



Recommended best practices for a statistical website

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1. Introduction

While there is no set approach for building statistical websites, national statistical offices around the world have adopted some best practices over the years. This document presents some of these best practices for your consideration when developing and/or enhancing the website of your national statistical office (NSO).

This document was first revised in June 2020 with additional updates in November 2022. It is now considered final.

2. The Basics Of A Website For A Statistical Office

Statistical websites are not only the primary data dissemination vehicle for NSOs, they are also a forum to promote the NSO's visibility and a means to communicate with current and future respondents.

The two main audiences for NSO websites are also very similar the world over: respondents (businesses and households) and data users (of all types).

Data users are sometimes segmented into categories, such as casual browsers, data farmers and data miners, and come from different backgrounds. It is clear that statistical agencies must serve a broad range of data users, from elementary school students to government planners and policy experts, to very advanced researchers and professional economists. As websites grow and develop more features, it is recommended to create a number of personas to represent different types of data users. A persona is a fictitious, specific and concrete representation of a data user. Personas act as stand-in for real data users and help guide decisions about functionality, design and content.

While there is no single "right" way to organize statistical results and information on a website, plenty of examples exist from around the world. Visitors to these statistical websites will see differences, but will also observe many similarities in the type of content, layout and organization.

The following are best practices that PRASC recommends to implement for the development and/or the enhancement of a national statistical office's website. Note that the implementation of these recommendations should be done in a phased approach and in accordance with the NSO's context, priorities and resources available.

3. Recommendations

3.1. Website Design

3.1.1. Mobile Friendly / Responsive Design

To keep up with the increasing use of mobile devices, a mobile first design approach is paramount. In addition, Google now uses mobile-friendliness as a ranking factor in their algorithm to render search results.

3.1.2. Consistent Presentation / Easy Navigation

It is recommended to have a consistent presentation throughout the website, an easy navigation and a coherent and simple product line. This will make it easier for users to navigate and find what they are looking for. A common look and feel across similar products should be adopted. As an example, all data tables should have a similar presentation and follow the same standards. It is good practice to provide access to products and information from more than one access point (menu tabs, cross-links, etc.) to accommodate various types of users.

Breadcrumb navigation, which shows users where they are on the website and how they got there, should also be implemented.

e.g. Home > Subjects > Environments

3.1.3. Content Management System

For sustainability and maintainability, it is best that the website be developed using a web content management system rather than custom coding of web pages. Many content management systems are available. Note that WordPress has been adopted by most NSOs of the Caribbean countries with whom PRASC was providing website assistance. WordPress is a free open-source content management system that is very easy to use and offers a good selection of free website themes and features (plug-ins).

3.1.4. Secure Website

To ensure that the user is connected to an authentic site and that their personal information is safe while browsing the website, an SSL certificate should be obtained to make the website secure. The website URL will be preceded by “https”. Google is also using “https” as a ranking factor. In addition, there are other best practices that can be followed to increase website security. Some basic WordPress security best practices can be found in the WordPress User Guide, also produced by PRASC. It is critical to keep the website security up-to-date as internet security measures and requirements evolve.

Here is a link where WordPress provides a good overview of various security measures: <https://www.wpbeginner.com/wordpress-security/>

3.2. Data Dissemination On A Website

The heart of any statistical website is data dissemination. The term “data dissemination” also includes, in this context, reports and publications that may be analytical in nature, as well as reference material. In addition, the NSO website is a forum to promote the NSO’s visibility. It is a means of communication with the public, stakeholders, media, data users and respondents. The NSO website is an essential tool in the advocacy of statistics.

Communication officers, statisticians and website administrators all play a key role in the development and enhancement of their organization’s website. Communication officers are active participants in the planning and development of content, communications and promotions published on the website. Statisticians are active participants in the creation of statistical content, such as data tables, reports and reference material. Website administrators are active participants in guiding and finding solutions from a technical standpoint for the layout and organization of the content. All have to work together in the planning of the development and the enhancement of the website.

PRASC recommends including the following elements on an NSO website:

3.2.1. High-Level or Latest Indicators

The NSO should consider including high-level indicators, such as the Consumer Price Index or population estimates, on its home page and/or on the main page of each subject area. Each indicator should link to its data source to offer more information, such as complete data table, news release and/or analytical report.

3.2.2. Downloadable Data (with time series, where possible)

It is certainly an international best practice to publish interactive and downloadable data tables on a website. Some organizations publish Excel files, while others use in-house systems or software such as PC-Axis or the .Stat Suite from the Organisation for Economic Co-operation and Development (OECD).

When offering downloadable data on a website, the file type as well as its size should be displayed.

The goal should be to offer non-proprietary output formats, however, as a first step, the NSO could publish Excel files. Developing HTML tables and offering CSV (Comma Separated Values) format and SDMX/XML (Statistical Data and Metadata eXchange/eXtensible Markup Language) as download options could be considered at a later date, when resources permit. Offering data via APIs (Application Programming Interface) could also be considered for advanced and tech-savvy data users.

As stated in the UN Fundamental Principles of Official Statistics, it is best practice to cross-reference data products with related metadata in order to facilitate correct interpretation of data.

3.2.3. Reports, Publications And Media Releases

Most statistical agencies publish various types of analytical, text-based documents, which often contain data tables and charts. These may be short documents, such as media releases, or longer such as analytical reports, annual yearbooks and statistical digests.

The main options to consider for these types of publications are whether to publish them as HTML web documents or whether to publish them as PDF documents. Either format, or both, would be acceptable for the NSO's website.

Update:

- Some NSOs are starting to move away from publishing PDFs on their website. PDFs are harder to read on phones, are not search engine optimized and are not easily measured by analytics. Users now expect more interactive content. This new trend certainly leaves room for debates between NSOs as well as within.

3.2.4. Metadata

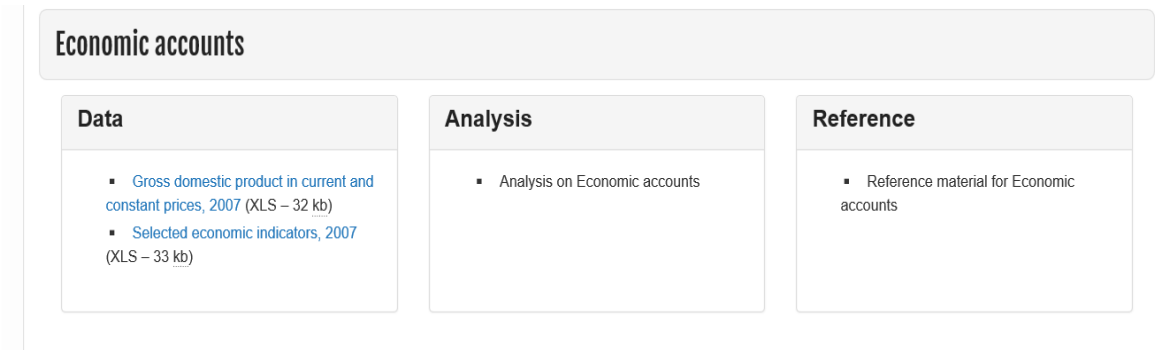
In line with the third fundamental principle on official statistics, accountability and transparency, the NSO is to present information according to scientific standards on the sources, methods and procedures of the statistics. Such material includes concepts, definitions, classifications and methods used by the organization in the production of statistics. Making this type of information available to users serves to facilitate the correct interpretation of the data, assessing the quality of the data, and assessing the suitability of the data for other statistical projects/reports.

3.2.5. Organization By Subject

It is imperative that data, analysis and metadata be organized and presented logically by subject area on the website. This is what has been observed from users during usability testing and consultation sessions over the years. This may be less important if only a very small amount of data is presented to start with, but will become important to implement as more data and subjects are published on the website. The websites of statistical organizations around the world provide a variety of examples of how to organize and display information by subject.

Some organizations will group subjects by pillar (i.e. Economic Statistics Social and Demographic Statistics, Environment Statistics) while others will list every subject. For organizations with large amount of information a second subject level may also be used.

It is important that within each subject, all its statistical information be found (data tables, publications, references, etc.). The following image illustrates one way to present different types of information for a particular subject area.



3.2.6. Data Portals

The concept of data portals is also a growing trend. In some cases, a data portal would be similar in nature to a subject page. Crime and Justice would be one such example. In other cases, a data portal could serve to group content that would otherwise not be grouped by subject – take gender for example. Many data products contain a gender component, labour, population, etc.; grouping this content into a gender data portal is desirable. Typically, such data portals would go beyond an inventory of content, but would also contain some highlights, indicators with data visualizations and possibly a listing of featured products.

Another component of the growing trend of data portals is that information does not only have to originate with the statistical office. Where appropriate links to other data sources such as central banks or other government departments can be provided. Another example could be the use of a data portal for the dissemination of Sustainable Development Goals (SDG). Here is the example of Statistics Canada: <https://www144.statcan.gc.ca/sdg-odd/index-eng.htm>.

It is important to note that data portals, along with any web content, must be carefully curated and kept up-to-date. Out-of-date content would hold little appeal to data users.

3.2.7. Search

While it is important to organize data into logical subject groupings, the search function is also a factor to consider. Website users expect to be able to search within a website for content. Content must also be “findable” by external search engines, such as Google. A search engine optimization (SEO) plan should be considered in the strategies to elevate awareness of the NSO and increase traffic to the website. It is important to note that well developed content and the quality of the tagging have a direct impact on findability of content. There are a number of content writing techniques for creating effective SEO content.

3.2.8. Advance Release Calendar

It is a best practice and an IMF (International Monetary Fund) requirement to establish and publish a release calendar, especially for major economic indicators.

3.2.9. Promoting News Releases / What's New / Events

Since the website is also used as a communication and advocacy tool, it can feature news, latest statistics or reports, events, and upcoming changes the home page via a rotating banner and/or feature tiles.

3.2.10. Information For Respondents

A respondent relations section should be considered for the website. This section should deliver some basic information about surveys in the field at a given time (i.e. description, collection period, collection method) and could include a "Frequently asked questions" for respondents. The Canadian example, <https://www.statcan.gc.ca/eng/survey/index> also features infographics and videos created to help learn about Statistics Canada, survey participation, survey data, and more.

3.2.11. About The NSO

A section to promote the NSO and increase visibility and transparency is recommended. This section should include information about the NSO, its mandate, the acts and policies under which the organization operates as well as its organizational structure. It can also include the work done with other departments/regional/international organizations, links to organizations the NSO collaborates with, description of current consultations and special projects as well as career opportunities at the NSO.

3.2.12. Contact Us

A section that provides ways in which to get in touch with the NSO for general enquiries and comments is essential. This "Contact us" section of the website could also include an online form that people can use to submit general and/or data requests. The inclusion of the NSO business hours and a Google Map of the NSO location is also recommended.

3.2.13. Legal Notices

Links to Terms and Conditions and Privacy notice related to the use of the website and its content should be included in the footer. Terms and conditions should also include a reference and link to an Open Data Agreement. PRASC has developed basic templates for these legal elements. Before using these templates for your website, PRASC strongly recommends to consult with your legal department to ensure that they align with your government's related legislations and guidelines, and to modify them accordingly as required.

3.2.14. Outreach And Engagement Features

As a way to reach and engage users and build awareness, the following features could be implemented:

- Links to social media accounts
- Share this page
- Subscribe to releases/notifications (Open Data Watch released a study (<https://www.aiddata.org/publications/counting-on-statistics>) that found that, especially in low and middle income countries, data users (government officials – policy makers, researchers) wanted to be notified by text or email of updates to data, and that this service was rarely offered.)

Update:

- The use of social media is increasing. NSOs need to have a presence on social media platforms to reach and connect with users.
- RSS feeds are not in as much demand as they used to be as users are turning to social media for following sites, watching feeds and learning about new content.
- Blogs and chats have proven to be quite resource intensive to manage therefore NSOs are moving away from them and using other mechanisms to connect with users such as social media and visualization.

3.2.15. Sustainable Development Goals (SDGs)

As a commitment to the 2030 Agenda for Sustainable Development, a page dedicated to SDGs should be considered. The page could include information and/or links to SDG related documentation as well as the indicators and their source. In addition to the Canada example provided earlier, here is Statistics Denmark SDG page.

<https://www.dst.dk/en/Statistik/Sdg#>

3.2.16. Census Information

A page (or section) where users can find all related Census information is desirable. NSOs can use this page to inform and promote upcoming Census and related activities. This is where all published Census data, publications, metadata and more can be found.

3.2.17. Other Elements And Best Practices To Consider

- The navigation menu, referred to as the megamenu, should contain no more than 7 or 8 tabs. Alternatively, one single menu tab with a dropdown could be used. Some organizations are using the hamburger menu represented by an icon with three short horizontal stacked bars.
- When listing elements on a page or in a sub menu, it is best practice to use alphabetical order as much as possible.
- Links on a page should be obvious to the user and presented in a consistent manner. They should all be the same colour and could also be underlined.

3.3. Web Analytics

To better know your audience's behavior, how they navigate and access content, it is recommended that web analytics software be used to obtain metrics and trends about the website. Such metrics can be the number of visits, page views, time spent, returning visitors, location of visitors and more. In essence, it reveals what users do on the website. This information is an important part of data evolution and can contribute to increase the availability and accessibility of data and guide future development on the website to achieve an effective website. The use of the free standard version of Google Analytics is recommended, as it is easy to use and offers enough valuable tools to gain a better idea of how users are interacting with the website.

Open Data Watch, in partnership with PARIS21, conducted an excellent study on web traffic using Google Analytics. We recommend to consult the report as it provides excellent recommendations. <https://opendatawatch.com/publications/measuring-data-use/>

It is also important to note that a well-structured website will increase the value of the data captured by web analytics.

3.4. Emerging Trends

To keep up with the digital economy and the way data users consume information, the following features should be considered:

- data visualization (static and interactive), to understand the story behind the data.
 - infographics, to quickly and visually understand a message or a story derived from data.
 - thematic maps, to view the spatial distribution of specific data themes for standard geographic areas.
 - dynamic tables and charts, to explore the different characteristics of the data.
 - videos, to learn about your survey results, statistical concepts, and more.
- application programming interfaces (API, also called web services) - to provide quicker, automated access to statistical data as a website matures over time
- accessibility, to ensure that users have equal access regardless of their abilities and adaptive technologies (in accordance with the World Wide Web Consortium's Web Content Accessibility Guidelines <https://www.w3.org/standards/webdesign/accessibility>).
- feedback mechanism, the latest trend for soliciting feedback on pages is to have only two choices (happy/sad, thumbs up/down) followed by a comment entry. The idea is to try to obtain actionable feedback.

Update:

- The trend of soliciting feedback on web pages by offering two choices (happy/sad, thumbs up/down) followed by a comment entry has seen a big decline. The thumbs up/down feature did not provide actionable information and was of very little value. PRASC no longer recommends the use of this feature.

- A new trend that has seen some uptake in recent years is the [request to obtain cookie consent](#) from visitors. PRASC encourages NSOs to implement this practice on their website and update their cookie/privacy policies accordingly.

3.5. Open Data

Open data is digital **data** that is made available with the technical and legal characteristics necessary for it to be freely used, reused, and redistributed by anyone, anytime, anywhere (Open Data Charter <https://opendatacharter.net/principles/>).

By offering easy to find downloadable data in non-proprietary formats, free of charge, NSOs are meeting Open Data principles. NSOs should strive to maximize access to official statistics by increasing the number of datasets available as the website matures over time.

As countries develop websites for their statistical organizations, it is likely that more and more will be included in the Open Data Inventory (ODIN) <https://odin.opendatawatch.com/> which measures data coverage and the openness of the official statistics.

3.6. User Consultations And Website Testing

When developing or enhancing a website, it is desirable to conduct user consultations to better connect with users and understand their behaviors and needs. Assessments can include focus group discussions, online client satisfaction surveys and one-on-one usability testing. Focus groups consist of a group of diverse individuals who are prompted by a moderator for comments relating to various topics and products. For satisfaction surveys, users are invited to give their level of satisfaction about services and products, in order to measure how well their needs are being met. Usability testing is an assessment technique that evaluates the effectiveness of existing website or new prototypes with the goal to determine the overall user experience with the product. Results from client consultations serve as guide to the development or enhancement of a website in order to effectively respond to user's needs.

It is best practice to test any website before it is launched. While there are many ways to do this, it is suggested that the near-final version of the prototype or the new section or feature be presented to main data users to solicit their feedback and to ensure that it meets their needs. A coordinated communication effort is also recommended to support the launch of the website and/or promote its new section and features.

3.7. Starting Small And Considering The Potential For Future Development

It is recommended that NSOs, that do not yet have a website, start small and then gradually add content and functionality to their website, but only when it is clear that the NSO has the capacity and resources to maintain and support it.

The replacement of Excel files with CSV and SDMX can be a gradual effort as well as the addition of HTML and data visualisation. Other more specialized tools, such as REDATAM,

and any special applications for trade data, for example, can also be considered as future additions.

In order to facilitate maintenance and ensure sustainability, it is best practice to use the smallest possible number of software and technologies on a website.

In addition to disseminating statistical information, a website could also be used for data collection. Given the added level of complexity and security required, it is not recommended to use the website as a data collection tool for most NSOs in the Caribbean region until the NSO can ensure necessary technical capacity and infrastructure to support this on an ongoing basis.

3.8. Statistical Websites In The Context Of A Whole-Of-Government Approach To Websites

NSOs around the world are engaged in interesting discussions about their websites. They are interested in whether a statistical website should simply be an integrated portion of a wider central government website or be a separate entity. NSOs in Canada, the United Kingdom and Australia, among others, have successfully argued that they should maintain a separate and unique web presence. The rationale for this position is based on the United Nations Fundamental Principles of Official Statistics. One of these principles is impartiality, and it is therefore necessary for a statistical agency to maintain some sense of independence. A distinct Web presence is one way to maintain separate branding. However it is recommended to include a link to the NSO website from the central government and/or the ministry that oversees the NSO.

This is not to say that a statistical agency needs to avoid using government-wide tools and infrastructure. In fact, it makes sense for statistical offices, particularly smaller ones, to take advantage of expertise and toolsets provided by central government IT departments. In the Caribbean, working with the central government and using its IT web infrastructure makes good sense. There may also be standards to follow across government websites.

One recommendation is that the URL of the statistical website should be simple and recognizable (for example, the URL for Statistics Canada is statcan.gc.ca). If this is not possible, it is suggested that *stats.country_abbreviation* be created as a functioning URL "alias."

3.9. Additional Technical Considerations

As website matures over time, another best practice is to have a Business Continuity Plan in the event of power outages and other events or crisis that would affect the availability of the website and the ability to update it. The practice of having a staging site for development and testing is also recommended.

Organizations should stay abreast of IT infrastructure and may consider moving to cloud based infrastructure in the future.

3.10. The Security Of Pre-Release Data And Information

Statistical agencies are well accustomed to the need for protecting the security of respondent information. Great care must also be taken to protect reports and aggregate data before official release, especially for market moving data which are of particular sensitivity: Early and unequal access must be avoided to preserve trust, objectivity and impartiality of the NSO.

The security of information as it is being prepared for publication on the website must be carefully considered. Discussions are required with the IT team about adequate levels of security and the need to restrict access to pre-release information even for other government employees, who are not authorized to see this type of data until it is officially released.

One way to avoid this issue is to load information to the website only once it has already been publicly released.

In the longer term, however, it is recommended that the website becomes the official release mechanism, as it is for most NSOs around the world. For this to happen, security concerns with information that is being prepared for launch on the Web must be addressed.

3.11. Data Dissemination Policies

If data dissemination policies are not already in place, it is recommended that the NSO develops policies, directives and/or business processes that include full procedures for publishing on the Web, including rules for retention and archiving, revisions, and corrections.

Update:

- The NSO may refer to the [Web Dissemination Process](#) template which describes the various procedures for disseminating and publishing data on the NSO website. It also covers corrections, archiving, roles and responsibilities and maintenance procedures for the website.

4. Additional PRASC Documents And Templates

Additional PRASC documents and templates can be found on the CCS – E-CISTAR – Knowledge base.