

Craigslist's Effect on Violence Against Women

Scott Cunningham, Gregory DeAngelo and John Tripp

December 29, 2017

Prostitute Mortality

Providing sex services illegally is a very risky occupation

- Workplace homicide rate for female prostitutes (204 per 100,000) vs. female liquor store employee (4 per 100,000) (Lowman and Fraser 1995; Castillo and Jenkins 1994)
- Homicide rate more than 13 times higher than the general population (Potterat et al., 2004).

Serial killings

- 65% of serial murders are female and 78% of female victims of serial murderers are prostitutes (Egger, 2003)
- 35% of all prostitute homicides were by serial killers (Brewer et al., 2006)

Matching before and after Craigslist

- Traditional methods for matching included agencies, streets and pimps, word of mouth, reviews, backpages of alternative weeklies, some expensive advertising sites
- Craigslist was a low cost advertising (\$0 - 10) section of the front page that was used exclusively by prostitutes to advertise themselves to clients
- Erotic services (ERS) matched buyers and sellers on a centralized advertising platform
- Lowered matching costs, thickened the online market, feedback effects, improved matching efficiency

Mitigating risks through Craigslist

*“Having the ability to advertise online allows sex workers to more carefully screen potential customers and work indoors. Research shows that when sex workers can’t advertise online and screen clients, they are often forced onto the street, where it is more difficult to screen out **violent clients** and negotiate safe sex (i.e. sex with condoms). They are also more likely to have to depend on exploitative pimps to find customers for them.” - Bass (2015)*

Overview

- We estimate the effect of Craigslist's ERS on violence against women
- ERS lowered female homicides by between 1 and 17 percent, and imprecise estimates on female rape offenses
- Our evidence suggests that this was caused by lower tier prostitutes (e.g., street), who have the highest homicide risks, moving indoors.

Craigslist ERS

- Craigslist itself is the 15th most popular website in the US, cheap advertising, better matching, more business, low search costs
- ERS was protected by 1996 Communication Decency Act
- But nevertheless continual harassment by district/state/US attorneys and activists
- Craigslist closed ERS in September 2010
 - Village Voice's Backpage was immediately adopted replacement
 - ... closed its ERS in early 2017 (also due to harassment)

Erotic services as a clearinghouse

- Lowers search and solicitation costs
- Easier for buyers and sellers to find one another
- *Allegedly* moves outdoor prostitution (e.g., streets) indoors
- Allows for more efficient matching
- Thickens the online market

Screening

- Email vs split-second decisions
- Call the John at work
- Background checks
- References and White Lists

1995

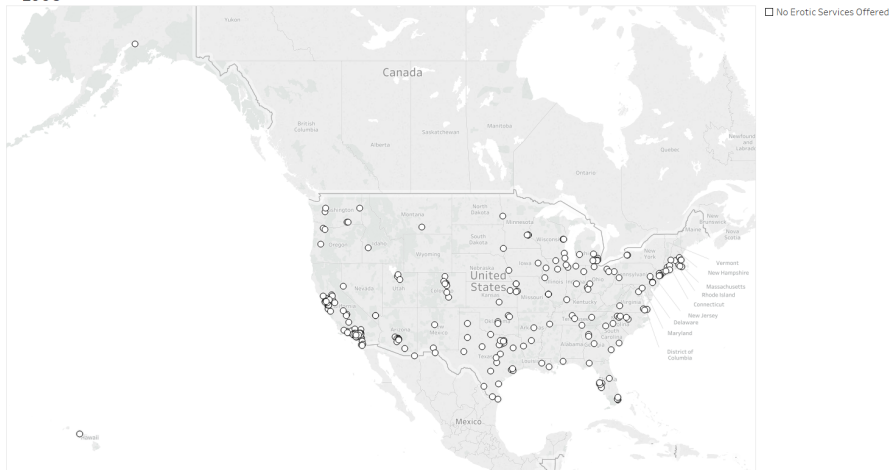


Figure: Craigslist ERS in 1995

April 2003

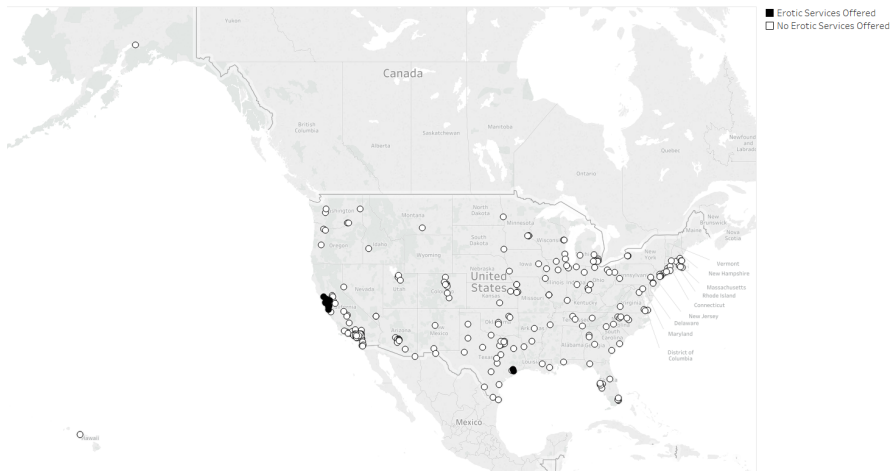


Figure: April 2003

Jan 2004

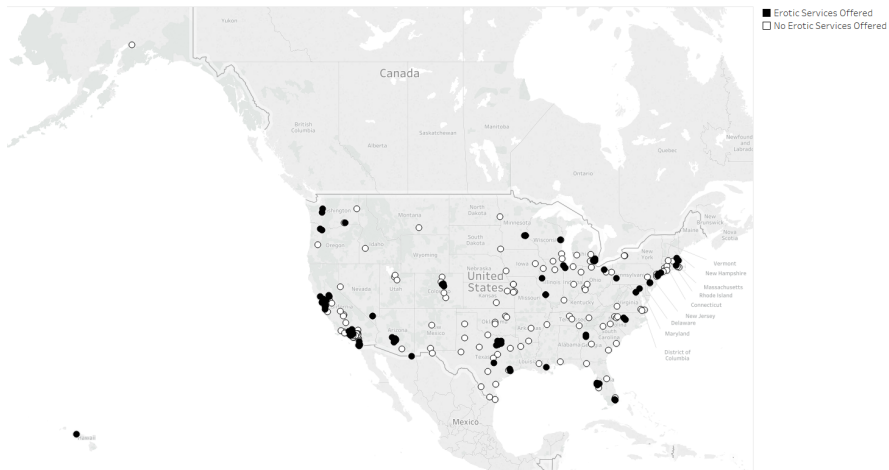


Figure: January 2004

Jan 2005

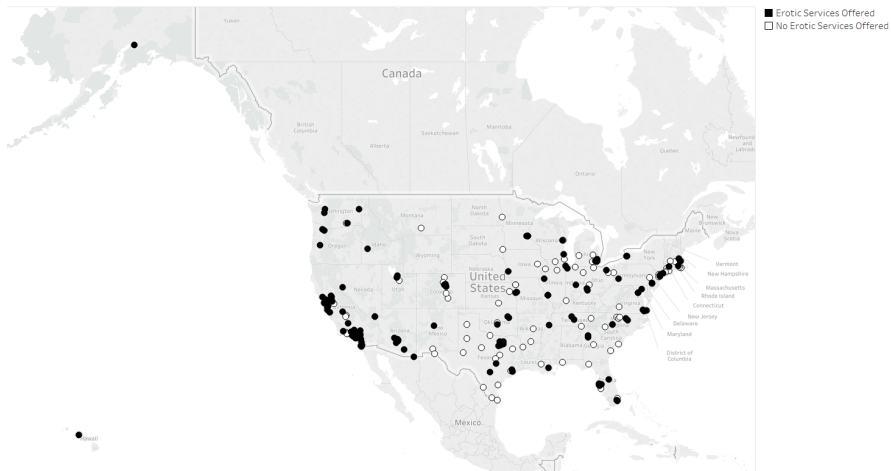


Figure: January 2005

Jan 2006

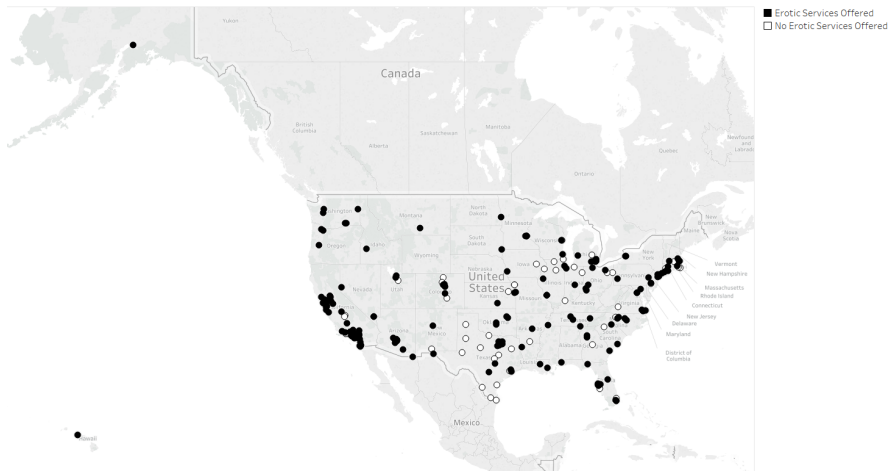


Figure: January 2006

: 2009

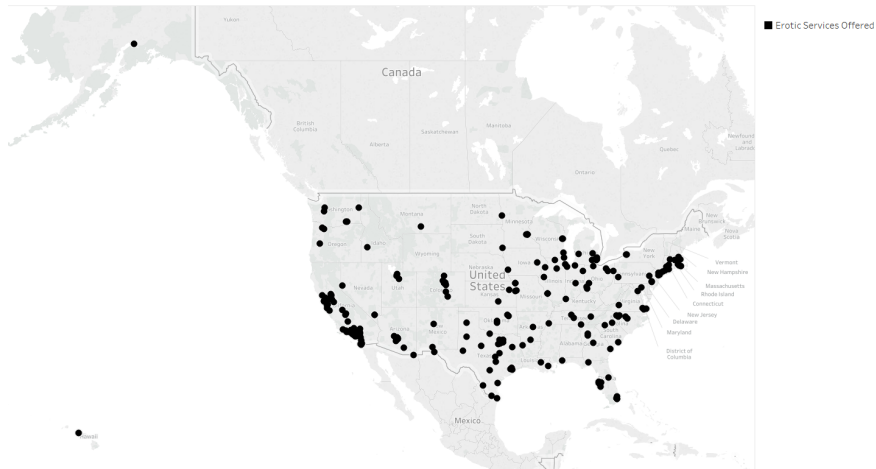


Figure: End of 2009

[listing on craigslist](#)

[FAQ](#) [subscriptions](#)

search craigslist

community
search

nyc@craigslist.org

1.800.664.0633

[about craigslist](#)

- [artists / musicians](#) (81)
- [general community](#) (97)
- [events / entertainment](#) (34)
- [ridesharing](#) (25)
- [discussion forums](#)

personals - new

- [women seeking men](#) (15)
- [women seeking women](#) (9)
- [men seeking women](#) (34)
- [men seeking men](#) (8)
- [missed connections](#) (34)

- [apartments](#) (50)
- [apts - broker/fee](#) (102)
- [rooms / shared](#) (87)
- [sublet / temp / vac](#) (195)
- [swap](#) (138)
- [apts wanted](#) (118)
- [room / share wanted](#) (110)
- [sublet / temp wanted](#) (152)

sale / wanted

- [general for sale](#) (167)
- [computer / tech stuff](#) (28)
- [tickets](#) (43)
- [items wanted](#) (52) **;-new**

- [accounting / finance](#) (11)
- [business / e-biz / mgmt](#)
- [computer / engineering](#)
- [design / media / multimedia](#)
- [marketing / advertising](#)
- [office / admin / cust-serv](#)
- [sales / biz-dev](#) (57)
- [writing / editing](#) (12)
- [et cetera jobs](#) (13)

services

- [resumes](#) (331)
- [freelance / 1099](#) (130)
- [small biz ads](#) (179)

all listings are free..... questions/comments? -----> nyc@craigslist.org

craigslist **dallas / ft worth** ^W

post to classifieds
[help](#) [subscriptions](#)

search craigslist

community ▾ >

event calendar (45)
S M T W T F S
 14 15 16 17 18 19 20
 21 22 23 24 25 26 27
 28 29 30 31 1 2 3
 4 5 6 7 8 9 10

best-of-craigslist
[craigslist factsheet](#)
[job boards compared](#)
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system status

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community (317)

activities lost+found
 artists musicians
 childcare news+views
 general politics
 groups rideshare
 pets volunteers
 events classes

housing (327)

apts / housing
 rooms / shared
 sublets / temporary
 housing wanted
 housing swap
 vacation rentals
 parking / storage
 office / commercial
 real estate for sale

jobs (242)

accounting / finance
 admin / office
 arch / engineering
 art / media / design
 biotech / science
 business / mgmt
 customer service
 education / teaching
 government
 human resources
 internet engineering
 legal / paralegal
 marketing / pr / ad
 medical / health
 nonprofit sector
 retail / food / hosp
 sales / biz dev
 skilled trade / craft
 software / qa / dba
 systems / networkg
 technical support

for sale (444)

barter auto parts
 bikes baby+kids
 boats cars+trucks
 books cds/dvd/vhs
 free clothes+acc
 furniture collectibles
 general computer
 jewelry electronics
 sporting garage sale
 tickets household

discussion forums

arts jobs psych
 autos kink queer
 beauty legal rofo
 comp loc pol solent
 crafts m4m self+
 ecology money shop
 educ music spirit
 ftsbk night sports
 film npo/ngo testing
 fitness open transg
 flirt outdoor transit
 food over 50 travel
 gaming parent tv
 halku pefo wkw
 halku pets wedd
 health philas woma
 history poo writat
 housing politic

services (3879)

computer	automotive
creative	household
erotic	labor/move
event	skill'd trade
financial	real estate
legal	sm biz ads
lessons	therapeutic

albany little rock tampa bay europe
 albucuerpo los angeles tucson amsterdam
 allenmore louisville tulsa athens
 anchorage madison wash, DC barcelona
 ann arbor maine western mass berlin
 asheville memphis west palm brussels
 atlanta miami west virginia copenhagen
 austin milwaukee wishtia florence
 bakerfield minneapolis wyoming frankfurt
 ballmore montana canada genova
 birmingham montana canada madrid
 boke montney calgary milan
 boston nashville edmonton moscow
 buffalo new hamp halifax munich
 burlington new haven montreal paris
 dhambana new jersey ottawa prague
 charleston new orleans saakatoon rome
 dharlotte new york toronto stockholm
 chicago norfolk vancouver vienna
 dhioo n dakota victoria zuriich
 dindinnati oia city winnipeg
 dewland omaha asia
 columbia orange oo americas bangalore
 columbus orlando buenos aires bangkok
 dallas philadelphia lima beijing
 dayton phoenix mexico city delhi
 delaware pittsburgh rio de janeiro hong kong
 denver portland costa rica istanbul
 deoimoes providence santiago jerusalem
 detroit puerto rico sao paulo manila
 el paso raleigh sjpans mumbai
 eugene redding oaxta
 fort myers reno uk & ie seoul
 freano richmond baifax shanghai
 grand rapids rochester birmingham
 greenboro sacramento camdf singapore
 hamburg salt lake dublin tel Aviv
 hartford san antonio edinburgh tokyo
 honolulu san diego glasgow africa
 houston SF bay london cape town
 humboldt santa barb manchester jo'burg
 indianapolis el obispo
 inland emp seattle au & nz >>
 jackson s dakota auckland adelaide
 jacksonville spokane auckland adelaide
 kansas city st louis brisbane
 las vegas stockton melbourne
 lexington syracuse perth
 tallahassee sydney

Figure: 14 “services” including ERS

Data

1. Wayback Machine (Internet archive)
2. Supplemental Homicide Reports 1995-2009 (city/month)
3. Summary Uniform Crime Reports, offenses 1995-2009 (city/month)
4. *The Erotic Review* 1999-2009 (city/month)

Underascertainment bias

- Prostitution deaths appear only 49 times out of 31,250 observations caused by underascertainment bias

The monthly reporting schedule for participating agencies “requires agencies to report homicides in the month that they are discovered, even if that is not the month in which they occurred or if the social context of the homicide is not yet known. Prostitute homicides often go undetected for weeks, months, or years, so the SHR procedures have a built-in bias toward under ascertainment of many prostitute homicides”

- We therefore only focus on the total female homicide rate.

Yelp of Prostitution

- *The Erotic Review* (TER) is a reputation website where clients review prostitutes
- Popular institution; sex workers value their reputation
- Over 1.4 million reviews on hundreds of thousands of unique providers (April 2017)

Poisson Estimation

(Standard and Dynamic) Differences-in-differences

$$E[Y_{mt} | D_{<10,mt}, D_{\geq 10,mt}, X_{mt}] = \exp(\delta_1 D_{<10,mt} + \delta_2 D_{\geq 10,mt} + \beta X_{mt})$$

$$E[Y_{mt} | \sum_{j=2}^6 L_{mt}, \sum_{i=1}^8 D_{mt}, X_{mt}] = \exp(\sum_{j=2}^6 \gamma_j L_{mt} + \sum_{i=1}^8 \delta_i D_{mt} + \beta X_{mt})$$

$D_{<10,mt}$ is the first ten months after ERS opens in a city/market by month; $D_{\geq 10,mt}$ is after ten months; X includes calendar date and city/market fixed effects; L_{mt} and D_{mt} are ten month leads and lags. All models adjust for within-city serial correlation.

Alternative OLS specifications

$$Y_{mt} = \delta_1 D_{<10,mt} + \delta_2 D_{\geq 10,mt} + \beta X_{mt} + \varepsilon_{mt}$$

$$Y_{mt}^{\frac{1}{4}} = \delta_1 D_{<10,mt} + \delta_2 D_{\geq 10,mt} + \beta X_{mt} + \varepsilon_{mt}$$

$$\ln(Y_{mt}^2 + (Y_{mt}^2 + 1)^{\frac{1}{2}}) = \delta_1 D_{<10,mt} + \delta_2 D_{\geq 10,mt} + \beta X_{mt} + \varepsilon_{mt}$$

where the first equation uses the rate, the second the quartic root, the third the inverse hyperbolic sine, and ε_{mt} is the error term. All models adjust for within-city serial correlation.

Robustness

- 6-mo, 9-mo and 12-mo lagged treatment variables: results are always significant on the lag. We use 10-month to correspond with the Craigslist visual
- We also controlled for state-linear trends, and results don't change
- We also conducted randomization inference with 1,000 randomized treatments

TS Kristine

TER ID: 317421

★★★★☆

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Cost Of Service

Service

[🔗 VIP only](#)

Length

[🔗 VIP only](#)

Price

[🔗 VIP only](#)

Check out our VIP Section section for info on becoming a supporter of The Erotic Review. Being a supporter of this site gains you access to the Explicit part of search form, plus alot of other nice stuff.

General Information

Ad Website [Report New Website URL](#)

Personal Website [Report New Website URL](#)

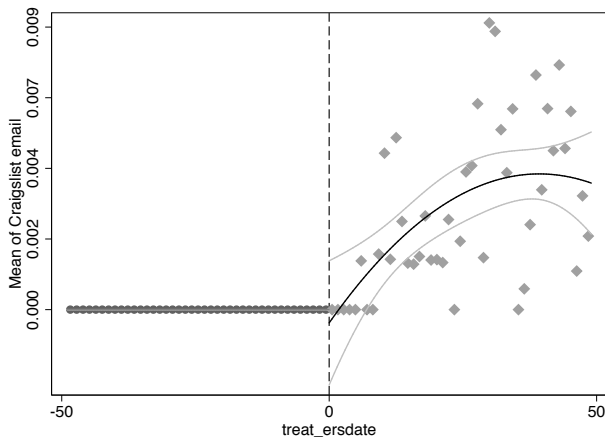
Email mf3fm-5943544580@serv.craigslist.org

Agency	Independent	Service	Escort/Massage
City	Revere, MA	Other City Served	None
Phone	(617) 412-6678	Phone Type	Provider Picks Up
Phone 2	(781) 629-5794	Phone 2 Type	Provider Picks Up
Incall/Outcall	Incall	Smokes	No
On Time	Yes	Availability	Daytime/Nighttime
Porn Star	No	Services Delivered As Promised	Yes

Appearance

Build	Athletic	Photo Accurate	Photos accurate
Ethnicity	Asian	Height	5'3" - 5'5"

Craigslist penetration, measured by email use



TS Kristine

TER ID: 317421

★★★★☆

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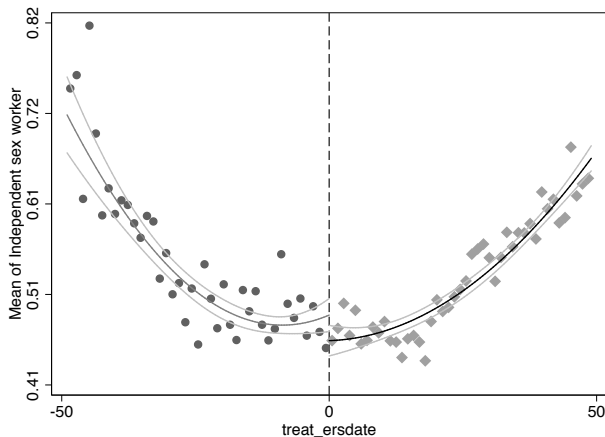
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Craigslist penetration, Probability Independent



Craigslist penetration, Probability Agency

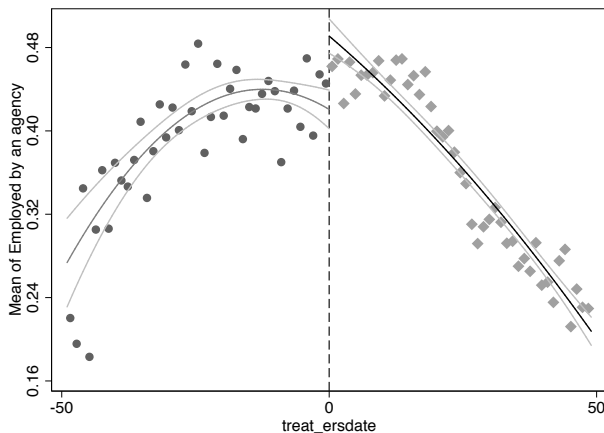
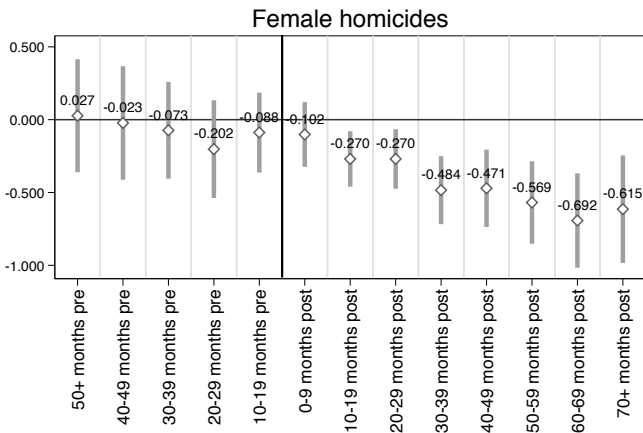


Table: Poisson and OLS estimates of the effect of erotic services openings on female murders per 100,000

Dep var:	Murders			
	Poisson	Rate	Quartic root	Sine
ERS (first 10 months)	-0.015 (0.076)	-0.000 (0.010)	-0.005 (0.008)	-0.002 (0.006)
ERS (post-10 months)	-0.192** (0.077)	-0.019** (0.009)	-0.016* (0.009)	-0.011* (0.006)
N	60,207	60,207	60,207	60,207
Mean of dependent variable	0.13	0.13	0.19	0.09
Dep var:	Rapes			
	Poisson	Rate	Quartic root	Sine
ERS (first 10 months)	-0.013 (0.030)	-0.029 (0.079)	-0.029* (0.016)	-0.039 (0.037)
ERS (post-10 months)	-0.047 (0.044)	-0.077 (0.111)	-0.060** (0.027)	-0.109* (0.058)
N	58,636	58,636	58,636	58,636
Mean of dependent variable	2.76	2.76	0.97	1.81

The first column estimates a poisson maximum likelihood model with the rate as the outcome. The second model estimates OLS with the quartic root as the outcome. The third model estimates the hyperbolic sine transformation as the outcome. Models control for market and calendar date fixed effects. Robust standard errors clustered within city in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dynamic Diff-in-Diff of ERS on Female Homicides with counts and Poisson



Model estimated with Poisson includes date and city fixed effects

Levels

Quartic root

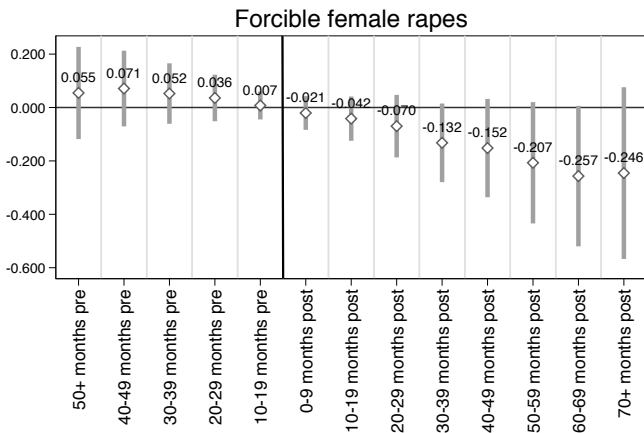
Hyperbolic sine

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Dynamic Diff-in-Diff of ERS on Female Rapes with counts and Poisson



Model estimated with Poisson includes date and city fixed effects

Levels

Quartic root

Hyperbolic sine

Table: Falsification exercises: the effect of Craigslist's erotic services on females murdered by acquaintances, all male murders and all manslaughters per 100,000

Dep var:	Females by acquaintances	Males	Manslaughters
ERS (first 10 months)	0.159 (0.178)	-0.001 (0.034)	0.057 (0.224)
ERS (post-10 months)	0.110 (0.184)	-0.020 (0.057)	0.165 (0.304)
N	60,381	60,381	58,636
Mean of dependent variable	0.02	0.48	0.01

Dependent variables are outcomes per population times 100,000. Models estimated with Poisson. Models control for city and date fixed effects. Robust standard errors clustered within city in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Mechanisms: Streets and Screening

- We do not have reliable or comprehensive data on street walkers, but we can test the hypothesis using the data from ***TER***
 - Examine characteristics of provider (prices, appearance, performance, incall/outcall) to see if there's evidence of entry coming from lower tiers
- Classifiers and additional scraping were built to determine whether screening or signaling was used by the service provider
 - Search engines (google, yahoo, bing!, etc.)
 - Call at client's place of employment
 - Background checks
 - White Lists and informal letters of reference - Cunningham & DeAngelo (2017)

Incumbents vs. Entrants

$$Y_{imt} = \sum_{\tau=1}^6 \delta_{t+\tau} E_{i,t+\tau} + \sum_{\tau=1}^6 \gamma_{t+\tau} D_{m,t+\tau} + \beta X_{mt} + \varepsilon_{imt}$$

where Y_{imt} are provider and review-specific characteristics, D_{mt} is an indicator equalling one if the market has ERS yet, E_{it} is an indicator equalling one if the respondent had entered t months after ERS (i.e., entrant) compared to people who had entered before ERS, X_{mt} are market and calendar date fixed effects, and ε_{imt} is the error term. The model is estimated with OLS, and standard errors are adjusted for within-market correlation.

Table: The effect of Craigslist's erotic services openings on characteristics of entrants

Dep var:	Panel A								
	Screen	Repeat	Looks	Performance	Street	As promised	Real photo	Incall	Price
ERS (first 10 months)	0.000 (0.004)	0.020** (0.009)	-0.053* (0.030)	-0.066* (0.034)	-0.003* (0.001)	-0.001 (0.012)	-0.009 (0.015)	0.049*** (0.013)	-6.624* (3.555)
ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)
Panel B									
Entrant 0-10mo post ERS	-0.002 (0.002)	0.004 (0.004)	-0.122*** (0.035)	-0.489*** (0.063)	0.000 (0.001)	-0.051*** (0.011)	-0.099*** (0.015)	-0.038*** (0.009)	-17.226*** (5.100)
Entrant 11-20mo post ERS	-0.006** (0.003)	0.011** (0.004)	-0.074** (0.033)	-0.430*** (0.042)	0.004*** (0.001)	-0.049*** (0.014)	-0.065*** (0.017)	-0.006 (0.015)	-11.016** (5.410)
Entrant 21-30mo post ERS	-0.002 (0.002)	0.005 (0.003)	-0.170*** (0.028)	-0.469*** (0.037)	0.001 (0.002)	-0.054*** (0.010)	-0.039*** (0.011)	-0.007 (0.008)	-21.764*** (6.888)
Entrant 31-40mo post ERS	-0.012*** (0.003)	0.004 (0.006)	-0.137*** (0.024)	-0.547*** (0.041)	0.002 (0.002)	-0.055*** (0.010)	-0.046*** (0.010)	-0.011 (0.009)	-13.644** (5.684)
Entrant 41-50mo post ERS	-0.022*** (0.003)	0.002 (0.003)	-0.252*** (0.023)	-0.667*** (0.033)	0.002 (0.001)	-0.079*** (0.010)	-0.072*** (0.016)	-0.024** (0.011)	-18.207*** (6.673)
Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)
N	344,561	344,561	344,561	344,561	344,561	68,450	68,450	68,450	344,339
Mean of dependent variable	0.05	0.15	7.46	7.32	0.02	0.87	0.79	0.84	294.33

Models control for city and date fixed effects. Robust standard errors clustered within city in parenthesis. * p<0.10, ** p<0.05, *** p<0.01

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ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)
Panel B									
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Entrant 11-20mo post ERS	-0.006** (0.003)	0.011** (0.004)	-0.074** (0.033)	-0.430*** (0.042)	0.004*** (0.001)	-0.049*** (0.014)	-0.065*** (0.017)	-0.006 (0.015)	-11.016** (5.410)
Entrant 21-30mo post ERS	-0.002 (0.002)	0.005 (0.003)	-0.170*** (0.028)	-0.469*** (0.037)	0.001 (0.002)	-0.054*** (0.010)	-0.039*** (0.011)	-0.007 (0.008)	-21.764*** (6.888)
Entrant 31-40mo post ERS	-0.012*** (0.003)	0.004 (0.006)	-0.137*** (0.024)	-0.547*** (0.041)	0.002 (0.002)	-0.055*** (0.010)	-0.046*** (0.010)	-0.011 (0.009)	-13.644** (5.684)
Entrant 41-50mo post ERS	-0.022*** (0.003)	0.002 (0.003)	-0.252*** (0.023)	-0.667*** (0.033)	0.002 (0.001)	-0.079*** (0.010)	-0.072*** (0.016)	-0.024** (0.011)	-18.207*** (6.673)
Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)
N	344,561	344,561	344,561	344,561	344,561	68,450	68,450	68,450	344,339
Mean of dependent variable	0.05	0.15	7.46	7.32	0.02	0.87	0.79	0.84	294.33

Models control for city and date fixed effects. Robust standard errors clustered within city in parenthesis. * p<0.10, ** p<0.05, *** p<0.01

Table: The effect of Craigslist's erotic services openings on characteristics of entrants

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ERS (first 10 months)	0.000 (0.004)	0.020** (0.009)	-0.053* (0.030)	-0.066* (0.034)	-0.003* (0.001)	-0.001 (0.012)	-0.009 (0.015)	0.049*** (0.013)	-6.624* (3.555)
ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)
Panel B									
Entrant 0-10mo post ERS	-0.002 (0.002)	0.004 (0.004)	-0.122*** (0.035)	-0.489*** (0.063)	0.000 (0.001)	-0.051*** (0.011)	-0.099*** (0.015)	-0.038*** (0.009)	-17.226*** (5.100)
Entrant 11-20mo post ERS	-0.006** (0.003)	0.011** (0.004)	-0.074** (0.033)	-0.430*** (0.042)	0.004*** (0.001)	-0.049*** (0.014)	-0.065*** (0.017)	-0.006 (0.015)	-11.016** (5.410)
Entrant 21-30mo post ERS	-0.002 (0.002)	0.005 (0.003)	-0.170*** (0.028)	-0.469*** (0.037)	0.001 (0.002)	-0.054*** (0.010)	-0.039*** (0.011)	-0.007 (0.008)	-21.764*** (6.888)
Entrant 31-40mo post ERS	-0.012*** (0.003)	0.004 (0.006)	-0.137*** (0.024)	-0.547*** (0.041)	0.002 (0.002)	-0.055*** (0.010)	-0.046*** (0.010)	-0.011 (0.009)	-13.644** (5.684)
Entrant 41-50mo post ERS	-0.022*** (0.003)	0.002 (0.003)	-0.252*** (0.023)	-0.667*** (0.033)	0.002 (0.001)	-0.079*** (0.010)	-0.072*** (0.016)	-0.024** (0.011)	-18.207*** (6.673)
Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)
N	344,561	344,561	344,561	344,561	344,561	68,450	68,450	68,450	344,339
Mean of dependent variable	0.05	0.15	7.46	7.32	0.02	0.87	0.79	0.84	294.33

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ERS (first 10 months)	0.000 (0.004)	0.020** (0.009)	-0.053* (0.030)	-0.066* (0.034)	-0.003* (0.001)	-0.001 (0.012)	-0.009 (0.015)	0.049*** (0.013)	-6.624* (3.555)
ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)
Panel B									
Entrant 0-10mo post ERS	-0.002 (0.002)	0.004 (0.004)	-0.122*** (0.035)	-0.489*** (0.063)	0.000 (0.001)	-0.051*** (0.011)	-0.099*** (0.015)	-0.038*** (0.009)	-17.226*** (5.100)
Entrant 11-20mo post ERS	-0.006** (0.003)	0.011** (0.004)	-0.074** (0.033)	-0.430*** (0.042)	0.004*** (0.001)	-0.049*** (0.014)	-0.065*** (0.017)	-0.006 (0.015)	-11.016** (5.410)
Entrant 21-30mo post ERS	-0.002 (0.002)	0.005 (0.003)	-0.170*** (0.028)	-0.469*** (0.037)	0.001 (0.002)	-0.054*** (0.010)	-0.039*** (0.011)	-0.007 (0.008)	-21.764*** (6.888)
Entrant 31-40mo post ERS	-0.012*** (0.003)	0.004 (0.006)	-0.137*** (0.024)	-0.547*** (0.041)	0.002 (0.002)	-0.055*** (0.010)	-0.046*** (0.010)	-0.011 (0.009)	-13.644** (5.684)
Entrant 41-50mo post ERS	-0.022*** (0.003)	0.002 (0.003)	-0.252*** (0.023)	-0.667*** (0.033)	0.002 (0.001)	-0.079*** (0.010)	-0.072*** (0.016)	-0.024** (0.011)	-18.207*** (6.673)
Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)
N	344,561	344,561	344,561	344,561	344,561	68,450	68,450	68,450	344,339
Mean of dependent variable	0.05	0.15	7.46	7.32	0.02	0.87	0.79	0.84	294.33

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ERS (first 10 months)	0.000 (0.004)	0.020** (0.009)	-0.053* (0.030)	-0.066* (0.034)	-0.003* (0.001)	-0.001 (0.012)	-0.009 (0.015)	0.049*** (0.013)	-6.624* (3.555)	
ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)	
Panel B										
Entrant 0-10mo post ERS	-0.002 (0.002)	0.004 (0.004)	-0.122*** (0.035)	-0.489*** (0.063)	0.000 (0.001)	-0.051*** (0.011)	-0.099*** (0.015)	-0.038*** (0.009)	-17.226*** (5.100)	
Entrant 11-20mo post ERS	-0.006** (0.003)	0.011** (0.004)	-0.074** (0.033)	-0.430*** (0.042)	0.004*** (0.001)	-0.049*** (0.014)	-0.065*** (0.017)	-0.006 (0.015)	-11.016** (5.410)	
Entrant 21-30mo post ERS	-0.002 (0.002)	0.005 (0.003)	-0.170*** (0.028)	-0.469*** (0.037)	0.001 (0.002)	-0.054*** (0.010)	-0.039*** (0.011)	-0.007 (0.008)	-21.764*** (6.888)	
Entrant 31-40mo post ERS	-0.012*** (0.003)	0.004 (0.006)	-0.137*** (0.024)	-0.547*** (0.041)	0.002 (0.002)	-0.055*** (0.010)	-0.046*** (0.010)	-0.011 (0.009)	-13.644** (5.684)	
Entrant 41-50mo post ERS	-0.022*** (0.003)	0.002 (0.003)	-0.252*** (0.023)	-0.667*** (0.033)	0.002 (0.001)	-0.079*** (0.010)	-0.072*** (0.016)	-0.024** (0.011)	-18.207*** (6.673)	
Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)	
N	344,561	344,561	344,561	344,561	344,561	68,450	68,450	68,450	344,339	
Mean of dependent variable	0.05	0.15	7.46	7.32	0.02	0.87	0.79	0.84	294.33	

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ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)	
Panel B										
Entrant 0-10mo post ERS	-0.002 (0.002)	0.004 (0.004)	-0.122*** (0.035)	-0.489*** (0.063)	0.000 (0.001)	-0.051*** (0.011)	-0.099*** (0.015)	-0.038*** (0.009)	-17.226*** (5.100)	
Entrant 11-20mo post ERS	-0.006** (0.003)	0.011** (0.004)	-0.074** (0.033)	-0.430*** (0.042)	0.004*** (0.001)	-0.049*** (0.014)	-0.065*** (0.017)	-0.006 (0.015)	-11.016** (5.410)	
Entrant 21-30mo post ERS	-0.002 (0.002)	0.005 (0.003)	-0.170*** (0.028)	-0.469*** (0.037)	0.001 (0.002)	-0.054*** (0.010)	-0.039*** (0.011)	-0.007 (0.008)	-21.764*** (6.888)	
Entrant 31-40mo post ERS	-0.012*** (0.003)	0.004 (0.006)	-0.137*** (0.024)	-0.547*** (0.041)	0.002 (0.002)	-0.055*** (0.010)	-0.046*** (0.010)	-0.011 (0.009)	-13.644** (5.684)	
Entrant 41-50mo post ERS	-0.022*** (0.003)	0.002 (0.003)	-0.252*** (0.023)	-0.667*** (0.033)	0.002 (0.001)	-0.079*** (0.010)	-0.072*** (0.016)	-0.024** (0.011)	-18.207*** (6.673)	
Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)	
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ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)
Panel B									
Entrant 0-10mo post ERS	-0.002 (0.002)	0.004 (0.004)	-0.122*** (0.035)	-0.489*** (0.063)	0.000 (0.001)	-0.051*** (0.011)	-0.099*** (0.015)	-0.038*** (0.009)	-17.226*** (5.100)
Entrant 11-20mo post ERS	-0.006** (0.003)	0.011** (0.004)	-0.074** (0.033)	-0.430*** (0.042)	0.004*** (0.001)	-0.049*** (0.014)	-0.065*** (0.017)	-0.006 (0.015)	-11.016** (5.410)
Entrant 21-30mo post ERS	-0.002 (0.002)	0.005 (0.003)	-0.170*** (0.028)	-0.469*** (0.037)	0.001 (0.002)	-0.054*** (0.010)	-0.039*** (0.011)	-0.007 (0.008)	-21.764*** (6.888)
Entrant 31-40mo post ERS	-0.012*** (0.003)	0.004 (0.006)	-0.137*** (0.024)	-0.547*** (0.041)	0.002 (0.002)	-0.055*** (0.010)	-0.046*** (0.010)	-0.011 (0.009)	-13.644** (5.684)
Entrant 41-50mo post ERS	-0.022*** (0.003)	0.002 (0.003)	-0.252*** (0.023)	-0.667*** (0.033)	0.002 (0.001)	-0.079*** (0.010)	-0.072*** (0.016)	-0.024** (0.011)	-18.207*** (6.673)
Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)
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ERS (post-10 months)	-0.005 (0.007)	0.027** (0.013)	-0.131*** (0.049)	-0.110* (0.064)	-0.003* (0.002)	0.004 (0.018)	-0.022 (0.020)	0.087*** (0.024)	-14.823** (6.246)
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Entrant 50mo post ERS	-0.039*** (0.004)	0.009** (0.004)	-0.522*** (0.017)	-1.073*** (0.049)	0.006*** (0.001)	-0.098*** (0.009)	-0.090*** (0.012)	-0.046*** (0.006)	-10.312 (6.353)
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ERS saved lives

- We calculate that ERS saved between 136 and 2,144 females from murder for 2002-2010 (hyperbolic sine and Poisson bounds)
- Between 13,045 and 207,713 additional police officers needed to achieve equivalent effect
 - Reduction in female homicides of 1.1% (hyperbolic sine) to 17.4% (poisson)
 - Police murder elasticity, $\epsilon = -0.84$ (Evans & Owens, 2007)
 - Total police in 2001 (LEOKA): 1,003,441

Policy Implications

- Client violence (including serial killing?) can be disrupted by technology that moves prostitutes indoors
- ERS appears to have made prostitution markets safer – maybe safest in history
- Potentially unintended consequence of closing down internet institutions: increased risks to vulnerable participants, namely female prostitutes.
- Tradeoffs:
 - reduce the sex trade (including trafficking) vs.
 - reduce harm associated with prohibition
- Movement off the street should be one of the main goals to keep in mind when designing optimal policy