Data Quality Literacy 

**A Knowledge Brief**

# *Data Quality Literacy Series 04*

# **Using and Evaluating U.S. Federal Statistics**

## U.S. Federal Statistics and its Quality: The Basics

* The U.S. federal statistical system is a decentralized, interconnected network of 13 principal statistical agencies with about 100 additional federal statistical programs.
* Legislation such as the **Information Quality Act** ensures the quality of information disseminated by federal statistical agencies.
* The Office of Management and Budget issued [Information Quality Guidelines](https://www.federalregister.gov/documents/2002/02/22/R2-59/guidelines-for-ensuring-and-maximizing-the-quality-objectivity-utility-and-integrity-of-information) and statistical policy directives such as [Standards and Guidelines for Statistical Surveys](https://georgewbush-whitehouse.archives.gov/omb/inforeg/statpolicy/standards_stat_surveys.pdf) to specify quality requirements regarding:
	+ **Utility**: the usefulness of the information to the intended users.
	+ **Objectivity**: the information is accurate, reliable, and unbiased and is presented in an accurate, clear, complete, and unbiased manner.
	+ **Integrity**: protecting information from unauthorized access or revision and not compromised through corruption or falsification.
* Agencies including the U.S. Census Bureau created their own [Statistical Quality Standards](https://www.census.gov/about/policies/quality/standards.html) to ensure statistical information quality from planning programs, acquiring data, producing estimates, analyzing data, reporting results, and releasing information to documentation.

## Evaluating Federal Statistics for Research Needs

* Despite the high quality of federal statistics, researchers still need to assess the fit between the dataset and their research needs (refer to *Data Quality Literacy Series 03: Evaluating Dataset for Research Needs*).
* Researchers also need to be aware of the potential **dataset structure quality** issues in federal statistics:
	+ **Changes in the dataset schema and structure**. Data collection can also be discontinued due to funding cuts or changes in mandates. This change can affect data processing and the comparability of data across time.
	+ **Inconsistent use of variable codes**. Do not assume variable codes are the same between data collections. For example, if age 12 was coded as XYZ in a 2020 survey, it can be coded as XYZ2 in the next release. There can be underlying differences in how data was collected or tabulated.
	+ **Changes in survey questions or variable codes or labels between surveys**. For example, a new survey collection instrument is used in one year but not the next. Then, the trend can become discontinuous.
	+ **Latency or source release schedule changes**. For example, the Internal Revenue Service (IRS) can be late in publishing an updated statistical release.
	+ **Changes in reference materials**. For example, updates to North American Industry Classification System (NAICS) codes every five years can affect data comparability over time, potentially disrupting continuity in series.
	+ **Lack of documentation**. Especially for administrative records, the data documentation may be insufficient for researchers to understand how to use the data.

**References**

Liu, G., Bordelon, B., Nagar, R., Sarti, J., Nguyen, U., & Boettcher, J. (2024). *Data Quality Literacy: A Guidebook*. Institute of Museum and Library Services (IMLS) Grant Project. <https://doi.org/10.31219/osf.io/ruawm>

Office of Management and Budget. (2022). *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information*. <https://www.federalregister.gov/documents/2002/02/22/R2-59/guidelines-for-ensuring-and-maximizing-the-quality-objectivity-utility-and-integrity-of-information>

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