARCH

Slide 43

Suggested Improvements for the CSO - Verbatim Responses

Base: All who had suggestions 199

%

Provide More Detail and a Greater Range Of Statistics — 22
Make the Website and Tables More User Friendly — 18
Improved Search Functionality — 15
More Timely Release of Statistics — 13
Provide a Greater Breakdown/Narrative for Statistical Releases — 12
Make More Reports Available in Excel/SAPS/PDF/.Sav — 6

%

An Online Application System to Apply for and Track the Status of RMF's — 4
Improved Response Rates to Email/Phone Queries — 4
Allow Merging and Access to RMF's for a Period Longer than a Year — 4
An Improved Advanced Release Calendar with Specific Dates — 3

*All others 2% or less

Whilst, the majority (60%) did not have any additional suggestions for improvement, amongst those who did, providing a greater variety of statistics and making the website and tables more user friendly were the top suggestions.

Q.25

coyne RESEARCH

Slide 44

coyne RESEARCH

RESEARCH INSIGHTS & IMPLICATIONS

Slide 45

Section 1: Customer Profile

Insights	Implications
Customer Retention ➤ CSO users profiled as largely as aged over 35, ABC1 and living in Leinster (2 in 3), from the sample achieved. ➤ Just over half of users surveyed had contacted the CSO in the past week. ➤ Of the 40% who had not contacted in the past month, circa 4 in 5 had no need for statistical information in this time.	✓ High incidence of use of the CSO amongst those who need statistical information, with minimal evidence of lapsing behaviour indicate **positive customer retention rates.**
Employment Status and Industry ➤ Majority of the sample are working full time with just 5% of the sample being students. ➤ 2 in 5 were employed in politics/public bodies, with circa 1 in 5 in business/finance and just under 1 in 6 involved in education. Circa 1 in 10 were involved in science/technology/engineering or construction (STEC) with 15% involved in another industry.	✓ The range of sectors identified in the employment section indicates a **broad profile of CSO users.**
Seniority and Decision Making ➤ Majority of respondents claim to be in a managerial role (65%) and employed by an Irish, medium-large sized organisation. ➤ Just under 3 in 4 claim that CSO statistics have helped them make a personal/organisational decision, rising to circa 4 in 5 of those in government/politics or in business.	✓ The large proportion of users operating at a senior level within organisations, and high claimed incidence of CSO statistics being used to make decisions, indicates **importance placed on CSO statistics.**

coyne RESEARCH

Slide 46

Section 2: Statistical Channel Usage

Insights	Implications
Statistical Usage ➤ 3 in 5 of all users claim to access statistical information on a weekly basis. ➤ Circa 3 in 4 of users claim to use the CSO most often for statistical information, with Eurostat, the OCED, Central Bank and Dept. of Finance also popular scores for statistics.	✓ The CSO is the most popular source amongst users for statistics, however important to note that it is not the only source they are using for their statistical needs.
Channel Awareness and Usage ➤ Highest channel momentum for the website, however despite high awareness and usage for email and phone StatBank has the second highest momentum score, due to a high conversion ratio. ➤ Low awareness for RMF'S and SAPMAP, however they achieved positive brand momentum scores. Both social media channels had low awareness and usage across all users, as did API.	✓ Driving awareness of StatBank and SAPMAP is likely to increase usage due to positive conversion ratios. ✓ Social media channels currently have lower overall potential to increase conversion to frequent usage.
Overall Satisfaction ➤ Overall very high satisfaction across all channels amongst those who had previously used (circa 90% satisfaction for website and phone). ➤ Highest dissatisfaction (circa 1 in 10) for AMF and RMF users.	✓ High overall satisfaction levels are positive, however indication of some potential to improve AMF and RMF channels.

coyne RESEARCH

Section 3: Usage of CSO Statistics – I

Insights	Implications
Reasons for Contacting the CSO ➤ The majority are contacting the CSO for a range of reasons, the most frequent being for academic, general work or business/market analysis.	✓ The wide range in reasons customers are using the CSO is a positive reflection of the diversity of the available information.
Devices Used to Access CSO Statistics ➤ Just over 4 in 5 have used a desktop, with 3 in 10 accessing via mobile and 1 in 5 via tablet/iPad.	✓ With a significant proportion using via mobile/tablets important to ensure website and **online tools are optimised** for these devices.
Awareness of New Statistics ➤ Majority became aware of latest CSO statistics directly on the website, with just over a third finding out in the press/newspaper.	✓ Considering that the majority are only finding out about new statistics once on the website, potential to improve engagement and usage by **increasing communication** through other channels.
Rating of CSO Statistics on Key Metrics ➤ Highest satisfaction with trustworthiness, unbiased nature and accuracy of CSO statistics (circa 9 in 10). ➤ 1 in 5 claim some dissatisfaction with CSO statistics being timely, up to date and easy to find. ➤ Whilst 15% claim to be dissatisfied with the visual appeal of the statistics, 3 in 10 fall within 'neither/nor' indicating scope for improvement.	✓ Overall, whilst users were satisfied with their rating of CSO statistics, potential for improvements in terms of timeliness of releases, providing **clear signposting to statistics**, and ensuring the continuous improvement of the **visual appeal** of statistics on offer.

cOyne

Section 3: Usage of CSO Statistics – II

Insights	Implications
➤ Circa 3 in 5 are satisfied with the ease of finding CSO statistics, however amongst those who were dissatisfied the main reason was being unsure of where to go to find the information they want (66%) with circa 3 in 10 considering the search tool inaccurate and/or the dropdown menu confusing. ➤ When evaluating the website specifically, just under 1 in 5 are negative towards ease of finding information and circa 1 in 10 towards ease of using the website.	✓ Potential to **improve ease of navigation** for users by increasing the accuracy of the search tool, and reviewing the navigation process, e.g. dropdown menu summary.
✓ Overall, very positive ratings of CSO publications/releases with the majority positive towards overall layout, look and feel and ease of navigation.	✓ CSO publications and releases are highly rated, with minimal evidence of dissatisfaction.

cOyne

Section 4: Attitudes Towards CSO

Insights	Implications
Recommendation Behaviour ➤ Overall, the CSO was given a positive Net Promoter Score (NPS) of +59, which was even higher amongst weekly, email, phone and StatCentral users.	✓ A limited number of detractors amongst CSO users, which indicates minimal threats to the organisations reputation – important to maintain and seek opportunities to improve.
Perceptions of Societal Contribution ➤ Overall, high claimed awareness of the work of the CSO with just under 9 in 10 holding the perception that the CSO contributes towards understanding wellbeing and life in Ireland.	✓ Positive impression of the contribution of the CSO to Irish society and high claimed awareness of activities again indicates positive reputation.
Brand Image ➤ Highest satisfaction with providing a valuable service and statistics (just over 9 in 10). ➤ However this is slightly less (5%) amongst those employed in business/financial sector. Those in this sector were also less satisfied with the overall communication of statistics, visualisation of information, being seen as active and being seen as progressive.	✓ Explore any opportunities to improve the communication and visualisation of statistics from a business/financial sector perspective.
Additional Suggestions ➤ Whilst, the majority (60%) did not have any additional suggestions for improvement, amongst those who did providing a greater variety of statistics and making the website and tables more user friendly were the top suggestions.	

cOyne

117