



The Human Rights Argument for Effective Visualization of Open Government Data

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Access to data—the results of research that are then synthesized to [create information](#)—is an essential component of U.S. citizens' empowerment, since it is through data that we [generate knowledge and achieve wisdom](#). Data's persistent incomprehensibility for the average layman who may request it, therefore, is a barrier to human flourishing. While laws like the Freedom of Information Law (FOIL) or the Freedom of Information Act (FOIA) for state and local records suggest that all citizens are guaranteed a basic level of access to information that the U.S. government has compiled, ineffectively visualized open government data reduces that information's usability and potentially diminishes the [effectiveness, efficiency, and satisfaction](#) we are meant to derive from that access. More than a nuisance, effective visualization of open government data is a human rights issue: without it, data are "accessible" in name only, and the promise of equally shared knowledge and wisdom that can advance the cause of human rights cannot be realized.

Data Visualization in Scholarship, Government

Data visualization refers to "the use of electronic tools (software applications) to represent data in charts, maps, tag clouds, animations, or any graphical means to make content easier to understand." Arts and Humanities Bibliographer Joan Reitz has posited that for research results which involve interpreting complex statistics, data visualization may improve communication to a broader audience. Visualizations of large or multiple data sets may more easily reveal [hidden patterns](#) and [highlight connections](#) among elements that would not be obvious from observing numerical data alone.

My 2023 research with a colleague found that overall, data visualizations' importance and complexity were increasing in academic publications. In 2001, scholars publishing in the *Journal of the Association for Information Science and Technology* used only 16 unique data visualization types, which rose to a peak of 37 unique data visualization types used in 2016 and settled at 29 unique types in 2021. The worlds of [academic knowledge creation and government data collection are not separate](#), and in fact academics who engage with government research and policymaking are part of the process that seeks to ensure that positive trends seen in academic research affect the data generated by governments and vice versa. Open government data and laws that mandate citizen's ability to view that data are compromised when government does not move forward in step with non-governmental scholastic trends like increased use of data visualization tools; ineffective data visualization of open government data could lead citizens who do access it to deem it useless or indecipherable despite their access.

Counterexamples—where government is employing data visualization—underscore how accessibility means more than just making data publicly available. Popular Annual Financial Reports (PAFR) are used to explain financial information provided by government entities, like city revenues and expenditures. A far cry from pages of numbers only trained accountants can read, these reports often contain illustrations alongside a range of tables and charts and center the decision-making citizen as the intended viewer. Since 1991, the Government Finance Officers Association (GFOA) has maintained an [award program](#) for these reports, encouraging governments to submit documents that most exemplify accessibility as defined by the [Open Knowledge Foundation principles](#) which require open data to be: Complete, Primary, Timely, Accessible, Machine processable, Non-discriminatory, Nonproprietary and License-free.

Recommendations

Changes can be made to enable increased government transparency, support real accessibility of open data, and acknowledge that data accessibility is a human right.

- Government should establish and employ both active and passive strategies for modeling transparency. Active transparency—like the voluntary release of information through easy-to-use portals and in-person discussion—and passive transparency—like the mandated response to citizens’ Freedom of Information Act requests—are both essential for increasing and maintaining citizen participation and responsive policymaking.
- Both academia and governments would benefit from the development of an authoritative Comprehensive Data Visualization Dictionary or “CDVD,” which could compile data visualization research, best practices, and tool development; standardize terminology; and provide a diverse array of pre-designed visualizations to improve viewer understanding, eliminate the need for creating new charts, and streamline research processes in the field of information science.
- FOIL and FOIA should be amended to mandate that data visualization of information be used as needed to increase the comprehensibility of government documents requested by citizens. Mandates would require that open government data platforms enable citizens to use embedded data visualization and analysis tools, while suggesting that governments collaborate with research-driven partners to align open government data resources with data visualization best practices.

Read more in S.O. Jeffcoat and Monica Rogers, “Data Visualization Use in JASIST: An Exploratory Look through Years 2001-2021,” 2023 ASIS&T Mid-Year Conference, March 2023.