

# OPEN DATA TUTORIAL

Opening and promoting use of budget data

What is open budget data for?  
Who is interested in it?  
How to use it?

# Making budget data publicly available in open formats has various purposes, including: 2/9

## **Increase the use of digital tools:**

In other words, it facilitates the access, storage and analysis of information, directly from the use of software and computer applications, to data processing.

## **Promote the creation of knowledge:**

Open budget data helps understanding broader dynamics or daily events whose potential connection to the context of the budgetary cycle was previously unknown. For example, the way in which the State distributes resources in its territory and the items considered for priority attention, can be identified.

## **Enabling citizen participation:**

The awareness that budget information is available to anyone, for any purpose, arises interest of the various social actors to participate in budget processes, and provides tools for citizen monitoring and auditing.

## **Improve decision making:**

The publication of budget information in open formats, increases the inputs available to the public (to people within the State as well as in the private and social sectors), fostering budgetary decisions that enjoy fuller and timely context and that promote greater efficiency.



Knowing some of the general uses of open data, we will review some specific examples of how to use budget data in open formats, according to the particular interests of those who look for it: the users.



## 2.1 Use cases for open budget data

1. Data of physical and financial progress (for example: monetary amounts approved and executed, and progress in the execution of projects) of a program that serves disadvantaged school communities.

**Who is interested?** parents, researchers and journalists.

**Use category:** increase the use of digital tools and enable citizen participation.

**How to use it?** information on the physical and financial progress of public investment for specific schools is in possession of at least two ministries: Education and Finance.

However, for this information to acquire public value, it must be linked and published. A simple way to link this information between dependencies is through a JSON (JavaScript Object Notation) file format, which is light-weight for data exchange and is machine readable.

Nonetheless, this type of format is usable only for a very specialized public, so to expand its consumption, it is desirable to generate visualizations that allow sharing the data in a simple way to those interested, in this case, the parents who will focus their attention in the schools where their children attend.

With software that facilitates the integration of geo-referenced information, such as a map, mothers and fathers can locate specific schools and know how the infrastructure needs of each one are being addressed, even without knowing what is or how to use a JSON, CSV or XLSX file format.

The following example, shows the platform of Mexico's [Ministry of Finance and Public Credit of Mexico about the Educational Reform Program of the Ministry of Public Education](#). It visualizes the budget data obtained in JSON format about schools with most physical infrastructure needs according to the census.

**How does it work?** when selecting any school on the map, a pop-up with detailed information is displayed with the type of aid approved, delivered and executed; the percentage of financial progress; and the photographic evidence of the improvements.

This information, in addition to having value as open data in JSON format, reaches its potential of use by being closer to stakeholders, through visualizations created with digital tools that before the data openness process were impossible to generate, which effectively transforms data into public value.

When the members of the school community (parents, directors, administrators, teachers, etc.) have this type of tools to visualize the information, they can verify its veracity and monitor implementation.



Ir a [transparenciapresupuestaria.gob.mx](http://transparenciapresupuestaria.gob.mx)

¿cómo funciona? Cereencias que busca borrar Escuelas por apoyar Datos Abiertos Proceso de acceso a recursos Resultados

# Comunidades Escolares por Apoyar

Ciclos Escolares 2016-2017 y 2015-2016  
Total de Escuelas Localizables: 24,935  
Fecha de Actualización: 31 de enero de 2018

Entidad federativa: Municipio: Localidad: Escuelas: Clave de escuela: LOCALIZA TU ESCUELA (Ingresa por código postal, dirección o clave de escuela)

Mapa Satélite

Todas las escuelas: Preescolar, Primarias, Secundarias

Ciclo escolar 2016-2017

Apoyo entregado: \$ 2,223,366,736.66 (98.30%)  
Apoyo ejercido: \$ 2,184,331,503.78 (97.05%)  
Comunidades escolares beneficiadas: 24,935

Detalle Escuela: Acción más significativa: Otras acciones

Escuela SECUNDARIA (ESCUELA GENERAL)  
ESCUELA SECUNDARIA DE NUEVA CREACION 37  
Clave CT: 03050037A2  
Estado: BAJA CALIFORNIA SUR  
Municipio: LA PAZ  
Municipio perteneciente a la Cruzada Nacional contra el Hambre  
Localidad: LA PAZ  
Rango de rezago: REPORTADO CON ALTO GRADO DE CARENCIA NIFED  
Nº de Alumnos: 300  
VALIDADO

Selección modalidat: Escuelas seleccionadas: Rango de alumnos por escuela: Comunidades Escolares destacadas

2. Data on the approved budget and its execution corresponding to the economic, functional and administrative expenditure classifications.

**Who is interested?** academia, budget experts, investors, auditors, among others.

**Use category:** promote the creation of knowledge and enable citizen participation.

**How to use it?** traditionally, specialized reports on public finances are available in processed and unstructured formats (PDF, DOCX, etc.), which do not enable immediate reuse.

However, the ministries in charge of its publication, have these documents in structured formats (for example, XLSX

or in some system in the best cases), so that publishing them in those formats would facilitate their use, allowing interested actors to carry out their own analysis, generating public value.

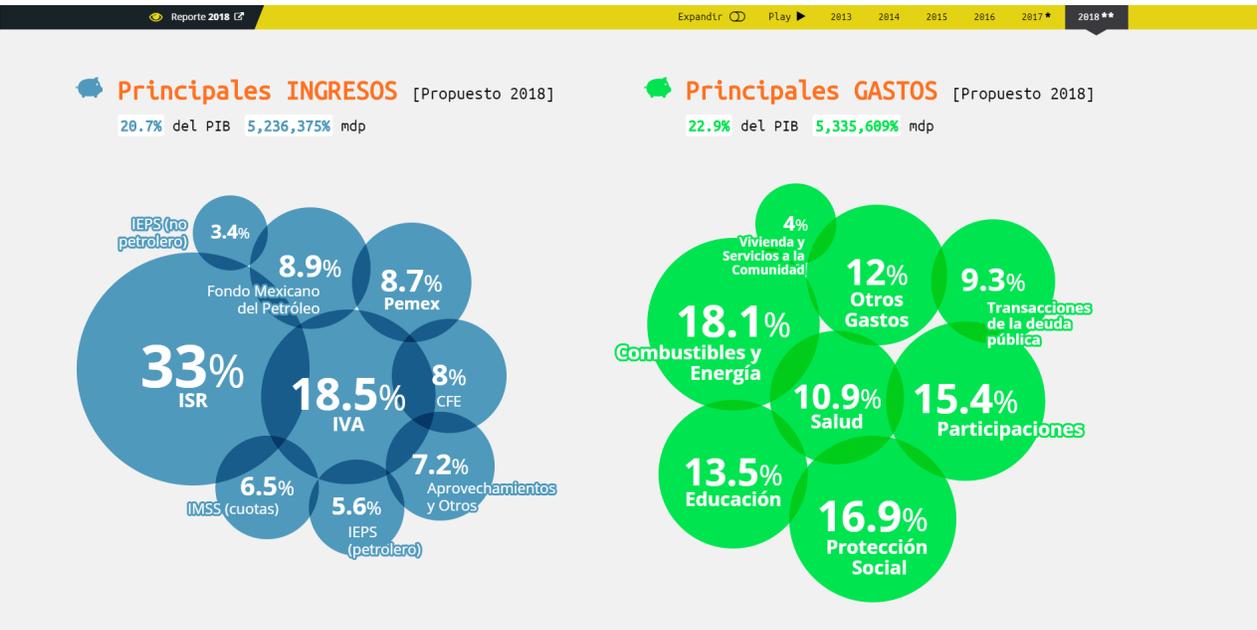
In several countries, there are non-profit centers dedicated to researching public finances, in order to monitor national and international economic trends, oversee the spending of public resources and influence decisions regarding its destination.

An example of citizen use, is the one carried out by the [Center for Economic and Budgetary Research](#) from Mexico, which has taken advantage of the open data made publicly available through the [Open Fiscal Data Package](#) to make its own products almost immediately after its publication, in a "Citizen Budget"<sup>1</sup> fashion.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
1	CICLO	ID_RAMO	DESC_RAMO	ID_UR	DESC_UR	GPO_FUNC	DESC_GPO	ID_FUNCION	DESC_FUNC	ID_SUBFUNC	DESC_SUBFL	ID_AI	DESC_AI	ID_MODALIC	DESC_MODALIC
2	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
3	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
4	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
5	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
6	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
7	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
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9	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
10	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
11	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
12	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
13	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
14	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
15	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
16	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
17	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
18	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
19	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
20	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
21	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
22	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
23	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
24	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
25	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
26	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
27	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
28	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
29	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
30	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
31	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
32	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos
33	2017	1	Poder Legisla	100	H. Cámara de	1	Gobierno	1	Legislación	1	Legislación	4	Llevar a cabo	R	Específicos



<sup>1</sup> The Citizen Budget is a document that presents key information about a government's public finances. In general, they are written in accessible language and incorporate visual elements, that help non-specialist readers understand the information.  
 Source: International Budget Partnership (2018). Citizens Budget.  
 Available at: <https://www.internationalbudget.org/open-budget-survey/resources-for-governments/citizens-budgets/>.



The Center for Economic and Budgetary Research from Mexico uses governmental data on the approved budget for the 2018 budget cycle and processes it according to its research agenda, in this case they combined this data with information about debt and income. Available at: <http://paqueteeconomico.ciep.mx/>.

**3.** Federal transfers to sub-national governments through subsidies, contributions or agreements; the amounts authorized, exercised, paid, etc.; and the corresponding report on the physical and financial progress of the projects executed by the governments that receive these transfers.

**Who is interested?** civil society organizations or academia with interest in specific agendas, local governments.

**Use category:** promote the creation of knowledge, enable citizen participation and improve decision making.

**How to use it?** on a regular basis, organizations from the public, private or even international sectors have specific agendas: environment, gender, poverty reduction, productivity, entrepreneurship, etc., which absorb the focus of their attention in terms of data collection and analysis.

Because of this, when publishing information in open data, it is important to enable inputs so that these organizations, not necessarily specialized in budget analysis, include it in their analyzes and use it for their own purposes, giving added value and social meaning to the spending information.

For example, transfers from central governments to subnational governments, offer a range of specific agendas since the uses of these resources include issues such as drainage, education, housing, health, sports, transport and roads, among many others; and they have the additional advantage that, having

a local dimension, the projects financed by these resources are the ones that most directly and notoriously affect the citizenry.

As an example, the [Institute for Transportation and Development Policy \(ITDP\)](#), which has an international presence, used the open data of the projects executed by sub-national governments to carry out analyzes on public policies that could favor sustainable urban mobility.

Having made said analysis the ITDP promoted changes to the [budget and operating rules of certain programs related](#), in order to incorporate the non-motorized mobility agenda.

Open budget and spending data can also contribute to developing analyzes in other priority agendas that address issues as varied as they can be: education, social development, health, etc., and defeat the pre-conception that budgetary data is only useful for a financial-oriented agenda, but can be used for the promotion of any advocacy agenda.





ITDP uses governmental data on federal resources transferred to sub-national governments and identifies investment by type of infrastructure. Available at: <http://invertirparamovernos.itdp.mx/#/>.

4. Data on the follow-up of spending of federal transfers to sub-national governments: project identification; location by address and/or geographic coordinates; start and end dates; amounts authorized, modified and spent; physical and financial progress; beneficiaries; among other.

**Who is interested?** public officials; personnel in charge of public infrastructure.

**Use category:** promote the use of digital tools and improve decision making.

**How to use it?** reports on the spending of resources received from subnational governments through transfers from the central government were published and issued under heterogeneous information requirements that each publisher deemed relevant, and could range from printed data to structured files, arbitrarily.

However, the constant interrelation between local governments and ministries, and even the volume of information requirements among personnel of the different levels of government, demanded the development of a common scheme to collect budget data, which also promotes good quality of information.

# IMPORTANT

"Open by default", is one of the principles of open data policy that governments should direct their actions towards.

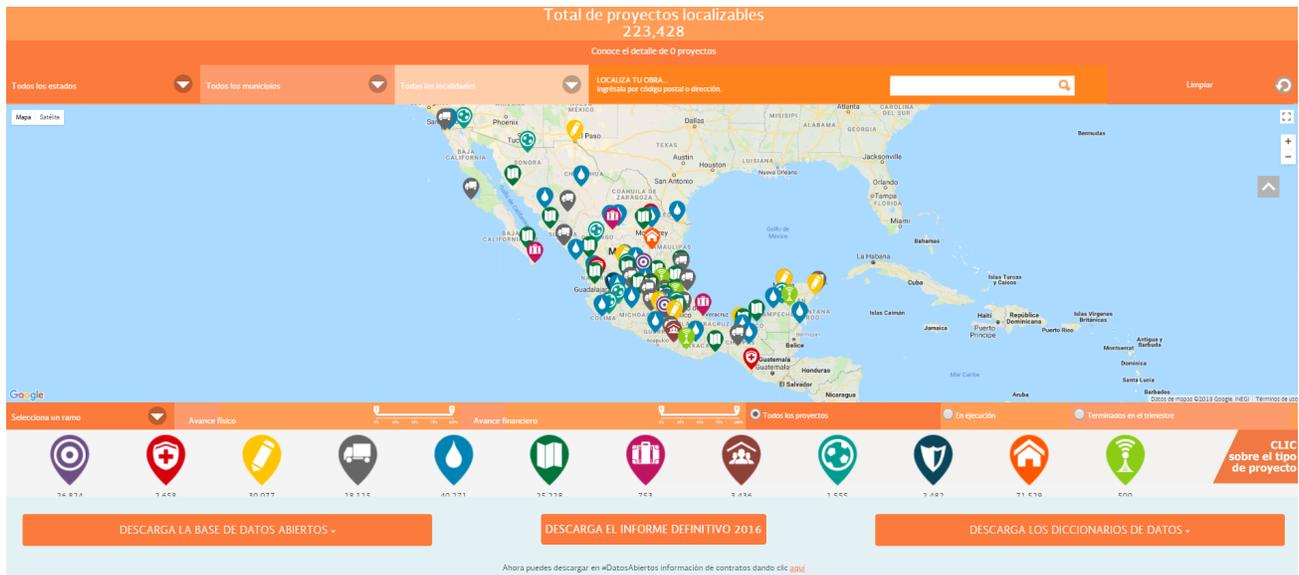
This principle implies that government data is ready to be published (without human intervention being necessary), which means that governments must be proactive in guaranteeing access to information and data they generate, unless there is a reason not to do it.

According to the Open Data Charter, this openness, represents a real change in how the government operates and interacts with its citizens, since there must be an implicit presumption that the publication of data is immediate (without intermediaries).

An example of a process that led to this, is the information that can be located in the section [local governments](#) of the Budget Transparency Portal of the Mexican government, which centralizes the information related to the spending of investment projects carried out by local governments, using the transfers from the federal government, enabling the use of open data and granting them added value.

The work was not easy, since the sub-national governments registered their reports in a system without following a particular scheme, so there was a high risk of generating heterogeneous data.

The image shows a screenshot of a budget transparency portal. It features a large, multi-column table with a complex header. The table is organized into several sections, with some rows highlighted in yellow and others in blue. The columns represent different financial categories and data points, such as 'Concepto', 'Cuenta', 'Subcuenta', 'Rubro', 'Subrubro', 'Detalle', 'Monto', 'Unidad', 'Tipo', 'Ejercicio', 'Periodo', 'Estado', 'Observaciones', and 'Referencias'. The data rows contain numerical values and text descriptions, representing the spending of investment projects by local governments. The table is dense with information, reflecting the complexity of the data being presented.



Example of the before and after the deep changes of the system in which sub-national governments report how they spend federal resources. Budget Transparency Portal. Federative Entities- Monitoring of resources. Available at: <http://www.transparenciapresupuestaria.gob.mx/es/PTP/EntidadesFederativas>.

As a result, the system in which the information was collected was reformulated through a standardization of the data collection, observing public finance accounting guidelines to improve the quality of the available information.

This process of consolidation has brought benefits such as the strengthening of internal processes, the reduction of inefficiencies, the scaling down in reviewing times and the downsizing of access to public information requests (how many people, would you have to find if you want information on more than 223 thousand local investment projects?)<sup>2</sup>, among others.

In this way, the Mexican government has worked on the use of standards to improve data quality, which not only promotes a culture of openness, but also provides elements for spending monitoring and thus enables **data-driven decision making**.

<sup>2</sup> Number of localizable projects, that refer to the exercise of transferred resources to the sub-national governments in Mexico, information to the fourth quarter of 2017. Source: Budget Transparency Portal. Follow up on resources. Available at: <http://www.transparenciapresupuestaria.gob.mx/es/PTP/EntidadesFederativas>.

## IMPORTANT

One of the best uses of open data in public administration, is the promotion of **"Data-driven policy making"** which uses structured governmental data, as key input to solve complex problems such as poverty, climate change, migration, among others, based on publicly available information.

When citizens and organizations use open data for decision making they generate advantages such as: modification or creation of specific public policies, replicate results of data analysis and, bringing the public to see, understand and replicate the logic of these advantages, participating and getting involved.

Now that you know some examples of how to use open data, you should realize that any tool, as simple as it may seem, can facilitate decision making, promote the use of digital tools, favor the creation of knowledge, and improve citizen participation for various purposes.

We invite you to give context to open data, promote its use and review the following document, which aims to help identify some basic guidelines to start the data openness process.

