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WORKING PAPER ON ASSESSMENT OF WEBSITES FOR EFFECTIVE DISSEMINATION OF DATA



Data Informatics and Innovation Division

Ministry of Statistics & Programme Implementation
Government of India
January, 2025

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FOREWORD

राव इन्द्रजीत सिंह
RAO INDERJIT SINGH



राज्य मंत्री (स्वतंत्र प्रभार)
सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय;
राज्य मंत्री (स्वतंत्र प्रभार) योजना मंत्रालय तथा
राज्य मंत्री संस्कृति मंत्रालय
भारत सरकार
Minister of State (Independent Charge) of the
Ministry of Statistics and Programme Implementation;
MOS (I/C) of the Ministry of Planning and
MOS in the Ministry of Culture
Government of India

FOREWORD

In an era where data underpins governance reforms and shapes public policy, ensuring seamless, accessible, and reliable dissemination of Official Statistics is essential for empowering citizens and support informed decision-making. The Ministry of Statistics & Programme Implementation (MoSPI) is committed to making Government data available in formats that meet rigorous quality standards, while at the same time aligning with growing demands for transparency and accountability.

Government websites serve as crucial access points for data as far as citizens, businesses, researchers, and policymakers are concerned. With the rising demand for open data, it is imperative that these platforms remain user-friendly, responsive, and capable of delivering accurate and timely data. Recent digital advancements have opened up new avenues to enhance the effectiveness of data communication and usage across these platforms.

This Working Paper offers a tool for comprehensive assessment of the current state of Government websites in India, specifically evaluating their effectiveness in delivering statistical data to the public. It provides a mechanism for reviewing these websites against global best practices for data dissemination.

This Paper aims to guide Government entities in making websites a more effective platform for data dissemination. By focusing on areas such as accessibility, website design, data presentation, and user engagement, we can create a framework for ensuring accessibility of public data to all.

I encourage all Ministries and Departments to adopt the guidelines outlined in this Working Paper. By enhancing the usability and accessibility of our websites, we can reaffirm our commitment to transparent, data-driven governance and strengthening public trust through improved service delivery.


(Inderjit Singh)

EXECUTIVE SUMMARY

The Ministry of Statistics and Programme Implementation (MoSPI) plays a crucial role in modernizing India's National Statistical System by improving data management and dissemination through government websites. This working paper outlines a framework for assessing and enhancing government websites to ensure effective data dissemination, emphasizing usability, accessibility, and user engagement.

The paper highlights the distinction between data portals and websites, with the former focused on structured data access, and the latter providing broader informational content. Drawing from global standards and best practices, the paper proposes key features for data dissemination websites, including accessibility, search functions, metadata availability, data visualization, multilingual support, and feedback mechanisms.

An assessment tool and scoring mechanism are provided to evaluate the effectiveness of websites in meeting these standards across four themes: *Data Accessibility & Organization*, *Publications & Updates*, *User Interaction & Feedback*, and *Data Presentation & Multilingual Support*. The aim is not to rate websites but to offer Ministries and Departments a self-assessment framework for improving their websites.

By adhering to the proposed benchmarks, government websites can improve data dissemination, facilitate better decision-making, and enhance public trust in official statistics. The final score helps determine the level of compliance with global standards, guiding improvements where needed.

The working paper provides a tool to Ministries/ Departments of the Government of India for self-evaluation and enhancement of their websites. By doing so, the Indian government can significantly improve the quality of its data dissemination practices, ensuring that the websites are user-centric. The adoption of this framework will lead to greater transparency, more informed policy decisions, and increased engagement with citizens, ultimately contributing to better governance and accountability.

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INTRODUCTION

The Ministry of Statistics and Programme Implementation (MoSPI) is responsible for managing and coordinating the country's statistical activities. Since its establishment in 1999, MoSPI had played a vital role in shaping and overseeing policies related to the collection, processing, and sharing of data. As per the Allocation of Business Rules, Ministry has the following mandates among others:

1. Advise Departments of the Government of India on statistical methodology and on statistical analysis of data.
2. Conducting quality checks and auditing of statistical surveys and data sets through technical scrutiny and sample checks and generate correction factors and alternate estimates, if required.
3. Dissemination of statistical information through a number of regular or ad-hoc publications to Government, semi-Government or private data users/agencies, and dissemination of data, on request, to United Nations Agencies like United Nations Statistics Division, Economic and Social Commission for Asia and the Pacific, International Labour Organization and other relevant international agencies.

BACKGROUND

Ministry of Statistics and Programme Implementation is actively implementing strategic goals set for modernizing Indian National Statistical System. One of the goals under modernization plan relates to the *Technical Upgradation: Data Management and Sharing System for Major Datasets and Experimentation with New Technology*. Under this recommendation, MoSPI intends to create a framework for improving existing data management system including websites and data portals of data producers for ease of access and management. A key focus is on developing a framework for user-centric data dissemination system across all data producing Ministries/Department which is prerequisite for data driven decision making and enhancing statistical literacy.

It is interesting to know that a data portal and a website have distinct roles. A data portal is designed to give users of data including researchers and developers access to datasets and analytical tools, featuring structured data, APIs, and visualizations, along with search and download functionalities. On the other hand, a website aims to inform or engage a broader audience through a combination of text, images, and multimedia, focusing on navigation and user interaction. In summary, a data portal specializes in data access, while a website encompasses a wider array of informational content including data.

Ministry of Statistics and Programme Implementation has drafted this working paper that aims to establish benchmarks for Ministries/Departments in disseminating data through their websites. The paper outlines features for government websites to enable them

to adhere to the highest standards of usability and accessibility. This standardization is essential for fostering informed decision-making and improving governance by making data more accessible and user-friendly for all citizens.

In 2001, the United Nations Statistical Commission and the Economic Commission for Europe jointly published “A Guide¹ to the Websites of National and International Statistical Organizations”. This guide was created to assist users in navigating and searching for statistical information on the websites of National Statistical Offices (NSOs) and selected international organizations. It also highlighted good practices in data presentation, user interface design, and the effectiveness of search and navigation tools. References from this guide have been used in the working paper to identify the essential features of a website for effective data dissemination.

OBJECTIVE

The primary objective of this working paper is to create a framework for data dissemination practices for websites of the government departments/ministries as per the global norms.

“A website can be defined in the context of research as a collection of interlinked web pages, images, videos, and other digital content that is hosted on a web server. According to Lee and Kozar (2012)², a website serves as a platform for users to access information and interact with content, emphasizing the importance of usability, organization, and purpose in effective web design”

The aim of this paper is to help the users of statistical websites in navigating and searching for statistical information on the existing websites. This paper does not aim at rating the websites, although some good practises have been indicated for adherence. These in turn can help Ministries/Departments to locate good existing practises that can be followed.

Through desk research including assessment of various guidelines on the subject, a comprehensive recommendation of how these websites should function in terms of usability, accessibility, and user engagement so far as dissemination of official statistics is concerned has been arrived at. Based on this assessment, the paper aims to establish a set of minimum standards and features that all government websites should incorporate in order to ensure that the websites are user-friendly, transparent, and effective in delivering critical information to the public. The goal is to enhance the overall quality of data dissemination, making it easier for policy makers and citizens to access and utilize government data in a meaningful way.

1 A Guide to the Websites of National and International Statistical Organizations | UNECE. (2001, November 1). <https://unece.org/info/publications/pub/21889>

2 Lee, Y., & Kozar, K. A. (2012). Understanding of website usability: Specifying and measuring constructs and their relationships. *Information & Management*, 49(3), 130-139. <https://www.sciencedirect.com/science/article/abs/pii/S0167923611001679>

This working paper also seeks to clarify that the proposed assessment and recommendations do not overlap with the work done by the Ministry of Electronics and Information Technology (MeitY). While MeitY focuses on the cybersecurity, IT and data protection aspects of government websites, this paper concentrates on the data dissemination features of the government websites. The aim is to complement MeitY's efforts by ensuring that, while websites are secure and protected, they also meet high standards of user experience and public engagement. This distinction is crucial to avoid duplication of efforts and to ensure a holistic approach to improving government websites.

■ SCOPE OF WORK

The objective is to ensure that key socio-economic indicators and relevant datasets are presented in a user-friendly manner, making them easily accessible, searchable, and regularly updated. By setting these standards, the paper seeks to enhance the overall quality of data dissemination across Ministries/Departments, thereby promoting transparency and increasing public engagement through consistent and well-maintained online platforms. It is important to note that this paper does not address cybersecurity or data protection concerns, as these do not fall under the domain of this ministry and users are advised to follow guidelines prescribed by concerned agencies for the purpose.

■ BASIC FEATURES OF A WEBSITE FOR DATA DISSEMINATION

In order to ensure ease of access of the data handled by the Ministry/ Department, the website should have following basic features in order to make the website more accessible and user-friendly so far as dissemination of data is concerned:

S.no	Features	Description
1	Availability of Background Information on the home page	General information about statistics produced Contact information of the statistical units Information about Acts regarding statistical functions
2	Arrangement of Available Data	Data must be accessible from the homepage Data should be arranged as per themes (E.g. Energy, Industry, Economy, Education) & Chronologically within a theme
3	Press Releases	Press release available should be chronologically arranged on the main page
4	Online Publications	Availability of online publications with proper links to view and download

S.no	Features	Description
5	Data Formats	Tables should be in Excel/CSV or Flexible access to database with download facility
6	Data Visualization	Data visualisation such as Graph, Chart, Scatter plots to be present for better appreciation of data
7	Frequency	Frequency of updating the data should be mentioned
8	Metadata	Metadata should be made available along with datasets
9	Search & Navigation	Facility for basic site search locally built in the website along with filter mechanism for disaggregation
10	Access to Databases	Data so far as possible should be accessed through database
11	Languages	Readable in Multiple languages as per government guidelines
12	Feedback	Availability of Feedback Mechanism from users on the website
13	Technical Information for using the site	Any specific technical information/tools to access the websites should be prominently mentioned
14	Search Engine Optimization	The link of the website should appear on the first page of the search engine

ASSESSMENT

In order to assess the websites on the standards mentioned above, an assessment tool is provided in this [link](#). This assessment tool can be used to determine the effectiveness of the website to disseminate data to the users efficiently and changes which are required to be undertaken for making the website data user friendly. It is once again reiterated that this paper does not intend to rate the website, rather its objective is to provide a tool in the hands of web managers to assess the effectiveness of respective websites and make improvement if required for ease of data access.

SCORING MECHANISM

The assessment is split into 4 themes viz. Data Accessibility & Organisation, Publication & Updates, User Interaction & Feedback and Data Presentation & Multilingual Support

1. There are four themes as indicated above.
2. Each of the themes has a set of questions scored on the scale of 0 to 3 if the question has 4 options; and 0, 1.5 and 3 if there are three options to the question.

The detailed question-wise scoring mechanism is illustrated as per the table mentioned below:

S.No	Category	Scoring Mechanism
THEME 1: DATA ACCESSIBILITY & ORGANISATION		
1a.	General Information	<p>The website with general information like contact info, relevant Acts/ Policies related to the collection of data/statistics accessible to users directly from the homepage, would receive a score of 3.</p> <p>If the information is accessible but not directly from the homepage, it would receive a score of 2.</p> <p>If efforts are underway to make this information accessible, the website would receive a score of 1.</p> <p>If there is no plan to make the information accessible, it would receive a score of 0.</p>
1b.	Information about data	<p>If the homepage provides both the information about different types of data and a link to access the data, the website would receive a score of 3.</p> <p>If the homepage contains either the information about the data or the link to access the data, it would receive a score of 2.</p> <p>If the process to provide both the information and link is under progress, the website would receive a score of 1.</p> <p>If there is no direct access provided to the information or the data, the website would receive a score of 0.</p> <p>Note: Details about data will be considered to be provided even if data and metadata from the homepage are linked to separate portal/page.</p>

S.No	Category	Scoring Mechanism
1c.	Metadata	<p>If metadata is displayed along with all datasets, it would receive a score of 3.</p> <p>If metadata is provided along with only few datasets, it is scored 1.5.</p> <p>If no metadata display is undertaken on the website, it would receive a score of 0.</p> <p>Note: <i>Details about metadata will be considered to be provided even if data and metadata from the homepage are linked to separate portal/page.</i></p>
1d.	Search Engine Optimisation	<p>If website has local search on website as well as has its appearance in popular search engines on the first page, it would receive a score of 3.</p> <p>If the website has only local search or has its appearance in popular search engines on the first page but not both, it is scored 1.5.</p> <p>If the website is trying to establish a local search and boost its presence on search engines, it is scored 1.</p> <p>If there is no plan of establishing this, it would receive a score of 0.</p>
THEME 2: PUBLICATION & UPDATES		
2a.	Press Releases	<p>If the website displays all the press releases and is in chronological order, it would receive a score of 3.</p> <p>If the website displays all the press releases but not arranged in chronological order, the website would receive a score of 2.</p> <p>If the website displays most of the press releases and are listed in chronological order, the website would receive a score of 1.</p> <p>If the process to display the press releases in chronological order is underway, the website would receive a score of 0.</p>
2b.	Release Calendar	<p>If the website provides a release calendar with tentative dates for all releases, it would receive a score of 3.</p> <p>If the calendar contains tentative dates for only a few specific releases, the website would receive a score of 2.</p> <p>If efforts are underway to prepare and publish a calendar with release dates, it would receive a score of 1.</p> <p>If there is no plan to include a release calendar, the website would receive a score of 0.</p>

S.No	Category	Scoring Mechanism
2c.	Download-ability	<p>If the website provides a link to download all publications, guidelines, summaries, and reports on the homepage, it would receive a score of 3.</p> <p>If the data/ publications are distributed across different sections of the website but efforts are in progress to organise them on the homepage by way of providing a link, it would receive a score of 1.5.</p> <p>If there is no plan to organize all publications at homepage, the website would receive a score of 0.</p>
2d.	Data Population	<p>If the data on the website is updated via APIs, the website would receive a score of 3.</p> <p>If the data is updated automatically through a linked database, it would receive a score of 1.5.</p> <p>If the data is manually updated, through scripting, Excel file, or similar methods, the website would receive a score of 0.</p>
THEME 3: USER INTERACTION & FEEDBACK		
3a.	Filter	<p>If the website offers a filter option that allows users to find the exact information they require, it would receive a score of 3.</p> <p>If the filter option is available but does not cover all required information, the website would receive a score of 2.</p> <p>If efforts are underway to establish a filter option, it would receive a score of 1.</p> <p>If there is no plan to implement a filter option, the website would receive a score of 0.</p>
3b.	Feedback	<p>If the website gathers feedback through a dedicated feedback section, the website would receive a score of 3.</p> <p>If feedback is collected from email provided on the website, the website would receive a score of 1.5.</p> <p>If there is no mechanism in place to gather feedback, the website would receive a score of 0.</p>

S.No	Category	Scoring Mechanism
3c.	Software Requirement	<p>If the website provides complete information about the type and version of the browser or any required software for accessing data on the homepage, it would receive a score of 3.</p> <p>If the homepage provides details about either the browser type and version or the required software for accessing data, the website would receive a score of 1.5.</p> <p>If there is no mention of the browser type, version, or software requirements, the website would receive a score of 0.</p>
THEME 4: DATA PRESENTATION & MULTILINGUAL SUPPORT		
4a.	Format	<p>If all the datasets are available in machine-readable formats like CSV or Excel, the website would receive a score of 3.</p> <p>If few of the datasets are available in machine-readable formats, the website would receive a score of 2.</p> <p>If efforts are in progress to provide datasets in machine-readable format, the website would receive a score of 1.</p> <p>If there is no plan to make datasets available in machine-readable formats, the website would receive a score of 0.</p>
4b.	Visualization	<p>If the website offers major data visualizations such as maps, charts, scatter plots, and graphs, it would receive a score of 3.</p> <p>If the website offers a few of the data visualisations, it would receive a score of 2.</p> <p>If there are plans to introduce data visualizations but they are not yet implemented, the website would receive a score of 1.</p> <p>If there is no plan to offer data visualizations, the website would receive a score of 0.</p>
4c.	Multilingualism	<p>If the website is available in more than one languages, it would receive a score of 3.</p> <p>If the website is available in only one language, it would receive a score of 0.</p>

S.No	Category	Scoring Mechanism
4d.	Data arrangement	<p>If the data is arranged by themes matters and a link to the data is available from the homepage, the website would receive a score of 3.</p> <p>If either the data is arranged by theme or the link to the data is available from the homepage, the website would receive a score of 2.</p> <p>If efforts are underway to arrange the data by theme and provide links, the website would receive a score of 1.</p> <p>If there is no direct access from homepage to themed data or links, the website would receive a score of 0.</p>

FINAL SCORE

In order to arrive at the overall assessment score, a two-tiered average process is used:

- a) First, simple average of question wise scores within each theme is calculated.
- b) Second, simple average of theme wise scores to arrive at final score for the website of the M/D.

Simple average is prescribed as each of the theme is considered of equal importance for making the website accessible from user point of view

Aggregate score are matched with the type given below.

Type	Score Range	Definition
Website follows all global standards	Aggregate Score ≥ 2.5	Website follows the global standards for effectively disseminating the data
Website follows most of the global standards	$1.5 \leq$ Aggregate Score < 2.5	Website is disseminating data following most of the global standards, however improvement is needed to make it more effective
Website follows some of the global standards	$0.5 \leq$ Aggregate Score < 1.5	Website follows some of the global standards and needs upgradation to effectively disseminate data as per the global standards
Website needs improvement	$0 \leq$ Aggregate Score < 0.5	Website needs to function as per the global standard to effectively disseminate the data

An illustration on how to fill the self-assessment tool is provided as per the [Annexure](#).

CONCLUSION

There is a need for following standards with respect to websites as they are the main source of data dissemination. Non uniformity in websites makes it difficult for the users to access data leading to degeneration in the value of data. This will ultimately need to reduced public trust in Official Statistics. Therefore, an attempt has been made through this paper to prescribe basic norms of a website mandatory for ease of data access. This will provide the web mangers with a tool to not only access their websites but as well make them more user centric by incorporating these practices.

Disclaimer

Assessment and recommendations made in this working paper do not overlap with the work conducted by the Ministry of Electronics and Information Technology (MeitY). While MeitY focuses on cybersecurity, IT, and data protection and design aspects of government websites, this paper emphasizes the data dissemination features of these sites which is primarily related to user experience. The goal is to complement MeitY's efforts by ensuring that, in addition to being secure and protected, government websites also provide a high-quality user experience and foster public engagement. This distinction is important to promote a comprehensive approach to enhancing government websites following Government as a whole philosophy.



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