How to write a research paper

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Writing a research paper: principles, structure, and pitfalls

A focus on both qualitative and quantitative research

Article structure

- Introduction → sets the problem
- Literature & theory → frames the argument
- Methods → demonstrates credibility
- Findings → themes and interpretation
- Discussion → theoretical and practical contribution
- Conclusion → emphasizes the take-away

Common PhD mistakes

- Descriptive findings without interpretation
- Vague or incomplete methods section
- Unclear or overstated contribution
- Theory added superficially
- Quote dumping or overlong excerpts

Why qualitative writing is challenging

- Focus on meaning, process, and context
- Rigor ≠ statistics; it's transparency & plausibility
- The researcher is not invisible (positionality matters)
- Writing is argumentation, not just description

Introduction: Problem & Contribution

Weak vs Strong Example

Weak:
“Leadership has been widely studied…This study explores leadership practices in organizations.”

Strong:
“Although leadership in complex organizations has been extensively theorized, we still know little about how leadership is enacted in day-to-day interactions under conditions of uncertainty…This study examines how leadership is constructed and negotiated in everyday work practices in complex organizational settings.”

Takeaway: Identify a puzzle, justify qualitative inquiry, signal contribution.

Research Questions

Weak vs Strong Example

Weak:
“What are the experiences of participants? How do participants perceive leadership?”

Strong:
“How do organizational members construct and negotiate leadership roles in everyday work interactions? How do these constructions shape decision-making under conditions of uncertainty?”

Tip: Focus on process, aligned with qualitative methods.

Literature Review

Qualitative X Quantitative

Weak vs Strong Example

Weak:
“Several studies have examined leadership in organizations…Smith (2015)…Jones (2017)…Brown (2019)…”

Strong:
“Prior research on leadership has primarily focused on styles and outcomes…we lack a processual understanding of leadership under conditions of uncertainty.”

Tip: Synthesize, critique, and show the gap.

Theoretical Framing

Qualitative X Quantitative

Weak vs Strong Example

Weak:
“This study draws on sensemaking theory to analyze the data.”

Strong:
“We draw on sensemaking theory to examine how organizational members interpret ambiguous situations and coordinate action…This perspective sensitizes our analysis to moments of disruption, interpretive negotiations, and the enactment of meaning in interaction.”

Tip: Integrate theory, show how it guides analysis.

Methods: credibility engine

Weak vs Strong Example

Weak:
“We conducted qualitative interviews and analyzed the data thematically.”

Strong:
“We conducted 32 semi-structured interviews with organizational members across three departments…Data analysis followed an iterative thematic approach, involving open coding, development of categories, and refinement of themes through constant comparison.”

Tip: Be specific and transparent; show audit trail.

Reflexivity

Weak vs Strong Example

Weak:
“The researchers maintained objectivity throughout the study.”

Strong:
“The first author had prior professional experience in the field…To address this, analytic memos were used to reflect on assumptions and alternative explanations throughout the analysis.”

Tip: Acknowledge researcher position; explain bias management.

Findings: themes vs data

Weak vs Strong Example

Weak:
“Many participants said communication was important…One participant said, ‘Communication is very important here.’”

Strong:
“Participants emphasized communication not simply as information exchange, but as a mechanism for negotiating authority…‘Communication is how we signal who is taking the lead when things are unclear.’”

Tip: Interpret data; avoid quote dumping.

Use of quotes

- Short, purposeful, illustrative
- Integrated into analysis
- Supports an analytical claim
- Example included in previous slide

Discussion: theoretical contribution

Weak vs Strong Example

Weak:
“This study found that leadership is complex and involves communication.”

Strong:
“By conceptualizing leadership as an interactional accomplishment rather than a fixed role, this study extends process-oriented leadership theories and highlights how authority is negotiated in real time under conditions of uncertainty.”

Tip: Link findings to theory and contribution.

Conclusion

Weak vs Strong Example

Weak:
“In conclusion, this study contributes to the literature and future research is needed.”

Strong:
“This study demonstrates that leadership emerges through everyday communicative practices rather than formal roles alone. By foregrounding these processes, it opens new avenues for studying leadership as a dynamic and situated accomplishment.”

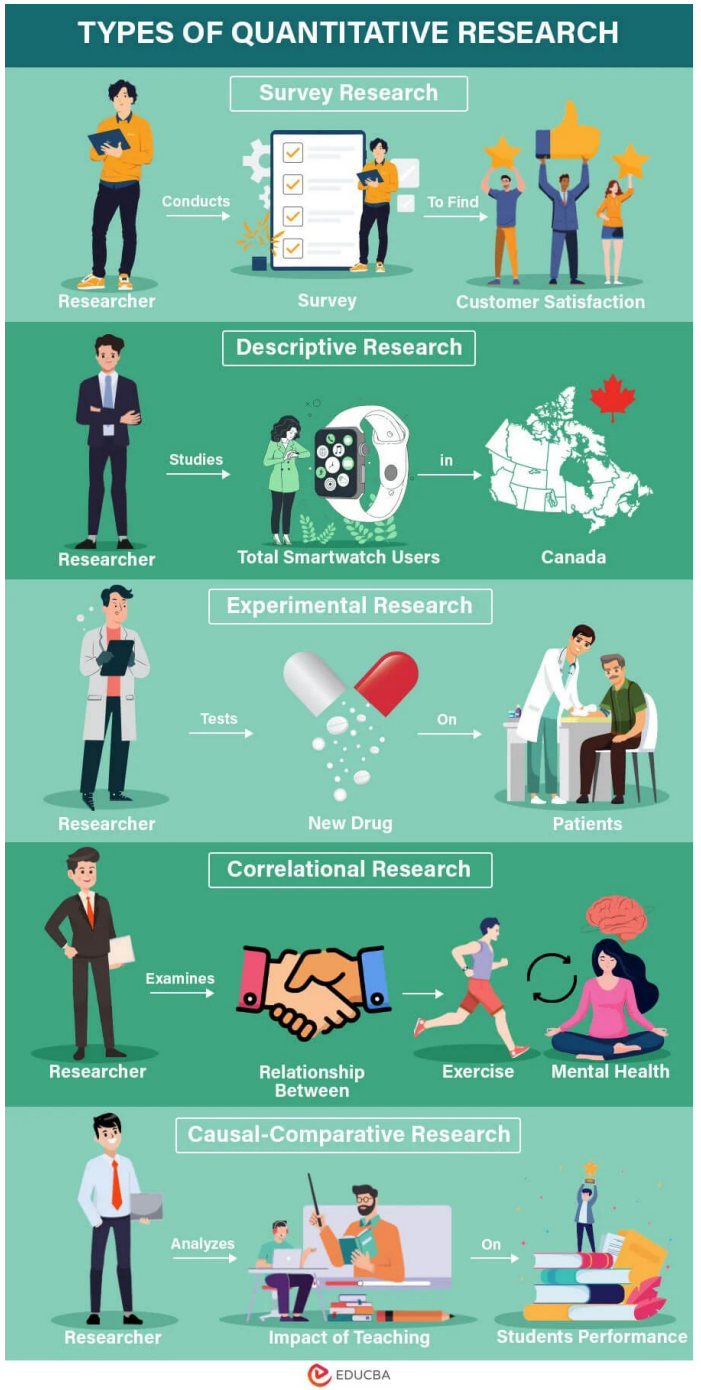
Tip: Emphasize contribution; leave a clear takeaway.

Writing a research paper: principles, structure, and pitfalls

Quantitative research

Why quantitative writing is challenging

- Knowledge is built through measurement and comparison
- question → data → analysis → inference
- Predefined variables
- Standardized methods
- Separation between results and interpretation
- In theory, the researcher is an observer (objectivity)
- Paper structure is similar to qualitative approach



Source: EDUCBA (s.f.). Types of quantitative research.

Introduction: Problem & Contribution

Weak vs Strong Example

Weak:
"Several studies have analyzed productivity in science. ***This paper analyzes publication patterns.****"*

Strong:
*"****Although research productivity has been widely studied****, we still* ***lack comparative*** *evidence on how gender and career stage interact to shape publication trajectories across fields.* ***This study addresses this gap*** *by analyzing…"*

Takeaway: Identify a measurable gap

Research Questions

Weak vs Strong Example

Weak:

*“**Are there differences** between groups?”*

Strong:
*“Do women and men **differ in publication productivity across career stages**?*
*H1: Women publish fewer articles than men, **controlling for academic age**.”*

Tip: Make expectations explicit

Literature review and theoretical frame are similar to qualitative research

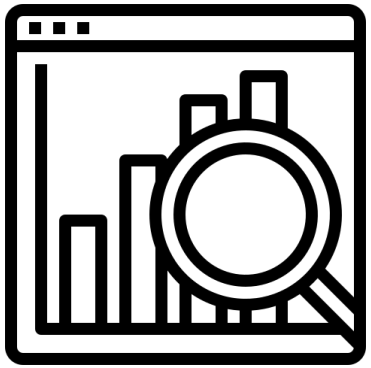
Methods: Importance of reproducibility

Data selection

- Data source(s)
- Sampling strategy

Data collection and preprocessing

- Inclusion/exclusion criteria ⟶ N corpus before and after sampling
- Unit of analysis and variables
- Procedures for processing ⟶ Transformations, scaling, missing data
- Ethical approvals (if relevant)



Data analysis

- Operationalization of abstract concepts
- Analytical strategy ⟶ Procedures for analyzing the data
- Why these methods are appropriate
- Assumptions (normality, independence, etc.)
- Software, packages, versions

TIP: After you read the methodology section, you should be able to reproduce it

Methods: credibility engine

Weak vs Strong Example

Weak:
*“We included **several control variables.**”*

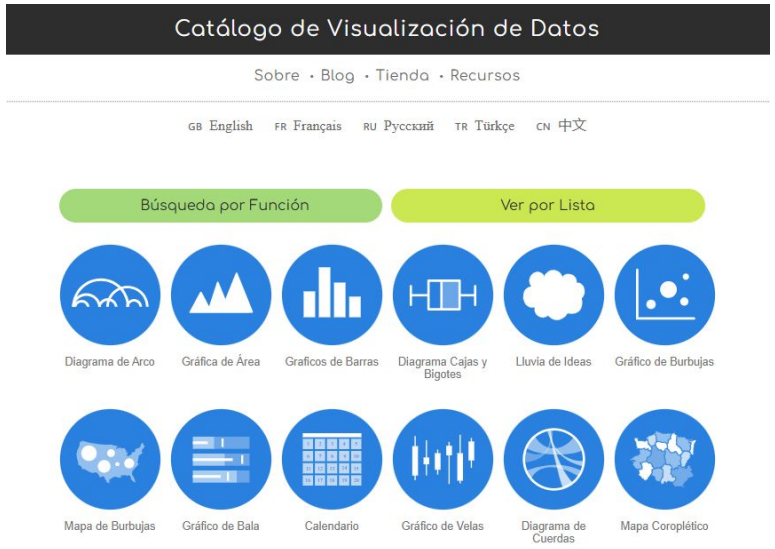
Strong:
*“**Productivity** was operationalized as the **number of publications per year**. **Gender** was inferred **using… Academic age was calculated as**…”*

Findings

Use of tables, graphics and other visual representations

- The choice of how to display depends on your results.
- Self-contained and interpretable

Visual representation tools and references:



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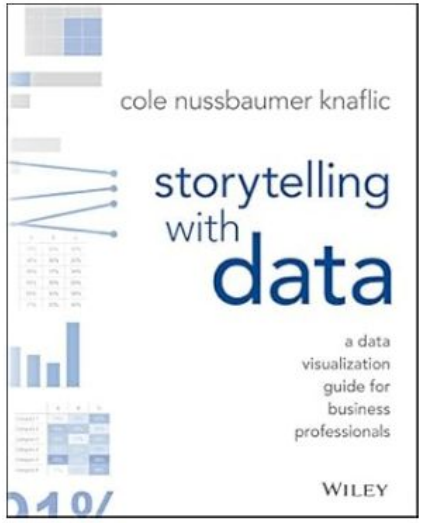
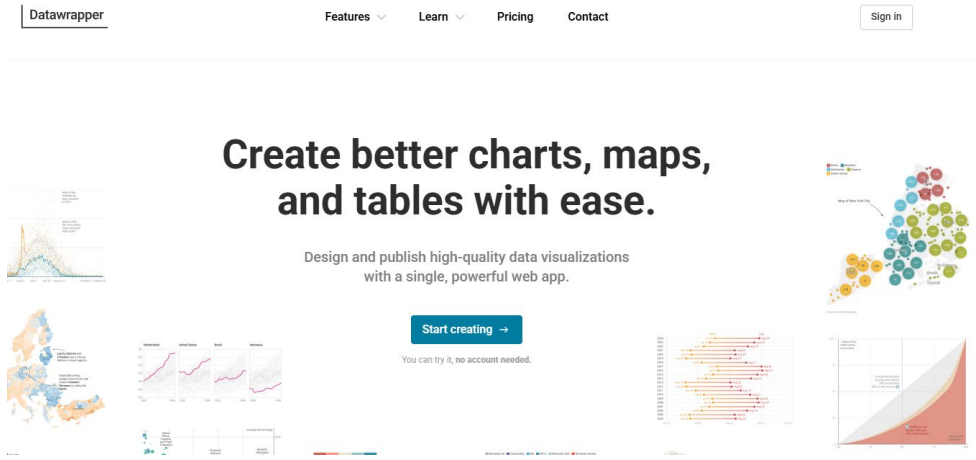


Storytelling with Data: A Data Visualization Guide for Business Professionals



https://www.datawrapper.de/

Findings: themes vs data

Weak vs Strong Example

Weak:
*“Women **published fewer** papers than men.”*

Strong:

*“**Across all fields**, women show **lower average publication counts**, with **particularly large gaps in** early career stages and in physical sciences.”*

Tip: Detail results, avoid interpretation.

Discussion: theoretical contribution

Weak vs Strong Example

Weak:

*“This study **shows significant differences** between men and women.”*

Strong:

*“These findings **suggest that productivity gaps are not uniform across careers, highlighting the role of cumulative disadvantage in early academic stages.**”*

Tip: Link findings to theory and contribution.

Conclusion

Weak vs Strong Example

Weak:
"In conclusion, this ***study contributes to the literature and future research is needed.****"*

Strong:
"This study ***demonstrates that gender differences in productivity vary systematically across career stages,*** *offering new evidence for understanding inequality in scientific careers."*

Tip: Emphasize contribution; leave a clear takeaway.

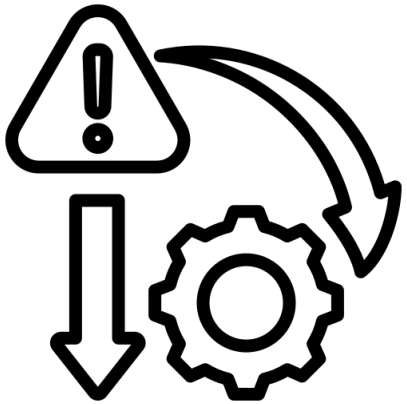
Limitations:

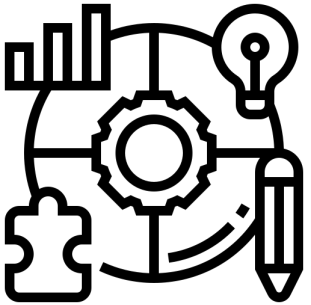
Qualitative X Quantitative

- Be honest about limitations

For instance, potential bias and representativeness of data

- Describe why your study is important for literature.
- Possibilities for future research

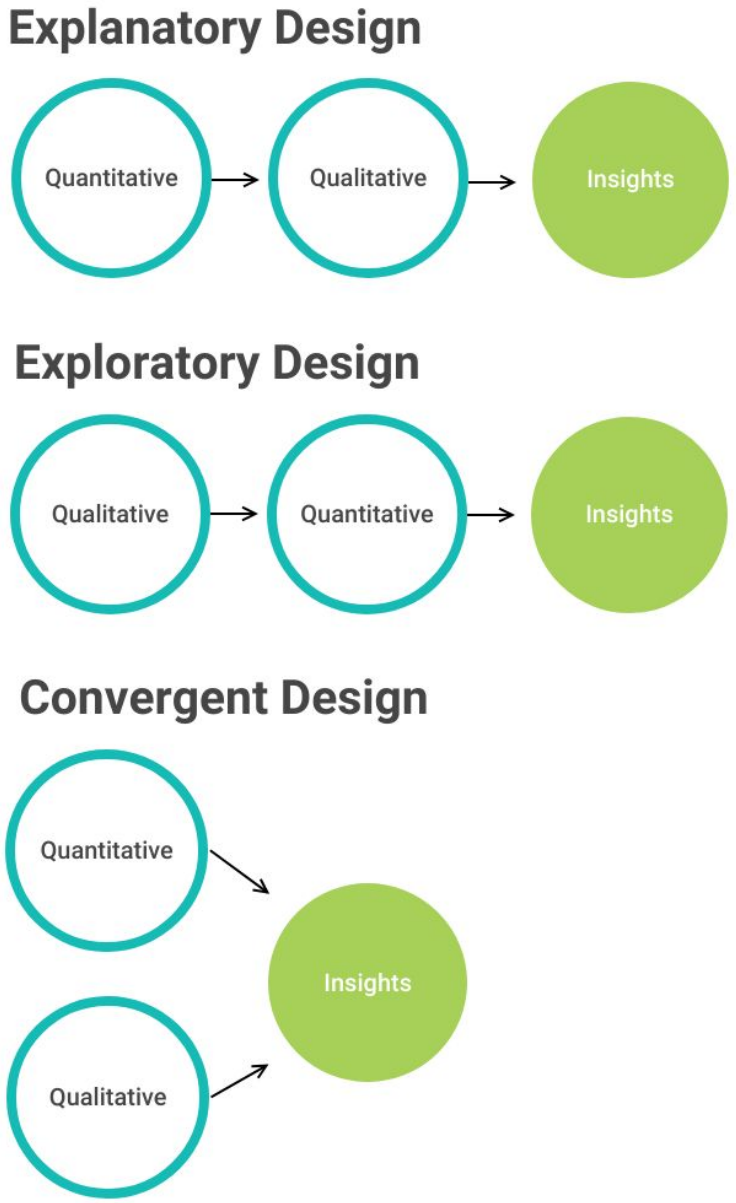




Research using mixed methods

Qualitative + Quantitative

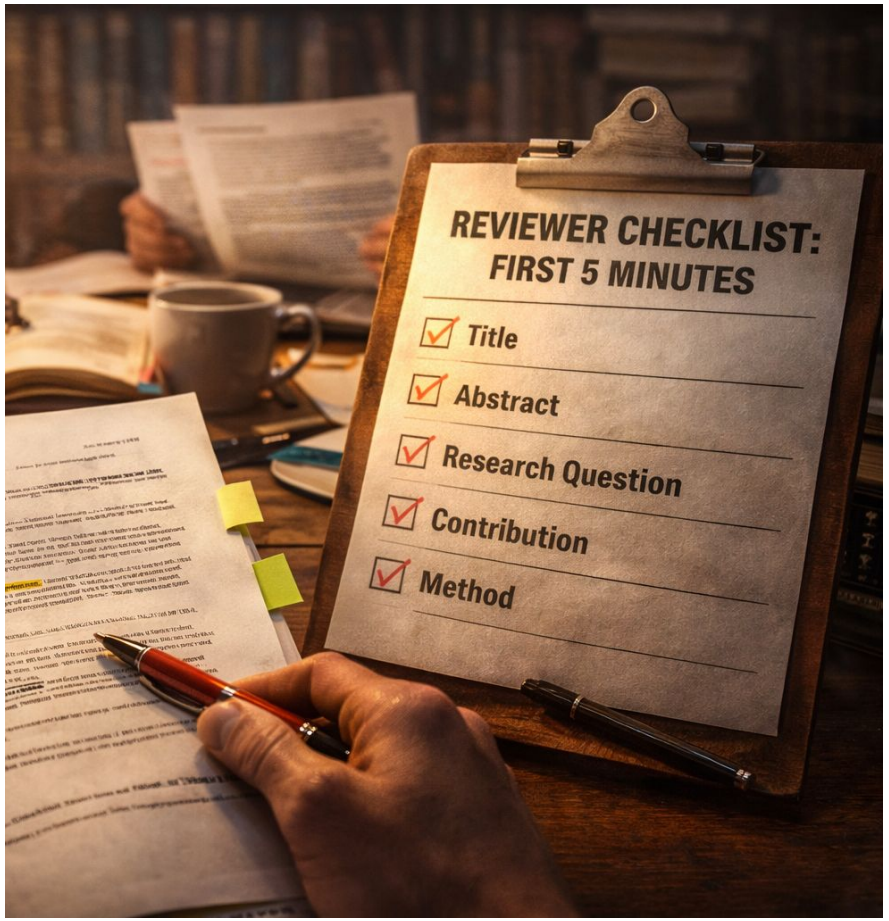
- Use quantitative and qualitative approach to explain a phenomenon
- Sequential or at the same time
- Same structure:
  - Introduction
  - Methodology
  - Findings and Discussion
  - Conclusions



Wicen, S. (2022, November 14). *Directions for research design: Mixed Methods*. Library Research Service. https://www.lrs.org/2022/11/14/directions-for-research-design-mixed-methods/

What reviewers expect

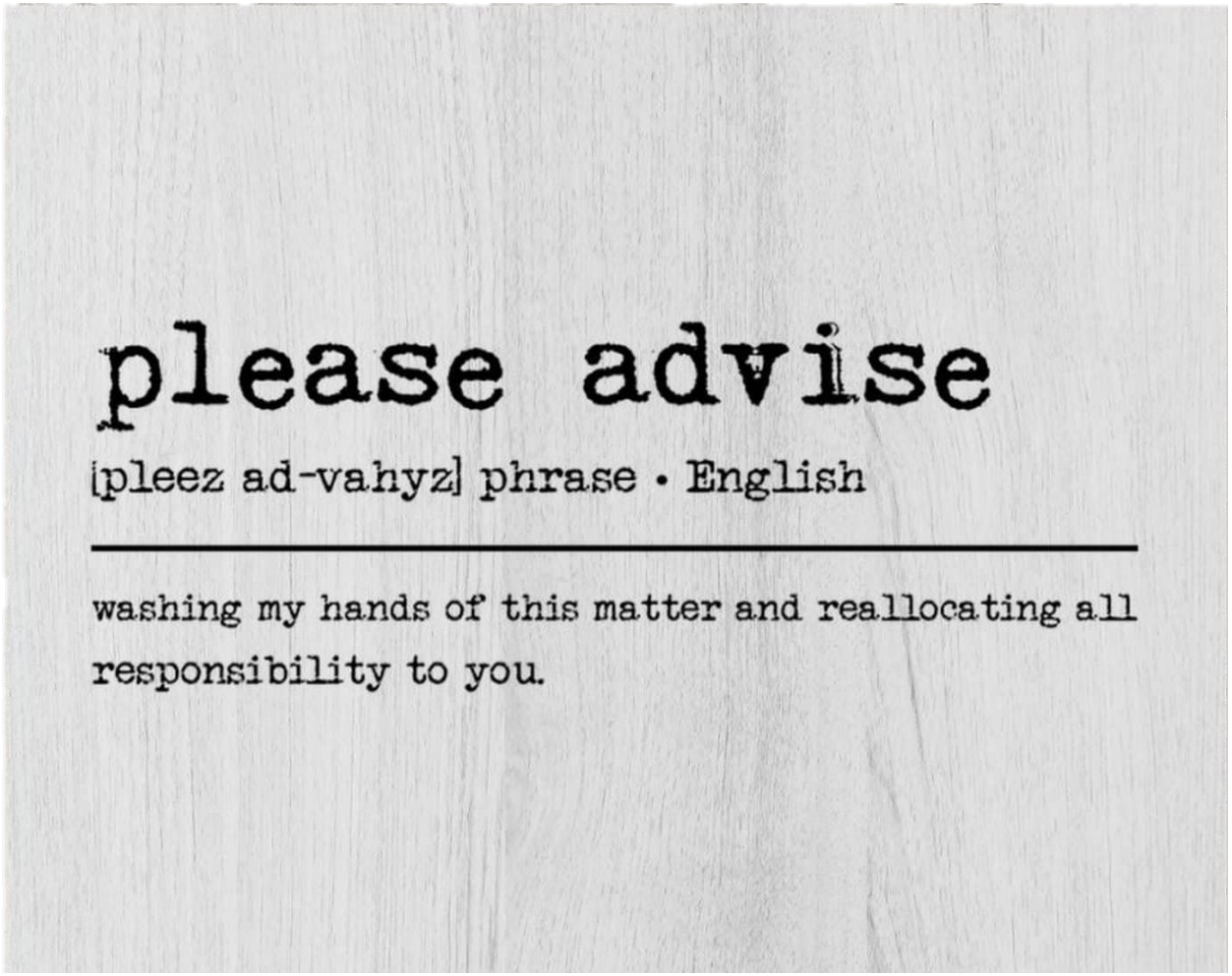
- Clear, testable research problem
- Methodological and statistical credibility & transparency
- Explicit analytical strategy
- Meaningful empirical contribution
- Common mistakes: vague methods, overinterpretation of results, unclear contribution.



Final advice

- Write with a specific journal in mind
- Read qualitative and quantitative articles for structure, argument, and rhetoric
- Iterative writing clarifies analysis
- Aim to convince readers that interpretations are thoughtful, transparent, and plausible

Qualitative X Quantitative



Thank you for your attention !

Questions ?

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