

**Applying for a liquor license reduces police stops of innocent people?
Reconsidering the effects of strip clubs on sex crimes found in
Ciacci & Sviatschi's study of New York City**

Keywords: Sex crime, sex work, stop and frisk, police, law enforcement

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JEL

[I18 - Government Policy; Regulation; Public Health](#)

[J16 - Economics of Gender; Non-labor Discrimination](#)

[J47 - Coercive Labor Markets](#)

[K14 - Criminal Law](#)

[K42 - Illegal Behavior and the Enforcement of Law](#)

Abstract

Ciacci & Sviatschi's (2021) "The Effect of Adult Entertainment Establishments on Sex Crime: Evidence from New York City," published in *The Economic Journal*, concluded that opening a strip clubs reduced sex crimes, with the most compelling finding that "[strip clubs and gentleman's clubs] decrease sex crime by 13% per police precinct one week after the opening." We contend that the study's conclusions speak well beyond the data, which cannot support these findings because they do not accurately measure the necessary variables. The study uses the date a business is registered with New York State as a proxy for its opening date, when it is simply the earliest date a business can apply for the liquor, cabaret and restaurant licenses necessary for lawful operation. The actual date of opening comes several months later, after licensure and community board approval. The study then uses police Stop, Question and Frisk Reports as data about subsequent crimes, when over 94% of these reports document that the police had an unfounded belief in criminal activity and the person was in fact innocent of any crime. In effect, what the study has done is measure changes in police encounters with innocent people in the week after an entity has filed the paperwork necessary to apply for the business licenses that will eventually allow it to open a strip club. We argue that paper's conclusions cannot be supported by this data, the study cannot reject the null hypothesis of its most important finding, and the paper's conclusions should be retracted.

Introduction

In the summer of 2021, Ciacci & Sviatschi published "The Effect of Adult Entertainment Establishments on Sex Crime: Evidence from New York City" in *The Economic Journal*. It found strip clubs reduce sex crimes in New York City, with the most compelling finding that "[strip clubs and gentleman's clubs] decrease sex crime by 13% per police precinct one week after the opening, and have no effect on other types of crime," an assertion presented prominently in the abstract and showcased as the study's principal result. The paper made national news, receiving widespread media coverage, contributing to debates about policing and effective public safety. The study was important because it tested a novel hypothesis about the relationship between sex crimes and lawful alternative outlets for the behaviors typically associated with them. It suggested that providing such outlets—in contrast to heavily regulating consensual sex work—promotes public safety.

We believe the study has fatal problems, however, and they preclude drawing any of its conclusions. One way to illustrate them could be to reproduce it using commensurate data from a different sampling frame to show the results do not generalize. Another approach would be to replicate the study while

correcting for its errors to show the results of a more rigorous study are different. We will argue we are unable to take either of these approaches because the data types used by the study cannot plausibly yield relevant conclusions in the first place, so we cannot proceed with either type of replication. In effect, the study makes fatal category errors in claiming the data it uses can yield its conclusions. This type of argument, if true, also means the original study cannot support its own conclusions because it speaks far beyond its own data.

The limits of replication

In other words, we argue that a replication meeting the requirements of scientific rigor cannot proceed. Given limitations that went unacknowledged in the study, a replication will exclude all the data used for its independent variable, and approximately 95% of the data used for the dependent variable, leaving us unable to conduct the relevant empirical analyses to an acceptable level of rigor. We therefore argue that the study cannot reject the null hypothesis underlying its most important finding, and we welcome further review by additional experts conversant in the nature and limits of the data used here. If our concerns are supported by their further review, the study should be retracted, media outlets that presented its findings as reliable knowledge should be notified, and it should serve as a call for increased collaboration between researchers and the stakeholders who create and maintain custody over the administrative data used in such studies. Their intimate knowledge of their subject matter will make for more robust, reproducible results.

To make our argument, we will:

1. Assess the suitability of the data used to measure the independent variable,
2. Assess the suitability of the data used to measure the dependent variable,
3. Discuss the implications of excluding these data for the study's implied null hypothesis,
4. Recommend a re-review of the study and a retraction if necessary,
5. Make a case for closer collaboration between economic researchers and the practitioners who create and manage administrative datasets of interest.

Assessing data for the independent variable: the opening date of a strip club

In the study's abstract and conclusion, it asserts this principal finding: "We find that these businesses decrease sex crime by 13% per police precinct one week after the opening, and have no effect on other types of crime." In the study's methodology, the date of registration of the sex club as a business with the

State of New York is used as a proxy for its opening date, with the study asserting that “we can use the date of registration as a quasi-natural experiment to study the effect of these businesses on sex crime” (p.2).

A date of registration is not the opening date, however, and has no predictable relationship to it. This is a critical methodological issue, the importance of which must be carefully understood and considered. Rather, this date is the first opportunity for the business to apply for a license from the New York State Liquor Authority, which is the principal regulatory authority of these businesses (Maslin-Nir, 2014; New York State Liquor Authority, 2019; Tracy, 2017). The licensing process, which includes an evaluation by the relevant community board, took a minimum of 24 to 26 weeks during the study period. Registering the business with New York State was a prerequisite for it. The source of this information, apart from the professional experience of the authors here (three of whom participated in these processes), is an August 3rd, 2021 telephone call by the first author to a New York State Liquor Authority employee (Lucas, employee ID# 62950) whose role at the SLA is to inform applicants about the licensing process and guide them through its steps.

To confirm this information, an attorney for the New York State Liquor Authority, Stefan M. Armstrong, advised the first author in a telephone call on June 22nd, 2022 that, as a matter of established practice, the authority requires full board approval (rather than a faster temporary permit) for licensing new adult entertainment establishments in New York City, this approval takes approximately six months, and registering the entity seeking approval as a business with New York State is a prerequisite for initiating the process. This prerequisite is listed on the authority’s website.¹ Regardless of whether a registered business may open sooner under a temporary liquor license, New York State requires all businesses to provide 30 days’ advance notice to the local community board before applying for either kind of liquor license.²

New York City’s guidance to aspiring business owners reinforces our point that registration occurs well before opening, whether or not a business intends to serve alcohol. The city’s website that lays out the steps for starting a bar,³ or any general business,⁴ and provides the same steps for both. It lists “Register your Business” [with New York State] as the second step, after creating a business plan. The steps after registration with the state include “Finance Your Business,” “Find and Plan Your Space,” “Prepare to Open,” (which includes completing pre-operational government inspections and licensing requirements), then “Hire a Team,” and “Open and Operate.” New brick and mortar businesses do not open to customers

¹ https://www.businessexpress.ny.gov/app/answers/cms/a_id/3737/kw/on%20premises

² <https://sla.ny.gov/municipalcommunity-board-30-day-advance-notices-premises-applicants>

³ <https://www1.nyc.gov/nycbusiness/startabusiness/bar>

⁴ <https://www1.nyc.gov/nycbusiness/startabusiness>

the day they register with New York State, but several weeks or months later, with strip clubs typically taking months. The study cannot defeat strong prima facie evidence that any short-term association between crime and the date of business registration is spurious.

Based on this problem, we feel the strongest and most prominent conclusion of the study, that sex crimes decrease 13% in the week after a strip club or gentlemen's club is registered with New York State, cannot be presented as a causal relationship. The independent time variable is a proxy for a latent time variable that consistently occurs at an undetermined time several months after it. Yet, the principal finding of the study asserts strong effects within a week and tests for robustness at a month, which is impossible given the study's hypothetical causal model: "our results suggest that these effects are driven by potential customers who substitute sex crimes with services provided by adult entertainment businesses" (p. 25). *If we were to replicate this study to suitable standards of rigor, we would exclude the entire dataset for the independent variable.*

Assessing data for the dependent variable: sex crimes in New York City⁵

a. Exclusion of reports of encounters with innocent people (94% of the analytic sample)

The study uses New York City Police Department stop, question and frisk (SQF) report data to measure what it asserts are police-observed sex crimes, and uses changes in the frequency of the reports to assert the effect of opening an adult entertainment establishment on these sex crimes. Affirmatively referring to the SQF incidents included in the study as "sex crimes," which the paper does throughout (see p. 2 and p. 6, for example), is a category error, however. Over 94% of the analytic sample used in the study records a finding that there was inadequate cause to believe the person stopped had committed a crime (see table for four sample years), and so no arrest was made (arrest (Y/N) and top charge upon arrest are two fields in the SQF database used in the study). *The remaining 94% are records of people who were legally innocent of a crime at the time and place of the encounter.* These encounters with innocent people were initiated by police for a variety of reasons, most of them based on the ultimately unfounded suspicion of a crime, but a federal court decision opined that many were made based inadequate suspicion or no suspicion at all, and targeted racial minorities to the exclusion of white people, which for the purposes of the study would introduce a nonrandom sampling error based on precinct racial demographics. In sum, only approximately 6% of the SQF sample used in the

⁵ We have performed this analysis using the entire body of stop question and frisk reports, but we presume the percentages and trends discussed closely match the subcategory of sex crimes defined by the study; to our knowledge, no evidence exists that they do not. The stop, question and frisk data used in our analysis can be found here: <https://www1.nyc.gov/site/nypd/stats/reports-analysis/stopfrisk.page>. Mr. NNNNNN was the custodian of the NYPD's stop question and frisk data during the period of the study and can answer further questions; Mr. NNNNNN is presently one of the custodians of the data.

study would qualify for analysis if records of police encounters with innocent people—none of whom the police developed cause to believe were committing any crime—were excluded from the sample as “sex crimes” because these records are not, in any way, records of a sex crime.

Year	Total SQF	Arrest made	Percent	Charge listed	% of listed	% of total SQF
2004	313,524	16,355	5.2%	14,079	86.1%	4.5%
2008	540,303	32,207	6.0%	25,911	80.5%	4.8%
2011	695,725	40,884	5.9%	32,148	78.6%	4.6%
2012	532,913	32,316	6.1%	25,164	77.9%	4.7%

b. Exclusion of arrests for other than sex crimes and for unknown charges from the remaining sample

Another concern is that when an arrest is made after police stop a person for a suspected sex crime, there is insufficient reason to think it was for a sex crime per se. A person could have been initially stopped for a suspected sex crime, then arrested upon investigation for possession of controlled substances, weapons, an outstanding warrant, resisting governmental administration of the stop, a criminally suspended driver’s license, etc. These charges are reflected in a column in the dataset, and initial inspection indicates significant variation between the reason for a stop and the resulting charge upon arrest. In approximately 20% of the records where an arrest was made in the sample years we analyzed, no charge is listed, and an analyst would not be able to determine why a person was arrested at all. If the sample is to contain only records where a stop resulted in an arrest for a sex crime, and not just any arrest for any charge, the study would have to exclude more than 20% of the remaining sample. While we understand the concept and use of proxy variables, in this case, given that over 95% of the time these records of police stops document insufficient cause to believe a crime has been committed, the use of this proxy variable as a measure of the study’s dependent variable (i.e., sex crimes) is not appropriate.

c. Data used for the robustness check contains the most probative SQF data

The NYPD’s criminal complaint report data (CRD) used for a robustness check of the SQF analysis contains complaints that document arrests made at the conclusion of an SQF incident, after investigation, and for which an SQF report exists. Although the CRD also contains incidents that that were not memorialized in both types of reports, such as ones where an encounter began with probable cause that yielded a summary arrest without the need for a detention and investigation based on the lesser standard of reasonable suspicion, the robustness check was therefore conducted using a dataset that contains all the

most probative data of the principal analysis. This creates the risk of skewing the robustness check into alignment with the principal analysis by virtue of a largely overlapping sample.

d. Conclusion: the study should have excluded 95-96% of its SQF analytic sample.

The most important point of these concerns is that you cannot plausibly use records of innocent people stopped by the police as records of sex crimes. Amending this error requires excluding approximately 94% of the study's analytic sample. Of the remaining records, approximately 20% do not offer insight into what charge resulted in arrest, and many sex crime stops would have resulted in arrests for an offense other than a sex crime, indicating the person may have been charged with an offense but was legally innocent of a sex crime. The suitable sample is therefore likely at least 95% smaller than the sample used in the study. This cannot help but have a profound effect on the power and results of the study, apart from the concerns above that the principal conclusion, even if supported, will be a spurious association in any case. Lastly, this residual dataset would be a lesser included of the CRD used for a robustness check.

3) The baseline data about strip clubs and gentleman's clubs contains substantial missing data

The initial canvass of clubs at the $T=0$ shows no clubs in parts of Queens and Brooklyn (Figure A.7) where the authors know there to have been many. For example, Wild Wild West, Corrado's and Sweet Cherry were all clustered in an industrial neighborhood in the 72nd Precinct, and had been in business at the time the study began (Brick, 2006), and Mermaids was in operation in the 114th Precinct.

It is very likely that there were other substantial errors. Reporting by the *The New York Times*, for example, discusses a group of clubs that were set to open in 1999 in Queens Plaza, which marks the border between the 108th and 114th Precinct, in addition to several already in operation (Weir, 1999). It was an area that had enough strip clubs a few years prior to generate worries about being called a "new Times Square." This is an area in Western Queens that was reported also to have 0 clubs at $T=0$. There may have been a half dozen or more, depending on how many of the ones mentioned in reporting remained in business five years later. There were at least two, Scandals and City Scape, listed by name in a 2004 article in the *New York Post* (Calabrese, 2004). We believe, based on our recollection, there were several more.

This all suggests the data were based on an insufficient inclusion criteria. It is unclear what search and inclusion criteria were used to set the baseline of businesses at $T=0$, but that a casual investigation reveals at least eight omissions in three precincts that were reported to have 0 businesses at the beginning of the study suggests the omissions at $T=0$ were substantial and systematic, and yielded an unreliable baseline

that further prohibits drawing conclusions from the study. This concern is ancillary to the more important one that nearly all the data used to conduct the study should be excluded based on the category errors their inclusion represents.

Assessing the null hypothesis

We can reframe the study's principal finding as a null hypothesis: opening a strip club in New York City has no significant effect on sex crimes in the week after it opens. To evaluate it, we would need data on when a strip club opens, and what sex crimes are recorded in the following week. As we have shown, registering a business with New York State has no determinate relationship with the opening date of a business, and if it does, it is consistently at some unknown point several months after registration. This leads us to reject the entire dataset of business registration dates as an acceptable proxy for the date on which strip clubs opens. Second, our analysis of the stop question and frisk reports used in the study shows that they document a police encounter with an innocent person 94% of the time, and for an arrest on an unknown charge 1% of the time. Excluding these two categories of data means excluding 95% of the data for the dependent variable.

These exclusions are fatal to not only a replication, but to the original study. If we apply the necessary exclusion criteria, we are unable to proceed with an analysis using the data provided: we have no data for the independent variable, only 4% of the original data for the dependent variable, and we cannot reject the null hypothesis in support of the study's original findings. More importantly, this strongly suggests the principal conclusion of the original study is unsupported by the data as well. *What the study has done is measure changes in police encounters with innocent people in the week after an entity has filed the paperwork necessary to apply for business licenses that will eventually allow it to open a strip club.* This has no bearing on the study's null hypothesis and cannot be used to test it.

Results of an inability to proceed

If our assessment is true, the data used in the original study cannot support its results. To be clear, we do not take a position that the analytical methods used in the study were inappropriate or incorrect, and we have no cause to believe they were anything but rigorously executed. After extensive conversations with the authors, who were extremely forthcoming and courteous, we are certain there was never an intention to use the data in their study in a way that intentionally drew insupportable conclusions, which we believe resulted from inadvertent category errors about what the data represented. Perhaps the study's underlying

assumptions went unexamined because the authors did not benefit from consultation with expert practitioners familiar with the data both during the study and the review process. While it may not be easy for economists to enlist the collaboration of people with expertise about NYPD crime data, or the workings of the New York State Liquor Authority and Department of State, it is far from impossible, and the quality of study would have greatly benefitted from it.

Conclusion

The effect of strip clubs on sex crimes is an important one that deserves close study. The idea that they offer an outlet for behaviors that would otherwise be exercised criminally is interesting, and understanding the merits of the argument is important from a public safety perspective, especially given the vulnerability of women, already a marginalized group in many ways, to sex crimes. Still, if the authors found an association between registering a sex club as a business and a reduction in crime, it cannot be used to conclude that this is the case because the registration is a proxy for a sex club opening during the time frame used in the study. Likewise, encounters with innocent people cannot be used to draw conclusions about the ensuing crime rate. The category errors that arose from the original study were avoidable, however. Practitioners well-versed in the topic under study could have provided insight into what the data can and cannot speak to, what it indicates, and what it can be used to analyze. We encourage others with the relevant expertise and an interest in this topic to reexamine both the original study and our concerns here, in order to continue the research in this vein at the proper levels of rigor.

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