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Teaching Paper: Data Visualization Tools for Non-Profit Research and Communication

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DR. ANNA NEYA KAZANSKAIA

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Dr. Anna Neya Kazanskaia
NEYA Global | NEYA Global Publishing
ORCID: https://orcid.org/0009-0009-5669-1676
DOI: https://doi.org/10.64357/neya-gjnps-qn-rchfr-mth-tp-03

Abstract

Effective communication of data is essential for non-profits that must demonstrate accountability, influence stakeholders, and inform strategic decisions. Data visualization transforms complex datasets into accessible, meaningful insights. This Teaching Paper introduces five key visualization tools—Microsoft Excel, Tableau, R with ggplot2, Google Data Studio, and Power BI—highlighting their strengths, features, and practical applications. Each tool is presented with step-by-step instructions for creating visualizations ranging from simple charts to advanced interactive dashboards. By situating these tools within academic frameworks on strategic planning and evidence-based decision-making, the paper shows how non-profits can align their communication practices with both scholarly and professional standards. A case study demonstrates the real-world use of visualization in advocacy and program reporting. The paper also discusses challenges, limitations, and strategies for ethical and impactful data visualization.

Keywords

Data visualization; non-profit communication; Excel; Tableau; Power BI; R ggplot2; Google Data Studio; evidence-based practice

Executive Summary

Data visualization plays a critical role in how non-profits communicate findings to funders, policymakers, and communities. This Teaching Paper reviews five leading tools used across the sector:

- **Microsoft Excel** for accessible, entry-level visualizations.
- **Tableau** for advanced, interactive dashboards.
- **R with ggplot2** for customizable, research-level graphics.
- **Google Data Studio** for free, web-based reports.
- **Power BI** for integrated analytics and interactive visual storytelling.

The resource highlights both technical steps and strategic implications. Excel provides simplicity, while Tableau and Power BI excel in interactivity. R with ggplot2 enables advanced statistical visualization, and Google Data Studio offers a free and collaborative option. Non-profits can select tools according to capacity, resources, and audience needs.

Purpose and Learning Objectives

The purpose of this Teaching Paper is to equip non-profits with knowledge of accessible and advanced visualization tools to improve communication of data.

Learning objectives:

- Understand the role of visualization in strategic communication and program evaluation.
- Learn the basic features and instructions for five widely used visualization tools.
- Recognize strengths and trade-offs of different platforms.
- Apply visualization strategically to influence stakeholders and improve transparency.

Background and Context

Bryson (2018) underscores that clear communication is central to effective strategic planning, while Patton (2008) highlights the importance of using data for decision-making. Drucker (1990) reminds organizations that "what gets measured gets managed," but equally, "what gets visualized gets understood." Data visualization bridges the gap between data analysis and stakeholder understanding, making complex insights actionable. Non-profits working in resource-constrained environments particularly benefit from tools that allow them to present results persuasively to donors and policymakers.

Practical Guide

Tool 1: Microsoft Excel

- **Usage:** Basic, widely available.
- **Features:** Bar charts, line graphs, pie charts, histograms.
- **Instructions:** Input data → highlight → *Insert* > *Chart type*.

Tool 2: Tableau

- **Usage:** Advanced interactive dashboards.
- **Features:** Drag-and-drop, real-time updates, multiple chart types.
- **Instructions:** Import data → drag fields → select visualization type.

Tool 3: R with ggplot2

- **Usage:** Advanced customizable plots.
- **Features:** High flexibility, research-quality graphics.
- **Instructions:** install.packages("ggplot2") →
  ggplot(data, aes(x, y)) + geom_point() for scatter plots.

Tool 4: Google Data Studio

- **Usage:** Free interactive dashboards and reports.
- **Features:** Google ecosystem integration, templates.

- **Instructions:** Connect data source → drag fields → select visualization.

Tool 5: Power BI

- **Usage:** Business analytics and interactive storytelling.
- **Features:** Data connectivity, dashboards, real-time updates.
- **Instructions:** Import data → drag fields to canvas → choose chart type.

Case Study

A non-profit advocating for clean water access in South Asia collected survey data on household water usage. **Excel** was initially used to create simple bar charts for internal team discussions. For donor presentations, the organization employed **Tableau** to develop interactive dashboards, allowing funders to filter data by region and household size. Researchers later collaborated with a university partner to use **R/ggplot2** for advanced regression-based plots highlighting disparities in water access. The findings were summarized in **Google Data Studio**, shared with community partners through easily accessible online dashboards. For government advocacy, the organization used **Power BI** to present policy recommendations supported by real-time data. The layered use of multiple visualization tools ensured accessibility, academic rigor, and advocacy impact.

Common Challenges and Tips

- **Overcomplication:** Avoid clutter; prioritize clarity.
- **Resource constraints:** Choose free tools (Excel, Google Data Studio, R) if budgets are limited.
- **Technical skills:** Provide staff training to avoid underuse of advanced tools.
- **Ethical risks:** Avoid misleading scales or selective visualization.
- **Accessibility:** Use color schemes that are readable for all, including color-blind audiences.

Reflection Questions

1. Which visualization tool best fits your organization's capacity and audience?
2. How can visualization support advocacy with policymakers and funders?
3. What risks exist in oversimplifying or misrepresenting data through visuals?
4. How could your organization combine basic and advanced tools for layered communication?

Limitations and Considerations

While visualization enhances communication, it cannot replace rigorous analysis. Poorly designed visuals may distort findings, while resource limitations may restrict access to advanced tools. Non-profits must balance clarity, accuracy, and audience engagement.

Academic Value

This paper contributes to the literature on non-profit evaluation and communication by linking technical visualization skills with broader theories of strategic planning and evidence use. It highlights the role of visualization in bridging research-practice gaps, reinforcing both academic analysis and practitioner capacity.

Conclusion and Next Steps

Data visualization empowers non-profits to make their work more transparent, persuasive, and impactful. From Excel's accessibility to Power BI's advanced dashboards, these tools provide scalable solutions for diverse contexts. Next steps include experimenting with multiple platforms, investing in staff capacity-building, and developing visualization strategies aligned with organizational goals.

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References

- Bryson, J. M. (2018). Strategic planning for public and nonprofit organizations (5th ed.). Jossey-Bass.
- Drucker, P. F. (1990). Managing the nonprofit organization: Principles and practices. HarperCollins.
- Few, S. (2012). Show me the numbers: Designing tables and graphs to enlighten (2nd ed.). Analytics Press.
- Kazanskaia, A. N. (2025). Quantitative Research Methods. NEYA Global Publishing. https://doi.org/10.64357/quantitative-research-methods-2025
- Kazanskaia, A. N. (2025). Visualizing Impact: Data Communication Strategies. NEYA Global Publishing.
- Kazanskaia, A. N. (2025). Data Analysis: Turning Information into Insight. NEYA Global Publishing. https://doi.org/10.64357/data-analysis-insight-2025
- Kazanskaia, A. N. (2025). Tools for Strategic Evaluation. NEYA Global Publishing. https://doi.org/10.64357/tools-evaluation-2025
- Kazanskaia, A. N. (2025). Reporting Quantitative Results in Non-Profit Research. NEYA Global Journal of Non-Profit Studies. https://doi.org/10.64357/neya-gjnps-qn-rchfr-mth-10
- Kazanskaia, A. N. (2025). Using Statistical Software for Quantitative Analysis in Non-Profit Organizations. NEYA Global Journal of Non-Profit Studies. https://doi.org/10.64357/neya-gjnps-qn-rchfr-mth-09
- Patton, M. Q. (2008). Utilization-focused evaluation (4th ed.). SAGE Publications.