Guide for the (Soon-to-be) Perplexed:

Considerations for Scholars Launching and Leading Survey Data Harmonization Journeys

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ABSTRACT

This article synthesizes the key opportunities and challenges for researchers to consider when launching and leading research projects that include survey data harmonization. Focusing on the ex-post harmonization of cross-national survey data from multiple survey programs on topics related to political attitudes and behavior, we integrate insights from relevant literature with interviews of researchers who have expertise in survey data harmonization. We conclude by identifying best practices to inform future research.

Introduction

Constructing ex-post harmonized datasets across multiple cross-national survey programs is gaining prominence as a strategy for producing innovative scholarship in political science and related fields. This approach is intuitively attractive for both early-career researchers who lack research funds to generate original data, and for senior scholars advancing multi-year grant projects. Yet the challenges of harmonizing survey data to produce high-impact research are not always apparent to researchers just beginning this work.

In this article, we synthesize insights for researchers launching and leading research projects that include survey data harmonization, focusing on both individual-level data and country-year measures aggregated from individual-level indicators. Our contribution is similar in spirit to the classic book of Jewish theology "Guide for the Perplexed" (Maimonides [1190] 1963), a work intended to help students to reconcile seemingly irreconcilable knowledge sources (specifically, Jewish theology and Aristotelian philosophy). With an appropriate dose of humility, we tackle a parallel task of integrating insights from experienced scholars who seek to reconcile the seemingly irreconcilable, namely, harmonizing survey data not originally designed for this purpose.

Despite the increased prominence of ex-post survey data harmonization in recent research in political science and related fields, it is not a standard research strategy taught in graduate school, and is generally learned through trial and error. Our contribution is therefore intended primarily for researchers who may be unaware of both the unique scholarly opportunities of survey data harmonization, and the common challenges encountered by scholars who have successfully used this research strategy.

Prominent Examples of Survey Data Harmonization

Our focus on survey data harmonization aligns with Slomczynski et al.'s description of "a process that aims to produce equivalent or comparable measures of a given characteristic across datasets" (2023, 2). We focus on studies that harmonized surveys that were not originally designed to be combined, i.e., "ex-post harmonization."

Any comprehensive review of studies using this approach faces terminological challenges, as relevant studies do not consistently use the term "harmonization" or related terms.

Given terminological challenges, we aimed to identify several prominent survey data harmonization publications and projects in a specific area of scholarship, namely, the study of political attitudes and behaviors. Our identification strategy is based on three sources: The review paper by Kołczyńska (2022); a systematic search in the Web of Science in social sciences journals for terms related to survey data harmonization (see Appendix A for details); and recruiting leading scholars in the field as interviewees to note projects and studies that they view as exemplary studies on these topics (see the following section for interview methodology details).

Our implementation of this identification strategy identified projects that have produced multiple high-impact contributions on these topics include Claassen's research on "Democratic Mood" (e.g., Claassen 2020), Neundorf's "Global Citizen Politics" project (e.g., Neundorf et al. 2020), and Solt's "Dynamic Comparative Public Opinion" lab (e.g., Hu and Solt 2025). Additional prominent political science studies investigate core topics in the field, including affluence and representation (Lupu and Warner 2022), political ideology (Caughey et al. 2019), political participation (Dassonneville et al. 2021; Kostelka and Blais 2021), and political trust (Valgarðsson et al. 2025). These studies exemplify the approach of combining multiple cross-national datasets from several different survey programs (See Appendix A for documentation of additional relevant literature, data sources, and research projects).

Researchers' Insights

This brief overview indicates the high-impact contributions that recent studies using this approach have made on important topics. To better understand the opportunities and challenges of this type of research, we conducted semi-structured interviews with researchers with expertise in survey data harmonization in political science and related fields. We recruited interviewees by sending email invitations to authors of survey data harmonization publications, with a particular focus on authors of political science articles in selective journals. We sent invitations to 30 authors, and conducted 22 interviews—a larger number than our initial intention of 15. The semi-structured interview instrument includes questions that prompted interviewees to discuss their own contributions to the field. Following Seidman's (2006) canonical guide to interviewing as qualitative research, we asked open questions that encouraged interviewees to think reflectively about both the opportunities and the challenges of this type of research. In addition,

the anonymity of the interviews—noted in the IRB-approved consent form signed by each interviewee and emphasized verbally at the beginning of each interview—encouraged researchers to articulate meaningful critiques of their own work and the field as a whole with the intention of providing useful insights for scholars using this research strategy. See Appendices B for IRB-approved consent form; C for additional interview methodology documentation; and D for interviewee characteristics.

Synthesizing insights from the literature and these interviews, we identify key *opportunities* for survey data harmonization, followed by key *challenges*. Before detailing specific insights, we highlight a dominant meta-theme: the importance of continually revising a project's highest priority *research questions* in dialogue with the identification of fully harmonizable data. One senior researcher articulated an "abundance of riches" challenge, as this approach can tempt even the most experienced researchers to "get lost like kids in a candy store" and lose sight of the importance of addressing clearly defined questions. Another senior researcher described a related "iterative process" challenge stemming from the time-intensive balancing act of creating a harmonized dataset that accounts for technical harmonization challenges (e.g., question wording, response categories, country-year data availability), while clarifying the possible scope of theory-informed analysis based on harmonizable data. Experienced researchers strongly advised asking: Can the same (or similar) findings be produced without survey data harmonization? If the answer is "yes," researchers suggested skipping the data harmonization journey. Conversely, researchers noted that survey data harmonization can be optimal for answering certain kinds of questions, best articulated by one interviewee as follows: "Survey data harmonization is one of the only ways to say something truly meaningful about political attitudes and behaviors across diverse contexts, and over long time periods." The concluding discussion details best practices based on the interviews and describes the second meta-theme in our interviews: the importance of investing in scholarly community due to this strategy's unique combination of opportunities and challenges.

Opportunities

The interviewees discussed two main categories of opportunities: first, data and analysis, including both technical and theory-oriented opportunities; and second, research impact, including the potential for ground-breaking research.

Opportunities, Part 1: Data and Analysis

Computing infrastructure and open science: Advances in computing power have provided individual researchers with online data access and efficient computing and software systems. These developments facilitate sophisticated data transformation and statistical analyses on large datasets that were not feasible even a decade ago. Related advances in "open science" have meaningfully strengthened norms and practices that encourage researchers to publicly post their data and replication materials online (Rinke and Wuttke 2021).

Methodological innovations: Building on these advances in computing infrastructure and open science, recent methodological innovations make survey data harmonization more feasible and robust, particularly for country-level aggregated measures. As detailed in this Symposium's article on modeling aggregate trends (Koc and Kołczyńska 2026) these innovations include latent variable models that harmonize survey items that are not fully comparable (e.g., Claassen 2019).

Similar survey items: Our overview of prominent publications that include survey data harmonization clarifies that similar indicators are available for important topics. As survey data waves have accumulated over time, it can seem deceptively simple to combine survey data to broaden researchers' investigations.

Statistical power: An advantage noted by most interviewees is the potential to increase sample size and statistical power, which is particularly important as analytical models become more complex. Additionally, research shows that statistical power is important for replication success (Arel-Bundock et al. 2024).

Heterogeneous sample: A related but distinct opportunity is the potential to obtain a more heterogeneous sample. For example, although the European Social Survey is often described as among the highest quality survey programs (Jabkowski et al. 2023), its geographic scope is relatively limited in relation to important contextual characteristics, such as democratic quality and economic performance. With increased focus on multilevel politics in this era of democratic backsliding (Blauberger et al. 2025), a more heterogeneous sample enables the analysis of contextual and longitudinal effects.

Opportunities, Part 2: Research Impact

Prominent approach: As documented in our discussion of prominent examples of research using survey data harmonization, this approach has become an increasingly high-impact research strategy, including multiple highly-cited publications in leading journals. This growing literature signals to early-career researchers that survey data harmonization can create a data infrastructure that yields impactful research.

Team-building: A central theme of the interviews was that the collaboration of multiple researchers is needed for the success of ambitious harmonization research. Even researchers who published solo-authored studies discussed the importance of working with skilled research assistants, consistent with the discussion of quality assurance processes in this Symposium's article on data wrangling (Hu, Tai, and Solt 2026). Several researchers discussed opportunities that this collaboration between senior and junior researchers creates for training students, and for developing a collaborative research community.

Grant support: This research strategy is a natural fit for multi-year grants from agencies such as the U.S. National Science Foundation (NSF) and the European Research Council (ERC). These funding opportunities, which generally have a 3–5-year timeline, encourage project proposals with complex and time-intensive research strategies. These opportunities, however, are also linked to important challenges regarding long-term scholarly contributions, discussed in the following section.

Data infrastructure creation: As noted in Kołczyńska's (2022) overview of ex-post survey data harmonization research, two distinct types of studies use survey data harmonization techniques. First, *study-specific* projects tend to focus on information-sharing about dataset construction to meet journals' replication requirements. Second, *infrastructure-oriented* projects in political science and related fields seek to produce harmonized data infrastructure designed for wider scholarly use, although this vision can be difficult to realize (for further details see Kołczyńska [2022, 63-64]).

Challenges

While researchers enjoyed discussing opportunities, they had even more to say about challenges. Two main challenges paralleled the opportunities in the previous section. First, parallel to the opportunity of "Data and Analysis," researchers discussed the challenge of "Workflow and Replication." Second, parallel to the opportunity of "Research Impact," interviewees discussed "Scholarly Challenges."

Challenges, Part 1: Workflow and Replication

Replication transparency: Responding to what has been called a "replication crisis" in the social sciences (Freese & Peterson 2017), scholars have endeavored to create clear replication standards. As detailed in this Symposium's "data wrangling" article, replication documentation ideally guides researchers from the moment of downloading data through to the replication of published findings. The myriad data transformation decisions required to produce a harmonized dataset make it challenging to create documentation that is both comprehensive and transparent to project "outsiders."

Data availability: A technical challenge for seamless replication is that most survey programs' user agreements require users to download data from the program's websites, while digital object identifiers (DOIs) that uniquely identify the same dataset over time are not always available. This means that data available today may not be available in identical form by the time future researchers follow data replication instructions. Additional challenges include time-intensive ethical approval required by some programs to protect respondent anonymity, as well as

programs that require payment. These data availability issues create challenges for authors aiming to generate transparent and stable replication files.

Workflow for harmonizing new survey data waves: Most relevant programs for cross-national data harmonization regularly publish new waves and important revisions to prior waves, including additional countries and error corrections. As a result, a harmonized dataset can become outdated the moment it is produced, underscoring the need for clear harmonization project workflows and timelines.

Software language and programming infrastructure: While software language and programming infrastructure are rarely mentioned in the literature, interviewees viewed this as a central component of successful survey data harmonization. Most senior researchers described an evolution of their training that generally began with SPSS, proceeded to Stata, and then in some cases to R and GitHub. The consensus of early-career and senior researchers is that open-source software such as R, with version control like GitHub, is an optimal infrastructure—but only if all researchers involved can invest in training to develop this common language. As software will clearly continue to evolve, researchers advised making clear decisions about programming infrastructure that facilitates transparent collaborative documentation.

Challenges, Part 2: Scholarly Challenges

Conceptual and empirical equivalence: The important challenge of conceptual and empirical equivalence across datasets is addressed in this Symposium's article on *conceptual* challenges (De Sio, Katsanidou and Borghetto 2026), and the article on *empirical* data harmonization challenges (Slomczynski, Tomescu-Dubrow, and Wysmułek 2026), such as whether and how to harmonize variables with different question wording and response options. Additional important topics for equivalence across datasets include *sample type, quality,* and *weights*, which can be affected by data collection challenges in different countries and regions (Jabkowski et al. 2023; Joye et al. 2023; Montalvo et al. 2018), as well as numerous operational challenges related to *translation methods, interviewer training, field supervision,* and *survey mode* (Lyberg et al. 2021).

Descriptive contributions in a causal inference era: A scholarly challenge discussed by multiple researchers leading ambitious projects is that survey data harmonization focuses on observational data analysis, and is therefore primarily descriptive at a time when causal inference is often considered a more meaningful scholarly contribution. Yet, several studies discuss an evolving scholarly appreciation for high-quality descriptive research, including "Mere Description" (Gerring 2012), "Defense of Observational Research" (Stokes 2014), "A Case for Description" (Holmes et al. 2024), and "Good Description" (de Kadt and Grzymala-Busse 2025). In addition, recent work shows the inferential power of combining high-quality observational analysis with experimental designs (e.g., Pereira 2021).

Time investment: A deeply-felt challenge emphasized by researchers is that survey data harmonization requires a time-intensive investment. Multiple researchers contrasted the demanding nature of this approach compared to experimental research. Those experienced with multiple research methods noted that researchers and grant project referees consistently underestimate how much time this research strategy requires.

Peer review: Researchers discussed a recurring challenge posed by reviewers who draw on their inevitably selective familiarity with specific surveys to advocate for using more fine-grained variables than those in the harmonized dataset, even when the less detailed dataset is optimal for the project's theory-informed goals. Several researchers noted this challenge as particularly acute for reviewers with Americanist expertise who lack familiarity with cross-national datasets. One strategy proposed to address this challenge is to prepare robustness tests based on the most commonly used surveys.

Academic credit: Both early career and senior researchers noted the challenge of receiving appropriate academic credit for their scholarly investment in this type of research. We already discussed related challenges of multi-researcher coordination, and this strategy's relatively time-intensive demands, which can lead to sub-optimal data- and information-sharing.

Long-term infrastructure: As noted in the "opportunities" section, survey data harmonization projects are an appropriate fit for the common time horizons of relatively large research grants to

individual Principal Investigators, such as NSF and ERC. As discussed further in this Symposium's concluding article (Boomgaarden et al. 2026), an important long-term challenge is sustaining the valuable data infrastructure created by these projects after the conclusion of generous but time-limited project funding.

Conclusion

Informed by these findings, Table 1 documents best practices in four main categories. First, *theory* best practices include conducting a "harmonization necessity check"; engaging in iterative research question clarification; and embracing descriptive contributions. Second, *replication preparation* requires clarity on software and programming infrastructure; data availability; and survey program-specific robustness tests. Third, *dataset construction and analysis* requires researchers to define the conceptual and empirical focus of variable selection and recoding; assess sample type, quality, and weights; and consider whether individual-level or country-year level harmonization is optimal. Finally, and oft-noted by interviewees as most important, *timeline and teamwork clarification* requires researchers to proactively (re-)assess feasible timelines; define research team roles and credit; and engage in a broader scholarly community.

<Insert Table 1 Here>

We conclude by highlighting the final best practice in this list of building a *scholarly community* of colleagues conducting survey data harmonization, which is also emphasized in de Jong's (2025) discussion of international and cross-culturally comparable research. Echoing our first meta-theme of the importance of clearly defined *research questions*, experts in data harmonization argued that while *scholarly community* is important for advancing social science research writ large, it is even more fundamental for survey data harmonization. Given the unique combination of this research strategy's opportunities and challenges, researchers emphasized the importance of proactively engaging in scholarly dialogue to advance team members' methodological training, and to learn about relevant adjacent projects. While still relatively small, a meaningful community of survey data harmonization researchers has evolved, making it all the more important to conclude with best practices gleaned from master teachers.

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Conflict of Interest

The authors declare no ethical issues or conflicts of interest in this research.

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Table 1. Best Practices: Cross-national Survey Data Harmonization

Best Practice	Description
	Symposium sources for additional practical guidance
I. Theory	*See Boomgarden et al. (2026); De Sio et al. (2026)*
Harmonization necessity check	Assess whether theoretical goals can be achieved without survey data harmonization
Research question clarity	Articulate clear research questions that are continually prioritized and iteratively revised as the dataset is constructed
Descriptive contribution clarity	Be prepared to argue for the contribution of descriptive research
II. Replication preparation	*See Hu et al. (2026); Slomczynski et al. (2026)*
Software and programming infrastructure	Define the project's common programming language, and establish team protocols that support full replication
Data availability	Clarify usage agreements to prepare for harmonized dataset-sharing beyond project collaborators
Survey program-specific analyses	Be prepared to conduct survey program-specific robustness tests as part of the review process
III. Dataset construction and analysis	*See De Sio et al. (2026); Hu et al. (2026); Koc and Kołczyńska (2026)*
Variable selection and recoding	Define the conceptual and empirical focus of variable harmonization
Sample type, quality, and weights	Assess optimal weighting procedure for each survey program as part of the survey selection and harmonization process
Individual-level variable harmonization vs. country-year aggregation	Consider optimal level of survey data harmonization with attention to recent country-year aggregation approaches
IV. Timeline and teamwork	*See Boomgaarden et al. (2026); Hu et al. (2026)*
Timeline	Proactively (re-)assess feasible timelines, including potential end date and post-project data availability
Research team roles	Clarify the collaborative roles of multiple researchers contributing to the project
Broader scholarly community	Engage with researchers working on similar topics to benefit from collegial information-sharing and potential collaboration