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## DISCUSSION PAPER SERIES

# Writing Tips for Crafting Effective Economics Research Papers – 2023-2024 Edition

Plamen Nikolov

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# ABSTRACT

# Writing Tips for Crafting Effective Economics Research Papers – 2023-2024 Edition*

This paper aims to provide insights for those who value careful, precise communication to draft effective economics papers. It is designed to be a helpful and convenient guide, which is divided into well-defined, thought-provoking sections.

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**Prelude: Your Journey to Clear Economics Writing**


Welcome to 'Writing Tips,' the guide that marks the beginning of your journey towards more effective writing. The origin of this guide dates back to my time at Harvard College, teaching the sophomore tutorial for economics concentrators (Economics 970). That teaching experience was the seed for this practical resource, now available to you in a virtual format. With constructive criticism from my bright students at Harvard College, Harvard Kennedy School, and The State University of New York, it's evolved into a trusty sidekick for those knee-deep in economics - students, researchers, or professionals.

Here's the deal: tangled sentences and dizzying ideas don't do anyone any good. This guide is about cutting through the jargon and delivering clear, digestible advice. It's all about boosting your voice and thought organization in your writing. Research impact depends in considerable measure on clear and effective writing. Research findings hold little value if not conveyed effectively.

This document, a reflection of my ongoing commitment to improving my writing, aims to provide insights for those who value careful, precise communication. It is designed to be helpful and convenient, divided into well-defined, thought-provoking sections.

Now, I won't pretend this piece has all the answers - it doesn't. But it does have a good batch of straightforward tips to shape your writing and thinking. It can help you put your research findings out there in a way that really lands. This guide has your back no matter what stage you're at in the economics world - maybe a doctoral student, an early-career professor, or a veteran economist. The suggestions in this document encourage you to scrutinize your research and underline the importance of confident, organized writing.

This guide keeps it real. It's research-oriented, sure, but it's also like a friendly chat over coffee. I hope you will find that this guide is packed with practical advice, real-life examples, and a dash of humor. I hope you can use the strategies outlined in this guide to elevate your economics paper to its best potential!

# I. Essential Guidelines: Defining the Key Elements and Mastering the Tone and Style of Economic Writing

Research writing, particularly in economics, demands a delicate balance between innovative thought, rigorous analysis, and nuanced interpretation of data. Beyond deep subject knowledge, scholars are expected to contribute significantly to ongoing debates, primarily through working papers and peer-reviewed articles.

A high-quality economics paper typically exhibits three key attributes: (1) a riveting question rooted in economic theories or current economic affairs, (2) an insightful assessment of how the current study adds value to the existing body of research on the same topic, and (3 a keen understanding of the empirical challenges surrounding the cause-and-effect issues related to a chosen topic, accompanied by a clever research design to address the central research question. Your paper should not just join the conversation but say something that turns heads.

Consider it this way: instead of a quick-witted New York Times columnist, envision yourself as an expert navigating the intricate labyrinth of applied microeconomics, leaving no stone unturned. Your presented evidence should be solid, your cited literature should be pertinent, and your explained economic trade-offs should be crystal clear.

And your thesis? Think of it as your North Star, guiding every analytical decision you make. While the temptation to adopt an op-ed or journalistic tone can be strong (a common pitfall in undergraduate research papers), remember that you are crafting an economics research paper, not a newspaper column!

Sharpening your economics writing skills is crucial in communicating top-notch research effectively. Remember, your paper's impact may suffer if your writing is:

• grammatically flawed,
• unclear, or
• excessively journalistic.

Writing an economics paper without proper grammar is like balancing an economic model on a unicycle – it's a recipe for disaster! So, let's dot our i's, cross our t's, and give those grammatical errors the cold shoulder. After all, you do not want your readers scratching their heads and wondering if a misplaced comma enthusiast wrote your paper. Let's keep it clear, concise, and typo-free.

If you struggle with grammatical accuracy, allocate extra time for a copyeditor to review your draft or, as a student, visit a writing tutor at the University's Writing Resource Center. Clarity trumps sophistication in economic writing, so focus on clear communication over trying to sound impressive.

Economists have a writing style all their own, a secret handshake, if you will. If you want to fit in, it's worth learning. The "economist style" essentials are laid out in almost all peer-reviewed economics articles. Some may seem quirky, but it's best to roll with it.

Key Elements Defining the Writing Style and Tone of Economics Research Papers:

**Part 1: Structure and Clarity**

1. Stick to one idea per paragraph. Stick literally to one idea per paragraph.
2. Each paragraph should follow an inverted pyramid structure.

   - Adopt the BLUF (Bottom Line Up Front) style: each paragraph should start with a summary sentence that encapsulates all subsequent details. Think of this summary as an umbrella, sheltering all the following points. After this lead sentence, organize the rest from the most significant to the least.
   - The remaining sentences should support the core theme in the paragraph's opening line and prove, explain, or discuss.
   - The rest of the sentences in the paragraph should support, explain or unpack the statement or assertion of the opening line.
   - If you start the paragraph and tell the reader that you will talk about X, you cannot talk about Y or W in some other sentence within that paragraph.
   - Try to keep your paragraphs three to five sentences long.

3. Sentence Structure:
   - Aim for short, clear sentences. While not always possible or necessary, consider using monosyllabic words for simplicity when appropriate.
4. Clarity and Brevity:
   - Strive for clarity in your writing. Avoid repetition and unnecessary words. If it is possible to cut a word, sentence, or paragraph without losing clarity or content, do so.

     o Once you write your paper, review each section, paragraph, and sentence to remove any superfluous information.
     o Your writing objective is to be as clear as possible with as few words as possible.
     o Cut out extraneous words or sentence stretchers like 'it is,' 'there is,' and 'there are.'
5. Simplicity over complexity
   - Get rid of deadwood—any words that do not help convey unpack your argument
   - Use precise language over vague words. Vague and abstract words lessen your ability to have the reader form mental pictures of what you write about
6. Personal Pronouns:
   - Use "I" when referring to your own actions or thoughts and "we" when referring to shared knowledge or experiences. It is perfectly acceptable in economics papers to use personal pronouns like 'I,' 'we,' 'she/he,' 'they,' etc.
7. Language and Tone:

- Avoid overly dramatic language. For instance, writing "these results completely shatter our expectations." is too much.
- Use positive (evidence-based) statements over normative (i.e., what should/ought to happen).

8. Active Voice:
- Write in the active voice as much as possible. It is generally more direct and vigorous than the passive. For instance, "I estimated the model" is better than "The model was estimated."

9. Consistent Tense:
- Use present tense when discussing economic theories, models, or general facts. In economics research papers, you can use present simple tense even when referring to specific past studies or your own past research. For instance: "Mullainathan (2000) finds that..." or "In this paper, I attempt to...."

## Part 2: Writing with Data

10. Presentation of Data:
- Be clear when presenting data, calculations, and findings. Use phrases like "The results show...," "The tables report," "The estimated coefficient on...," even if they may seem repetitive.
  - When reading your "Results" section, readers are used to keeping track of numbers and regression tables.
  - As such, they will tolerate a less-than-scintillating delivery of the main results so long as your delivery and reporting are clear.

11. Focus on Economics:
- Keep the main body of your paper focused on economics. Reserve comments on topics outside of economics for the introduction and conclusion unless they're integral to your model. For example, if your findings bear intriguing political implications, you can hint at these in the Introduction and circle back to them in the Conclusion.
- If you are on the fence about whether to include non-economics material, it is safer to give it a miss. When in doubt, leave it out.
  - Students, in particular, tend to include too much political and social commentary rather than too little.

## Part 3: Language and Style

12. Use of Contractions and Abbreviations:
- Limit contractions and abbreviations, such as, e.g., i.e.
- Always italicize Latin or foreign languages. For example: "Feldstein et al. (1976)...."

13. Jargon and Acronyms:
- Avoid jargon unless necessary. If a word is not commonly found in a newspaper, approach it skeptically. Do not create your own acronyms.

14. Avoid Wordiness:
    - Avoid wordy phrases and replace them with more concise alternatives. For example, replace "in order to" with "to," "whether or not" with "whether," and "is equal to" with "equals.
15. Clear References:
    - If you start a sentence with "This," ensure that what "this" refers to is clear. However, try to avoid sentences beginning with "This" when possible, as it often leads to ambiguity.
16. Use adverbs sparingly
17. Avoid wordy, smothered verbs (also called "buried verbs"). Smothered: make a decision. Un-smothered: decide.
18. Avoid "of course," "clearly," and "obviously." These terms can sound presumptive or dismissive
    - Clearly, if something is obvious, that fact will, of course, be obvious to the reader. 😊
    - The word "very" is very often very unnecessary.

**Part 4: Citations and References**

19. Citation Style:
    - Ensure your citation style follows your institution's preferred style guide. For example, the Chicago-modified style[1] would look like this: "Feldstein et al. (1976)...."
    - Use formal in-text citations for books and articles. Do not describe them in your writing.
        - Write: "Mullainathan (2000) finds that..."
        - Do not write: "Sendhil Mullainathan, in a 2006 journal article...."
20. Use a Reference/Citation Manager
    - I'd encourage using a free citation manager like Zotero, Mendeley, and Endnote on web platforms, desktops, and mobile devices. These tools are built to manage your references, create bibliographies, cite within the text, annotate PDFs, take research notes, and share info. They can enhance your ability to add references into Word or LaTeX. You can easily switch citation styles without reformatting every reference with them. Plus, you can share and edit references with your co-authors. Zotero is a highly versatile and user-friendly citation manager, given its open-source nature, broad compatibility, extensive citation support, and collaborative features. It also has a Chrome browser extension, which lets you input the research bibliography you read on the web (e.g., published articles, books, websites) into a bibliography database. Considering these advantages, I'd recommend Zotero over other citation managers.

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[1] While a few economics papers use APA citation style, most adhere to the Author-Date system of the Chicago Manual of Style. For additional details regarding the appropriate format, visit the style guide on the American Economic Review's website: https://www.aeaweb.org/journals/aer/styleguide

**Part 5: Reader Engagement and Rhetoric**

21. Engage Your Reader:
    - Engage your reader with techniques such as metaphors, anecdotes, or compelling facts.
    - Ensure your writing remains relevant and relatable.
    - A vivid metaphor or a captivating anecdote can engage readers more than any dry exposition.
    - Always relate the impact of your economic question to the readers' daily lives or the wider population.
    - Keep it simple.
        - Consider your reader as someone who may not have studied economics, like a college roommate who majored in Classics.
        - Assume he's never studied economics.

**Part 6: Technical Conventions in Economics**

22. Economic Terminology:
    - Be aware of the standard uses of terms in economics. For example, "Long run" (without a hyphen) is a noun. "Long-run" (with a hyphen) is an adjective. Same with "short(-)run." and "Saving" (without a terminal s) is a flow. "Savings" (with a terminal s) is a stock.

**Part 7: Revision and Editing**

23. Be Your Own Critic:
    - Review your own work critically. When it comes to critiquing your writing, be your own worst enemy. If you do not, someone else certainly will.
24. Peer Review:
    - Engage your colleagues or peers in the review process. Having a fresh set of eyes look over your paper can catch issues you might have overlooked.
25. Iterative Process:
    - Always remember that writing is an iterative process. Your first draft will never be perfect. Be ready to write, revise, and rewrite until your paper is polished.
26. Proofreading:
    - Never underestimate the importance of proofreading. Spelling, grammar, and punctuation errors detract from your paper's credibility and distract the reader. Use spell check, but also manually proofread your article.
27. Seek Feedback:
    - Seek feedback from your peers, professors, and mentors. Their perspective can help to improve the overall quality of your paper.
28. Don't Fall in Love with Your First Draft:

- Do not become too attached to your first draft. Be ready to chop, change, and rearrange.

## Part 8: Research Integrity Issues

29. Understanding Intellectual Dishonesty:
    - Know what counts as plagiarism and how to steer clear of it. Scholarly misappropriation includes copying someone else's words without a proper citation and using someone else's ideas without giving credit.
30. Proper Quotations:
    - If you must quote directly, use quotation marks and cite the source appropriately.

## Part 9: Formatting

31. Consistency in Formatting:
    - Maintain a consistent format in your paper, including a uniform heading style, font type, and size, uniform line spacing, and a consistent approach to using bullet points.
32. Readability:
    - Ensure that your paper is readable. Use headers and sub-headers to break up the text into sections or subsections.
33. Tables and Figures:
    - Use tables and figures appropriately. They should be self-contained and self-explanatory. Always refer to each table or figure in the text and explain its significance. Naturally, figures and tables are placed with the text in published papers. There are varying guidelines regarding the placement of figures and tables in working papers that have not yet been published. Some researchers prefer to incorporate tables and figures directly into the piece, while others prefer to position them after the main body of the manuscript.
34. Formatting References:
    - Ensure your reference list follows a consistent citation style.[2] Each reference you include should have a corresponding citation in your text, and every in-text citation should be in your reference list.

## Part 10: Conclusion

35. Concluding Your Paper:
    - Your conclusion should briefly recap the main points and findings of your paper. It can also suggest further areas for research.
36. Reflecting on Your Work:
    - Take a step back and reflect on your work. Ask yourself if you have convincingly answered your research question, if your arguments are logically structured and well-

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[2] I provide further guidance on this point later in the document. The most frequently used citation style among economists the *Chicago Manual of Style* Author-Date system for all common publication types. The AEA's "Sample References" provides information for less common citation sources: https://www.aeaweb.org/journals/policies/sample-references

supported, and if your paper contributes something new to the existing body of knowledge.

**Final Check:**

37. Before submission, ensure that your paper complies with all the guidelines provided by your institution or the journal you are submitting to. Don't rush this final check – it's your last chance to catch any overlooked errors or inconsistencies.

Remember, writing is as much a skill as understanding economic theory; like any skill, it improves with practice. Read widely about writing. Refer to well-known guides such as Strunk and White's "Elements of Style" and William Zinsser's "On Writing Well." Get a copy of them. Read them—again and again and again—to internalize the advice. Take these guidelines to heart and incorporate them into your writing process.

Over time, you will find your writing becoming more fluid, your arguments more compelling, and your research papers more impactful.

## II.    Identifying and Selecting a Compelling Research Question in Economics

In crafting an economics research paper, two cardinal dimensions govern the quality of your research piece: the importance and novelty of your research question and the robustness of your answer (i.e., your research design or identification strategy). Your question should be significant and interesting and contribute meaningfully to the existing body of economic knowledge. The quality of how you address that question, in turn, should be supported by a solid research methodology, data analysis, and assumptions underlying the method you can defend. These two pillars—question and answer—are crucial in defining the strength of your research. However, it's vital to note that the first dimension—qualifying the quality of the research question—is more subjective. As the idiom says, different strokes for different folks; likewise, the relevance and value of a research question can vary based on individual perspectives. In this guide, I won't push my views on which research questions you should choose. Instead, I'll give you strategies to spot good research questions on your own.

This approach aims to stimulate your original thinking, helping you to determine compelling, research-worthy questions that align with your interests. An engaging and impactful research question is the foundation of any economics research paper. To choose a question that truly resonates, you may consider some of the following strategies:

▪ Relevance to Current Affairs: Current events play a significant role in shaping economic landscapes. Thus, analyzing them can yield meaningful insights. From international trade disputes to the impact of technological innovation on job markets, ensure your research question has real-world implications and can contribute to the ongoing discourse.

▪ Alignment with Interests and Passion: Passion and interest are significant drivers of scholarly inquiry. Choose a topic you genuinely find engaging. This enthusiasm will make the research process more enjoyable and influence the quality of your work.

▪ Novelty and Originality: Strive for uniqueness and look for areas that have not been exhaustively explored. Consider new angles or underexplored facets of well-known topics.

Innovative ideas often generate exciting questions that can reshape perspectives and significantly contribute to the field.

- Theoretical and Practical Significance: Economic theories and models provide conceptual frameworks to understand complex realities. Formulate a research question that adds to these theories or challenges them. At the same time, ensure the practical relevance of your question – your research should ideally propose or inform actionable solutions.

- Accessibility of Data: Ensure that the data needed for your research is available and accessible. Time and resources are key constraints. If your question requires data that is too costly or difficult to obtain, you may need to reconsider.

- Scope and Feasibility: Make sure your research question is not too broad, which might lead to surface-level analysis, or too narrow, which might limit its significance. Similarly, consider the feasibility of the research within your resources and time constraints.

- Advice from Experts and Peers: Engage in dialogue with your professors, classmates, or other experts in the field. They can provide constructive criticism, suggest unexplored areas, and enrich your understanding.

- Potential to Impact Many People: When selecting your research question, consider its potential to affect a broad range of people. A research question with wide-reaching implications can be compelling—for example, questions exploring large-scale economic phenomena like globalization, poverty, or climate change. Alternatively, you could focus on an issue that affects a specific but substantial demographic. Research that can influence policies or practices to benefit large populations is often highly impactful and recognized in economics.

- Potential to Improve Human Welfare in Unconventional Ways: Look for research questions that could lead to unexpected improvements in human welfare. This dimension might involve identifying and studying unorthodox economic strategies, non-traditional indicators of economic health, or underappreciated factors influencing economic outcomes. For example, you could explore how different aspects of behavioral economics could be used to improve financial literacy and decision-making. In doing so, you might uncover novel ways of improving economic well-being that challenge traditional assumptions and norms. This approach can lead to exciting research questions that illuminate the myriad of ways the implications of new economic research can help improve human lives in unsuspected ways.

- Cross-Disciplinary Approach: A compelling approach to selecting a research question in economics can involve turning to other disciplines, such as sociology, psychology, or public health. Look for questions these fields ask and consider how you could re-frame or answer them from an economics perspective. Consider exploring a question from other disciplines using methods unique to economics while ensuring that your approach contributes meaningfully to the existing body of economic literature. For instance, you could transform a sociological question about the influence of social networks on career advancement into an economic one on the effect of social capital on labor market outcomes. Similarly, a psychological question on the impact of cognitive biases on decision-making can be approached economically by studying its effects on consumer behavior in the marketplace. A public health research question that examines the risk factors for obesity can be reimagined

through an economic lens. A similar question that economists may find interesting could study how consumers measure and compare the benefits of delicious but unhealthy food against the associated costs, specifically the increased risk of health problems and a potentially shortened life expectancy due to poor diet choices. This cross-disciplinary approach offers the opportunity to bring fresh perspectives to existing questions, fostering intellectual synergy and enhancing the overall richness of your research.

- Unraveling Contemporary Puzzles: In a constantly evolving world, contemporary puzzles often emerge in ongoing debates and news. Such puzzles can provide fertile ground for economic research. Analyzing these phenomena or apparent contradictions can lead to captivating research questions. For instance, why do certain economies thrive while others with similar characteristics languish? Why are some sectors booming amidst a global recession? These real-world puzzles often touch on important economic principles and policies, and your research could help resolve these puzzles or at least shed light on the underlying economic dynamics. Delving into these issues contributes to a better understanding of contemporary economics and allows your work to be closely tied to present-day concerns, making your research more appealing and relevant to a broader audience.

- Tackling Controversial Issues: Delving into controversial issues can lead to compelling economics research. These topics elicit strong opinions and heated debates, such as wealth inequality, minimum wage laws, abortion, and gun laws. These areas can be particularly rich for exploration as they allow you to engage with diverse viewpoints critically and perhaps challenge prevailing assumptions. Additionally, they invite rigorous empirical investigation to separate fact from opinion. One potential outcome is that your research could help to clarify misconceptions or provide new perspectives, helping to elevate the discourse on these hot-button issues. Remember that working with controversial topics requires a careful and balanced approach. Your analysis should be objective, your methodology should be rigorous, and your conclusions should be drawn from evidence rather than personal beliefs.

- Evaluation of Existing Policies, Current Events, and Potential Policy Proposals: Assessing the impact of existing economic policies or evaluating potential policy proposals is another robust approach to formulating a research question. Economic policies directly affect society and can significantly alter the course of economies. By studying the effects of a particular policy, you can contribute to understanding its benefits, drawbacks, and unintended consequences. Alternatively, examining potential policy proposals allows for theoretical and predictive analyses. For example, you could explore the potential economic impact of proposed tax reforms, new trade agreements, or climate change policies. This type of research can provide valuable insights for policymakers, helping them anticipate the economic consequences of their decisions. However, this type of research requires a good understanding of the policy environment and often involves complex data analysis. Nevertheless, it can be gratifying and significantly contribute to economics.

- Revisiting Older Problems with New Methods: Another intriguing approach involves revisiting older economic problems published 20-30 years ago that lacked satisfactory answers due to less sophisticated empirical methodologies at that time. With the

advancement in econometric techniques, machine learning, and the availability of richer data sets, these problems can now be re-explored. Perhaps a question was left unresolved due to a lack of data or because the statistical techniques used then could not effectively isolate causal relationships. New methods of detecting causal effects, such as difference-in-differences, regression discontinuity design, or instrumental variable methods, might now provide the tools needed to reassess these questions. By revisiting these older problems, you can contribute fresh insights and potentially solve longstanding puzzles in the field. This approach reflects the ongoing, cumulative nature of research. It shows how economics, like other scientific disciplines, continually builds on past efforts to refine our understanding of the world.

- Literature Review to Identify Promising Gaps: Conducting a literature review on a topic of your passion can be a fruitful starting point in identifying a research question. Literature reviews offer a systematic way to understand the current state of knowledge on a given topic, allowing you to map the terrain and identify gaps, inconsistencies, or underexplored areas. It is important to note that a gap in the literature does not merely represent an area that has not been studied. It can also be a question that existing studies have not satisfactorily answered due to methodological limitations, lack of data, or inconclusive results. Once you identify a promising gap, consider how well-suited current research methods and available datasets are for addressing it. With your passion driving your inquiry and equipped with modern research tools and data, you will be well-positioned to make a meaningful contribution to your chosen field of economics. Remember, while your passion provides the initial spark, the rigorous scholarship carries a research project forward and allows it to shine brightly.

- Aligning with Current Demographic or Sociocultural Shifts: Aligning your research with current demographic trends or sociocultural shifts offers an opportunity to engage in timely and relevant economic inquiry. For example, the aging population in many developed countries has significant implications for labor markets, social security systems, and healthcare economics. Similarly, increasing urbanization, rising educational attainment, and shifting household structures all present fascinating economic questions to explore. Cultural and social shifts also hold enormous economic significance. Changes in social attitudes towards gender roles, work-life balance, or environmental sustainability all have far-reaching economic impacts. By studying these shifts, you can shed light on the evolving economic landscape and contribute to a deeper understanding of how economic forces shape the world. This approach allows you to delve into areas of economics that are actively evolving, making your research highly relevant to contemporary readers. Furthermore, it provides the chance to influence policy debates and decision-making as societies grapple with these ongoing changes.

- Exploration of Historical Economic Events: Digging into history can often yield fascinating research questions. You could consider exploring the economic implications of significant historical events, such as wars, pandemics, political revolutions, or economic reforms.

- Role of Social Media in Economics: Social media has transformed many aspects of our lives, including economics. It might be worth investigating its impact on consumer behavior, market trends, or even the propagation of economic ideas.

Choosing a research question for your economics paper is an intellectual journey. Explore various avenues and consider the facets above before making a final choice on a research question to explore. A thoughtful and well-informed question will make your research process more rewarding and ensure that your findings make a meaningful contribution to economics.

III. **Unveiling Your Study's Unique and Most Compelling Aspects: The Art of Getting to the Point Quickly**
   *(Note: Keep this section in mind for later when you have actual results from your analysis and return to the Intro section.)*

Having laid out the fundamental elements required for an impactful economics paper in the first section and presumably having a specific question to explore, we will now focus on the presentation aspect of your research. To captivate your readers and make a lasting impression, it is crucial to appropriately emphasize your work's distinct and significant facets from the beginning. Therefore, this section will help you think through issues highlighting your core findings clearly and effectively underlining their contributions. Let us explore how to achieve this in a way that engages your readers, respects their time, and leaves no room for ambiguity.

When presenting your research, highlighting your study's unique and compelling aspects from the get-go is essential. Don't keep your readers in suspense or make them wait until the end to understand your work's significance. Grab their attention early and express your main points with clarity and brevity.

Steer clear of an extended, rambling introduction or bombarding your readers with excessive background information. Remember, they seek key takeaways and the value your research adds to the existing body of knowledge. By hitting the nail on the head right away, you respect their time and make it easier for them to engage with your work.

Identify the most significant contribution of your paper and capture it in a concise paragraph early on in your piece. Identifying the most important contribution of your paper requires thoughtful analysis of your work, its merits, and its relevance in relation to existing research. It may involve some difficult decisions about what to omit from your paper. However, once you accomplish this task, the focus of your paper will be clearer, its storyline regarding the claimed contributions will be stronger, and it will facilitate quicker comprehension for readers.

When describing your contribution, be specific and avoid vague statements like, "I analyzed data on the HIV epidemic and found interesting results." Instead, clearly describe what you attempt to address and how it advances the existing literature. For example, Oster (2012) begins the study abstract with the following:

> "I estimate behavioral response using a new instrumental variables strategy, instrumenting for HIV prevalence with distance to the origin of the virus. I find a low response on average, consistent with existing literature, but larger responses for those who face lower non-HIV mortality and those who are richer." (Oster, 2012)

In the example, Oster (2012) effectively illustrates how to clearly describe what a research paper attempts to address and how it contributes to the existing body of literature. The author identifies a

key issue in the existing literature—limited understanding of behavioral changes in response to HIV infection in Sub-Saharan Africa and the consequent difficulty in HIV prevention. Then, she points out the gaps in the existing literature, notably the short-term estimates, limited groups considered, and lack of efforts to understand how responses may differ among individuals. Oster addresses these gaps by providing new estimates of behavioral response to HIV and analyzing potential variations among individuals, especially those with longer non-HIV life expectancy and different income groups. Therefore, she outlines her paper's objectives and showcases how it aims to advance the existing literature by filling critical gaps.

When crafting your paper and constructing your argument, remember that your readers are often impatient individuals who would rather spend their time on other tasks than read your article. Recognize that most readers tend to skim through papers, so it is crucial to write with the expectation that they will skim. With this in mind, make it effortless for readers to grasp your paper's primary results and core message. Only a select few readers deeply invested in your work, the topic, or the subfield your paper belongs to will delve into the finer details and nuances.

Although the tone of your writing should not mimic journalism, the structure of your main argument, particularly in the Introduction section, can mirror a newspaper article's format. Just like in journalism, it is essential not to bury the lead. Instead, begin by conveying the most significant aspects of your story upfront. Additional secondary details can be fleshed out later, but only after the main idea has been presented. These secondary details are meant for readers interested in further delving into the topic.

In the Introduction section, use a 'triangular' structure for your narrative and main message.[3] Begin with the specific research question, follow with the most crucial findings, and then add any necessary background details. This strategy helps create an inverted pyramid structure in your introduction: deliver the bottom line first, explain why it matters and what it adds to existing knowledge, and flesh out details later. Following this approach ensures your reader grasps the primary results and core message, even if just skimming your paper.

However, bear in mind that research papers are not mystery novels. The suspenseful build-up to a final revelation that works in fiction will be frustrating in research writing. Your reader will unlikely stick around until page 10 or Table 12 to discover the main point. Therefore, prominently feature the punchline early in the Introduction, ideally within the first few paragraphs. If the main argument is buried or obscured, readers will struggle to grasp your paper's main punchline and critical contribution(s). They might not even discover it until they reach the last page of your paper.

Successful Writing is:
- Purposeful
  - Something new. Be sure to highlight what it is that you add. How is it unique?
  - Insightful: don't explain the obvious—answer how and why
  - Timely: why now?
- Persuasive
  - Have a compelling economic topic or question. Why is it compelling?

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[3] This format, also called BLUF ("Bottom Line Up Front"), is a common technique in military and intelligence writing. BLUF encourages writers to begin their communication with the most important or relevant information, providing a clear and concise summary before expanding on the details.

- Persuade why compelling: facts and logic.
- Main point upfront
- Precise
  - Make every word count.
  - Ensure readers take away the same message.

General Tips for Getting Your Point Across Compellingly:

1. Establishing the Relevance of Your Study:
   - Ensure your topic resonates with your audience.
   - Bring fresh and insightful analysis to the table.
   - Link your research to current events or timely issues.
   - Communicate the significance of your investigation.

2. Articulating Your Main Thesis:
   - Emphasize your central idea in the title and opening two paragraphs.
   - Add value through a unique and non-obvious viewpoint.
   - Clarify why your topic matters to your audience early on in the piece.

3. Incorporating Judgments and Anticipating Questions:
   - Preemptively address questions your readers might have.
   - Differentiate between certainties, uncertainties, and educated assessments.
   - Offer transparent and convincing reasoning.
   - Acknowledge possible alternative conclusions if they exist.

4. Structuring and Supporting Your Argument about Why the Audience Should Care and Your Central Contribution:
   - Organize your thoughts logically and coherently.
   - Concentrate on a few pivotal points.
   - Place crucial information upfront.
   - Validate your statements with compelling, succinct evidence.
   - Draw a clear link between your findings and their potential implications.
   - Maintain a balanced, objective tone free from bias.

5. Optimizing the Flow and Continuity of Your Introduction:
   - Align your title with the paper's content.
   - Introduce the novel aspects of your research topic and its significance to your readers immediately.
   - Keep each sentence and paragraph progressively building on the previous.
   - Group related ideas together to prevent redundancy.

6. Polishing Your Introduction for Clarity and Precision:
   - Be concise and precise in your writing.

- Use tangible examples to make abstract concepts relatable.
- Position the subject and verb early in your sentences.
- Proofread your work to eliminate grammar and typographical errors.
- If using graphics, ensure they effectively enhance your text.

## IV.  Mastering the Introduction: Structuring Strategies with Examples

### A.  Key Components of the Introduction Section

Having understood how to present your research and hook your reader's interest effectively, the next step is to focus on the crucial early segments of your paper: the abstract (a summary written at the end once you have actual results and have contemplated the paper's contributions) and the introduction. These sections act as your research's "foot-in-the-door," providing the initial impression to your audience. Here, the precision of your language and the craft of your narrative become paramount.

The paper's introduction section should accomplish two major things: conceptualization and crafting. What I mean by conceptualization here is the writing technique that enables you to force the reader to focus on the big-picture issues to which your question contributes, make the reader believe that the big picture matters, and effectively argue why and how your research piece will add something valuable to this big picture. But strong conceptualization will be ineffective without solid crafting. By crafting, I mean you are writing so clearly and simply that the reader cannot possibly misunderstand your message.  In other words, if two people read your intro, they should come away with precisely the same takeaways.

Crafting the opening sentence can be especially challenging, but there are various strategies to captivate your audience and lay the groundwork for an engaging paper. Achieving these goals requires some creative thinking.

One strategy is to start your introduction with a strong opening paragraph that highlights the importance of your research topic and its relevance to economists. Then clearly state the specific research question or problem you are addressing. Immediately follow this with a concise description of your research design and the study's most important findings. Doing so establishes the context and significance of your work right at the outset.

Another effective method to set the stage is by incorporating a 'hook,' which can be an intriguing statistic, a thought-provoking quote, or a compelling anecdote related to your research topic. The purpose of a hook is to grab readers' attention, generate curiosity, and leave them wondering what comes next.

Engaging your readers from the start will encourage them to delve deeper into your paper. Here are a few potential approaches to achieve this:

- Present an intriguing puzzle
- Share a perplexing and difficult-to-explain fact
- Make a bold and controversial statement (which you can bolster with your paper's analysis)
- Use a story hook, relating it to an everyday activity or an issue that affects many people

Consider another strategy to kick off your introduction: starting with an intriguing and puzzling stylized fact that catalyzes your research topic.[4] Then follow it with a possible explanation, which your research article will uncover with its empirical (or theoretical) investigation. This strategy creates intrigue and motivates readers to continue reading to understand how you arrived at such outcomes. It also allows you to differentiate your study from previous research and emphasize its unique contributions. The puzzling fact or issue will set the stage for something you presumably aim to achieve in your research.

Here is an example from Karlan et al. (2019):

> "Small-scale entrepreneurs throughout the developing world often rely on moneylenders for working capital, borrowing on a daily or weekly basis at exorbitant interest rates. The ubiquity of this type of borrowing is a long-standing puzzle for development economists: why do these entrepreneurs not save a little bit and then borrow less, given their implicitly high risk-free rate of return to savings? We report on three experiments (one in India and two in the Philippines) in which we gave cash grants and brief financial training to market vendors with high-interest-rate debt. We then test how long before, and whether, individuals go back to using high-interest-rate debt again." (Karlan et al., 2019)

Karlan et al. (2019) exemplify the strategy of beginning with a puzzling fact in their excerpt, highlighting a prevalent yet baffling behavior among small-scale entrepreneurs in the developing world. These entrepreneurs often borrow money at high-interest rates rather than saving, presenting a mysterious phenomenon that necessitates further research. The authors propose a possible explanation for this behavior: the lack of knowledge about better financial practices, a hypothesis they plan to explore through experiments. Their proposed empirical investigation aims to uncover the reasons behind this stylized fact, providing direction to the paper and captivating the reader's interest. This approach effectively introduces a research paper by framing a problem and suggesting a pathway for its resolution.

Once you've presented this fact (or another chosen hook), establish a clear connection to your research question. It's crucial to explicitly link the hook to the direction your research will take. Challenging your readers' intuition right from the outset can significantly increase their motivation to delve further into your paper. Remember that your readers are your audience, and their time is valuable. Therefore, it is vital to ignite their interest in your thesis and convincingly present your argument within the first two paragraphs.

Let's delve into the study by Nikolov and Hossain (2023), which presents an intriguing puzzle. Their research examines the effect of a new pension program in China on cognition among older adults. What makes this study particularly captivating is the unexpected twist involving the unintended adverse consequences of a program intended to confer benefits. Surprisingly, their findings reveal a negative effect on the cognitive outcomes among older adults, unraveling a perplexing puzzle within the realm of pension programs. Here are two excerpts from the study:

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[4] Heath and Heath's (2007) book "Made to Stick" offers researchers a strategic approach to making their work more impactful and memorable. The authors offer a model, "SUCCESs," which argues for presenting research simply and concretely for better understanding, while unexpected elements enhance memorability. To increase engagement, credibility and emotion are key, and storytelling can further enliven findings. Although the book is geared towards viral marketing messages, its principles and tips can guide researchers in effectively selling their research ideas, boosting perception, understanding, and recall of their work.

"Across the globe, population aging continues rapidly, and this trend has motivated many developing countries to introduce pension programs. However, introducing such programs could have a fortuitous consequence related to cognitive function in old age. There is growing evidence that cognitive activity is linked to enhanced cognitive function (Bonsang et al. 2012), suggesting that long-term involvement in the workforce may prevent cognitive aging. Understanding how retirement plans affect cognitive function in old age is crucial for fully recognizing their welfare implications and gaining insight into how cognitive abilities evolve over the life course.

Cognitive abilities represent one dimension of human capital, as do education, health, and noncognitive skills. Historically, the economics literature has primarily focused on human capital formation (Heckman 2000) and considerably less on the causes and consequences of human capital depreciation, including cognitive decline. However, recent neuropsychological evidence suggests that the adult brain is malleable and open to enhancement even in late adulthood (Howard-Jones, Washbrook, and Meadows 2012). Cognitive aging is a complex process, and its economic and policy causes are poorly understood. In this paper, we analyze the effects of a pension program on cognitive performance in old age." (Nikolov and Hossain, 2023, p.594)
and

"Studying how human capital depreciates over the life cycle has powerful economic consequences. At the micro-level, cognitive functioning is crucial for decision-making. Elderly individuals make complex financial, health, and long-term care decisions with significant economic implications (Korniotis and Kumar 2011; De Bruin 2017). Given the lack of intermediary market institutions in rural areas to aid with financial decisions connected to income security or health care provision, examining the impact on the cognition of the elderly population in a country like China may be especially crucial. Understanding the causes of cognitive decline is also crucial for policy, as the relationship between cognitive aging and productivity affects long-term economic growth (Meisenberg, 2014)." (Nikolov and Hossain, 2023, p.595)

"Retirement plans typically offer benefits that guarantee participants a certain level of income security in old age (Cutler and Johnson 2004). Nevertheless, we find clear evidence of adverse effects on cognitive performance among NRPS participants. Specifically, we find that the provision of pension benefits negatively impacts immediate recall, delayed recall, and total word recall for program participants. This finding is significant, as lower performance on delayed recall memory measures has been a highly accurate detector of dementia among senior individuals (Welsh et al. 1991). For the comprehensive cognitive performance index, relative to performance on the test before accessing program benefits, the estimated decline is 12 percent of a standard deviation (or approximately five percent of the average baseline score). This decline occurs about four years after the onset of program benefits. When we benchmark our estimate to general ability measures, we show that a 5-percent drop in the average total word recall score is equivalent to a decline in general intelligence by 1.7 percent (relative to the general population). Our findings are robust to specifications using alternative NRPS

17

> participation measures. Furthermore, we find evidence to suggest that prolonged exposure to the program exacerbates cognitive decline." (Nikolov and Hossain, 2023, p.595)

The first two passages from Nikolov and Hossain (2023) appear at the very beginning of their study's introduction section.

The passages do an excellent job of adhering to many of the guide's recommendations for writing the introduction of an economics paper:

- Highlight the Unique Aspects: The authors highlight a less-studied potential consequence of pension programs: their impact on cognitive function in old age. This unique angle distinguishes their work from other studies on pension programs.
- Straight to the Point: The authors get straight to the point by introducing their central research question: how do retirement plans affect cognitive function in old age?
- Significant Contribution: The authors identify their contribution by recognizing that the existing literature has focused less on the causes and consequences of cognitive decline, a gap their research aims to fill.
- Clarity and Conciseness: The language is clear, concise, and easy to understand. They have neatly outlined the significance of their study and the research question.
- Engaging Opening Sentence: The paper opens with a broad, engaging statement about population aging and pension programs' introduction, immediately capturing readers' attention.
- Incorporate a Hook: The authors incorporate a hook by introducing the unexpected adverse impact of introducing a pension program on cognitive function. This intriguing finding can pique readers' interest.
- Engage the Readers: They successfully engage the readers by presenting a perplexing and difficult-to-explain fact, i.e., the potential role of pension programs in cognitive aging.
- Present the Research Question Clearly: The authors clearly state their research question (the impact of pension programs on cognitive function) and provide a brief overview of the paper.
- Use a Puzzling Fact: The authors introduce a puzzling fact: pension programs' possible role in cognitive function, adding intrigue and making their research stand out.

The third excerpt from Nikolov and Hossain (2023) appears later in their article's introduction section. It discusses some of the puzzling and innovative features of how the introduction of the pension program accelerated cognitive decline among the participants. This passage also reflects some of the highlighted tips for crafting an engaging introduction:
- Importance of the topic: Referencing the general purpose of retirement programs - ensuring the welfare of aging adults - the authors establish the significance of their topic. The study's relevance, therefore, stands out for a broad audience that includes economists, policymakers, and the general public.
- Research question or problem: While not directly stated, the research problem is implied in the presentation of their "interesting results": the negative effect of the NRPS program on cognition among individuals aged 60 or above.

- Research design and findings: The authors describe their main findings clearly and concisely: the provision of pension benefits leads to a decline in several cognitive performance indicators among older individuals.

Finally, to bring this discussion to a close, let's examine another example from Oster's (2012) study investigating strategies to effectively address behavior change in the context of the HIV epidemic in Africa. Oster (2012) starts with the following:

> "For this reason, sexual behavior change is a major focus of HIV prevention efforts, and understanding changes in behavior is important for both predicting the future path of the epidemic and for developing policy. I first present new estimates of behavioral response to HIV, which rely on an instrumental variables strategy. I then consider whether variations in behavioral response across individuals are consistent with utility-maximizing choices in the face of HIV." The approach relies on trying to shed light on and helps us understand better a common activity or an issue that affects many people." (Oster, 2012)

The passage from Oster (2012) effectively demonstrates some of the tips provided for a compelling introduction:

- Importance of the topic: The author highlights the importance of understanding changes in sexual behavior for HIV prevention efforts and policy development, establishing the topic's relevance and significance.
- Research question or problem: The author clearly states the primary research question: Do variations in individuals' behavioral responses align with utility-maximizing choices in the face of HIV? By doing so, the author makes it easy for readers to grasp the focus of the research.
- Research design: The author mentions an instrumental variables strategy, which implies a specific methodological approach.
- Hook: The author mentions that the approach will shed light on an issue affecting many people, engaging the reader's interest and curiosity. The focus on a topic of wide-ranging impact could function as a hook.

To effectively capture the reader's interest, you can establish the significance of your research question within the opening paragraphs. Clearly state the specific question you aim to address and briefly introduce your primary variables. Readers should leave with a clear understanding of the key independent and outcome variables that your work focuses on, along with the embedded testable hypothesis.

## B. The Broader Context and Highlighting the Value-Added of Your Research

Once you have identified a puzzling fact or issue to explore, outlined your research question or problem, and given an overview of your research design and results, you should connect your study to a broader context. Connecting your study to existing (and published) economics research will further enhance its appeal and impact. You could show how your research fits within your field's

larger intellectual dialogue or explain its implications for policy, practice, or real-world problems. In other words, why should your audience care about your research? This aspect is the "so what" part of your introduction.

One way to demonstrate the broader relevance of your work is by highlighting its unique contributions to the existing literature. To achieve this, it is important to clearly articulate how your research expands upon and improves the existing scholarship. Use straightforward language to convey your ideas and avoid excessive wordiness. Remember, the objective extends beyond merely restating your conclusions; it's about demonstrating how your paper substantiates and supports your claims.

Furthermore, when discussing your contributions, explicitly state what constitutes a contribution and explain how it adds value. What new insights or evidence does your study provide? How does it advance our understanding of the issue at hand? These are essential questions to address in your introduction.

Let's examine the introduction of the Nikolov and Hossain (2023) paper to see how they tackled this task. Here is another excerpt from their article:

> "Our study contributes a new angle to the existing literature on participation in retirement programs in low- and middle-income countries (LMICs). First, we are among the first studies to examine how access to a retirement plan affects cognitive performance in the context of a developing country, and our study relies on a rich new dataset supplemented by analyses of administrative records. Illuminating how retirement programs can generate adverse downstream effects on old-age cognition can provide insights for enriching existing models on human capital depreciation. Furthermore, from a policy standpoint, uncovering the potential mechanisms that lead to old-age cognitive decline can inform debates on creating policies to mitigate some of the adverse impacts without engendering the numerous benefits that retirement programs can confer to beneficiaries. Studying the depreciation of human capital is especially relevant in China because of its population size and the growing share of its elderly population. Second, we show how program participation affects a broader set of cognitive domains than has been previously considered. This study uses data on various proxies of cognition, such as episodic memory, which is sensitive to aging. As we age, episodic memory is the first domain to deteriorate (Souchay et al. 2000; Prull et al. 2000). Finally, we provide insights on possible mechanisms underlying the observed impact of pension benefits on cognitive functioning." (Nikolov and Hossain, 2023, p.595)

In this passage, Nikolov and Hossain (2023) explain how their study contributes to the literature and broader discourse on retirement and cognitive decline. They highlight three unique aspects of their study that enhance its value:

- Their study is among the first to investigate the effects of a large-scale pension program on cognitive function in a developing country, expanding the geographic scope of research on this topic.
- By focusing on China, which has the largest elderly population globally, their research offers insights that could be relevant to other aging societies, enhancing its potential impact.
- They provide robust evidence that the observed decline in cognitive performance is a real effect of the pension program, not a statistical artifact or a reflection of changes in the

labor force composition. This finding has significant implications for policymakers who design pension programs, emphasizing the real-world relevance of their research.

The authors clearly state these contributions to justify their study's relevance and importance. By doing so, they make a compelling case for why readers should care about their work, further engaging their audience and motivating them to read on.

## C. A Note on Brevity

While your introduction should contain several key components, it is important to remember that brevity is key. Your introduction should be concise and to the point, avoiding unnecessary details and lengthy explanations. Save those for the main body of your paper. A long-winded introduction can discourage readers and make it harder for them to grasp the main points of your paper.

The introduction should quickly grab the reader's attention, clearly present the problem your research addresses, provide a brief overview of your research design and findings, and establish your work's broader relevance and unique contribution. If you can succinctly accomplish all of this, you'll be well on your way to writing an effective and engaging introduction.

In conclusion, crafting an effective introduction necessitates thoughtful planning. You should engage your reader, articulate your research problem clearly, and offer an overview of its contributions to the broader scholarship in your field.

## D. Structure of the Introduction Section: The "How-To Guide for Crafting Your Intro"

Let's summarize our discussion on the introduction section by underlining its essential features and desirable qualities. More than just a preamble, a well-crafted introduction invites your reader into the heart of your research. A well-written intro takes the reader by the hand, piquing their interest, laying out your purpose of the piece and why they should care to read it, acknowledging the giants upon whose shoulders you stand, and then making a case for your paper's unique contribution. It also gives the reader a quick tour of what they can expect from the rest of your paper. Here is a deeper look into these vital components of an engaging and effective introduction. Moreover, remember that your intro is not a set-and-forget element; revisit and refine it as your paper evolves. Use the following five dimensions as the key pillars guiding the content of your paper's introduction.

- Starting Point: Engage the reader by demonstrating that your paper addresses an important topic. What attributes give a topic the 'wow' factor? Generally, it's a combination of features that render the topic noteworthy: (1) The outcome holds real-world importance affecting people's lives, (2) The research question is captivating and eludes swift, straightforward understanding, (3) The subject of investigation is contentious or relates to a fervently debated political issue, (4) The topic has vast implications, influencing countless individuals or daily activities.
- The Central Question: Let the reader know what your paper sets out to do. Introduce it early in the intro by the third paragraph. By the end of your paper, the reader should have

a well-rounded answer to a clearly defined research question. Aim to introduce a version of the "This paper examines…. " sentence by the end of the second paragraph of the paper.

- Existing Research: Shed light on prior work essential for understanding your paper's value. Avoid discussing papers that do not directly contribute to the intellectual storyline your paper builds upon. Recognize the contributions of those who came before while gently indicating areas for improvement or gaps that need to be filled within their work.
- The Value of Your Paper: Outline clearly several ways that your paper pushes the envelope relative to the existing scholarship on the topic and tell the reader how your paper advances the literature on the topic. This paragraph could be your golden ticket to persuading editors and reviewers that your paper is worthy of publication.
- Structure and Roadmap of the Paper: Highlight the number of sections and briefly describe the content of each. Some may even use the roadmap as a guide to selectively navigate the sections they wish to skip or skim while allocating more time to digest others thoroughly.

Begin with the introduction, but be sure to revisit and refine it as you develop other sections of your paper.

### E.  Recommendations for Highlighting Key Aspects in the Introduction Section:

1.  Clearly state the specific question, preferably by directly articulating the hypothesis to be tested.
2.  Explain the importance of the question and its relevance to readers, highlighting whether it addresses an unproven theoretical result or a significant policy question. Discuss the economic perspective and briefly describe any uncertainty or debates surrounding the question, including a range of previous results.
3.  Spark curiosity in the audience by challenging their intuition or baseline expectations regarding the research question, presenting a puzzle or surprising information that engages their interest and encourages them to read further.
4.  Clearly state your specific contribution in the introduction, explaining how you address the question and emphasizing the novelty of your approach, such as employing a more robust identification strategy (e.g., field experiment), testing a new theoretical model, or utilizing a previously overlooked dataset to examine specific mechanisms.
5.  Provide a preview of your main results, focusing on the most critical findings from your analysis. Reserve caveats, robustness checks, extensions, and secondary results for other paper sections. Briefly explain how your findings differ from previous work and discuss their implications. If your analysis is inconclusive, be transparent and briefly state why. Ensure the analysis of results is clear even to a lay audience.
6.  Offer a brief roadmap of the sections in your paper, providing readers with an overview of the paper's organization. Although this may seem standard, it helps readers understand which sections to focus on and which areas to skip.

### V.  Strategies and Structural Guidance for Crafting the Literature Review Section

As we move forward from creating compelling abstracts and introductions, it is important to consider how your work relates to the broader academic conversation. This context is provided by effectively discussing previous studies and their findings in relation to your own. The fourth section guides this aspect, specifically on integrating a literature review into your paper.

Whether you choose a standalone section or intersperse it throughout your paper, your approach to the literature review can significantly influence your readers' comprehension of your research's significance and its relation to the broader field of study.

## A. Core Components and Structuring Techniques for Literature Reviews with Examples

In general, papers typically discuss the relationship between their results and findings from previous studies in one of two ways:

1. Including a separate Literature Review section within the body of the paper.
2. Integrating the discussion of previous studies into the Introduction section or other relevant sections (I strongly recommend this approach, especially for papers you plan to submit to journals!)

If you choose the first approach (have a separate Literature Review section), here are some guidelines to follow:

- A separate section allows readers to skip it easily if they are uninterested.
- Avoid using the title "literature review," as some view this approach as somewhat sophomoric. Instead, integrate the discussion of previous literature under a common thread highlighting your read of main takeaways or a takeaway theme. For example, if your paper is titled "Do Traditional Institutions Constrain Female Entrepreneurship?" you could label your literature review section as "Restrictive Gender Norms in India." In other words, provide a descriptive title that hints at the content or the overarching theme the section will unpack for the reader. Another way to view the process of choosing a title for your literature review section is to consider the title as analytic (not descriptive) and one that conveys your focus (statement of your synthesis) in the abbreviated format of your review of the existing literature.

  - Write it first: try to craft your literature review title first, but only once you have reviewed the studies and have a solid idea of the story and patterns you want to highlight. Crafting the title will force you to zero in on the major point(s) you wish to highlight in your section.
  - If you can't crystallize the general purview of your piece, you likely haven't thought carefully about the unifying themes connecting the underlying studies that make up your literature review.
  - Having a title will also allow you to communicate to your reader the analytical content and point in only a few words.
  - You can construct titles in many ways: emphasize the conceptual bottom line of your synthesis, highlight the topical, emphasize the open areas for research the literature review has no compelling answer for, or emphasize any other theme found in the existing

literature that could serve as opening a door on how to frame your own research topic or elevate its significance.

If you opt for the second approach, consider the following guidelines:

- It may be challenging for readers to determine your work's novelty (and value-added) over existing research until they understand your contribution. Therefore, avoid starting your introduction with extensive discussions of what others have found. Focus on showcasing your work and its potential benefits, then relate it to relevant studies from the literature review.
- Be generous with citations to acknowledge and credit other researchers. Treat others' work respectfully, emphasizing significant limitations in existing research, if necessary, but be cautious about being overly critical, especially when publishing your paper and considering feedback from referees.
- Your literature review should focus on distinguishing your paper from the most relevant existing studies and giving appropriate credit to those who have contributed similar ideas.

Regardless of the approach you choose, keep the following points in mind:

- Keep in mind that readers are primarily interested in your research. However, most of them may not be intimately familiar with the literature in your field, making it challenging to explain others' findings in simple terms.
- Your write-up of the literature review should be about your ability to gist the related literature in service to your own analysis. To gist is to evaluate prior studies on your chosen topic critically and distill them—in as few words and paragraphs as possible—into unique takeaways relevant to your reader and your own investigation.
- Gisting will reduce your summary to the main themes from reading the related studies.
- If necessary, create notes or summaries of the books and articles you have read on index cards or in a separate file. Look for common themes that can aid in organizing your literature review. For example, consider using a systematic method, such as a spreadsheet, to keep track of previous studies.
- Read each related study and ask yourself:
  - What is the main point of this study?
  - Write them down in as few words as possible
  - Don't worry about the relevance to your study at this point
  - Gist all the info from all selected studies
  - Then go back and organize the summary points logically into coherent takeaways.
- The literature review has two functions: demonstrating your familiarity with scholarly work on your topic and conveying the contribution of your paper. Provide a synthesis of what you have read, trace important themes, and highlight any tensions in prior research. Finally, define the issues you intend to address and explain the terms and approach you will use in relation to previous scholarly works.
- While the first function may push for including as many sources as possible, the second requires selecting only those useful sources for your argument. Remember that a summary is

selective by nature, and your choices should reflect your interests and engage the reader in your argument.

Following these guidelines, you can effectively structure and present your literature review, demonstrating your understanding of the existing research and highlighting your contributions.

Let's go over two examples from the studies by Chakravarty et al. (2019) and Feldstein (1974). We'll review excerpts from the studies, aligning them with some of the suggestions and principles highlighted earlier. Let's first delve into Chakravarty et al. (2019), a study aiming to assess how a vocational training program in Nepal influenced the employment outcomes of the program participants.

- In the text, the authors provide context to the study findings by discussing previous studies that have examined the effects of vocational training based on income classification, explicitly looking at countries with different average per capita income levels:

> "Most of the vocational training literature on similar programs in high- or middle-income countries finds low or insignificant effects (Card et al., 2010; Kluve, 2010; Dar and Tzannatos, 1999)." [Chakravarty et al., 2019]

Overall, this paragraph demonstrates a robust and effective approach to a literature review, considering a wide range of previous findings while making a solid case for the unique contribution of the authors' own research.

Next, the authors compare the findings of their study and their research question with those of other closely related studies that have investigated the same topic:

> "Our paper provides evidence that large program impacts of vocational training programs – particularly in the low-income context – are possible, despite most existing evidence from middle-income countries suggesting otherwise. Based on the experience of middle-income countries, only Maitra and Mani (2017), Reis (2015), and Alzua (2016) find positive impacts on the probability of any employment and any earnings in India, Brazil, and Argentina, respectively. On the other hand, Honorati (2015), Card et al. (2010), Attanasio et al. (2011, 2015), Ibarraran (2015), Hirshleifer et al. (2015), Acevedo et al. (2017), Diaz and Rosas (2016), and Galasso et al. (2004) find either mixed, muted, or no impacts at all from vocational programs on various labor market outcomes. That large effects may be particularly pronounced in low-income contexts is confirmed by two studies conducted in Liberia and Uganda: Adoho et al. (2014) randomly assign a similar intervention to the one studied here and detect an increase of 47 percent in non-farm employment and 80 percent in earnings among young Liberian women. Similarly, Bandiera et al. (2017) find a positive impact on income-generating activities of 48 percent (almost entirely driven by self-employment) but no positive impact on wage employment in Uganda." [Chakravarty et al., 2019]

- These excerpts from Chakravarty et al. (2019) illustrate several key principles from the literature review guidelines noted above:

o First, the authors identify the unique contributions of their study: they present the difference in returns to vocational training between women and men, contrasting their findings with the works of Blattman and Ralston (2015) and McKenzie (2017). This practice aligns with the guideline that literature reviews should distinguish the author's paper from the most relevant existing studies, highlighting its unique contributions.

o Second, the authors demonstrate a respectful treatment of others' work. They acknowledge the findings of Blattman and Ralston, and McKenzie, even when those findings contradict their own. They articulate these differences without being overly critical.

o Third, they highlight a critical tension in the existing research—the disparity in vocational training returns between genders, which their study addresses.

o The second excerpt introduces the role of socio-cultural norms in Nepal as a potential explanation for their findings. It highlights a key area for future research: the impact of socio-cultural norms on vocational training outcomes. This example resonates with the notion I stressed earlier that literature reviews could emphasize open areas for research.

o In summary, the excerpts demonstrate a thoughtful engagement with the existing literature while clearly identifying the unique contributions of their study.

- The authors also highlight the relationship between their study and other closely related studies, specifically focusing on an important dimension: the differences in program impacts based on the gender of the beneficiaries:

> "Our second contribution to the existing literature relates to the pattern of different returns to vocational training between women and men. Although Blattman and Ralston (2015) point to a stylized fact that proposes vocational training has higher returns for women, McKenzie (2017) reviews recent vocational training programs in low-income and middle-income countries and argues that previous studies, which formally test for equality by gender, can either not reject similar impacts for men and women, or have found significantly higher impacts for men. In stark contrast, our study does formally test for equality by gender, and it unambiguously shows robust evidence that vocational training in our context yields higher returns for women." [Chakravarty et al., 2019]

> We highlight that our results are likely driven by the socio-cultural norms in Nepal, which shape gender roles that identify women with more restrictive characteristics and capabilities in the labor market compared to other country contexts in the training literature (e.g., Latin America). This exemplifies that generalizing heterogeneous impacts of policies such as the one investigated here should (if at all) be made cautiously, carefully considering the relevant effect channels." [Chakravarty et al., 2019]

> "Finally, our study underscores that measuring a wider range of employment outcomes, such as self-employment, may be necessary to study the impact of active labor market programs comprehensively. Even though formal employment per se is not affected by vocational training in our context, we can identify some short-run effects on women's self-employment that less comprehensive labor market surveys of previous studies may have missed." [Chakravarty et al., 2019]

This final excerpt from Chakravarty et al. (2019) continues to reflect the literature review guidelines.

- First, it highlights another unique contribution of the authors' study: the broad measure of employment outcomes, including self-employment. The authors articulate this as a methodological advancement over previous, less comprehensive labor market surveys, which aligns with the guideline to distinguish the author's work from existing research and highlight its unique contribution.
- Second, the acknowledgment of a gap in the existing literature - specifically, the lack of focus on formal employment in prior studies - suggests respect for the contributions of these studies. The approach aligns with the guideline that recommends treating the limitations of existing research with respect.
- Third, it implicitly suggests a direction for future research: the comprehensive study of the impact of active labor market programs, including a broader range of employment outcomes, which aligns with the guideline suggesting that literature reviews can highlight open areas for research.
- Overall, this paragraph is a brief and effective demonstration of how to highlight the unique contributions of one's research in relation to the existing literature in keeping with the literature review guidelines.

Let's consider another example of structuring one's discussion about previous studies from Feldstein (1974)'s "Social Security, Induced Retirement and Aggregate Capital Accumulation." Here is the excerpt from Feldstein's article (p.906-908):

> "Ever since Harrod's (1948) discussion of "hump saving," economists have recognized the importance of saving during working years for consumption during retirement.1 Although there are a variety of other motives for saving, the life-cycle hypothesis provides a particularly suitable framework for discussing the effects of social security. The most obvious implication of this familiar model is that social security, by providing income during retirement, reduces the amount of saving during the working years. More specifically, if the combination of social security tax and benefits has no net income effect, that is, if the individual's lifetime budget constraint is unchanged, savings will be reduced by just enough to leave consumption during retirement unchanged.
>
> The possible importance of social security has been recognized but has never been formally incorporated into the theoretical or empirical analysis of the life-cycle model. Friedman (1957, p. 123) noted that social security "would clearly tend to reduce the need for private reserves and so to reduce private savings" but made no allowance for this in his analysis of both aggregate and cross-section savings. The potential effect of social security has also been ignored in Modigliani's own tests of the life-cycle hypothesis using time-series data for the United States (Ando and Modigliani 1963) and aggregate data for a cross-section of countries (Modigliani 1970). Mayer's (1972) recent book provides an extensive review of previous studies of the life-cycle hypothesis but no examples of studies in which the effect of social security had been considered.
>
> In contrast to the implications of the life-cycle theory, students of social security have generally argued that social security is not likely to have a substantial effect on personal savings and that it might even cause such savings to increase.3 This conclusion is based largely on the evidence of Katona (1964) and Cagan (1965)

that persons covered by private pensions do not save less and may save more than those persons not covered by pensions. More specifically, Cagan analyzed data generated by a mail survey of Consumer Reports subscribers and found that the average savings rate was slightly higher for those with pensions than for those without and was also higher for those with vested pensions than for those whose pensions were not vested. A regression equation implied that an increase in the individual's rate of pension contribution was associated with a higher level of direct ("discretionary") saving. Katona analyzed data collected by a University of Michigan survey of randomly selected households and also found that participation in a pension plan raised savings rates when age and current income were taken into account.

Cagan explained his surprising results in terms of a "recognition effect": when an individual is forced to participate in a pension plan, he recognizes for the first time the importance of saving for his old age. Participation in a pension plan has an educational effect; more formally, it changes the individual's utility function as he perceives it ex-ante during his working years. Katona added to this a second explanation: the "goal gradient" hypothesis borrowed from psychological research on the forming of aspirations. According to this theory, "effort is intensified the closer one is to one's goal" (Katona 1964, p. 4). In more conventional economic terms, this would imply that individual preferences are themselves a function of the opportunity set or of the initial position, a dramatic departure from the usual assumption of economic analysis.

The findings of Cagan and Katona can be explained without invoking a recognition effect or a model of changing preferences by extending the life-cycle model to make the extent of retirement endogenous. Workers who are covered by pensions have an incentive to retire earlier than they otherwise would. To receive a pension requires retiring from a current job and generally involves loss of union seniority. Even if the individual is permitted to draw the pension after taking a new job, the loss of seniority and of job-specific skills generally entails a substantial fall in the available wage. The pension therefore acts as a combination of an annual lump sum grant and a tax on earnings after the standard retirement age. The result is to reduce the labor supply of pension recipients, generally through earlier retirement. The pension, therefore has two effects on personal savings: (1) it reduces personal saving because it substitutes for household assets, but (2) it also increases personal saving because it lengthens the period of retirement over which accumulated assets will be spread. The net effect of the pension depends on the relative strength of these two forces.

Social security has a similar dual impact. The "tax" on earnings after age 65 is higher and even more obvious than with private pensions. The "earnings test" in the current social security law provides that a potential recipient loses his social security benefits if he earns more than $2,400 per year, thus requiring retirement from regular employment as a condition of receiving benefits. For an individual who in the absence of social security would have retired at age 65 to consume the income and principal of his accumulated assets, the social security benefits have the unambiguous effect of reducing saving. For those who would otherwise have worked beyond age 65, social security would generally (but not always) induce retirement at an earlier age. For such individuals, the effect of social security on savings is uncertain. In the extreme case of the individual who planned to work as

long as he was able and then to be supported by his children or at public expense, the inducement to plan an early retirement could only increase savings. Although additional cases could be distinguished, it is already clear that the two countervailing effects make the net impact of social security ambiguous." (Feldstein, 1974).

In the article, Feldstein (1974) first reviews the previous literature to propose a life-cycle model of how introducing a social security program affects savings. To do so, he first examines the previous literature on the topic. He points out significant issues in that literature and explores their implications for his research subject—the effect of social security on personal savings. Feldstein notes that previous literature, including Harrod (1948), Friedman (1957), and Modigliani (1970), largely ignored the potential effects of social security on private savings, focusing predominantly on the life-cycle model of saving.

In their works, Katona (1964) and Cagan (1965) introduced two effects, the 'recognition effect' and the 'goal gradient' hypothesis. Cagan suggested a "recognition effect," whereby individuals participating in a pension plan acknowledge the importance of saving for old age. Katona introduced the "goal gradient" hypothesis, indicating that the closer one gets to a goal, the more effort one puts into achieving it.

For his literature review, Feldstein critically assesses these studies and their identified effects, incorporating them into his analysis of the impact of social security on private savings. He extends the life-cycle model by arguing that social security can trigger a recognition effect and adjust retirement timing (akin to the goal gradient). The culmination of his literature review and its application to the social security topic reveals a nuanced impact on savings: while social security may reduce personal savings by providing retirement income, it could potentially increase savings by incentivizing earlier retirement.

**B. Guidelines for Crafting an Effective Literature Review Section or Sub-section:**

- Aim for a concise literature review, approximately two single-spaced pages, within a 20-page paper.
- The review should be structured in two succinct parts:

  o The first part should concentrate on past research that directly ties into your study rather than an exhaustive list of all works on the subject. Pay attention to studies using comparable methodologies, models, and datasets as yours, emphasizing their relevance to economics.
  o In the next part, delve into the unique aspects of your contribution. Discuss how your work adds value relative to preceding studies. Here are some useful perspectives to guide your emphasis:
    ▪ Are you introducing novel data?
    ▪ Are you employing a new model?
    ▪ Is your identification strategy innovative?
    ▪ Are you addressing a question with a broader or narrower scope?
    ▪ How are you advancing previous research?
  o Once again, critically examine your study's external validity—its generalizability beyond the particular context of your research—in this section. For example, could the distinct

applicability of your findings to a specific population or institutional setting explain any differing outcomes from previous work?
- o Remember that your work will primarily be evaluated in the context of previous economics research and the field of economics. Thus, ensure your literature review predominantly features articles from peer-reviewed economics journals.
- o If you're tackling an interdisciplinary subject, such as health, citing papers from related fields like epidemiology is acceptable. However, most of your references and the assessment of your work will be based on their contribution to economics compared to prior <u>economic</u> research.
- o Therefore, ensure your literature review is primarily populated with articles from peer-reviewed economics journals.[5]

## VI. Data Section

After highlighting the significance of a well-crafted literature review in positioning your research, we now focus on the data section. This section plays a critical role in establishing the empirical foundation of your study and allows you to describe your data concisely yet comprehensively. From identifying the type of data you have used to acknowledging its limitations and highlighting key descriptive statistics, this section reviews the various tools needed to showcase your data in the most illuminating and credible manner possible.

### A. Main Elements

This section (on the data) should be roughly one single-spaced page in a 20-page document. To gain insight into its composition, analyze analogous sections in <u>already published</u> research articles, focusing on the type of information presented.
Broadly, this section should cover two facets:

1. Initially, you should provide the name of your data, its source, the period it covers, and critical variables relevant to your empirical approach.
   - Specify whether you have a panel, cross-section, or time series data.
   - Specify your unit of observation and the total number of observations in your dataset.
   - Highlight the features of your data most pertinent to your project. In doing so, your dependent variable might take more precedence over secondary control variables.
   - Discuss any data limitations, such as missing variables or observations, survey response rates, and measurement issues related to your key variables.
     - o Prioritize the discussion of significant limitations that might concern careful readers. Address these in a falsification exercise or a robustness check later in the document.
     - o Highlight other data limitations, like a small sample size or inaccurate proxies for key variables, that could affect your identification strategy or the internal validity of the results.

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[5] Access a comprehensive list of peer-reviewed economics journals here: http://www.aeaweb.org/econlit/journal_list.php

      o  Briefly note minor limitations in the footnotes.

      o  Discuss glaring shortcomings, comparing your data set to the ideal one for your hypothesis.

2. The second facet should focus on reporting relevant descriptive statistics.

- Include tables that showcase means and standard deviations for all relevant variables in your analysis, such as outcomes, independent variables, and essential controls.
- Ensure to cite the sources of your data.
- Aid the reader by including a table with summary statistics for each variable.
- Depending on your research design, you may need to present these statistics for various subgroups (e.g., treatment vs. control; attriters vs. non-attriters; pre vs. post).
- Ensure that readers clearly grasp the variable names and their relevance.
- If necessary, highlight any differences between empirical and theoretical measures.

For instance, the Data section in the 2019 study by Chakravarty et al. serves as a helpful reference:

1. The study initially addresses the relationship between the sampling strategy and the data generation process:

> "We used two primary sources of data. First, we used data from training application forms and the selection procedure of EF-sponsored training that covered three consecutive cohorts of applicants (from 2010 to 2012). Second, we conducted individual (applicant) and household surveys with two rounds of data collection for each cohort. For the 2010 cohort, a second follow-up was conducted on half of the cohort. Figure 1 shows the survey timeline. Sampling in this study included a combination of stratified, random, and convenience sampling and was done in two consecutive steps. The first step consisted of selecting training events for each cohort, and the second consisted of selecting individuals according to standardized procedures. The event sampling frame for this study consisted of all training events from the universe of the EF-funded trainings that occurred between January and April of each year. Events were grouped into clusters of close-by districts before sampling for survey administrative reasons. We then randomly sampled up to 15 district clusters in each of the three years, respectively. Furthermore, from the list of training events in these district clusters, we randomly selected 20 percent. Because of the focus on young women in this study, events likely to include more young women (identified by training providers) were purposely oversampled in 2011 and 2012. In 2010, because a complete event listing was unavailable in advance, the events were not chosen randomly but by convenience, based on scheduling and accessibility. Table 1 details the resultant sample of events for the three cohorts." [Chakravarty et al., 2019]

The paragraph addresses several key aspects mentioned above regarding what the Data Section should highlight. Let's go over some of these aspects:

- Name, source, and period of data: The paragraph mentions two primary data sources, namely the EF-sponsored training application forms and selection procedure and individual and household surveys. The section also notes that the data covers three consecutive cohorts from 2010 to 2012.
- Type of data: The text does not explicitly state whether the data is a panel, cross-section, or time series, but given the descriptions, the passage indicates elements of panel data (repeated observations of the same individuals across different years).
- Unit of observation and the total number of observations: The paragraph indicates that individual applicants and households are the units of observation and that Table 1 (mentioned later in the article) reports the total number of observations in the dataset.
- Features of the data: The paragraph provides extensive detail about the data collection method, including stratified, random, and convenience sampling, and information on the selection procedure for events and individuals. It also mentions the specific focus on young women in the study.
- Data limitations: The paragraph points out a limitation in the 2010 data collection where the events were not chosen randomly due to scheduling and accessibility issues, showing a potential bias. This acknowledgment adheres to the guide's recommendation of discussing any limitations or shortcomings in the data.
- Reporting relevant descriptive statistics: The paragraph provides descriptive statistics like means and standard deviations and summary statistics tables by referring to Figure 1 and Table 1, which contain this information.

2. The study then delves into the structure of the data:

> "The 2010 sample comprised 65 events across 12 districts. The 2011 sample comprised 182 events, of which 113 were dropped from the baseline survey, either because the survey team could not reach the event on the day of applicant selection (usually due to weather conditions) or because the event was not "oversubscribed." The remaining 69 events in 28 districts were included in the 2011 baseline sample. In 2012, 85 out of 112 sampled events covering 26 districts were included in the study sample. Figure 2 depicts the study areas by survey year." [Chakravarty et al., 2019]

The paragraph addresses some new aspects mentioned in the guide:

- Unit of observation and the total number of observations: This paragraph further illustrates the units of observation by detailing the number of events each year.
- Data limitations: The paragraph continues to acknowledge limitations in the data, explaining why some events were dropped from the 2011 baseline survey.
- Reporting relevant descriptive statistics: The paragraph provides some descriptive statistics about the dataset, such as the number of events and districts included in each year. It refers to Figure 2, which visually presents additional details on the events and districts recruited into the study.
- This paragraph adds further information about the dataset and continues to acknowledge its limitations.

3. …Followed by an analysis of the summary characteristics:

> "Generally, women have lower *paid* employment levels and earnings at baseline. Forty-seven percent of women engage in activities *inside* the house that yield some income (e.g., self-employment activities). In comparison, only 36 percent of the women engage in *paid* activities *outside* the house. In contrast, 59 (69) percent of men engage in *paid* activities *inside* (*outside*) the house. Also, men (69 percent) are more likely than women (56 percent) to carry out *unpaid* work *outside* the house (e.g., helping relatives); however, more women carry out *unpaid* work *inside* the house (e.g., household chores, childcare). Almost all women (94 percent) work in the household without pay for at least five hours a week, whereas this is only true for 61 percent of men. Furthermore, 55 percent of the women work more than 20 hours per week inside the house without pay, which is only true for 12 percent of the men in our sample." [Chakravarty et al., 2019]

This paragraph significantly contributes to the aspects of reporting relevant descriptive statistics and discussing critical variables:

- Reporting relevant descriptive statistics: The paragraph provides various descriptive statistics, focusing on gender differences in work engagement inside and outside the house, paid and unpaid work, and hours worked per week without pay. These statistics include both percentages and counts, helping to provide a rich picture of the dataset's key characteristics.
- Discussing critical variables: The paragraph presents the key variables related to employment levels and earnings, type of employment (inside or outside the house, paid or unpaid), and hours of unpaid work per week. These variables relate to the study's empirical approach, which also focuses on gender differences in employment and labor market outcomes.
- This paragraph does a significant job of presenting important descriptive statistics and discussing critical variables for the research.

## B. Recommendations for Key Points to Address in the Data Section.

- Highlight any intriguing facts or patterns you can glean from the descriptive statistics table, as these provide valuable context for your analysis. Help the reader understand the relationships between key variables and the generalizability of your findings.
- Include basic summary statistics for each variable, like averages and standard deviations.
- If necessary, include figures crucial to understanding the distributions of variables.
- Visual displays can underscore aspects of your data, like robustness checks or assumptions that underpin the empirical methods used to test your hypotheses.

## VII. Identification Strategy

Now that we have discussed how to present and describe your data effectively, it is time to turn our attention to your study's empirical strategy, also known as the Identification Strategy. This

section is where we delve into the specific methodology, illustrating how you will distinguish and isolate the causal effects of your variables of interest. This section articulates your method for establishing causality. Therefore, this section is an integral part of your research paper, as it forms the bedrock of your empirical findings and helps instill trust in your reader about the validity and credibility of your results. Let's explore how to create a robust identification strategy that speaks volumes about your careful consideration of causality and confounding factors.

## A. Main Elements

This section should aim for approximately two to three single-spaced pages in a 20-page paper.

In your research journey, you will encounter many possible questions to explore, and one of the most crucial tasks is to select a question that is not only exciting and interesting but also testable with empirical data. As highlighted in the first section of this guide, the key to compelling economic research is to pick relevant questions with significant real-world implications that can elicit a sense of curiosity or challenge conventional wisdom.

Remember, any question is fine to choose. Take note that if you plan to submit the paper to a journal, editors and reviewers will likely assess the question's importance and economic significance. Below are some sample research questions across various fields of economics:

- Consumer Economics: Does an increase in the minimum wage lead to decreased consumption of luxury goods?
- Health Economics: Does an increase in cigarette taxes reduce the number of cigarettes purchased by heavy smokers?
- Development Economics: Does an increase in individual income reduce the likelihood of participation in illicit drug production?
- Industrial Organization: Does increased market concentration in the telecommunication industry lead to higher consumer prices?
- Labor Economics: Does access to affordable childcare increase labor force participation among women?
- Environmental Economics: Does the presence of a local recycling program increase individual recycling behavior?
- Behavioral Economics: Does introducing calorie information in fast food menus reduce the quantity of high-calorie items purchased?
- Financial Economics: Does an increase in interest rates lead to reduced borrowing among small businesses?
- Real Estate Economics: Does increased property taxes decrease the demand for high-priced homes?
- Education Economics: Does school voucher availability increase private school enrollment?
- Agricultural Economics: Does adopting organic farming practices lead to a reduction in crop yields?

In applied micro work, and after picking an exciting economics question, the three most crucial aspects of the paper revolve around Identification, Identification, and, yet again, Identification. Identification refers to the specific empirical method employed to estimate causal effects.

An economics paper's "Identification Strategy" section is crucial because it lays out the methodological foundation for your empirical findings. It articulates how you will isolate the effect of the variable(s) of interest from other possible confounding factors. The identification strategy is your argument for why the reader should trust your empirical findings. It is an opportunity to demonstrate that you've thought carefully about issues of causality and that you've done everything you can to ensure that your results are not spurious or driven by confounding factors. Ultimately, empirical work aims to establish a causal relationship between variables, often supported by regression analysis, a commonly used method to establish causal relationships in empirical work. The "Identification Strategy" explicitly articulates your estimation approach to establish a causal claim for the relationship between the variables embedded in your research question.

Here are some guidelines for what to include in this section:

1. **Research Design**: Clearly describe the research design you will employ. This could be a randomized control trial, a natural experiment, a regression discontinuity design, an instrumental variable design, etc. Explain why this design is appropriate given your research question and the data you have.
   - Under this theme, craft a compelling argument about why your identification strategy is best for identifying causal effects. You might use strategies like OLS, instrumental variable estimation, difference-in-difference estimation, regression discontinuity designs, or randomized control trials. Be explicit about your choice, but don't waste time explaining basic methods. Instead, discuss why the chosen method is the most suitable given your research question and why it works best with your specific data and study context.
   - For example, if using an instrumental variable approach, explain why it fits here, your Y and key X variables, and your chosen instrumental variable. If you use a regression discontinuity, discuss the cutoff rule for assigning groups.

2. **Key Variables**: Define your key dependent and independent variables. Discuss how you measure them. If your variables are not directly observable (e.g., social capital, economic insecurity, etc.), describe the proxies you use and why they are appropriate.

3. **Statistical Models (Estimation Equation)**: Begin by stating the empirical model(s) you plan to estimate. You might choose a simple linear regression model or employ more complex techniques. Such techniques could encompass instrumental variable estimation or propensity score matching.
   - Discuss the key hypothesis you are testing. The identification strategy also implicitly involves formulating a specific testable hypothesis. Though most data specifics belong in the Data section, you might need to connect your data to your hypothesis in this section as you articulate your research design.
   - Identify the key parameter(s) your model intends to estimate with the chosen research design.

When discussing your estimating equation, tackle these points:
   - Justify why your chosen specification suits the research question.
   - Is your specification theory-driven or drawn from previous empirical studies?
   - Explain why you've included specific variables and left others out.

- Be transparent about your identification strategy basis and the assumptions required for interpreting the parameters as you claim (e.g., addressing exclusion restrictions for a causal interpretation of parameters).
- Once you've discussed the basic specification, state any extra steps or tests you plan to undertake and why.

4. **Identification Assumptions**: This is a critical part of the identification strategy. Spell out the assumptions you need for your estimates to have a causal interpretation. These might include assumptions about the error term (e.g., independently and identically distributed), the exogeneity of certain variables, or the relevance and validity of your instrumental variables. It's essential to be transparent about these assumptions and, where possible, provide reasons or evidence to suggest they hold.
- Be transparent about your assumptions. Discuss what they mean for your variables and study context rather than listing them textbook style. Defending these assumptions later in your analysis/results section is good practice.

5. **Threats to Identification**: In the identification strategy section, it is crucial to address any potential threats that could undermine its validity. These threats could include omitted variable bias, simultaneous causality, measurement error, or selection bias. To counteract these challenges, detail the steps you plan to take. You could incorporate control variables into your model, for instance. Another strategy might involve leveraging an instrumental variables approach. Alternatively, controlling for unobserved, time-invariant factors might be possible through a fixed effects model.
- You might not reach definitive empirical results in your paper due to incomplete data, insignificant regression coefficients, or overlooked factors. It's better to recognize these shortcomings than to make unsupported claims.

6. **Robustness Checks**: Indicate what tests you will do to check the robustness of your findings. Some robustness checks one could run include estimating different versions of your model (e.g., using other control variables or various functional forms), testing the sensitivity of your results to the inclusion or exclusion of outliers, or using different measures of your key variables.

Let's consider an example from Becker and Pascali (2019)'s study on the impact of the Protestant Reformation on anti-semitic sentiments.

Sure thing, you'll definitely want to give the Becker and Pascali (2019) study a proper read when you can—it's chock-full of insights into its identification strategy. But for now, let's touch on how this study aligns with and underscores some of the key points I've laid out in this section.

Research Design (p.1775-1777): The authors rely on a historical natural experiment (the Protestant Reformation), using a difference-in-differences-in-differences strategy to isolate the effect of changes in labor market complementarities on anti-Semitic sentiments and violence.

Key Variables (p.1779-1780): They define their critical, independent variable (presence of Jews in the money lending sector before the Reformation) and dependent variables (anti-Semitism measures such as pogroms, anti-Semitic attitudes, and later Jewish involvement in finance).

Statistical Models (p.1779-1781): They employ an instrumental variable approach, using pre-

Reformation trade specialization as an instrument for pre-Reformation Jewish lending to show causality.

Identification Assumptions (p.1779-1781): The text implicitly addresses assumptions, such as the exogeneity of their instrumental variable, and the paper indicates that they will control for various factors in their regression models.

Threats to Identification (p.1779-1781): They acknowledge other potential sources of anti-Semitism (e.g., Martin Luther's views) and demonstrate the effort to isolate the economic channel (changing labor market dynamics) through various tests.

Robustness Checks (p.1784-p1786): They suggest robustness checks, including pseudo-difference-in-differences estimates, instrumental variables estimation, and examination of different historical and geographical contexts.

Overall, the study displays a well-thought-out identification strategy, with a clear exposition of the research design, key variables, statistical model, assumptions, threats to identification, and planned robustness checks.

We can review another example to illustrate some of the principles with highlights from a specific study, this time from Ye et al.'s (2019), published in Management Science. The study focuses on "gradualism," the theory that coordinating challenging objectives is eased by initially focusing on simpler goals. The researchers investigate whether gradualism enhances group coordination toward difficult-to-reach outcomes.

Ye et al.'s identification strategy entailed conducting a randomized lab experiment with 256 subjects, divided into consistent teams of four, and tested across 18 sessions using z-Tree software. Here is an excerpt from the study itself where the authors describe their proposed research design:

> "We conducted the laboratory experiment at the Renmin University of China in Beijing, China, in July 2010 with 256 subjects recruited through the bulletin board system and posters. The majority of the subjects were students from Renmin University and nearby universities. The experiment consisted of 18 computerized sessions using the z-Tree software package (Fischbacher, 2007). The instructions (see S1 in the Supplemental Material) and the game information shown on the computer screen were in Chinese. In each session, we randomly assigned subjects to groups of four; our sample consisted of 64 groups in total. The experiment included two stages: the first comprised twelve periods, while the second comprised eight. Group members did not change within each stage, but subjects were randomly reshuffled into groups of four after the first stage; this rule was made to be common information. The subjects were not told the exact number of periods in each stage. Instead, the subjects were told that the experiment would last 30 minutes to one hour, including sign-up time, reading instructions, taking a quiz to ensure that subjects understood the experimental rule, and final payment. Such a design reflects many real-world cases where people do not know the exact number of coordination opportunities." (Ye et al., 2019)

Later on, the authors clarify how the adopted experimental design relates to the key hypothesis the authors intend to test: that the gradualism approach is the most effective strategy to foster group coordination toward a common task:

"Our experiment comprised three main treatments: (1) Big Bang, (2) Semi-Gradualism, and (3) Gradualism. To isolate the wealth effect on the contribution of participants from the effect of the three main treatments in the second half (Periods 7–12) of the first stage, we introduced a fourth High Show-up Fee treatment, which is identical to the Big Bang treatment except that we give subjects higher show-up fees. All groups in the three main treatments faced the same stake in the second half of the first stage, but stake paths differed for each treatment in the first half (Periods 1–6). The first half of the first stage featured different stake paths for each treatment. We randomly assigned 12 subjects (three groups) into the three main treatments for eight of the 18 sessions. We randomly assigned 16 subjects (four groups) into the four treatments (three main treatments and the High Show-up Fee treatment). In total, we had 18, 18, 18, and 10 groups (or 72, 72, 72, and 40 subjects) in Big Bang, Semi-Gradualism, Gradualism, and High Show-up Fee treatments, respectively. Table S2 in the Supplementary Material shows that the randomization of treatment assignments worked well." (Ye et al., 2019)

Based on the excerpts from Ye et al. (2019) and the guidelines outlined earlier, here is how the study covers some of the critical dimensions:

- Research Design: The authors employed a laboratory experiment conducted at Renmin University of China. They used the z-Tree software package and ran 18 computerized sessions with 256 subjects divided into groups of four. They divided the experiment into two stages with different lengths and reshuffled the group members between stages. This setup is clearly described, which is crucial for the reader's understanding and the study's replicability. The authors' use of a randomized experiment helps to ensure the exogeneity of their key treatment(s) and potential confounding factors.
- Key Variables: The text mentions the treatment variables (Big Bang, Semi-Gradualism, Gradualism, and High Show-up Fee treatments) and indicates a concern with how these treatments might affect participants' contribution.
- Identification Assumptions: The authors do not explicitly discuss the identification assumptions necessary for their causal claims. However, they mention the randomized treatments, a design ensuring that the study's treatment groups are exogenous.
- Threats to Identification: The authors have thought about potential threats to identification and have attempted to mitigate them. For example, they have used random assignment to control for potential confounding factors and introduced the High Show-up Fee treatment to isolate the wealth effect.

The text clearly describes the experiment's setup and the treatments used. The authors later add more details about their key variables, the statistical model they estimate, the identification assumptions and potential threats, and various robustness checks in the same section (p.6-p.10).

**B. Addressing Key Aspects in the Identification Strategy Section.**

- Potential Biases in a 'Naïve' OLS Estimation

Consider the possible biases that might arise from a 'naïve' OLS estimation, such as simply regressing y on x or using an observational study design. Among these biases, endogeneity could be particularly problematic. This issue could emerge from various scenarios, including but not limited to:

- o Omission of Crucial Regressors: An important variable that impacts the dependent variable might be left out of the model.
- o Sample Selection Bias: This occurs when the sample used for analysis is not randomly selected and does not accurately represent the population.
- o Simultaneity: arises when the independent and dependent variables are jointly determined, creating a feedback loop.
- o Interaction Term Omission: Leaving out the interaction term you use to identify the effect.
- o Over-reliance on Cross-sections: Relying more on cross-sections rather than changes could lead to incorrect inferences.
- o Incorrect Unit of Comparison: Comparing across units rather than within units could be problematic depending on the research question.
- o Inaccurate Outcome Measures: Focusing on incorrect outcomes can lead to misleading results.
- o Exclusion of Appropriate Fixed Effects: Leaving out important fixed effects could bias the model.
- o Reverse Causality: This happens when it's the dependent variable that is causing changes in the independent variable, not the other way around.
- o Unobserved Heterogeneity: refers to unmeasured differences across subjects that correlate with measured variables.

- Key Comparison Groups: discuss your key comparison groups (i.e., treatment versus counterfactual). Understanding how these groups are chosen and why they are appropriate for the analysis is crucial for the credibility of your study.
  - o Justification for Comparison: provide a rationale or justification for the chosen comparison. How does the research design capture and create the counterfactual comparison?

- Guide to the Reader
  - o Use subheadings to lead the reader through the different levels of your analysis. A well-organized paper will help the reader follow and understand your approach to various issues, especially for more complex analyses.

## VIII.   Results Section

With a robust identification strategy established, your next step is communicating the empirical findings. This section of the guide focuses on the Results, where the fruits of your careful methodology come to light. Your approach to presenting your results can significantly influence your readers' understanding and interpretation of your study. Whether it's deciding which results to highlight or determining the extent of findings to present, the clarity and relevance of your presentation matter immensely. In this section, we learn to differentiate between core results and

secondary findings, ensuring your main points are not lost amidst abundant information. Let's delve into how to effectively showcase the main findings of your analysis, thus reinforcing your central argument.

### A. Main Elements

This part of your work should precisely and clearly showcase the main results of your analysis. Consider these key points:

- Decide on the empirical findings to showcase.
- Determine the number of findings to present.
- Determine which results are relevant to the main body of the paper and which should be included in an appendix.
- Plan how to explain the results in the main text.

### B. Deciding the Number and Types of Results to Report

Keep your results reporting concise. Often, less is more. Early researchers or grad students may over-share secondary estimates from their regressions. Although a "kitchen sink" strategy can show thorough analysis, it can muddy your main point. Pages of estimates often distract from your central argument.

- Readers can get lost, bored, or annoyed.
- Only show results and estimates that reinforce your main point.
- Include secondary analysis in an Online Appendix if necessary.

Take this example. You're looking at the Mincer equation— a regression model labor economists use—to determine wage returns to education. You set up a regression with an individuals' earnings on the left-hand side and variables like education, race, gender, work experience, and geographic fixed effects on the right. There may be a problem of endogeneity in your wage equation, as the primary variable of interest (education) is likely to be highly correlated with the error term. This correlation may arise because higher-ability individuals tend to earn more and attain more education. This correlation could result in a biased estimate of the effect of education on wages, an "ability bias."

Economists have found ways around this, one of which is using a proxy for ability (assuming the proxies for ability are exogenous to the education variables). If your main story is about ability bias and its magnitude, focus your discussion of the results on the estimates of education and ability effects in the revised specifications, including the ability proxies. Your regression results will likely look like the results reported in Table 1 below:

**Table 1**: The Effect of Education on Wages (OLS)

| | Dependent Variable: Log of Yearly Earnings | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Education | 0.091 | 0.031 | 0.086 | 0.027 |
| | (0.001) | (0.003) | (0.002) | (0.005) |
| Ability dummy | | 0.251 | | 0.301 |
| | | (0.010) | | (0.010) |
| State FE | No | No | Yes | Yes |
| $R^2$ | 0.50 | 0.55 | 0.76 | 0.79 |
| | | | | |
| No. of Observations | 35,001 | 35,001 | 19,505 | 19,505 |
| No. of Persons | 5,505 | 5,505 | 4,590 | 4,590 |

*Notes*: Standard errors are in parentheses. The analysis dataset covers the years 1985 to 1995. The shares of doctors and lawyers are taken from the Five Percent Public Use Micro Sample of the 1950 U.S. Census and are defined as the share of each profession among employed persons in the population aged 25–64. A "city" is defined as Standard Metropolitan Statistical Area; constant SMSA definitions were used from 1950 to 1990. Region dummies correspond to the 10 "major regions," as defined by the Census Bureau.

Note several attributes about how Table 1 presents the results:

- The table focuses on the primary variable (education), leaving out parameter estimates for all independent variables, such as marital status and gender.
- The table has a "*Notes*" section for clarifications and secondary details to help the audience understand your results.
- The *Notes* in the table should be self-contained and detailed enough so the reader doesn't need to return to the text for clarity.
- The Notes could define certain variables, explain why some regressions have fewer observations (if so), or clarify important measurement issues.
- The Notes should clearly state whether the parentheses under the coefficients contain standard errors or t-statistics.

Variable names and their labels should be easy to interpret:

- Don't use variable abbreviations from your statistical software program; make them easily understandable. Variable names like YEDUCT2011 or ABIL8225A will not only mean nothing to your reader but likely annoy them.
- Ensure that variable labels in the Tables are consistent with their references in the text.
- Don't worry about repetition between the text and the notes, as this can help the reader understand the table without referencing the text.
- Provide sufficient information for a researcher to replicate your results. Complex projects might require a data appendix.

After presenting the primary results, discuss any robustness checks conducted:

- Table 1's third and fourth columns serve as robustness checks, showing that including ability in the regression gives the same effect whether or not state-level fixed effects are included.
- Other robustness checks might involve subsetting only on male household heads or limiting the sample to the 1990s.
- In some cases, it is enough to inform the reader in the text that these tests were performed, and the main results were unaffected.
- Single robustness check information could be in a footnote linked to the relevant text section.
- However, if there are many robustness checks, consider presenting these results in another, more succinct table. Some papers include a separate "Robustness Checks" section, where authors examine several aspects of the main results' stability.

## C. Describing Your Results in the Paper

Once you have your tables, graphs, and figures ready, explain them in your text, hitting the key points immediately. Let's return to the results from Table 1. Our next step will be to author a concise paragraph capturing the key findings from Table 1. Pay close attention because as we transition into the following paragraph, we'll spotlight our most significant takeaway, ensuring it shines through in the first sentence.

> Adding ability measures to the Mincer equation lessens schooling's impact on earnings, pointing to ability bias in naive OLS estimates. Without ability measures in column (1), a year of education boosts wages by 9.1%. By including these measures in column (2), the impact drops to 3.1%. Columns (3) and (4) maintain this pattern, even when adding state fixed effects. Overall, these estimates support the argument that ability bias likely affects the naïve OLS estimates.

The opening and closing sentences of this paragraph describing Table 1's results set the scene and conclude the story of your data. Notice that the paragraph above captures both features.

It's crucial to articulate your findings clearly, connecting them to your paper's main messages. Your readers might argue that the results are clear in the table, but guiding them through your interpretation of the results allows you to frame your findings in the context of what you want to convey and for the reader to understand the significance of your work more fully.

Remember that research isn't always perfect, and data may not back every hypothesis. In such cases, transparency and precision in your discussion of results are essential.

Imagine another scenario: You're researching how the proportion of lawyers in a city influences its population growth. Some models suggest cities with more lawyers grow slower, but this doesn't apply to cities with other educated professionals, like doctors. Using 1950 data on doctors and lawyers and growth rates from 1950 to 1990, you run your OLS analysis, and you report your analysis in Table 2.

## Table 2: The Effect of Lawyers on City Growth

|  | Dependent variable: City's Population Growth Rate, 1950-1990 | | |
|---|---|---|---|
|  | (1) | (2) | (3) |
| Share of Lawyers in Population, 1950 | -0.09 (0.01) | -0.08 (0.03) | -0.07 (0.05) |
| Share of Doctors In Population, 1950 |  | 0.05 (0.03) | 0.05 (0.05) |
| Region FE | No | No | Yes |
| $R^2$ |  |  |  |
| No. of Observations | 25 | 25 | 25 |

*Notes*: Standard errors are in parentheses. The shares of doctors and lawyers are taken from the Five Percent Public Use Micro Sample of the 1950 U.S. Census and are defined as the share of each profession among employed persons in the population aged 25–64. A "city" is defined as Standard Metropolitan Statistical Area; constant SMSA definitions were used from 1950 to 1990. Region dummies correspond to the 10 "major regions," as defined by the Census Bureau.

There are two possible ways to unpack Table 2.

- A less effective approach would focus solely on each column's central theory, noting that including regional dummy variables doesn't significantly change the primary estimates, though it does reduce their precision.

- A more effective approach would go something like this:

> Table 2 suggests that cities with more lawyers grow slower. However, this effect becomes less certain after accounting for other factors also influencing city growth. According to column (1), a 10% increase in the lawyer population decreases city growth by approximately 0.9 percentage points. Conversely, as shown in column (2), a larger doctor population fosters growth, although this estimate is less accurate. The estimates in column (2) are less precise than those in column (1), probably due to positive multicollinearity between the doctor and lawyer populations. In column (3), the problem of statistical precision becomes more pronounced. When we include Census region fixed effects, accounting for these factors increases the standard errors of the coefficient estimates, resulting in the statistical insignificance of lawyers' impact on city growth. This observation indicates a potential negative influence of a higher lawyer population on city growth. However, when we include additional control variables, the estimate remains robust.

Now, let's delve into some critical points in presenting your results.

### a. How Many Decimal Places?

Avoid reporting all the decimal places your software shows — this is known as false precision. The optimal number of decimal places to report can be challenging to determine.

   a. Rounding numbers, often done in studies, improves readability.
      o Aim for visually pleasing tables when deciding on display details. Typically, this means using a consistent, small number of decimal places.
      o While this approach might not be purely logical, it's the best choice among many imperfect alternatives.
To further enhance readability, steer clear of coefficients packed with leading or trailing zeros.
   b. For example, a number like 0.00123456 could be reported as 1.23456, provided you adjust the variable's units accordingly.

### b. Using Standard Errors as a Benchmark

One strategy for deciding how many decimal points to report is using standard errors (SE) as a guide, a method often employed in the hard sciences. The principle here is that SE reflects the precision of an estimated coefficient.
   The rule using SE as a benchmark is: locate the first non-zero digit in the SE. If it's more than one, this digit determines the decimal place for your coefficients. Round the SE and the estimated coefficient to this decimal place, then report both.

For example:
- 0.00456789 +/- 0.0089 rounds to 0.005 +/- 0.009.

If the first non-zero digit in the SE is one, apply the same rules to the next decimal place.

For instance:
- 12345.6789 +/- 12.3456789 rounds to 12346 +/- 12.

If the first non-zero digit in the SE is a 1 that rounds up to a 2, keep the next digit. If the SE is 0.196, report the SE as 0.20.

Here's a tweak to the scientific rule. Follow the same process as mentioned but add one more decimal place to the results.

For example:
- 12345.6789 +/- 12.3456789 rounds to 12345.7 +/- 12.3

This modification helps to compute t-statistics when limited decimal places are reported accurately. It's important to note that there's no unanimous agreement on this topic, so it is best to avoid excessive decimal places.

### c.  Discussing Policy Implications and Normative Issues

Economic research often deals with real-world policies, and your work may reveal substantial effects of existing or new policies. However, be cautious when making normative statements in your papers. Avoid value judgments and focus on objective analyses, which can stand on their own. Remember, your research won't cover every aspect of a policy - leaving room for your audience to analyze additional elements.

When discussing your findings, don't shy away from mentioning your research's limitations:
- The limited number of observations you have,
- The simplicity of the tested functional form.

Generally, it's better to demonstrate your awareness of your method's constraints rather than make sweeping, unsupported claims.

### D.  The Crux of the Matter

When presenting your findings, maintain a clear focus on the core message of your results. Your audience will appreciate a straightforward and precise delivery.

**Additional Points:**
- It may be tempting to emphasize all results but prioritize those crucial to your central findings. If this proves challenging, avoid introducing details before the main result that aren't essential for understanding.
- Clarify the economic impact of key figures, not merely their statistical significance.
- Remember that even minor effects can be "statistically significant" in large panel datasets.
- Accompany every critical coefficient estimate with its corresponding standard error.
- Follow the primary result with figures or tables that reinforce the message.
- Present results or extra analyses that address potential criticisms and robustness checks.
- Consider placing most robustness analyses in an appendix or Online Supplementary Materials.

### a.  The Art of Crafting Tables
- Each table should be self-explanatory.
- Ensure your tables can be understood without referring back to the main text.
- Each table should have an understandable title and, if necessary, a descriptive legend.
- Check that table titles, column headings, and captions are clear in isolation.
- Clearly label the primary variables, specifically the dependent and central independent ones.
- The caption should summarize the central concept behind the table's results.
- The primary aim of table presentation should be to allow a reader to grasp the main story and findings underlying each research piece.

- A discerning reader should be able to interpret the table's results without referring back to the main text.

- Exclude secondary details about variable construction unless these variables are crucial to your analysis.
- Detailed documentation fits better within the main body of the paper.
- Use a logical number of significant digits, not the output from your software package.
  - For example, 4.56783 with a standard error of 0.6789 should be 4.6 with a standard error of 0.7. I discuss this issue in a separate section in this document.
  - Generally, two to three significant digits are typically sufficient for most economics and finance research papers.
- Prioritize sensible units. Percentages are a good example.
- You may find useful templates (for Word, Scientific Word, or LaTeX) provided by the American Economic Association at: https://www.aeaweb.org/journals/policies/templates.


b. **The Art of Crafting Figures**

- Make your paper sparkle with engaging figures that visually capture data patterns more effectively than dense numerical tables.
- Carefully select figures to avoid wasting space.
- Equip each figure with an independent, comprehensive caption.
- Ensure each graph symbol has a clear definition.
- Always include an understandable legend when necessary for content interpretation.
- Label your axes for clarity.
- Apply practical units.
- Avoid dotted line types that might be invisible in reproductions.
- Be mindful when coloring figures. Some readers may view or print in black-and-white.


E. **Crafting Your Results Section: Key Considerations**


- Aim for a concise results section, about 3-5 single-spaced pages for a 20-page paper.
- If testing a hypothesis, define the null hypothesis clearly and whether you reject or fail to reject it.
- Focus on interpreting key variables presented.
- Not just report but explain your results.
- Comment on the implications of the estimated coefficient of your primary explanatory variable.
- Discuss both the statistical significance and the magnitude of the estimated effect.
- Highlight any coefficients that are unusually large, strange, or unexpected.
- Always provide units when discussing numbers. Coefficients or predicted Y values, for instance.
- Foreign currency values are more easily grasped if compared to USD.

- Address potential biases, shortcomings, or threats to internal validity and suggest ways to address these.
- Include or discuss results from various other result runs.
- Compare your results with previous research on similar topics.
- Do they support or contradict established economic theory?
- Discuss ambiguities in your results and their potential interpretations.
- Propose possible mechanisms explaining the relationship between your analysis's main variables.

## IX.    Tips for Constructing an Effective Conclusion Section

After thoroughly processing and presenting your empirical findings in the Results section, it's time to tie all the threads into a compelling conclusion. This section is critical, as it summarises your core findings and positions them within the broader context of existing research. It's a snapshot summary that synthesizes the importance of your work, acknowledges its limitations, and looks ahead to future research paths. It also explores potential policy implications, giving real-world relevance to your research. Understanding how to craft an impactful conclusion is paramount to solidifying the resonance of your study with its readers. Let's delve into how to effectively summarize and extend our understanding of our results to form a potent and compelling conclusion.

### A.  Main Elements

Your conclusion should be succinct and compelling. Rather than rehashing content from previous sections, home in on your key results in a snapshot summary. Aim for about 5 or 6 tight paragraphs addressing the following:

- Recap your core findings
  - Offer an intuitive and gripping account of these results
  - Compare your results to the existing literature and emphasize why the results are novel
  - Discuss the mechanisms driving your principal findings
- Provide caveats and acknowledge significant limitations of your approach
- Suggest promising avenues for future research
- Explore potential policy implications

Let's consider an example from Nikolov and Jimi (2020) and how their study on the returns to various cognitive skills for labor market outcomes in South Africa illustrates an effective conclusion section in light of the attributes just highlighted for an effective conclusion section. Here is the excerpt:

> Building on extensive human capital literature, Manski (1993) posited that individual beliefs regarding educational returns could be a powerful determinant of individual demand for more schooling. In this article, we use individual-level data from two surveys in Tanzania to estimate the returns to primary and

secondary schooling and to examine whether subjective perceptions regarding the monetary returns to schooling differ from measured average returns for these two schooling levels. We also examine what factors are associated with the gap between actual measures of educational returns and subjective perceptions.

We find that each additional year of schooling in Tanzania, all else equal, increases earnings by 11% in the OLS estimates and by 9% in the IV estimates. Using data from Dar es Salaam's Perceived Returns Survey, we also examine the individual subjective perceptions regarding the average earnings associated with two levels of schooling. We find that survey respondents underestimate the average earnings for workers with primary-level schooling by 74%, and those survey respondents underestimate the average earnings for individuals with secondary-level schooling by approximately 79%. Using limited data on the socioeconomic characteristics of the survey respondent, we then examine each factor's role in driving the discrepancy between the measured average earnings and the subjectively perceived average earnings.

We find three powerful predictors that drive the gap between the subjectively perceived average earnings and the actual average measured earnings: the respondent's age, whether one has a secondary school or university-level education, and poverty status (based on asset poverty and earnings). Perhaps most policy-relevant is the fact that the most prominent effects, in terms of the estimated coefficient magnitudes, driving the discrepancy between measured earnings and subjective beliefs about earnings are associated with one's own earnings and one's own educational attainment. The lowest earners, as well as the lowest decile in asset poverty, are the two groups of individuals who underestimate the average earnings the most. Surprisingly, secondary school degree holders (relative to primary or no degree holders) underestimate educational returns. Although our measure of the returns may still be biased, the individuals' implied estimates of the returns are so low – about 3–4% per year of secondary schooling – that unless we believe our estimates of the actual educational returns are highly biased such that the true returns in Tanzania are dramatically lower than the returns we estimate in this article, it seems likely that individuals do in fact underestimate the true returns to schooling.

Finally, we note that within the Becker human capital framework, there are numerous reasons –other than low perceived returns to schooling – that may drive the equilibrium in which individuals receive low levels of education. For example, poverty and credit constraints have long been considered significant impediments to schooling, especially in Sub-Saharan countries. However, relaxing these other constraints is unlikely to be cost-effective. The results of this article point to an alternative cost-effective policy approach, in which a policy targets groups that underestimate the measured educational returns the most. A targeted low-cost informational intervention among the lowest earners and the lowest asset-poor decile will likely have a powerful impact on these groups' demand for more schooling. (Nikolov and Jimi, 2018)

The passage is a robust example of the guidelines for a conclusion section discussed above. Here is a breakdown of how this example aligns with the tips regarding the core attributes of an effective concluding section:

- o **Recap of core findings**: The passage succinctly restates the main findings: schooling in Tanzania increases earnings by 9%-11%, individuals tend to underestimate the earnings

associated with different education levels, and certain factors (like age, education, and poverty status) influence this perception gap.

- o **Offer an intuitive and gripping account of these results**: The authors provide a compelling interpretation of their results by discussing the implications of the perceived earnings gap. They argue that this perception gap might be lowering the demand for education, especially among those in lower earnings brackets and with less education.
- o **Compare your results to the existing literature and emphasize why they are novel**: The authors frame their research within the existing human capital literature, citing Manski (1993). They position their study as a valuable contribution to quantifying educational returns in Tanzania and examining individual perceptions about these returns.
- o **Discuss the mechanisms driving your principal findings:** The authors discuss mechanisms, such as age, level of education, and poverty status, that drive the difference between the actual and perceived returns to education. They offer a nuanced perspective on these mechanisms, focusing particularly on the surprising finding about secondary school degree holders.
- o **Provide caveats and acknowledge significant limitations of your approach**: The authors note a potential bias in their measurement of returns. They recognize that their findings are based on two surveys with limited socioeconomic data, which may affect their ability to fully uncover the drivers of the gap between measured and perceived returns.
- o **Suggest promising avenues for future research**: Their discussion implies the possibility of potential bias related to the inclusion of ability controls, which may affect how one interprets their findings. This explanation offers a clear route for future research to refine the methodology and validate these findings.
- o **Explore potential policy implications**: The authors suggest a targeted informational intervention aimed at groups that most underestimate the educational returns. This approach would improve the demand for schooling among these groups, offering a cost-effective policy solution to a complex problem.

After crafting your conclusion, revisit your introduction, incorporating a brief overview of your results and implications. Finally, meticulously proofread your paper. Even after running spell-check, go over it once more. Correct typos, enhance wording, and ensure your data adds up. A well-proofed paper demonstrates a thorough and careful approach to your work.

## B. Tips for Structuring an Effective Conclusion Section

- Keep your conclusion concise, ideally one single-spaced page for a 20-page paper.
- If your research focuses on applied microeconomic issues, consider its implications as a policy brief.
- Here's how to structure a compelling conclusion that could also serve as a policy brief:
  - o Highlight your main findings: Summarize the core discoveries in a memorable and straightforward way.
  - o Findings and stressing the importance of your study:

- Tell the reader several key high-level takeaways from your research. These should be accessible to an intelligent reader who is familiar with economics, even if not an expert in your specific economics subfield
- Remind the reader why your research matters and how it adds to the existing knowledge.
    - o Illuminate insights about human behavior: Discuss what your study teaches us about human behavior at a general level, highlight what was previously unknown or underexplored, and how your study somehow illuminated these two aspects.
    - o Consider public policy implications: Reflect on how your results could influence public policy or suggest potential specific policy reforms.

## X. Identifying a Compelling Paper Title

Having navigated through conducting research, analyzing data, and writing an economics paper, we find ourselves at the end of our guide, focusing now on choosing an apt title. While it may seem unusual to address this aspect last, there is a deliberate reason behind this sequencing. Writing a research paper is an iterative and self-editing process, where each component informs the other in an evolving narrative.

The title of your paper is an abbreviated summary of your work's essence, a snapshot of your findings, and a nod to your unique contribution to the field. To craft such a title effectively, it is vital to thoroughly understand your results, articulate your research's distinct contribution, and discern the most compelling takeaways for your audience. These insights often emerge and crystallize throughout your work on the paper. Therefore, although you may have preliminary ideas for a title early on, it is usually during the final stages of writing that the most fitting title reveals itself.

As such, it feels appropriate to revisit the matter of title selection toward the end of our guide. By now, having journeyed through the intricacies of economic research writing, you are ideally positioned to encapsulate your work in a compelling, concise title that accurately reflects your research and sparks interest in your readers.

Identifying and selecting a compelling title for an economics research paper is an art form, so just like identifying your research question, the reader should pick a strategy that works best for them. Indeed, the onus falls on you, the researcher, to inject a distinct and imaginative flair into your paper's title. The title is not just a label; it's the reader's first impression of your work and your unique contribution to economics. The uniqueness and creativity of your title can set your paper apart from the multitude of other research papers.

However, here are some guidelines that emphasize some useful features which can guide you in coming up with some compelling options:

- The Art of it: The title is an art form. It condenses your entire paper into a bite-sized nugget, capturing the essence of your research. Crafting the right title takes creativity, precision, and careful thought.
- Keep it Short and Memorable: Succinct yet captivating titles work best. The reader should be able to quickly understand your research's main theme and be intrigued to delve further into the paper.

- Creating Expectation: A title is a pledge to your readers. It lays out the promise of what they can expect from your research and what questions you intend to answer. It should be analytical and convey your paper's focus in an abbreviated form.
- Zeroing in on Focus and Takeaway: Crafting a compelling title requires you to zero in on your paper's central focus and key takeaway. It helps to reinforce and crystallize your thoughts and arguments.
- Learn from the Past: Review the titles of articles already published in economics journals. Doing so will enable you to understand the existing norms and expectations, guiding you to create a title that aligns with the conventions of economics research papers.
- Title-Intro Cohesion: Compare your title with the first few paragraphs of your introduction. Do they align? The intro should naturally unpack what your paper's title suggests—it should communicate the central research question, spell out your research design, highlight your key findings, and emphasize your contributions.
- Fulfilling the Pledge: Ensure your introduction delivers on the pledge established by the title. Readers should feel that the shortened version of your research depicted in the title is adequately expounded upon in the introduction.
- What to Emphasize: The focus of your title can vary. You might highlight the topic, the lesson, the puzzle, or the conceptual takeaway. Identify what you think might be the most compelling aspect of your paper and the one that will make the readers want to read the entire piece. Make it the centerpiece of your title.
- Use Attention-Grabbing Techniques: Clever rhyming, humor, or allusions to well-known phrases or idioms can make your title catchy and memorable. However, these should be used sparingly. Striking a balance is key – you want to pique the reader's interest without being overly gimmicky.
- Stray from Overused Phrases: The phrase "Evidence from..." has become somewhat clichéd in economics research paper titles. Renowned economist Daniel Hamermesh pointed this out in one of his emails to the IZA network of labor economists, expressing his concern about the dullness and formulaic nature of such titles. He encourages authors to avoid such conventions and opt for more unique, creative phrasing. Rather than defaulting to this familiar pattern, push your boundaries and strive for a title that sets your work apart. Remember, your title is an opportunity to make your paper distinctive, captivating your audience's attention right from the start.

To summarize, a compelling title is a critical part of your economics research paper. It sets the tone for your research, promises what the reader can expect, and leaves a lasting impression. A well-crafted title is an art form and a critical tool for effective communication in academic research. While staying within the boundaries of scholarly decorum and not appearing gimmicky is crucial, don't shy away from adding a touch of creativity to your title. Unconventional yet relevant titles can draw more attention and pique interest among a broad audience. Therefore, strive to make your title unique, engaging, and genuinely reflect your research.

Remember, you have a finite set of words to work with, so each word should count. Can you capture your study's essence in a thought-provoking yet concise way? Can you think of a unique

twist or angle that encapsulates your work? Strive for originality, and don't hesitate to explore outside the confines of conventional phrases and structures.

By crafting a creative and unique title, you are enhancing the appeal of your research paper and contributing to the richness and diversity of academic literature in economics. And who knows? Your ingenuity might just inspire the next generation of researchers to think outside the box.

## XI.   Placing Citations in Your Paper and References

Having addressed the conclusion section and picked a title, you can now move toward one of the critical foundations of your research work - your References. Crediting the sources you have drawn for your research strengthens your argument and positions your study within the broader scholarly conversation. This section delves into the protocols for placing citations in your paper and compiling your references. The rigor and consistency in this section underscore the academic integrity of your work. Now, let's delve into the nuances of citing correctly and forming your reference list while adhering to the accepted citation style in economics.

### A.  Main Elements

When you mention a theory, fact, or evidence from a source, always include a citation in your paper. This citation should include the author's name and published year. The way this information is formatted depends on the following:
- whether you wish to draw attention to the source, and
- whether you have previously referred to the author(s) in your paper.

### B.  Loud Reference

If you wish to explicitly acknowledge an idea's source, cite the author's name (s) in the body of your sentence and place the publication date in parentheses. Typically, economics research papers use the author(s) by the last name only: e.g., Crawford (1998)

### C.  Soft Reference

When you make a claim and want to back it up with a source, mention the author's name and the date in brackets. The sky is blue (Crawford and Sobel, 1982; Crawford, 1998)
- The authors are listed in order of publication date.
- Separate sources with a semi-colon.

### D.  Listing Your References

The complete bibliographic records of all sources cited within your papers should appear at the end of your article. The section titled REFERENCES is capitalized in the frequently used AER Style. In REFERENCES, follow the rules about indentation, capitalization, punctuation, and the

ordering of information (including boldface, italics, and spacing count). See
https://www.aeaweb.org/journals/aer/submissions/accepted-articles/styleguide

**Types of Sources and Sample Reference Entries**

The information in a REFERENCES entry and how this information is formatted depend mainly
on the source type. The most frequently used citation style among economists is the *Chicago
Manual of Style* Author-Date system for all common publication types. The AEA's "Sample
References" provides information for less common citation sources:
https://www.aeaweb.org/journals/policies/sample-references.
Below are some reference style examples following this style (17th edition):

| Specific Source | Chicago Manual of Style 17th edition (author-date) |
|---|---|
| No author (Newspaper/Magazine) | *The Economist*. 2000. "Survey of China: Wealth and Power," April 6, 2000. |
| Journal Article Published in a Journal (One Author) | Nikolov, Plamen. 2018. "Time Delay and Investment Decisions: A Field Experiment in Tanzania." *Economics Bulletin* 38 (2): 1124–37. |
| Journal Article Published in a Journal (Two Authors) | Nikolov, Plamen, and Nusrat Jimi. 2020. "The Importance of Cognitive Domains and the Returns to Schooling in South Africa: Evidence from Two Labor Surveys." *Labour Economics* 65 (August): 101849. https://doi.org/10.1016/j.labeco.2020.101849. |
| Journal Article Published in a Journal (Three Authors): | Angrist, Joshua D., Guido W. Imbens, and Donald B. Rubin. 1996. "Identification of Causal Effects Using Instrumental Variables." *Journal of the American Statistical Association* 91 (434): 444–55. |
| Journal Article Published in a Journal (Four Authors): | Jimi, Nusrat Abedin, Nikolov, Plamen, Malek, Mohammad Abdul, and Kumbhakar, Subal. 2019. "The Effects of Access to Credit on Productivity: Separating Technological Changes from Changes in Technical Efficiency." *Journal of Productivity Analysis* 52 (2019): 37–55. https://doi.org/10.1007/s11123-019-00555-8. |
| Books | Flora, Peter. 2017. *Development of Welfare States in Europe and America*. 1st ed. Book, Whole. London, The United Kingdom: Routledge. |
| Unpublished Ph.D. dissertation: | Nikolov, Plamen. 2013. "Essays in Applied Microeconomics of Development." Doctoral, Cambridge, MA: Harvard University. |
| Working paper or discussion | Nikolov, Plamen, and Adelman, Alan. 2019. "Do Pension |

| | |
|---|---|
| paper: | Benefits Accelerate Cognitive Decline? Evidence from Rural China." IZA Discussion Paper No. 12524. Bonn, Germany: IZA Institute of Labor Economics. https://www.iza.org/publications/dp/12524. |
| Website: | American Economic Association. 2020. "Sample References." American Economic Association's Sample References. June 2020. https://www.aeaweb.org/journals/policies/sample-references. |
| E-mail Message: | Nikolov, Plamen. 2020. "Sample References," June 1, 2020. |

## XII. Appendices: Why They Matter and How to Use Them Effectively

After conscientiously documenting all sources in the References section, we can shift our focus to how you can complement the main body of your paper with valuable supplementary details. This section deals with the issue of how to use appendices to consolidate additional information and analyses that can further bolster your analytical approach to support your central argument.

### A. Main Issues and Elements to Consider

Appendices serve as excellent tools to include supplementary analysis without deviating from your main findings or narrative. Use them to share auxiliary information or present additional analytical results.
Appendices could house the complex theoretical model you spent months developing or showcase the array of robustness checks and consistency tests you performed on your data. Essentially, appendices help to deepen your research while maintaining the flow of your main argument. Remember, any analysis placed in an appendix should be referenced within the body of your paper. In doing so, you guide your reader to further insights while keeping your central storyline in focus.

## XIII. Guidelines for Formatting Your Manuscript or Paper

We now turn to the last crucial aspect of your manuscript: the formatting. The overall presentation, including a clean layout and meticulous proofreading, speaks volumes about the diligence and commitment invested in your work. Let's look into the essential guidelines to effectively format your manuscript or paper, making it visually appealing, reader-friendly, and error-free.

### A. General
- All margins should be one inch.
- Use a standard typeface in 11 or 12-point font.

- Indent your paragraphs.
- Space the text either with 1.5 or 2-line spacing
- Single-space footnotes, endnotes, and long quotations.
- Single space within each reference entry and double space between reference entries.
- Your first page should cover your title, name, abstract, and date.

### B. Graphs and Charts
- Number your visuals, such as graphs and charts (e.g., Figure 1, Table 1), and provide concise captions.
- Always cite the data source at the bottom of your visuals for transparency and attribution.
- Include visuals immediately following your "References" section to maintain an organized structure.
- Group related tables and graphs together to facilitate comprehension and enable readers to quickly connect visuals that present related takeaways.

### C. Proofreading and Revision
- Thoroughly scan your paper for typographical and spelling errors, missing pages, incorrect table or figure numbers, and missing references.
- Cross-check to ensure that every in-text citation is included in your References section and that each entry in your References corresponds to an in-text citation.
- Read your draft critically to weed out awkward or repetitive phrases. Refine your sentence and paragraph structure to improve flow and eradicate redundancies. Your paper should read smoothly, presenting your research clearly and engagingly.


## XIV.   Additional Resources and References for Economics Writing

Several additional resources can be beneficial for economics writing:

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McCloskey, Donald. 1994. *Knowledge and Persuasion in Economics - Google Books*. Cambridge, United Kingdom: Cambridge University Press.

McCloskey, Donald N., and Deirdre N. McCloskey. 1990. *If You're So Smart: The Narrative of Economic Expertise*. University of Chicago Press.

Officer, Lawrence H., Daniel H. Saks, and Judith A. Saks. 1985. *So You Have to Write an Economics Term Paper*. East Lansing: Michigan State University Press.

Thomson, William. 1999. "The Young Person's Guide to Writing Economic Theory." *Journal of Economic Literature* 37 (1): 157–83. https://doi.org/10.1257/jel.37.1.157.

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Nikolov, Plamen, and Md Shahadath Hossain. 2023. "Do Pension Benefits Accelerate Cognitive Decline in Late Adulthood? Evidence from Rural China." *Journal of Economic Behavior & Organization* 205 (January): 594–617. https://doi.org/10.1016/j.jebo.2022.11.025.

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Oster, Emily. 2012. "HIV and Sexual Behavior Change: Why Not Africa?" *Journal of Health Economics* 31 (1): 35–49. https://doi.org/10.1016/j.jhealeco.2011.12.006

Zinsser, William. 2001. On Writing Well: The Classic Guide to Writing Nonfiction - Harvard University. 1st ed. New York, NY: HarperResource Quill

Ye, Maoliang, Jie Zheng, Plamen Nikolov, and Sam Asher. 2019. "One Step at a Time: Does Gradualism Build Coordination?" *Management Science* 66 (1): 113–29. https://doi.org/10.1287/mnsc.2018.3210