

WORKING PAPER ON ASSESSMENT OF PORTALS FOR DIGITAL 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



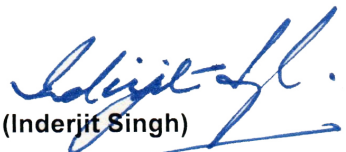
राज्य मंत्री (स्वतंत्र प्रभार)
सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय;
राज्य मंत्री (स्वतंत्र प्रभार) योजना मंत्रालय तथा
राज्य मंत्री संस्कृति मंत्रालय
भारत सरकार

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

The digital era has transformed the way Governments engage with citizens, businesses, and the global community. Government portals are now at the forefront of this transformation, providing vital access to information, services, and data that shape policy, economic activities, and public discourse. The Ministry of Statistics & Programme Implementation (MoSPI) remains committed to ensuring that data dissemination through these portals meets the highest standards of efficiency, accessibility, and transparency. As India leads the digital transformation in governance, Government portals have to keep pace with evolving user expectations and technological advancements. These platforms need to, not only serve as information repositories but also facilitate seamless interaction, thus enabling citizens and stakeholders to access and use government data effectively. This Working Paper presents a comprehensive framework for evaluation of government portals, assessing their capability to disseminate data in a user-centric and technologically sound manner. The assessment covers critical aspects, including interface design, ease of navigation, data accessibility, and responsiveness to user needs, setting benchmarks in each of these areas. It is essential for Government portals to continue evolving, ensuring inclusivity and openness while delivering an intuitive, reliable user experience. It is envisioned that our modernized portals, as per the best global practices, will support informed decision-making across sectors and strengthen public trust in Government data and services. The insights and recommendations in this Paper offer a roadmap for Ministries and Departments to enhance their data dissemination strategies. By improving user engagement, data transparency, and portal effectiveness, we can foster a digital ecosystem that reinforces governance, spurs innovation, and empowers citizens informed participation.

I, therefore, urge all Government Departments to embrace the guidelines in this Working Paper as an opportunity to refine their digital platforms, enhancing their role in India's journey towards Viksit Bharat through digital excellence, transparency, and accountability.


(Inderjit Singh)

EXECUTIVE SUMMARY

The Ministry of Statistics and Programme Implementation (MoSPI) has a crucial role in modernizing India's National Statistical System inter-alia by improving data management and dissemination through government websites and data portals. Lately there has been a trend to develop data portals for providing data to the users. This working paper outlines a framework for assessing and enhancing data portals of Government of India 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 portals, including accessibility, scalability, modularity, search functions, metadata availability, data visualization, open data policy, and user-centricity.

An assessment tool and scoring mechanism are provided to evaluate the effectiveness of the data portal in meeting these standards across three themes: *User Centred Design*, *Data Disaggregation* and *Data Communication*. The aim is not to rate the data portals but to offer Ministries/Departments a self-assessment framework for improving their data dissemination, in turn, facilitating better decision-making, and enhancing public trust in official statistics. The final score helps to determine the level of compliance with global standards, guiding improvements where needed.

The working paper is second in the series of working papers prescribing tools to assess the suitability of data disseminating websites/portals published by this ministry. It provides a tool to Ministries/Departments of the Government of India for self-evaluation and enhancement of their data portals. By doing so, the Ministries/Departments can significantly improve the quality of its data dissemination practices, ensuring that the data portals 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 has 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

The Ministry of Statistics and Programme Implementation (MoSPI) is actively pursuing strategic goals to modernize India's National Statistical System. As part of this modernization plan, one key objective focuses on *Technical Upgradation: Data Management and Sharing System for Major Datasets and Experimentation with New Technology*. MoSPI aims to improve the current data management framework and data portals, emphasizing ease of access and management. A primary goal is to develop a user-centered data dissemination system across all Ministries, a critical requirement for data-driven policy-making and increasing statistical literacy.

It is interesting to note that, a data portal and a website serve different purposes. A data portal focuses on providing access to datasets and analytical tools for researchers and other users, featuring structured data, APIs, and visualizations, with functionalities like search and data downloading. In contrast, a website aims to inform or engage a general audience, offering a combination of text, images, and multimedia, and focusing on navigation and user interaction. Essentially, a data portal specializes in data access, while a website covers a broader range of informational content including data.

To advance this effort, MoSPI has drafted a working paper that aims to set benchmarks for ministries on how to disseminate data through their portals. The paper outlines features to ensure government portal meet high standards of usability and accessibility, ultimately supporting better governance and informed decision-making by making data more accessible and user-friendly for all citizens.

Data Dissemination in the Digital Age¹, published by PARIS21 in 2021, serves as a key reference guide for the working paper, particularly in identifying best practices and essential features required for effective data dissemination via modern data portals. Drawing on comprehensive assessments and guidelines for national statistical office data portals, this handbook provided valuable insights into the design, functionality, and accessibility of data portals. These references were critical in framing the recommendations and observations made in the working paper, ensuring alignment with global standards for data dissemination in the digital age.

OBJECTIVE

The primary objective of this working paper is to create a framework regarding data dissemination practices through **Data Portals** of Government Ministries/Departments. As per Handbook on Statistical Organization (UNSD, 2021)²

“A data portal is a web-based, interactive data and meta data platform with databases modelled for specific data types and domains such as microdata, macro-data or geospatial data.”

The aim of this paper is to help the users of data portals in navigating and searching for statistical information. 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.

These portals facilitate easy access to statistical data, support data discovery, and aid in public policy monitoring, while also engaging with data users and citizens. This document elucidates various features of data portals in terms of accessibility, data disaggregation, user-centric design, and effective communication of data. The framework aims to establish minimum standards and features for data portals, ensuring they offer seamless interaction, dynamic data presentation, and a high level of user engagement. The goal is to make data portals more transparent and efficient in delivering detailed and disaggregated datasets, empowering citizens and stakeholders to access and analyse government data in a meaningful and actionable way.

¹ PARIS21. (2021). Data dissemination in the digital age.

https://www.paris21.org/sites/default/files/media/document/2023-10/Data_dissemination_in_the_digital_age.pdf

² UNSD (2021), 4th Edition of the Handbook of Statistical Organization, United Nations Statistical Division, https://unstats.un.org/capacity-development/handbook/html/Handbook/C10/Dissemination_methods.htm

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 data portals, this paper concentrates on the data dissemination features of the government data portals. The aim is to complement MeitY's efforts by ensuring that, while data portals 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 data portals.

■ SCOPE OF WORK

The objective of this scope of work is to assess the effectiveness of data portals, 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 evaluating these standards, the assessment aims to enhance the overall quality of data dissemination across Ministries/Departments, promoting transparency and increasing public engagement through consistent and well-maintained online platforms. It is important to note that this assessment 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. It is also important to mention that this paper does not intend to rate the portals, rather it provides for a tool in the hands of administrators to assess their portals and improve them as per the areas of improvement indicated.

■ BASIC FEATURES OF A PORTAL FOR DATA DISSEMINATION

The primary purpose of portal is to be a specialised platform dedicated to provide access to datasets and aid in data driven decision making. The portal should have following basic information in order to ensure portals are user-centered in dissemination of data:

S.No	Features	Description
1.	Data accessibility	Portal should ensure data is easily accessible to users with clear navigation and minimal barriers.
2.	Downloadable	Datasets should be available for download in machine-readable formats such as CSV or Excel for offline use.

S.No	Features	Description
3.	Metadata	Detailed metadata must accompany datasets, providing information on sources, methodology, and data collection processes.
4.	Data Upload and Updation	The portal should be linked to a dynamic database, allowing for real-time or near-real-time data uploads and updates.
5.	Search & Navigation	Advanced search and intuitive navigation features should enable users to locate specific data quickly and efficiently.
6.	Data Formats	Data should be available in multiple machine-readable formats, such as CSV, Excel, or JSON, for flexibility in analysis.
7.	Data Visualization/ Communication	The portal should offer interactive visualizations like graphs, charts, and maps to aid in data interpretation.
8.	Data Shareability	The portal should allow users to share datasets easily across platforms through links or embeddable content.
9.	Scalability and Modularity	Portal should be able to handle data from one or multiple sources.
10.	Open Data Policy	Data portals should be consistent with open data best practices. Portal should be accessed easily and contents should be freely used.
11.	Feedback	A mechanism should be in place for users to provide feedback on data quality, accessibility, and usability.

ASSESSMENT

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

Further, the information that are decided by the organisation to be non-confidential i.e., available in the public domain and is beneficial to public, are supposed to adhere to open data policy, to use, share, and modify as per user's need. The guidelines are only for the publicly shareable data. In case the data are not openly shareable, the M/Ds may follow their respective dissemination practices.

SCORING MECHANISM

The assessment is split into 3 themes – *User Centred Design*, *Data Disaggregation*, and *Data Communication*.

1. There are three 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: User Centred Design		
1a.	Accessibility and summary of information	<p>If the portal is accessible to the general public, and basic details about the available data are present on the homepage, it is scored 3.</p> <p>If the portal is accessible to users, but basic details about the available data are not present on the homepage, it is scored 2.</p> <p>If efforts to make the portal accessible to users are currently in progress, it is scored 1.</p> <p>If there is no plan yet to make the portal accessible to all users, it is scored 0.</p>
1b.	Metadata	<p><i>If metadata is displayed along with all datasets, it is scored 3.</i></p> <p><i>If metadata is provided along with only a few datasets, it is scored 2.</i></p> <p><i>If the process to attach metadata is underway, it is scored 1.</i></p> <p><i>If there is no plan to attach metadata, it is scored 0.</i></p>

S.No	Category	Scoring Mechanism
1c.	Ease of Data Upload and updation	<p>If the portal is very easy to maintain as the data is entered automatically from an underlying database and via APIs (Application Programming Interface), it is scored 3.</p> <p>If the portal is easy to maintain as the data is entered either automatically from an underlying database or via APIs, it is scored 2.</p> <p>If the portal is a little difficult to maintain since the data is entered through scripting (including bulk upload), it is scored 1.</p> <p>If the portal is very difficult to maintain since the data is entered manually in non-workable formats in flat files, it is scored 0.</p>
1d.	Download-ability	<p>If the datasets can be downloaded in machine-readable format in bulk, it is scored 3.</p> <p>If the datasets can be downloaded in machine-readable format but not in bulk, it is scored 2.</p> <p>If only a few datasets can be downloaded in machine-readable format, it is scored 1.</p> <p>If none of the datasets can be downloaded in machine-readable format, it is scored 0.</p> <p>Note: Bulk download enables download of an entire database/ dataset and also provides the option to select specific indicators.</p>
1e.	Feedback	<p>If a dedicated feedback section is available on the portal, it is scored 3.</p> <p>If an email is provided on the portal for seeking feedback, it is scored 1.5.</p> <p>If there is no mechanism in place to gather feedback, it is scored 0.</p>
1f.	Scalability and Modularity	<p>If the portal supports the addition of new datasets without needing additional developmental effort, it is scored 3.</p> <p>If the portal supports the addition of new datasets with minimal additional developmental effort, it is scored 2.</p> <p>If development to support scalability/ modularity are in progress, it is scored 1.</p> <p>If the portal does not support scalability/ modularity, it is scored 0.</p>

S.No	Category	Scoring Mechanism
THEME 2: Data Disaggregation		
2a.	Filter	<p>If filters exist for relevant parameters for all the datasets on the portal, it is scored 3.</p> <p>If filters are present but not for all datasets on the portal, it is scored 2.</p> <p>If the development of filters is under progress, it is scored 1.</p> <p>If no filters are planned, it is scored 0.</p>
THEME 3: Data Communication		
3a.	Visualization	<p>If the portal offers data visualizations and supports customized visualizations by end-users, it is scored 3.</p> <p>If the portal offers data visualizations but does not support customized visualizations, it is scored 2.</p> <p>If the portal offers only a few data visualizations, it is scored 1.</p> <p>If none are planned or are in progress, it is scored 0.</p>
3b.	Shareability	<p>If the data can be shared via APIs and the know-how document is also present, it is scored 3.</p> <p>If the data can be shared via APIs but the associated document is not attached, it is scored 2.</p> <p>If there are plans to set up an API sharing mechanism, it is scored 1.</p> <p>If data sharing via APIs is not planned, it is scored 0.</p>

S.No	Category	Scoring Mechanism
3c.	Open Data Policy	<p>If the data portal fully adheres to best practices of open data, it is scored 3.</p> <p>If the data portal adheres to best practices of open data but with some restrictions on usage, modification or sharing, it is scored 2.</p> <p>If efforts are being made to align with best practices of open data, it is scored 1.</p> <p>If the data portal does not follow any best practices of open data, it is scored 0.</p> <p>Note: <i>Data is considered open if it meets the following key criteria:</i></p> <ol style="list-style-type: none"> 1. Reuse and Redistribution: <i>People accessing the data must be permitted to reuse and redistribute it, including combining it with other datasets.</i> 2. Available to all: <i>Datasets must be equally available to all groups, whether private sector companies, individuals, researchers or public organizations.</i>

■ FINAL SCORE

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

1. First, simple average of question wise scores within each theme
2. Second, simple average of theme wise scores to arrive at final score for the portal of the M/D

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

Aggregate score is matched with the type given below:

Type	Score Range	Definition
Portal is effective	Aggregate Score ≥ 2.5	Portal follows the global standards for effectively disseminating the data
Portal follows most of the standards	$1.5 \leq \text{Aggregate Score} < 2.5$	Portal is disseminating data following most of the global standards, however improvement is needed to make it more effective
Portal follows some of the standards	$0.5 \leq \text{Aggregate Score} < 1.5$	Portal follows some of the global standards and needs upgradation to effectively disseminate data as per the global standards
Portal needs improvement	$0 \leq \text{Aggregate Score} < 0.5$	Portal needs to improve 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 crucial need for data portals to follow global standards, as they are the main channels for data dissemination. Inconsistent portal design and functionality can obstruct users from accessing data, which ultimately undermines the value of the information and diminishes public trust in official statistics. This paper seeks to outline fundamental norms for portal design that should be adopted to enhance data accessibility. By implementing these guidelines, web managers can improve the usability of their sites and foster a more user-centric experience, making it easier for stakeholders to engage with and effectively utilize the data.

Disclaimer

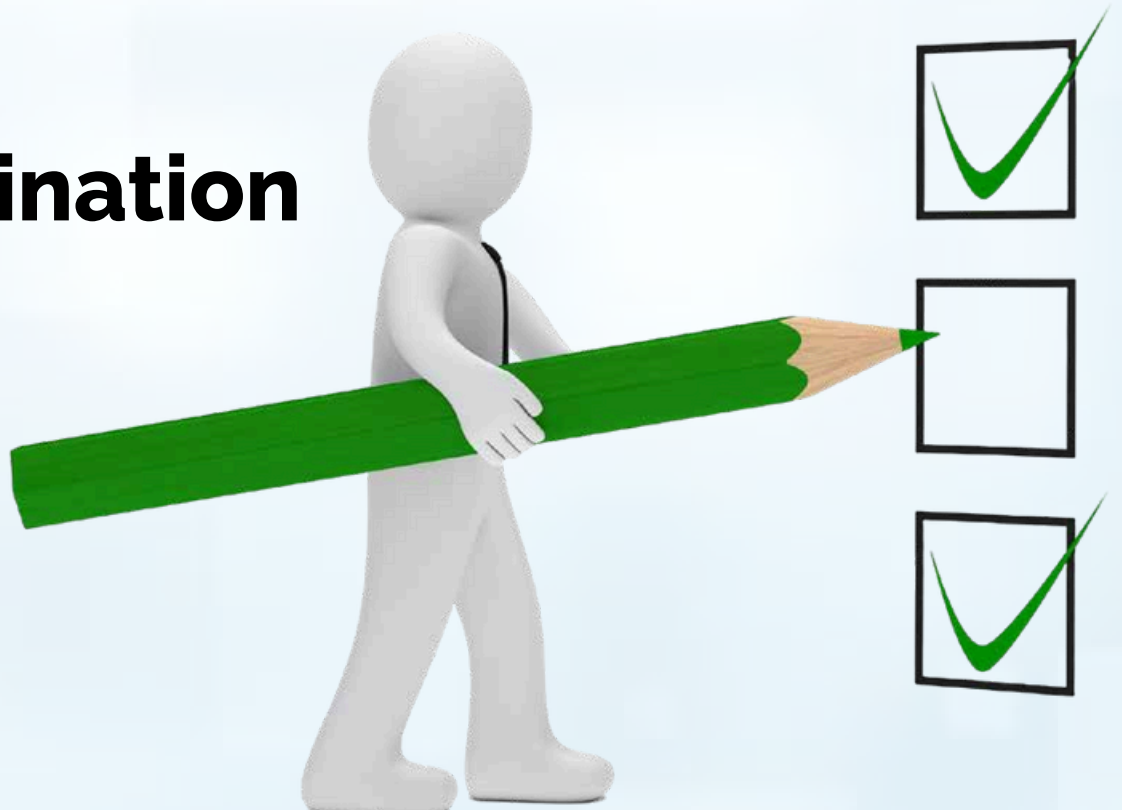
Assessment and recommendations made in this working paper do not overlap with the work conducted by the Ministry of Electronics and Information Technology (MeitY). While MeitY focuses on cybersecurity, IT, and data protection and design aspects of government data portals, this paper emphasizes the data 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 data portals also provide a high-quality user experience and foster public engagement. This distinction is important to promote a comprehensive approach to enhancing government data portals following Government as a whole philosophy.



Data Informatics and Innovation Division
Ministry of Statistics & Programme Implementation
Government of India

January, 2025

Self-Assessment Questionnaire of Portal for Digital Dissemination of Data



Organisational Information

S.No.

Particulars

1. Ministry / Department (M/D) Name*:
2. Portal Address*:
3. Details of the nodal officer
 - a. Name*:
 - b. Designation*:
 - c. E-Mail ID*:

Questionnaire

Q.No	Question	Scoring Mechanism
1. User Centred Design		
1 a.	Is the data portal accessible to general public, with basic details about the available data present on the homepage?	<p>A. It is accessible with basic details about the available data present on the homepage</p> <p>B. It is accessible to users but basic details about the available data are not present on the homepage</p> <p>C. Efforts to make it accessible to users is in progress</p> <p>D. There is no plan yet to make it accessible to all users</p>
1 b.	Are indicators in the data portal accompanied by minimum set of metadata such as source of data, methodology of collection, last release of data, frequency of release, etc.?	<p>A. Metadata is displayed along with all datasets</p> <p>B. Metadata is provided along with only few datasets</p> <p>C. The process to attach metadata is underway</p> <p>D. None planned</p>
1 c.	How easy or difficult is the portal to maintain and update?	<p>A. Very Easy as the data is entered automatically from an underlying database and via APIs (Application Programming Interface)</p> <p>B. Easy as the data is entered either automatically from an underlying database or via APIs</p> <p>C. A little difficult as the data is entered through scripting (including bulk upload)</p> <p>D. Very difficult as the data is entered manually in non-workable formats in flat files</p>

Q.No	Question	Scoring Mechanism
1 d.	Are the datasets available for download in machine-readable format (CSV/Excel)?	<p>A. The datasets can be downloaded in machine-readable format in bulk</p> <p>B. The datasets can be downloaded in machine-readable format but not in bulk</p> <p>C. Only few datasets can be downloaded in machine-readable format</p> <p>D. None of the datasets can be downloaded in machine-readable format</p>
1 e.	Is there a mechanism to gather feedback from users?	<p>A. A dedicated feedback section is available</p> <p>B. Email is provided on the portal for seeking feedback</p> <p>C. There is no mechanism in place to gather feedback</p>
1 f.	Can the data portal be easily scaled to handle new datasets without needing additional development effort?	<p>A. The portal supports addition of new datasets without needing additional developmental effort</p> <p>B. The portal supports addition of new datasets with minimal additional development effort</p> <p>C. The developments to support scalability/modularity are in progress</p> <p>D. The portal does not support scalability/modularity</p>
2. Data Disaggregation		
2 a.	Are there options to filter results by different parameters like year, gender, scheme or other variables?	<p>A. Filter exists for relevant parameters for all the datasets on the portal</p> <p>B. Filters are present but not for all datasets on the portal</p> <p>C. Development of filters is under progress</p> <p>D. None planned</p>

Q.No	Question	Scoring Mechanism
3. Data communication		
3 a.	Does the portal offer data visualizations such as maps, charts, scatter plots, graphs etc. and supports customized visualizations by end-users?	<p>A. Portal offers data visualizations and supports customized visualizations</p> <p>B. Portal offers data visualizations, but does not support customized visualizations</p> <p>C. Portal offers only few data visualizations.</p> <p>D. None planned/In Progress</p>
3 b.	Does the portal allow the sharing of information via APIs?	<p>A. The data can be shared via APIs and the know-how document is also present</p> <p>B. The data can be shared via APIs but associated document is not attached</p> <p>C. Planning to set up API sharing mechanism</p> <p>D. Data sharing via APIs is not planned</p>
3 c.	Is the data portal consistent with open data best practices, allowing data and content to be freely used, modified, and shared by anyone for any purpose?	<p>A. The data portal fully adheres to open data best practices</p> <p>B. The data portal adheres to open data best practices but with some restrictions on usage, modification, or sharing</p> <p>C. Efforts are being made to align with open data best practices</p> <p>D. The data portal does not follow open data best practices</p>

Assessment Level

Type	Definition
Portal follows all global standards	Portal follows global standards for effectively disseminating the data
Portal follows most of the global standards	Portal is disseminating data following most of the global standards, however improvement is needed to make it more effective
Portal follows some of the global standards	Portal follows some of the global standards and needs upgradation to effectively disseminate data as per the global standards
Portal need improvement	Portal needs to improve to function as per the global standards to effectively disseminate the data