# Paper Outline

*Please ignore the writing style. This is an outline of my ideas, so the stylistic choices are not optimal.*

## 1 Main Questions

In section 1

- My main request is that you take a look through each of the figures and tables in order without reading any of the text and see if you can understand the paper. I want to finalize all of these tables/figures before I begin writing.
- Are Figures 10-12 worth seeing?. I binned at the 2 week level to get more power and I think this looks decent. I think it at least gets the point across that there are diminishing returns to a moratorium.
- Still unsure whether to include the event study graphs or not. Here I put in the lead/lag figures (Figures **??**, **??**, **??**, **??**, **??**, and **??**) so that we can see the big dip. I provided two types of figures, one where I include 2 leads and lags by 1 week each, and one where I have 1 lead and lag that is at the 6 week level (the approximate median of moratorium length - things get a little sketchier if I go too far out). If people want to see event studies, I can throw them in the appendix with everything else with a big disclaimer explaining why they don't look terrific. They still pass an F-test, so I don't think I'm hiding anything - just doesn't look as appealing. Alternatively, Kevin recommended I try an event study without staggering the treatment effect - so the "0" period would be the entire moratorium period and "period 1" would be week after a moratorium ends and so on. This will probably get my a nice dip, and will allow me to compare all data to the week before rather than all of my data outside of the small 4 week period around moratoriums. Would love to hear thoughts on this.
- How does everyone feel about robbery/burglary having a tight null result being evidence of no change in policing during a moratorium (Table **??**)? Personally, I feel that robbery/burglarly should have absolutely no effect when a moratorium occurs, as I doubt college students are committing these crimes. However, since they have a tight null result (and the coefficient sign is positive), I think this makes for good evidence.

- For the Empirical Strategy section, I am curious how this should be presented. I want to talk about all the assumptions that need to be satisfied and the steps I take to convince you I meet these assumptions, but many of these tables I want to present later on in the paper. For instance, I specify that common trends and no change in reporting needs to be satisfied, but I want to present the common trends portion in the Main Results section where I have leads/lags. Do I just state the results from those later sections and say that they will be discussed in more detail later?
- If you have time, look through the introduction to see if my outline hits the right points. In particular, I'd want to know what types of literature I should really hit on. This is a very understudied topic, and most of the relevant fraternity literature I believe should occur in the Background section whereas the main literature in economics on alcohol/sexual assault in college should be presented in the introduction.
- If you have time, look through the entire outline to see if the story makes sense, and maybe evaluate if I am missing something crucial to the story.

# 2 Introduction

**Why is this important? Why is this potentially interesting? Is there a clear cut answer that is obvious, or is the answer not-so obvious?**

This paper is important because it is the first to estimate the causal effects of fraternity campus-wide moratoriums on crime. Moratoriums became a common policy technique for school administrators and student-groups to employ on their school fraternity life. In particular, the policy involves placing a temporary ban on all fraternity social events with alcohol. This technique is most commonly used after an unexpected shock to fraternity life at a university. These shocks come in the form of fraternity related deaths, behavior violations (e.g. hazing violations/inappropriate behavior gone viral), or sexual assault allegations.

How these moratoriums actually effect student behavior across the university is ambiguous. On one hand, prohibiting alcohol from fraternities may reduce alcohol consumption through several channels. First, fraternities are a common source of alcohol for underage drinking, as fraternities are typically a mix of students aging 18 to 22 (e.g. freshman - seniors). The inclusion of legal-age drinkers and large open-invitation social events allows for easy access to alcohol for underage students. Second, fraternities tend to live in their own private residences and host their social events within their residences. These houses are free from the typical university oversight such as residence-hall employees that could potentially intervene if rules are being violated or behavior is getting too dangerous. With a moratorium implemented, these large unregulated events with easy access to alcohol may decrease the amount of alcohol consumption. On the other hand, there are several mechanisms as to why these policies may have the opposite effect. First, without fraternity events, students may substitute away from consuming alcohol at fraternity houses to potentially riskier places. As a stylized example, members could continue to consume alcohol socially, but do so in locations that are far away from any potential oversight. Second, there could be a defier effect where fraternity members

now want to engage in *more* alcoholic activities now that it is prohibited. Therefore, it is not clear how moratoriums will affect behavior across a university campus.

**What do we know about this topic?**

*Alcohol Literature/Drug Literature*

We know that college partying leads to more sexual assault using variation in sports games (Lindo/White). We know that harsher punishment (through zero-tolerance driving laws) leads to less drinking among college-aged individuals (Liang and Huang), additional sanctions for DUI people lead to less reoffending (Hansen). More financial aid leads to more heavy binge drinking (Cowan). Legal access to alcohol hinders academic performance (Ha and Smith). Peer influences on alcohol consumption (Fletcher).

Why do we care about alcohol? Alcohol is bad because it can lead to undesirable actions such as increased assaults (Dobkin), sexual assault victimization (Hansen/Chalfin), lower GPA, reduced cognition etc. Alcohol has extreme health effects (Dobkin and Carpenter) Find some papers to back all of these things. Binge drinking affects drunk driving (Francesoni).

Why do we care about drugs? Marijuana usage leads to higher propensity to drop out of college (McCraffey). More access to marijuana leads to lower academic performance (Marie)

*Fraternity Literature*

We know that fraternity membership increases the likelihood of graduating on-time, and has a small negative impact on grades (Routon and Walker/Mara, Davis, Schmidt). If a roommate joins a fraternity, then more likely for that person to join (Sacerdote). Fraternities cause binge drinking (DeSimone). Presence of a fraternity makes more binge drinking (Chaloupka). Fraternity parties had higher levels of intoxication than others (Glinderman)

*Downfalls of the fraternity literature?*

All of the fraternity literature relies on survey data.

**What don't we know? Why don't we know this? What are the frictions?**

We don't know how fraternity activity causally affect campus-wide alcohol/drug/sexual assault behaviors. This is because of a lack of variation, and the difficulty in obtaining data. We also don't know how much fraternities contribute to alcohol problems in universities since it has, until now, been impossible to link fraternity behavior to alcohol violations with the data that is available.

**What do you do/contribution?**

I use the variation in timing from campus-wide moratoriums across 38 universities to estimate the causal effect of moratoriums on alcohol, drug, and sexual assault offenses. I construct a novel data set that contains fraternity moratorium dates linked with incidence-level reports of all crimes that are reported by each university police department. I use a difference-in-differences design and find that moratoriums decrease alcohol offenses by BLANK campus wide. These effects are most salient on the weekends (Fri-Sun) and non-existent on the weekdays (Mon-Thurs). Moreover, I find evidence that drug offenses also decline during these moratoriums, although there is little evidence to support reductions in sexual assault offenses.

My contribution is the data - it's the first time the daily crime logs are used at such a large scale for so many universities compiled. My other contribution is it's the first study to look at the effects of fraternity moratoriums on drinking behavior. It's also the first study to estimate how much fraternities can attribute to drinking behavior. Advances the literature on how partying effects crime and substance abuse. Adds to the literature on fraternities and drinking.

# 3 Background on Fraternities

Questions to answer: who are in fraternities? Why do fraternities exist? What percentage of universities are fraternities? What is the difference between an IFC fraternity and a "business" or "multi-cultural" fraternity? What do you have to do to be in a fraternity? How do people perceive fraternities? How proportion of universities are IFC?

Fraternities are a ubiquitous, and longstanding tradition in the United States. They maintain a presence at 800 universities across the US (Hechinger 2017) with the oldest fraternities forming in the mid 1800s (IFC website). Fraternities consist of students from families of higher-than-average educational attainment and income; they are predominantly white, and prior research has linked fraternity membership to increases in graduation rates (Routon and Walker 2014), income (Mara, Davis, and Schmidt 2018), and GPA (DeBard and Sacks 2011). However, members spend approximately 2 more hours partying than nonmembers (Routon and Walker 2014).

Fraternities have a unique structure of organization. The largest fraternities have national coverage, spanning across many of the top universities. Each fraternity sets their own guidelines for their chapters (e.g. a small satellite of a fraternity at a unique university) to follow. Appendix Figure (Sigma Alpha Epsilon Figure) shows an example of the guidelines that each chapter of the Sigma Alpha Epsilon (one of the oldest and largest fraternities) must abide by; their members are required to maintain a GPA above a chosen threshold, pay membership fees, participate in a minimum number of philanthropy hours, and attend a sizable majority of chapter meetings/rituals. These types of guidelines are commonplace in the types of fraternities that this paper focuses on: the Interfraternity Council (IFC) fraternities. IFC fraternities are colloquially known as the 'social' fraternities - while they participate in philanthropy and professional development, these are not their sole purpose. According to their creed, they "exist to promote the shared interests and values of our member fraternities: leadership, service, brotherhood and scholarship" (Hechinger 2017). IFC fraternities belong to the North American Interfraternity Conference (NIC), a trade association representing the fraternities which, according to their constitution, "promote the well-being of its member fraternities" by offering services such as "cooperative action in dealing with fraternity matters of mutual concern, research in areas of fraternity operations and procedures, fact-finding and data gathering, and the dissemination of such data to the member fraternities." Importantly, IFC fraternities are the fraternities subject to moratoriums in the sample.

There are three sources of regulation for each IFC fraternity chapter: the chapter's national headquarters, the chapter's university, and the university's own IFC council. As described

above, the chapter's national headquarters can set guidelines for each for each of their satellites to follow. However, each chapter is also subject to their university's own rules which may be more strict. For instance, universities can impose rules on their fraternities use of school property for their events and recruitment. Failure to abide by these rules can result in a fraternity being unrecognized by the university which is costly to a fraternity - a fraternity relies on the university for recruitment. Lastly, each university has it's own IFC council - a group of student representatives from each recognized IFC fraternity chapter which regularly meet with university staff to discuss rules/boundaries.

To become a member of an IFC fraternity, prospective members must apply during recruitment events that take place in the fall or spring semester (or both). Once a chapter and prospective member jointly accept membership, the new member (the "pledge") must abide by the chapter, university, and IFC council's guidelines. Upon membership, pledges may be invited to live within the chapter's fraternity house which can reside either on or off campus. These properties usually house the majority of each chapter's members. However, chapter houses are not managed by university-housing, and hence, do not have university employees enforcing the legal drinking age or curfew. Hence, fraternities have been found to be a reliable source of alcohol for first-year undergraduates (Mara, Davis, and Schmidt 2018).

IFC fraternities represent a relatively small portion of the undergraduate enrollment in the sample. On average, IFC fraternities represent approximately 5% of all undergraduate enrollment. However, there is a substantial amount of variation with the maximum being over 10% and the minimum being 1%.

- Figure **??**: fraternity membership guidelines (Appendix A)

# 4 Moratoriums

**What are moratoriums?**

Moratoriums are defined as a temporary ban on alcohol at social events for IFC fraternities. There is some heterogeneity within these moratoriums such as some schools cancel all third party events or require some sort of training to get out of a moratorium.

**How did you get these dates?**

I received these moratorium dates by searching news articles in addition to conversations with fraternity and sorority life advisers. The dates were verified either by newspaper article, Freedom of Information Act Request, or a conversation with the university's Fraternity and Sorority Life adviser. While I verified 38 university's moratoriums, there are other moratoriums that occurred in this time period that could not be verified and have been excluded from the sample (e.g. Miami University). Therefore, this sample represents the schools in which a fraternity moratorium occurred and their respective dates could be verified.[1]

[1]San Diego State actually had 3 moratoriums, 1 which is not included in the sample since I could not verify the exact end date. Hence, the sample treats this period as "untreated" when it is indeed treated. However, this moratorium was extremely short (below 3 weeks) and the analysis is robust to leave-one-out so I decided to leave in SDSU since it has 2 other moratoriums.

**Why fraternity moratoriums occur, how long they last for, and how wide-spread is this practice across the US?**

Moratoriums occur because of a particular triggering event. This event can be a prominent sexual assault allegation, a fraternity-related death (usually due to alcohol poisoning), or bad behavior that was brought to light (e.g. a hazing violation or inappropriate behavior caught on video and gone viral).

Moratoriums can be implemented by two sources of jurisdictions: the university or the Interfraternity Council. When a moratorium is implemented by the university, the university sets the guidelines that fraternities must abide by during the moratorium. On the other hand, an IFC-implemented moratorium is student-enforced. This means that the overarching IFC council (a group of student representatives from each fraternity chapter) is responsible for oversight. Heterogeneity analysis on the differences between these is explored later in the paper.

It is not always known how long a fraternity moratorium will last when a university implements one. For instance, some universities may "re-evaluate" the situation in a set amount of time or impose certain criteria that fraternities must abide by in order to lift the moratorium (e.g. sexual assault training). In other cases, moratoriums may be cut short by outside pressures from the fraternities themselves.

- Figure **??**- Distribution of lengths (Main Figure)
- Figure **??**- Distribution of why moratoriums happen (Main Figure)
- Figure **??**- Map of locations of universities (Main Figure? or Appendix?)
- Table **??**- List of schools and their dates (Appendix Table)

# 5 Data

**Why is this data unique? What benefits does this data have over other primary sources?**

This data is unique because it is the first data set to combine multiple university's universe of crimes at an incidence level. This data comes from Daily Crime Logs, which are mandated by the federal government under the Jeanne Clery Act for all universities that receive federal funding. The Daily Crime Logs are incidence-level reports of all activity reported by a university-specific police department. The logs must include information such as, date reported, date occurred, incident description, general location, and a case-ID.[2].

I use the Daily Crime Logs over two federal sources of crime data: the National Incidence Based Reporting System and the Uniform Crime Reports. While both the NIBRS and UCR data sets are nationally maintained by the FBI, these data sets have many shortcomings. First, no police department is mandated to report their crimes to these sources. This creates a large missing data problem where many police departments fluctuate between reporting

[2]While this information is mandatory, much of the time certain fields such as date occurred and general location are missing

and non-reporting. Moreover, each of these sources are either at too high of aggregation (monthly) or do not include alcohol offenses unless they are arrests. Given that students are generally not arrested for alcohol, the Daily Crime Logs represent the most accurate picture of campus alcohol usage at the incidence-level.

**How did you put these crime logs together?**

Each of these Daily Crime Logs were requested from their respective university police departments. While this means I have the universe of crimes at each police department, this comes at the cost of harmonization - each department has different ways of reporting their incidence descriptions. To mitigate this, I pattern-matched using regular expressions on each incident description. In particular I first observed the most common ways each type of violation was described at each university. Then, I used key-words to match on the descriptions. Importantly, the words used to match can only match to an offense a maximum of one times. For instance, if a incident description reads "alcohol offense - dui - minor in possession," then the words "alcohol," "dui," and "minor in possession" would all match this offense as an alcohol offense, but it would only be counted 1 time. Furthermore, since this process uses regular expressions, the word "sex" would match on descriptions such as "sex offense" or "sexual assault in the first degree."

**How well does this method of construction work?**

- Figure **??** - Example of crime log (Appendix Figure)
- Table **??** - Benefits of this data over others figure (Appendix Table)
- Table **??** - Words used to match (Main Table)
- Table **??** - Matching table results with top 15 from each category (Appendix table)

**What schools are in the data? What does the sample generally look like?**

Describe the summary statistics table in detail. Note that my sample is generally larger universities that are above 20k students and crimes are reporting quite differently across universities.

- Summary Statistics Table **??** - university characters + offense characteristics + moratorium characteristics (Main Table)

**What are the limitations of the data?**

Limitations include some missing data, missing residence hall offenses (e.g. offenses that are not reported to the campus police). Moreover, cannot bin this stuff perfectly. Some schools are missing date occurred and I have to use date reported (this occurs in X% of schools).

# 6 Empirical Strategy

**What is the primary specification?**

The preferred specification (specification (3)), is of the following form:

$$Y_{u,t} = \beta Moratorium_{u,t} + \gamma_u + \phi_t + \epsilon_{u,t}$$

where $Y_{u,t}$ is the outcome of interest in university $u$ in time $t$, $Moratorium_{u,t}$ is a value between 0 and 1 which equals 1 if a univeristy $u$ is experiencing a moratorium in time $t$, $\gamma_u$ are university fixed effects and $\phi_t$ are day-by-month-by-year fixed effects, $\epsilon_{u,t}$ is the error term. *I choose this specification because it has no negative weights so sign reversal is not possible.*

I use a difference-in-differences design utilizing the variation in the timing of the moratoriums. I use multiple specifications with different time controls. Note that this design is not a staggered adoption - schools can go 'in-and-out' of treatment multiple times. Because of this, none of the new estimators from Callaway and Santanna and Abram and Sun cannot be used. While DeChaisemartin and DeHouteville can be used in some cases of **multiple** treatments, in this case it cannot without tweaking to the package which will violate the assumptions of the model. In particular, if a school has 2 treatment dates, A and B, then between A and B will be represented as "treated" instead of "untreated." Clement advised that I could either change the identifier of the university that has multiple treatments (e.g. create a new identifier for the university after it is treated once), or I could use it as-is and accept that it does not identify what I want. However, using the DeChaisemartin and Dehouteville decomposition of TWFE shows that I do not have any negative weights on my primary specification (university and day-by-month-by-year fixed effects) and therefore sign reversal is impossible.

**What are the assumptions of the model?**

These are the main assumptions of the model: parallel trends, moratoriums are not correlated with unobservables (e.g. the error term) that affect the dependent variable, no long-run effects, and no systematic changes in reporting/policing due to a moratorium.

The parallel trends assumption is checked using 1 and 2 week lead and lags. This shows that universities are not implementing moratoriums because their alcohol/drug/sexual assault violations are increasing or decreasing. Moreover, each moratorium tends to occur almost immediately following a triggering event. For example, any time there is a fraternity-related death, the moratorium is implemented within a 3-day period (maybe I should have a chart of this?), and hence, there is no anticipatory effects given this rather instantaneous shock.

The omitted variable bias assumption is checked using a variety of different fixed effects to allow for flexibility - more on this later in the results section.

The no long-run effects assumption is checked using the specification with 2 week leads/lags. I also include 6 week lead/lag (binned together) to allow for more power within a point estimate. This can be seen in Figures 4-9 (thoughts on which one looks more convincing/should be put in the paper?).

The no-systematic changes in reporting is checked using a regression of whether the timing between the date-reported and date-occurred changes during moratorium days relative to non-moratorium days. There is no difference, and this is a very precise 0.

The no-systematic changes in policing is shown with the robbery/burglary regression where I combine robbery and burglary offenses together and regress on the moratorium indicator. Robberies and burglaries are a very tight and insignificant zero.

- Table **??** - TWFE weights table (Appendix? Is this necessary or can I just mention it?)
- Event study with TWFE and F-test of trends (Appendix because isn't exactly what I want) - **unsure about this one still**

# 7 Main Results

*What is the story behind these results?*

The story is that moratoriums have a lasting effect only when in place. This effect is not "by-chance" given the robustness to the many different controls I throw at it. Moreover, this effect is most prominent on the weekends, and non-existant on the weekdays. This matches with intuition, as fraternity parties/activies are more likely to occur on weekends rather than weekdays. Furthermore, it may be worrying that these moratoriums change behavior in universities forever (e.g. fraternities learn their lesson). However, this is shown to not be the case with my lead/lag figures.

- Table **??**- goes through the varying specifications with different controls. (Main Table)
- Table **??**- compares the full sample to weekend/weekdays - shows that weekends are where the effects are (Main Table)
- Figures **??**, **??**, **??**, **??**, **??**, and **??** - Lead and Lag table of 2 weeks OR lead and lag of 1 six week period. - (Main Figure) - **Should I do a traditional event study instead??**

## 7.1 Robustness

**How robust are your results? Can they survive a different estimator? Does one school drive the results? Are the moratorium effects driven by changes in reporting/policing?**

These results are robust. I use poisson regressions as an alternative to OLS given the count-nature of the data. In addition, I do a leave-one-out specification where I drop one university at a time and estimate the main model. There appears to be one university that has a decent amount of leverage in alcohol offenses (West Virigina University). When I analyzed the data for this school, it appears that WVU has quite a few outliers that come in times of non-moratoriums. While this could be solved by dropping outliers over a few standard deviations of the mean, I don't think this is a smart decision. Large fraternity parties could be the contributors of these large outliers where there are 30 alcohol violations in a night, and

moratoriums may indeed be preventing such large outlier events from happening. Lastly, these results are not driven by changes in reporting or policing. To check if reporting is changing, I estimate whether there is a change in the proportion of crimes that are reported with a 3 day lag (this is based on Sahay's work). There appears to be no change in reporting except for a strange effect for drug offenses ion the weekdays. I believe that this is simply multiple-hypothesis testing, as I can't think of a theoretical reason why this would be so. The effects of robbery/burglary show that there is no de-policing occurring as there is no change in the amount of robberies/burglaries reported to the police during moratoriums. These are extremely tight zeros.

- Tables **??** and **??** - Poisson regression table to mimic the tables (Appendix)
- Figures **??**, **??**, and **??** -Leave-one-out analysis with preferred specification (Appendix)
- Table **??** - Robbery/burglary regressions (Main Table?)

# 8 Heterogeneity

**What length of a moratorium is best? Does the length of the moratorium matter? Some schools have extremely long moratoriums, so the effects may fade.**

- Figures **??**, **??**, **??** - Treatment effect broken down into weekly/monthly component (Main Figure)

**Does the length of the moratorium have an effect on what happens after the moratorium? Do longer ones have lasting effects?**

- Need a figure here? Hard question to answer. Maybe a regression of the outcome on the lag for week 1 interacted with different quantiles of length?

**Method of Oversight: Who should oversee these? Should it be the university or the student's themselves? Why should we expect one to work over the other?**

The method of oversight that works best is the university. This is likely because university's actually impose their rules instead of the students themselves. Students are liekly only implementing these moratoriums to "save face" instead of actually restricting their behavior.

- Table **??** -Main Figure/Table of differences between IFC/University enforced.

## 8.1 What type of triggering event has the biggest effects

Some types of events may be more salient than others and cause bigger effects (e.g. a death).

- Figure **??** - Table on differences in effects (Main Table)

# 9 Discussion

What on earth do you talk about here that is different from the conclusion? (Routon and Walker 2014)

# 10 Conclusion

# 11 References

Hechinger, John. 2017. *True Gentlemen: The Broken Pledge of America's Fraternities*. 1st ed. Hachette Book Group, Inc.

Routon, P. Wesley, and Jay K. Walker. 2014. "The Impact of Greek Organization Membership on Collegiate Outcomes: Evidence from a National Survey." *Journal of Behavioral and Experimental Economics* 49 (April): 63–70. https://doi.org/10.1016/j.socec.2014.02.003.

# Appendix

# A Next

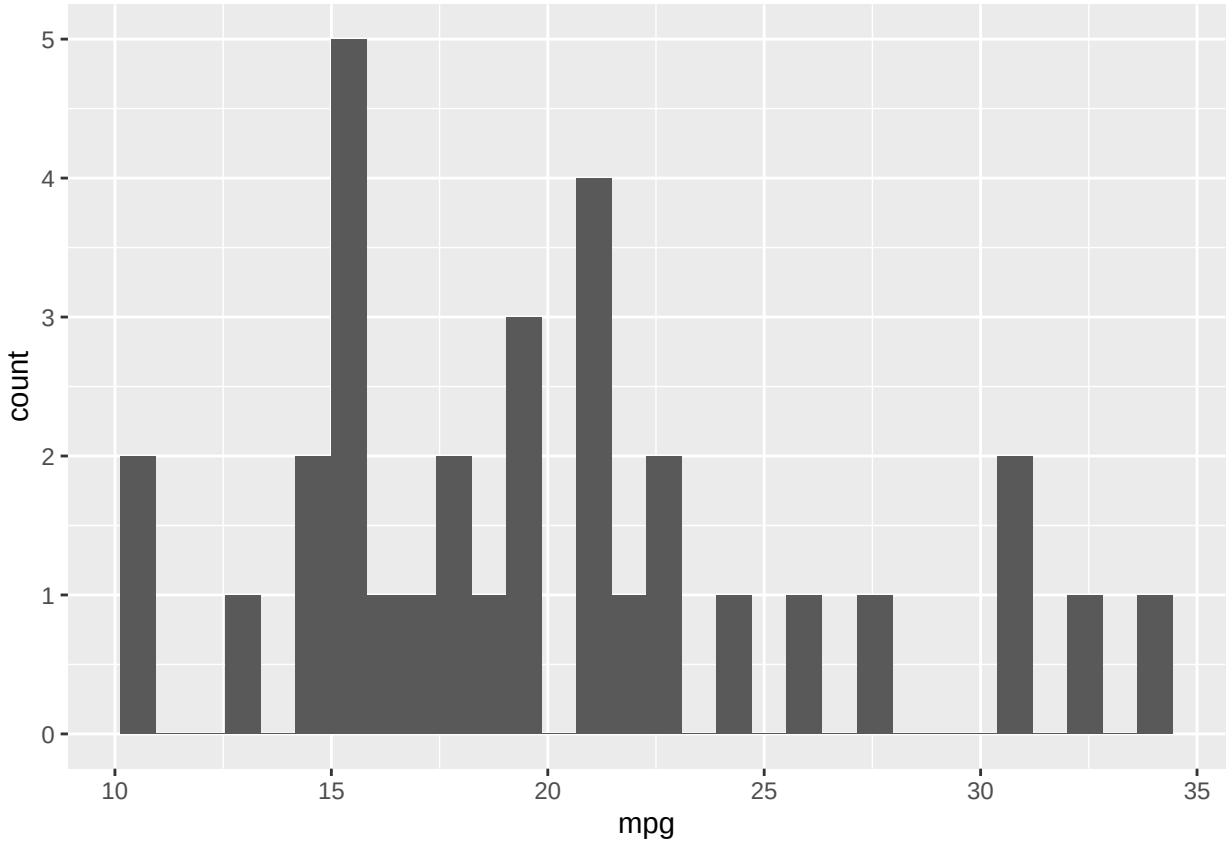


Figure A1: hi

# B TWFE

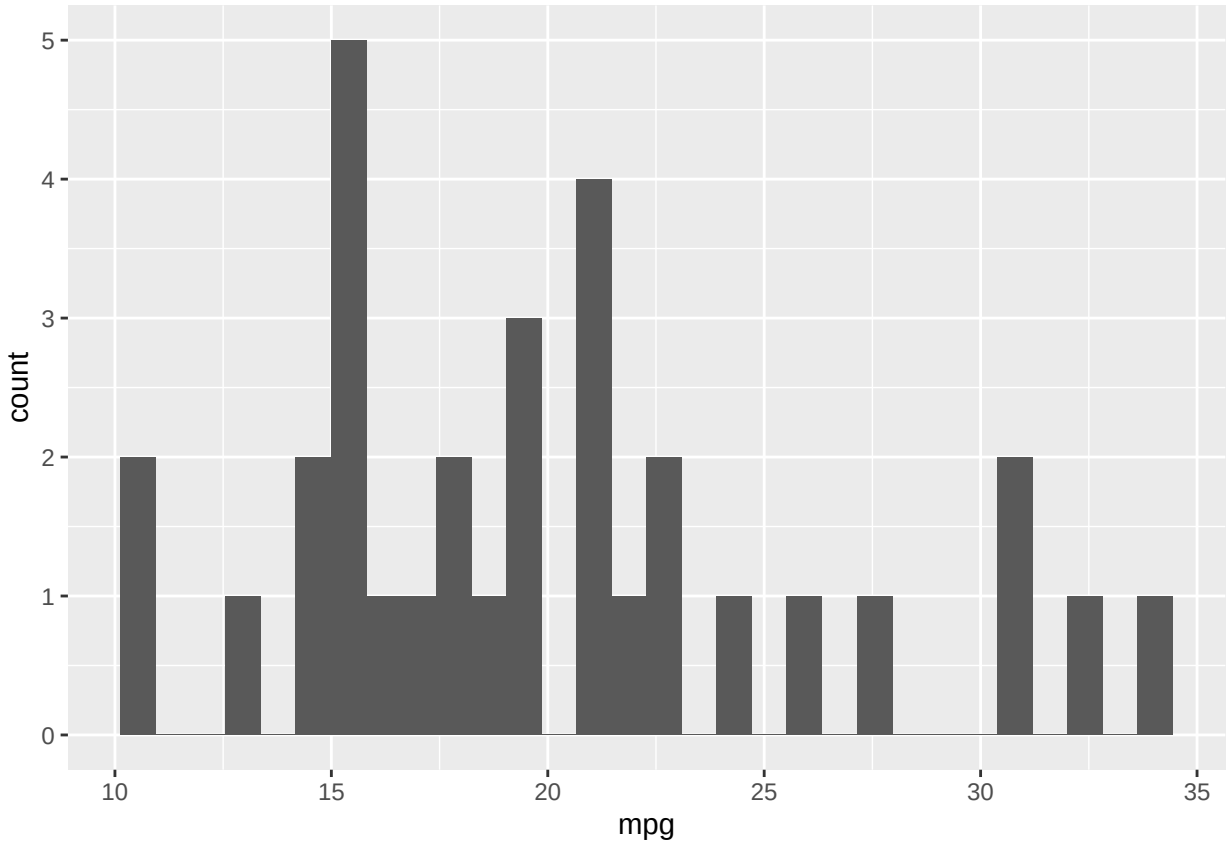


Figure B1: hell