Using Humor and Interactive Software to Teach Econometric Concepts: A Case Study in Using *The Simpsons* to Teach about Correlation vs. Causation

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Abstract

This article presents a novel approach for teaching a foundational concept in modern econometrics using a combination of humor, interactive software, and classroom assessment techniques to enhance learning and student experiences. The approach we present focuses on using a classic segment of the long-running television show, *The Simpsons*, to teach about the concept of correlation versus causation, where humor is leveraged as a device to engage students and challenge them to understand why correlation does not imply causation. The segment and larger episode also offers particular opportunities to link this concept to public economics and policy. We discuss the advantages of using humor and *The Simpsons* to enhance student learning and classroom experiences and outline core elements of how the respective segment of *The Simpsons* can be leveraged to teach this concept. We also present a summary of how use of the respective segment has been successfully used by itself as a simple add-on in various classes, and/or for particular use in an econometrics course in combination with interactive R code in the classroom. Finally, we discuss several options for classroom assessment to engage students and assess learning outcomes.

Keywords: humor, econometrics, correlation versus causation, student engagement
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1 Introduction

In recent decades, econometrics training has undergone a shift in conjunction with the "credibility revolution" (Angrist and Pischke, 2010). From a curriculum perspective, this shift is readily apparent from comparisons of widely used textbooks over the last several decades which now spend less time exhaustively studying probability distributions and the classical linear model and more time on the bevy of estimators used for causal identification (Goldberger, 1991; Imbens and Wooldridge, 2009; Angrist and Pischke, 2009, 2014; Wooldridge, 2025). These shifts have relevance not only to teaching standard treatment effects estimation strategies but also structural estimation objectives common in industrial organization.

The econometric theory underlying causal and structural identification are challenging, but at their roots there are a variety of simple conceptual threads that many know intuitively, including the notion that correlation does not imply causation. This concept is simple in many ways, but translating the intuition underlying it in a deep way that provides a foundation for the necessity of more advanced training is critical. But putting aside the necessity of understanding this concept for more advanced econometrics training, translating a deep and practical understanding of the adage that "correlation is not causation" is also at the heart of the objectives of higher education generally to cultivate critical thinking skills that serve civil society generally. Given these realities, it is important for educators to take teaching of this simple concept very seriously, not only because of its discipline-specific and civil importance, but also because bridging simple conceptual understanding of the concept to a firm quantitative basis can be very difficult for students.

In this article, we present a novel approach for teaching the concept that correlation does not imply causation by bringing lightness to a very serious topic, while also providing options to bring interactive quantitative heft all within the classroom. The primary initial pedagogical technique we leverage to increase deep awareness and understanding of this concept is to use humor. Humor is arguably an underutilized tool in economics and econometrics training which has universal appeal and power for breaking down barriers in understanding, communication, and conflict, which can also increase engagement and improve student experiences. The core element of our approach that

leverages humor is the use of a classic segment of the long-running television show, *The Simpsons*, which is publicly available on YouTube. In the respective segment, which comes from Season 7 and an episode called "Much Apu About Nothing", classic examples are brought to the screen in a humorous way that show how easy it is to fall into the trap that correlation *does* imply causation. The segment manages to open minds and break down barriers with humor while also managing to illustrate how causal fallacies can lead societies down unproductive paths from a policy perspective to address societal challenges.

Beyond simply arguing for the value of humor in teaching this concept and illustrating the teaching opportunities that use of this television show segment brings, we provide several examples for how the segment can be used in the classroom and combined with various forms of assessment. Indeed, we have leveraged the humor and concepts in the respective video segment successfully in a variety of courses where prior statistical training is not assumed. Within in an econometrics course setting, we present an approach for leveraging the power of humor embodied in this segment to generate intuition and discussion while also directly engaging with quantitative heft and interactive use of software that applies core statistical concepts with data visualizations. Regardless of the setting, we also provide suggestions on teaching notes and options for assessing learning outcomes and experiences.

The rest of our paper proceeds as follows. In Section 2 we discuss prior work on humor in education, how Homer Simpson might aid learning as a classic "fool" character, discuss some scholarly work on *The Simpsons*, and summarize how the show has been used in economics education. In Section 3 we provide details on the segment of the aforementioned *Simpsons* episode and illustrate why it can be useful in teaching the 'correlation is not causation' concept. In Section 4 we present options for how to leverage the segment in a classroom setting and comment on our experience teaching with the respective video segment in various settings. Lastly we provide suggestions for assessment in Section 5 and we conclude in Section 6.

2 Humor and Homer as Teaching Tools

In a variety of fields, scholars are taking a deep look at the role of humor in our lives, including specifically as it pertains to education. Morrison (2008) provides an overview of a variety of strands of research and strategies as it pertains to humor and education, including on how humor can help combat emotions that are contrary to effective learning (e.g., fear, depression, and lack of engagement) and how effective use of humor can help with cognitive retention and deep learning. In a review of 40 years of research on humor and communications education, Banas et al. (2011) report that while the research is mixed, there is good evidence that positive and non-aggressive forms of humor can help create learning environments, enhance recall, and improve test-scores. From a pedagogical perspective, even beyond its potential to foster deep learning, basic efforts to bring humor into the classroom are also well-established as a means for breaking up potentially dry lecture material, removing barriers and fostering communication, and reducing stress, among others (Morrison, 2008; Rice, 2018). Publishers also recognize the value of humor in attracting readers as any casual perusal of, say, introductory economics textbooks will reveal a variety of cartoons and efforts to teach with humor (e.g., Krugman and Wells 2024).

Humor comes in many forms and purposes, but there are good reasons to suspect that humor that involves classic jester, fool, and/or trickster characters might be effective when used strategically in education. This perspective is important as it points to some of the reasons why even fictional modern characters, such as Homer Simpson, might be helpful in teaching sophisticated concepts such as the principle that correlation does not imply causation. The archetypal character of the court jester, fool and/or trickster is apparent in cultures worldwide and has deep roots in indigenous cultures and ancient story telling (Radin, 1956; Erdoes and Ortiz, 1999; Otto, 2001). While culturally these figures can take on a variety of characteristics, in story telling from ancient to modern these figures commonly exhibit characteristics such as foolish or naive behavior, self interest, satire, and learning from mistakes. For even a casual observer, it is arguably quite

clear that Homer Simpson can exhibit these kinds of themes and characteristics[1]. From a teaching perspective, a strength of these characters comes with how they allow audiences to play out logical positions and/or actions and assess consequences in a humorous and safe way that stimulates reflection. Leveraging such characters can be an effective strategy for all the modern reasons educators understand from education scholarship, but they can also be effective given humanity's hard-wired relationship to storytelling and the universal appeal of these kinds of characters.

When it comes to *The Simpsons*, a number of scholars have found merit in using the animated series in teaching and research, including in economics. Scholars in philosophy, popular culture, and religion have studied the show's perspective on these topics and ways in which the show can be used to study contemporary society (Irwin, Conard, and Skoble, 2001; Alberti, 2004; Feltmate, 2017). In economics specifically, there is a small set of recent scholarship illustrating means of using the show as a tool for teaching economics. This includes an edited volume with an array of economists using particular scenes or episodes from *The Simpsons* to teach various topics in economics (Hall, 2014), as well as several teaching pedagogy papers that leverage the show to teach a variety of topics (Hall, 2005; Luccasen and Thomas, 2010; Gillis and Hall, 2010), and an economics education research paper suggesting that pop-quizzes provided in conjunction with clips from *The Simpsons* that are designed to enhance learning are associated with higher test scores (Chu, 2014).

3 Homer the Fool, Lisa the Skeptic, and Bears in Springfield

The segments from *The Simpsons* that are at focus for this paper come from an episode called "Much Apu About Nothing", which is from Season 7 of the television show (Cohen, 1996). There

[1]Homer Simpson plays many roles in *The Simpsons*, from the mundane to the sophisticated and he can frequently be found in dialogue with his highly intelligent daughter Lisa who helps illuminate the error of his ways. As Section 3 articulates, this kind dialogue is featured prominently in the focal segment of this article. There is even a classic episode where Homer's adventures take on more mythic and classic trickster themes, which are even played out with perhaps the most commonly recognized trickster character in Native American story telling, the coyote, who is voiced by country music great, Johnny Cash (see Season 8, Episode 9 "El Viaje Misterioso de Nuestro Jomer (The Mysterious Voyage of Homer)").

are several topics in this episode that are prospectively useful for an economics or public policy course, particularly when it comes to immigration policy (the main focus of the episode), though in the segments we study the ostensible immigration focus is not apparent.[2] The segments we use from this episode are especially useful in dramatizing the "correlation is not causation" adage, but there are also elements that are illustrative of public economics topics, especially taxation and natural resource management.

In the clip we use in classroom settings, which is publicly available on *YouTube*[3], there are two core pieces of dialogue, which are useful to highlight. The first piece of dialogue comes from near the middle of the clip (minute 2:22 - 2:42). The backdrop of this dialogue is a citing of a wild bear in Homer's neighborhood. Both Homer and his next door neighbor, Ned Flanders, experience the bear first hand amidst ample comedic bits and both ultimately come to no physical harm. We also see the respective bear citing documented by the local TV news anchorman, Kent Brockman, from the local Channel 6 "newscopter". The scene culminates with a gathering of Springfield residents in front of the Simpson home after the bear has successfully been tranquilized and moved away in a joint effort by Springfield's finest and the US Forest Service, after which this exchange between Homer and Ned takes place:

> *Homer: "I'm sick of these constant bear attacks! It's like a freakin country bear jambaroo around here!"*
>
> *Ned: "Well now realistically, Homer, I've lived here 30 odd years, this is the first and only bear I've ever seen."*
>
> *Homer: "Hey, if you want wild bears eating your children and scaring away your salmon that's your business, but I'm not gona take it! Whose with me?!"*

Once Homer poses this question to the gathering crowd, a large number of Springfield residents indicate agreement with Homer and the crowd turns into something of an angry mob, which Homer

[2]Given current active debates about illegal immigration in the United States today, elements in the full episode may hit close to home for American audiences, particularly because the episode originally aired over 30 years ago in 1996. Considine (2014) also briefly touches on some of the elements in the "Much Apu About Nothing" episode that we focus on in our teaching method, however, their focus is on public policy and taxation rather than econometrics.

[3]Classrooms with access to the internet and a large enough screen with audio are particularly suitable for accessing the clip live in the classroom: `https://www.youtube.com/watch?v=OkV_ztynYDM`.

leads to Mayor Quimby's office in a chant that ends with "We don't want anymore bears!".[4]

This scene and dialoque simultaneously provide a first example of "Homer the Fool" illustrating the fallacy of correlation-based logic while also dramatizing how such logic can go horribly wrong. In Homer's mind, the powerful experience of one bear citing, albeit in his front yard, over shadows the clearer reality that this bear citing seems to be a random one-off encounter. Ned tries to pump the brakes on Homer's drama by injecting some logic that Homer should be well aware of since he is Ned's next door neighbor. But Homer's experience leads him to leap to the conclusion, based on correlation, that one bear citing equates to a full blown bear invasion. This is also a very good example of the oft-stated data analysis concept that one data point does not make a trend. The added element that Homer's flawed logic and enthusiasm convinces others and contributes to him leading an angry mob to demand justice of elected officials produces a clear potential implication of over-reacting based on correlation-based logic: hasty and ill-informed action can lead down unproductive paths that have implications for everyone. This linkage provides a natural segway for reinforcing the objective underlying all good econometric analysis, which is to be cautious with correlation and ideally go beyond it with more rigorous econometric estimation methods.

Upon entering into Mayor Quimby's office (with an appointment no less because Principal Skinner "phoned ahead"), the mob proceeds to express their concerns about the claimed "bear invasion", exclaiming: "Your city is infested with bears!" (Homer), and "They're smarter than the average bears, one of them swiped my pick-a-nick basket!" (Moe Szyslak), and "Think of the children!" (Helen Lovejoy). This clamoring for action and concern produces predictable results

[4]There is one feature of the chant Homer leads that is worth noting as it contains an LGBTQ+ reference. The full chant from the crowd is: "We're here! We're queer! We don't want anymore bears!". This chant is a play on a chant used by gay rights activists in the early 1990s: "We're here! We're queer! Get used to it!" (Wikipedia contributors, 2026). It is unlikely that the episode's author, David S. Cohen, intended this as a slur. By the mid 1990s, the "queer" label had already begun to be reclaimed by many in the gay community. Today the term is commonly used in reference to that community in popular culture, such as in the popular TV shows "Queer Eye for the Straight Guy", and "Queer Eye". A more likely interpretation is that David S. Cohen is doing what *The Simpsons* have always done: use contemporary pieces of popular culture in humorous ways, often with a twist or slant that places them in a new and humorous context for a laugh. For a mid-1990s audience, it is likely the writer is aware of the chant, and throwing it into an episode with a different purpose brings another element of humor for a contemporary audience because they are also likely aware of the chant. Nevertheless, because this context is unlikely to be apparent to younger audiences, and current audiences may have varying potential reactions to this terminology, instructors would be wise to be aware of, and sensitive to, this history. A brief discussion about this historical context could be useful as it provides instructors an opportunity to transparently acknowledge how popular culture references and terminology can shift over time.

from Mayor Quimby, who generally serves as the avatar of a corrupt politician. Rather than trying to get the right response to the facts, Mayor Quimby quickly promises to "take swift and decisive action against these hibernating hucksters" (i.e., the bears) to address the problem. The satisfied mob then leaves, but the scene ends with Mayor Quimby chuckling as he feasts the pick-a-nick basket that he apparently stole from Moe.

The next scene brings the core set of dialogue that even more directly addresses the fallacy of correlation-based logic. The exchange is between "Homer the Fool" and his always insightful daughter, Lisa Simpson. The clip follows Mayor Quimby's promise of action with a scene featuring many blaring sirens of "Bear Patrol" vehicles in Springfield streets, combined with air patrols via helicopters and jets. Homer and Lisa see a bear patrol vehicle drive by their house, and Homer, with his arms crossed in self-satisfaction at having seemingly solved a public safety problem, proceeds to have an instructive dialogue with Lisa (minute 3:26 to the end of the clip).

Homer: "Ahh, not a bear in sight. The bear patrol must be working like a charm!"

Lisa: "That's specious reasoning, Dad."

Homer: "Thank you honey."

Lisa: "By your logic I could claim that this rock keeps tigers away."

Homer: "Oh, how does it work?"

Lisa: "It doesn't work."

Homer: "Uh huh."

Lisa: "It's just a stupid rock."

Homer: "Uh huh."

Lisa: "But I don't see any tigers around do you?"

Homer (looking around for tigers to assess Lisa's claim): "Lisa, I want to buy your rock."

Lisa: Does not reply verbally and shakes her head indicating "No" while holding up her hand in a 'stop' like fashion, but she then agrees with a shrug and takes her Dad's money.

The clip then ends with a clever scene that illustrates challenges with taxation as it relates to natural resource management. The scene begins with Homer going to his mailbox after the mail

lady arrives, after which he notices that his paycheck has also arrived, which prompts him to say "Woohoo! A perfect day. Zero bears and one big fact hairy paycheck." After expressing dismay at seeing a lower amount of pay due to the "bear patrol tax", Lisa and Homer engage in another fun bit of dialogue as Lisa tries to inject some logic and perspective into Homer's misinformed perspective on taxes and tax burden.

The above set of dialogue between Homer and Lisa offers the core opportunity to illustrate the problem with correlation-based logic and what can happen when it is carried out to its natural end. Not only can correlation-based logic be fundamentally incorrect, but such logic can lead to unfortunate courses of action, which produce outcomes that are counter to one's best interest. The set up itself is a clever positioning of characters and dialogue as the audience laughs at the humor in the actions and flawed logic of "Homer the Fool", while the enlightened character, Lisa, attempts to correct her father's logical fallacies.

On the one hand, students and teacher benefit from being able to discuss problems with the statement that because there are no bears around "The bear patrol must be working like a charm!". This is a perfect example of a logical fallacy captured in the Latin phrase, *post hoc ergo prompter hoc* ('after this, therefore because of this'). Put another way, just because the bear patrol is present does not mean it is causing there to be zero bears. The bear patrol is seemingly correlated with the presence of bears, but the presence of the bear patrol does not mean there are no bears *because* of the bear patrol. This point alone lends itself to further dissection in a classroom setting.

The heart of the dialogue between Homer and Lisa then emphasizes these teaching opportunities even more clearly, as if the author isn't certain the audience has fully grasped the logical problems in Homer's initial statement. At first Lisa tries a more erudite approach, by labeling her father's logic as "specious", which is an adjective that is generally used to describe an argument or reasoning that seems right at first, but closer inspection reveals is fundamentally flawed. Homer being Homer, he doesn't know the meaning of the word and says, "Thank you honey", implying he thinks 'specious' is a compliment. Sensing she isn't making headway, Lisa then tries to make it even easier to understand with an object lesson taken from a simple rock. By way of simple

analogy, Lisa attempts to illustrate why Homer's views about the efficacy of the bear patrol could be wrong by suggesting that Homer's logic is tantamount to claiming that the rock in Lisa's hand keeps tigers away. Of course, this course of action does not penetrate Homer's thick skull as his feeble logic leads him to even believe Lisa and purchase her "tiger-preventing-rock". For students and teachers alike the combination of a very clear example of a "fool", which no one intentionally wants to be, offers a clear moral: just because something is correlated with something else, does not mean it causes something else to happen; don't be foolish and assume that is the case.

The added extension of dialogue at the end regarding the bear patrol tax brings the segment full circle by linking the problems with correlation-based logic to bread and butter public policy issues. Here teachers and students have yet more information to dissect. In particular, not only is the foolishness of correlation-based logic on display in the isolated example of Homer seemingly only hurting himself by buying Lisa's rock, but the audience is lead to see that such logic can lead to misguided policy that is costly and ineffective – clear examples of economic inefficiency.

Overall, this combination of multiple opportunities to explore the implications of correlation not implying causation manages to bring logical and statistical heft within a space filled with humor in the safe setting of a cartoon. Rather than meeting students with potentially dry quantitative logic only, or brow beating about the importance of the topic, the teacher has the opportunity to take a break from lecturing and let humor, Homer, Springfield, and Lisa open students minds to grasping the "correlation is not causation" adage in a deeper way. An added advantage of the clip is that it is short (totaling 4 minutes and 30 seconds). This means the segment can be incorporated into a lecture quickly to inject a bit of humor and perspective and not overwhelm a planned lecture.

4 Classroom Implementation

We have taught the correlation vs. causation concept using the above detailed segment of *The Simpsons* over several years in a variety of courses, including introductory microeconomics courses, upper division electives and first year graduate econometrics. Within an econometrics course, we

have successfully combined the use of this clip with other standard quantitative material in upper division and first year graduate econometrics in conjunction with interactive R code in one combined lecture. Outside of an econometrics course, we have found many opportunities to introduce this clip successfully. In the next two sections we outline these respective approaches.

4.1 Implementation within an Econometrics Course with Interactive R Code

In the econometrics courses where we have incorporated the segment from *The Simpsons* at focus in this article along side other related material, the students have been comprised of upper division undergraduates and first year masters students. In this setting, the core learning objectives have been to: review descriptive statistics, probability distributions, and basic hypothesis testing; train students to code using R in order to clean and organize data for descriptive and inferential analysis; and build capacity for rigorously studying relationships using standard regressions methods and quasi-experimental estimators (e.g., instrumental variables, differences-in-differences). Topics are introduced roughly in this order, with R coding exercises implemented concurrently throughout the semester in a separate R coding lab.

Within this arc of material, students are introduced to the theoretical and practical measurement of covariance after: reviewing the basics of descriptive statistics, probability distributions, and hypothesis testing; completing several R labs; and having introductory lectures on the power of randomization for causal inference. As the course progresses to develop students' basic regression toolkit, covariance and correlation are introduced formally as an initial means of studying relationships in generality in terms of some Y and any number of variables $\mathbf{X}$. It is at this point in the course that we often find students are confronted for the first time with the anecdotal idea that "correlation doesn't imply causation" and the formal quantitative means of understanding the relative strength of a correlation-based measurement as compared with quantitative empirical evidence of a causal relationship. To deepen students understanding of these concepts and prepare them for more advanced methods, we have found it beneficial to find ways to help students to bridge these conceptual and quantitative means of understanding.

It is at this juncture in the course where we have designed a standalone lecture to nudge students in this direction by combining quantitative measurement, our focal video clip from *The Simpsons*, additional comical content from the comic strip *xkcd*, and closely aligned R code that students can interact with. In this lecture we introduce the mathematical machinery behind covariance and the standard correlation coefficient, the limitations of these measurements, and motivate the need for more advanced tools. To solidify their quantitative and conceptual understanding we have found it productive to introduce a simple R script that implements study of covariance and the correlation coefficient, followed by viewing our focal video clip from *The Simpsons*, and discussion of additional related comedic content from the comic strip *xkcd*.

This progression of material has been productive at connecting concepts across the course at that point and in increasing student engagement in the classroom. In the respective R code that we have developed, the instructor opens the script and runs it live in the classroom. Example code for this purpose is provided in our Supplementary Materials. Two versions of this code are provided: a standard R script (.R) and an R markdown version (.Rmd). The primary segment of code that we leverage utilizes a randomly generated dataset, but we also provide example code using real data featured in a current working paper focused on the effects of net metering policies (Felix De Los Reyes and Akhundjanov, 2026). Time permitting for the instructor, all of the code can be run in class or particular segments of interest. There are several coding techniques that are embodied in the respective R code, which is also provided to students for exploration and extensions (e.g., reproducible code, plotting techniques, use of random number generators, etc.).

The core interactive component involves generating a fake dataset comprised of a hypothetical outcome and several independent variables with varying kinds of relationships. Using plotting functions in R, a number of these relationships are plotted interactively with the students during which the class has the opportunity to guess, based on a scatter plot, how strong the correlation is between the two variables. To generate further participation, instructors go around the room and ask students what they expect in terms of the sign and magnitude of the respective correlation coefficient. After the guessing is complete, respective scatter plots are updated to show the resulting

coefficient values. This provides a direct opportunity for students to engage with the quantitative and coding elements of these concepts. Example figures from this code are presented in Figure 1.

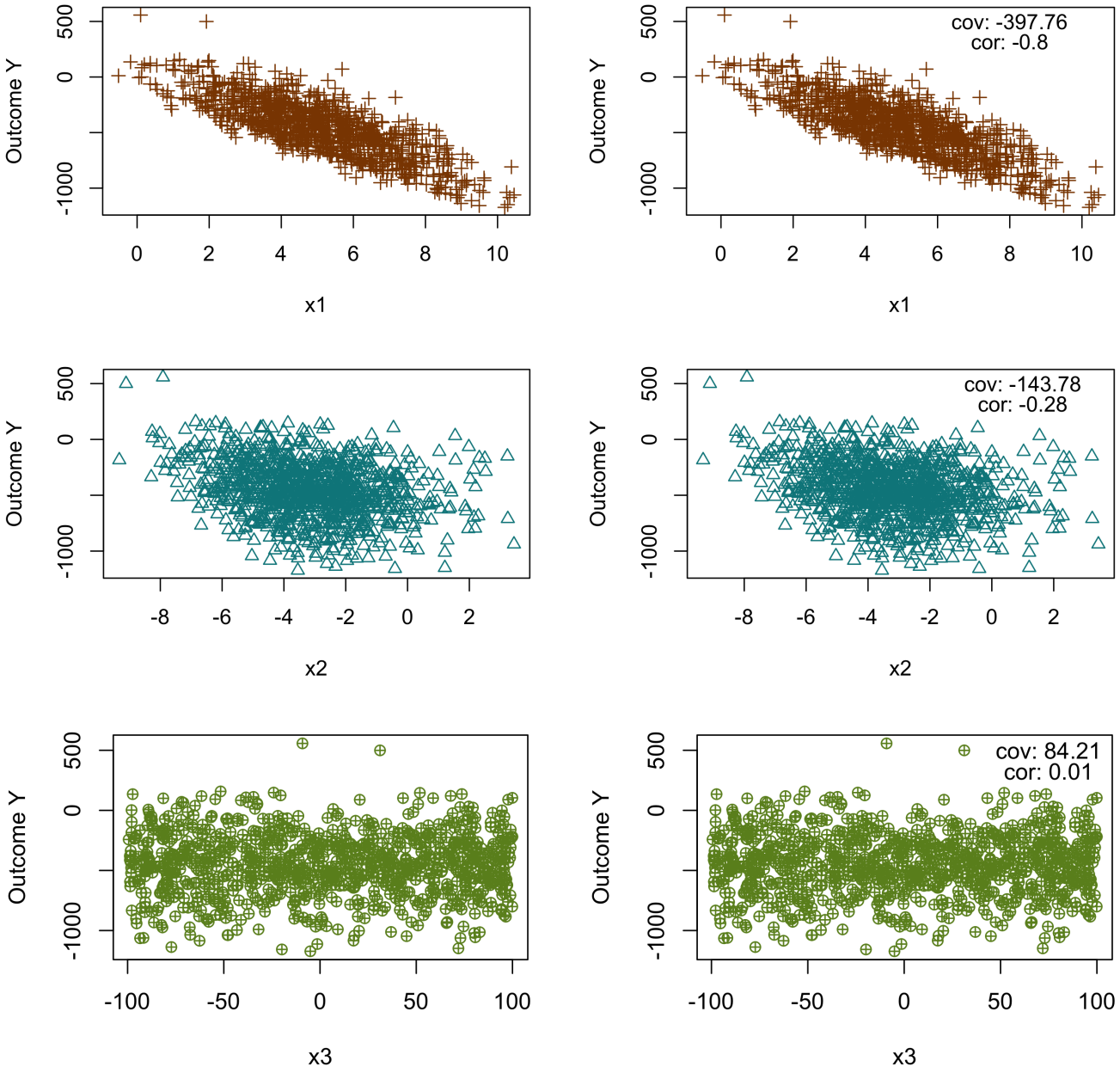


Figure 1: Example scatter plots generated with fake data using random number generators in R. During classroom implementation, plots without covariance and correlation values are plotted (example plots in the left column), students are then asked to guess the sign and magnitude of respective correlations, after which the true values are added (example plots in the right column).

After going through this code in class, instruction generally presents the focal video clip from

The Simpson followed by discussion that invites students to react and dissect the content in the video. An additional optional opportunity for comedic and thought-provoking effect is sometimes also added to this lecture at the end from the well known comic strip *xkcd* shown in Figure 2, which nudges students to fully grasp why correlation does not imply causation in order to understand the cartoon.

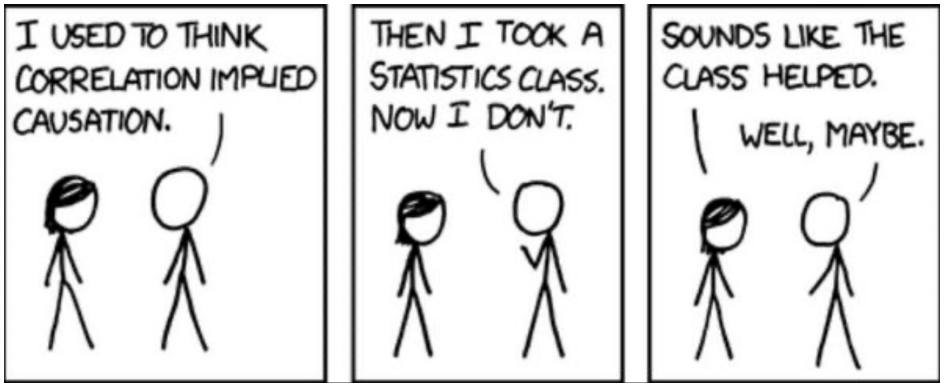


Figure 2: "Correlation" by Randall Munroe (xkcd #552), reproduced under the Creative Commons Attribution–NonCommercial 2.5 License (Munroe, 2009).

4.2 Implementation outside of an Econometrics Course

In our experience there are ample opportunities to use the focal video clip from *The Simpsons* to teach about correlation vs. causation in various courses. We have had particularly positive experiences in using this clip in introductory level microeconomics courses where students often have little to no statistical or econometric background. In our experience, students at this level are eager to learn more about what professional economists do, they are interested in learning about how economists study relationships, and they are eager to gather practical insights that can help them in their journeys and help them be more informed members of civil society. As such, we have found it beneficial to introduce simple econometric and "data analytics" concepts in introductory level courses, and related content is often covered in standard introductory microeconomics textbooks (e.g., Krugman and Wells 2024). We have also found it useful to discuss these concepts regularly

in more advanced elective courses.

In these settings, we have found it useful and interesting for students to emphasize the importance of the correlation vs. causation concept. This concept can be natural to introduce when discussing the basics of how to interpret graphical content of various kinds and simple interpretation of supply and demand plots. After initial discussions on these kinds of topics, we frequently will share the focal video clip from *The Simpsons*. At the simplest level, there is no need to introduce related quantitative concepts and the respective discussion can simply remain intuitive and conceptual while still substantively dissecting the content. In our experience, students enjoy the content, course discussions, and opportunities to be challenged to think carefully about causation as they advance their understanding of relationships, economics concepts, and public policy. Introducing these concepts by leaning into a humorous approach to convey and reinforce core concepts has, in our experience, been appreciated by students.

5 Classroom Experiences and Assessment

We have yet to have an experience where introducing the focal video clip from the *The Simpsons*, along side other related content described above, has not resonated well with students. As the adage goes, "humor is the best medicine" and in our experience we have found that any efforts instructors can make to introduce and discuss material in non-standard formats that leverage humor are greatly appreciated by students. The break it offers from lectures, the humor and substance it brings to a potentially dry topic, and the discussion opportunities it brings genuinely seem to enhance student experiences in the classroom.

From the teacher's vantage point, we can also attest to changes in the demeanor of the classroom that generally take place during and after seeing the clip. Indeed, many students visually increase their engagement and attention, there are often many audible laughs, and many students seem eager to engage in discussion to dissect the clip after watching it. While we cannot currently attribute improvements in course evaluations or test scores alone to use of this clip and associated

discussions, incorporating this approach to teaching about correlation vs. causation does seem to be one of a variety of positive elements of course content that students seem to appreciate that are contributing to increasing positive course evaluations. In an econometrics course setting, we have found the combination of comedic content along side quantitative theoretical machinery and interactive graphical exposition makes for a fun and memorable day in the classroom.

From a learning and assessment perspective, we have also successfully leveraged the focal video clip from *The Simpsons* and related material as part of short in-class assessments, problem sets, and exam questions. There are a variety of examples of short and simple classroom assessment techniques (CATs) that can be utilized for this purpose the day that these concepts are introduced or in subsequent class periods (Angelo and Zakrajsek, 2024). An advantage of CATs is that they can be simple and quick to prepare and introduce, and they can be assessed for credit or simply as a qualitative diagnostic in a more formative rather than summative manner. Commonly used examples include: the muddiest point, the minute paper, and the one-sentence summary, among many others. In problem set or exam settings, we have found it useful and interesting for students to sometimes include questions that ask students to recall details from the video clip itself, often times as simple extra credit questions. From a CATs perspective, the following are examples of simple ways that instructors can implement quick assessments to assess knowledge and progress in understanding the adage that "correlation does not imply causation".

- *Muddiest point:* After presenting respective lecture material using the video clip from *The Simpsons* and other supporting content, have students write down answers to the following questions for 1-3 minutes.
  - *What was the "muddiest point" (least clear) from today's class?*
  - *What concept(s) is (are) still not clear as it relates to the strengths and limitations of correlation-based measurement?*
- *Minute paper:* After presenting respective lecture material using the video clip from *The Simpsons* and other supporting content, ask students to take 1-3 minutes to compose answers to the following.
  - *What was the most important thing you learned today?*

  - *What question remains unanswered as regards the strengths and limitations of correlation-based analysis?*

- *Predict-Observe-Explain (POE):* After presenting respective lecture material using the video clip from *The Simpsons* and other supporting content, present a pre-composed hypothetical scenario that generates predictions on some outcome Y conditional on the presence/intensity of some variable X, and devise hypothetical outcomes to reveal to the students. After presenting the scenario, but not the outcome, take 3-5 minutes to lead students through the following.

  - *Have students predict what will happen based on the scenario in writing.*
  - *Reveal data on the outcome of the hypothetical scenario and prompt the students to observe/study the results. (In an econometrics course, a natural option is to generate a scatter plot from fake data representing outcomes between the hypothetical Y and one or more X in analogous fashion to the interactive R component described in Section 4.1.)*
  - *After giving students time to observe the outcome, prompt the students to explain the results using conceptual and/or quantitative content as applicable to the course.*

6 Conclusion

Economics and econometrics today are fast-moving spaces of scholarship where abilities to carefully interpret relationships and data are paramount. A foundational concept in all of economics and econometric training, and science generally, is the well-known concept that correlation does not imply causation. It has long been important in economics curriculum that students understand this concept, but with the rise of causal effects estimation as a cornerstone of econometrics training, it has become increasingly important for students to thoroughly grasp this concept. Moreover, in the modern era it is all to easy for false and/or unsubstantiated narratives to proliferate about events in the world and their origins. In this backdrop, in teaching about correlation vs. causation, teachers have the opportunity to impart knowledge that cultivates 'citizen scholars' who are learning how to learn and ideally contributing to the 'civil' part of civil society (Sanders, 2022).

In this paper we present a novel approach for teaching this foundational concept using humor as a vital part of the instruction. The core bit of humor that we use is a video segment from the long-running television series *The Simpsons*, which features Homer Simpson as a "classic fool"

character who clearly *does not* grasp the subtleties of why correlation does not imply causation. In the respective bit, Springfield experiences an encounter with a bear, which riles up the community who then demands action on the part of elected officials (Cohen, 1996). To some residents, Homer in particular, the expensive bear patrol that is produced from these demands clearly works, though he complains vociferously about the impacts to his tax burden. To motivate use of this segment, we discuss relevant scholarly literature on humor, and *The Simpsons*, we outline core elements of dialogue in the video segment, and we outline several approaches for in-class instruction.

For in-class instruction, we advocate for two approaches that are amendable to econometrics courses in particular, but also a variety of other courses. Within an econometrics course setting, we detail an approach for how use of the video segment can be combined with other standard quantitative measures and also combined with interactive R code for an in-class activity. We also detail options for how our teaching approach can be combined with various forms of assessment to better gauge learning outcomes.

In our experience implementing these approaches over several years and courses we can unambiguously report high student satisfaction with this approach. Rather than gloss over content which many may find elementary, or brow beat students by stressing "how important" the concept is, we advocate for leaning into an approach that gives students a break from a standard lecture format and breaks down barriers through humor in a thorough and interactive manner. The case study we present here offers an example for how to do this for teaching a foundational concept in econometrics and statistics generally. This approach, however, is general and can be adapted to any number of topics that might be combined with video or other content that lightens the mood in a meaningful way to enhance learning and better engage students.

References

Alberti, J., ed. 2004. *Leaving Springfield: The Simpsons and the Possibility of Oppositional Culture*. Detroit, MI: Wayne State University Press.

Angelo, T.A., and T.D. Zakrajsek. 2024. *Classroom Assessment Techniques: Formative Feedback Tools for College and University Teachers*, 3rd ed. Hoboken, NJ: John Wiley & Sons.

Angrist, J.D., and J.S. Pischke. 2010. "The credibility revolution in empirical economics: How better research design is taking the con out of econometrics." *Journal of economic perspectives* 24:3–30.

—. 2014. *Mastering'metrics: The path from cause to effect*. Princeton university press.

—. 2009. *Mostly harmless econometrics: An empiricist's companion*. Princeton university press.

Banas, J.A., N. Dunbar, D. Rodriguez, and S. Liu. 2011. "A Review of Humor in Educational Settings: Four Decades of Research." *Communication Education* 60:115–144.

Chu, S.Y. 2014. "An assessment of teaching economics with The Simpsons." *International Journal of Pluralism and Economics Education* 5:180–196.

Cohen, D.S. 1996. "Much Apu About Nothing." Television series episode.

Considine, J. 2014. "Mayors, Monorails, and Morons: Government Failure in The Simpsons." In J. Hall, ed. *Homer Economicus: The Simpsons and Economics*. Stanford University Press, pp. 94–106.

Erdoes, R., and A. Ortiz, eds. 1999. *American Indian Trickster Tales*. New York: Penguin Books.

Felix De Los Reyes, J., and S. Akhundjanov. 2026. "Do Lower Net Metering Payments Reduce Grid Exports? Evidence from U.S. Solar Utilities." Unpublished, Access to data available at https://github.com/jfelix-dlr/net.metering.

Feltmate, D. 2017. *Drawn to the Gods: Religion and Humor in The Simpsons, South Park, and Family Guy*. New York University Press.

Gillis, M.T., and J.C. Hall. 2010. "Using The Simpsons to Improve Economic Instruction Through Policy Analysis." *The American Economist* 55:84–92.

Goldberger, A.S. 1991. *A course in econometrics*. Harvard University Press.

Hall, J., ed. 2014. *Homer Economicus: The Simpsons and Economics*. Redwood City, CA: Stanford University Press.

Hall, J.C. 2005. "Homer Economicus: Using The Simpsons to Teach Economics." *Journal of Private Enterprise* 20:168–176.

Imbens, G.W., and J.M. Wooldridge. 2009. "Recent developments in the econometrics of program evaluation." *Journal of economic literature* 47:5–86.

Irwin, W., M.T. Conard, and A.J. Skoble, eds. 2001. *The Simpsons and Philosophy: The D'oh! of Homer*, vol. 2 of *Popular Culture and Philosophy*. Chicago, IL: Open Court.

Krugman, P., and R. Wells. 2024. *Microeconomics*, 7th ed. New York, NY: Worth Publishers.

Luccasen, R.A., and M.K. Thomas. 2010. "Simpsonomics: Teaching economics using episodes of The Simpsons." *The Journal of Economic Education* 41:136–149.

Morrison, M.K. 2008. *Using Humor to Maximize Learning: The Links Between Positive Emotions and Education*. Lanham, MD: Rowman & Littlefield Education.

Munroe, R. 2009. "Correlation." `https://xkcd.com/552/`, xkcd comic #552. Licensed under CC BY-NC 2.5.

Otto, B.K. 2001. *Fools are everywhere: The court jester around the world*. University of Chicago Press.

Radin, P. 1956. *The Trickster: A Study in American Indian Mythology*, K. Kerényi and C. G. Jung, eds. London: Routledge and Kegan Paul, Commentaries by Karl Kerényi and C. G. Jung.

Rice, G.T. 2018. *Hitting Pause: 65 Lecture Breaks to Refresh and Reinforce Learning*. Routledge.

Sanders, M.L. 2022. *Becoming a Learner: Realizing the Opportunity of Education*. MachMillan Learning.

Wikipedia contributors. 2026. "Queer Nation." The article discusses the activist group Queer Nation and its slogan "We're here, we're queer, get used to it.".

Wooldridge, J.M. 2025. *Introductory Econometrics: A Modern Approach*, 8th ed. Boston, MA: Cengage.