



**Online Advertisement Truth Set
Sex Trafficking Matrix: A tool to Detect Minors in Online Advertisements**

Research Brief

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The selling of children for sex online in the United States is a known problem. Evidence of child sex trafficking can be found on many easily accessible websites which are used by sex traffickers to sell their victims. Most of these websites are low barrier meaning they have few restrictions such as name or age verification and most are free. If evidence of online child sex trafficking is found, it is often held by law enforcement or federal agencies for the purpose of developing a criminal case but there has been no analysis of these advertisements to integrate into awareness and training programs for law enforcement. Little is known about what the online advertisements selling children contain regarding narrative content, timing, and photos.

This research study was developed to create a truth (or ground truth) dataset to develop a broad training and paper and pencil detection tool for law enforcement or forensic technology groups to utilize as they develop more complex tools to identify child sex trafficking victims online. From this truth set of 461 confirmed child sex selling online advertisements, we developed an evidence-based paper and pencil tool for law enforcement to use when searching online for child sex trafficking victims named the Sex Trafficking Matrix. The goal of this study was to develop new knowledge using a collection of known child victim advertisements to assist law enforcement in their pursuit of these victims.

This report includes detailed analysis of 461 online sex-selling advertisements of confirmed minors from multiple sources including specific details about advertisements posted only on Backpage.com. Analysis of the advertisements include exploring the age on the advertisement, time posted, art found in the advertisement, language found, photos, and the most common features found. A case study is also included to demonstrate movement of child victims of sex trafficking are moved by sex traffickers as evidenced by advertisement movement. The Sex Trafficking Matrix is attached to the end of the report.

Methods

This study explores the content of 461 online advertisements selling sex of confirmed minors (persons under the age of 18 years old) from 2009 to 2016. These advertisements were collected in two ways. First, the Arizona State University Office of Sex Trafficking Intervention Research (STIR) team collaborated with nine police departments in the United States and engaged in six tests to validate the Sex Trafficking Matrix. These tests included the STIR team arranging a time that the law enforcement partners were engaging in anti-sex trafficking work. During that time, the STIR team would use the Sex Trafficking Matrix to identify advertisements that could be minors (deemed high-risk advertisements) and send them to the law enforcement partner who would attempt to make contact and provide the age of the victim if they were successful in making contact. The second method of collecting these advertisements were from law enforcement departments giving them to the STIR team for this study during the course of other research activity. The advertisements included in this study were confirmed by law enforcement to be for a sex trafficking victim who was under the age of 18. Some advertisements were the same minor on different days and on different websites. Each advertisement is counted individually as it has unique information.

The tool was developed using information from the analysis. The questions on the Sex Trafficking Matrix correlate to the percentage that item was found in the advertisements.

The online sex advertisement information consisted of where the advertisement was posted, location, date and time information, photos, text and images that were coded into SPSS and analyzed. The advertisements were posted in 2009 (n = 1), 2011 (n = 62), 2012 (n = 38), 2013 (n = 92), 2014 (n = 33), 2015 (n = 98), and 2016 (n = 137).

The 461 advertisements were found in the following 31 cities.

Las Vegas, Nevada (n = 186)
Myrtle Beach, South Carolina (n = 80)
Phoenix, Arizona (n = 64)
Los Angeles, California (n = 21)
San Francisco, California (n = 12)
Minneapolis, Minnesota (n = 11)
Portland, Oregon (n = 11)
Tucson, Arizona (n = 9)
Salem, Oregon (n = 9)
Seattle, Washington (n = 8)
San Diego, California (n = 7)
Denver, Colorado (n = 7)
Sacramento, California (n = 6)
Atlanta, Georgia (n = 5)
Bakersfield, California (n = 4)
Fresno, California (n = 3)
Salt Lake City, Utah (n = 2)
New York, New York (n = 2)
Ventura, California (n = 2)

Ogden, Utah (n = 1)
Stanford, Connecticut (n = 1)
San Mateo, California (n = 1)
Minot, North Dakota (n = 1)
Houston, Texas (n = 1)
Albuquerque, New Mexico (n = 1)
Olympia, Washington (n = 1)
Oakland, California (n = 1)
San Jose, California (n = 1)
Great Falls, Montana (n = 1)
Fargo, North Dakota (n = 1)
Marietta, Georgia (n = 1)

The confirmed child sex trafficking advertisements were found on the following 31 websites.

Website	Number of advertisements	Percentage of sample
Backpage	320	69.4%
Craigslist	50	10.8%
Redbook	25	5.4%
MyMojoVillage	9	2.0%
EroticMugShots	7	1.5%
Bodyrublist	6	1.3%
Escortbrowser	4	1.7%
SipSap	4	0.9%
EscortAdvertisements.xxx	4	0.9%
TNABoard.com	4	0.9%
MyProviderGuide	3	0.7%
Liveescortreviews.com	3	0.7%
Escortphonesearch.com	2	0.4%
MyScarletBook	2	0.4%
EvilEmpire.com	2	0.4%
BackEscorts.com	2	0.4%
Velveteen	1	0.2%
Providerphone.com	1	0.2%
Whatshewilldo.com	1	0.2%
Escortphonelist.com	1	0.2%
Las-Vegas.Dating.com	1	0.2%
Eroticadvertisement.com	1	0.2%
AyPapiEscorts	1	0.2%
Escort-phone.com	1	0.2%
EscortsinCollege.com	1	0.4%
CityXGuide.com	1	0.2%
LocalAdvertisementultPages.com	1	0.2%
AdvertisementultSearch	1	0.2%

BeNaughty.com	1	0.2%
EscortPhoneReview	1	0.2%
TOTAL	461	100%

Advertisement Content Details

Advertisement details including the age reported, information about the phone numbers, art within the advertisements, time the advertisements were posted, language, photo details, and advertisement features were explored.

Age Details

Each advertisement had an age listed for the person being advertised for sex. The age listed on the advertisement ranged from ages 18 to 26 years old with the average age of 20.36 years old (SD =1.92). The actual age of the victims in the advertisements was verified for 400 of the advertisements. The actual age ranged from ages 14 to 18 with the average age of 16.47 years old (SD = 0.68). The remaining 61 were identified by law enforcement as “minors” or “under age 18.”

Phone Number

There were phone numbers listed in 78.3% (n = 361) of the advertisements. More than three-quarters (n=371, 80.5%) did not attempt to obfuscate or hide the phone number from electronic searching. This would include using letters, symbols or numbers within the phone number. For example, six02 two*11*0000. Thirty percent (n = 136) of the phone numbers listed in the advertisements were from area codes outside the city where the advertisement was placed.

Advertisement Art

Symbols were used in the title (top of the advertisement page) including crowns, emojis, and clip art in 38% (n = 173) of the advertisements. A photo nameplate, where a name is placed on top of the photo in the advertisement, was found in 4.8% of advertisements (n = 22).

Time Posted

Out of the 420 advertisements that had listing times, 47.6% (n = 200) were posted between 5:00 PM to 12:59 PM.

Time	Frequency	Percent
5pm-5:59pm	33	7.9
7pm-7:59pm	28	6.7
8pm-8:59pm	25	6.0
10pm-10:59pm	25	6.0
9pm-9:59pm	24	5.7
11pm-11:59pm	23	5.5
12pm-12:59pm	22	5.2
6pm-6:59pm	20	4.8

11am-11:59am	18	4.3
2pm-2:59pm	18	4.3
3pm-3:59pm	18	4.3
4pm-4:59pm	18	4.3
3am-3:59am	16	3.8
1am-1:59am	15	3.6
12am-12:59am	15	3.6
6am-6:59am	14	3.3
1pm-1:59pm	14	3.3
5am-5:59am	13	3.1
10am-10:59am	12	2.9
2am-2:59am	11	2.6
9am-9:59am	11	2.6
7am-7:59am	10	2.4
4am-4:59am	9	2.1
8am-8:59am	8	1.9

Language in Advertisements

In 44 (9.5%) advertisements, the advertisements were offering doubles or two girls at once.

In 130 (28.2%) advertisements, there was language about specials or deals in the advertisement. In (37.3%) 172 advertisements included youthful descriptors such as ‘bubbly’, ‘cute’, ‘barely legal’, ‘first time’, and ‘just turned 18’. In 16 (6.9%) advertisements, language about ‘finding a Daddy’ or ‘looking for a Daddy’ was found in the advertisement. Offers to travel to ‘all locations’ was found in 194 (41.1%) of the advertisements. In 17 (3.7%) advertisements the statement ‘No Black Men’ or ‘No AA Clients’ was found. In 12 (2.6%) advertisements the advertisement placer requested that customers contact them through text only.

In 173 (37.5%) advertisements language in the advertisement was text-speak based. For example ‘lol’ or ‘hmu’ (hit me up). In 335 (72.7%) advertisements there were misspelled words or grammatical errors. In 47 (10.2%) advertisements the text was originally written as first person ‘I’ and switched in the body of the advertisement to third person ‘she’.

Photos in the Advertisements

One in three advertisements (33.4%, n = 154) of the advertisements had photos that were obviously taken in a hotel with signs, hotel furniture, hair dryer attached to the wall, or hotel bedspreads/pillows in view. In 312 (67.7%) advertisements the photos were taken by someone other than the person in the photo. In 322 (69.8%) advertisements, the photos were from multiple locations and in multiple outfits.

Other information from the photos included that the face of the person being advertised was not hidden and could be seen clearly in 253 (54.9%) advertisements. When analyzing the photos, the following were identified as being physically youthful.

Childlike fat on cheeks (n = 111, 24.1%)

Little to no curve at waist (n = 108, 23.4%)

Gangly arms/legs (n = 177, 38.4%)

Youthful staging including pig tails, stuffed animals, knee-high socks, holding school books (n = 4, 0.9%)

Most Common Features Found in the Advertisements

The poster did not try to hide or obfuscate the phone number: 80.5%

Misspelled words/grammatical errors: 72.7%

Photos were from multiple locations and in multiple outfits: 69.8%

Advertisements were posted on Backpage.com: 69.4%

Photo taken by person not in the photo: 67.7%

Face of the victim can be clearly seen in photos: 54.9%

Backpage.com Analysis

The majority of the confirmed child sex trafficking advertisements in the truth set were posted on Backpage.com (n = 320, 69.4%). The advertisements were posted in 2009 (n = 1), 2011 (n = 39), 2012 (n = 33), 2013 (n = 50), 2014 (n = 20), 2015 (n = 41), and 2016 (n = 136).

The Backpage.com advertisements were from 26 major U.S. cities.

City	Frequency	Percent
Las Vegas, Nevada	102	31.9
Myrtle Beach, South Carolina	80	25.0
Phoenix, Arizona	54	16.9
Minneapolis, Minnesota	11	3.4
Los Angeles, California	11	3.4
Portland, Oregon	11	3.4
Salem, Oregon	9	2.8
Denver, Colorado	7	2.2
San Francisco, California	5	1.6
Sacramento, California	5	1.6
Seattle, Washington	5	1.6
Tucson, Arizona	4	1.3
Atlanta, Georgia	2	0.6
Bakersfield, California	2	0.6
Stanford, Connecticut	1	0.3
San Mateo, California	1	0.3
Minot, North Dakota	1	0.3
San Diego, California	1	0.3

Fresno, California	1	0.3
Albuquerque, New Mexico	1	0.3
Olympia, Washington	1	0.3
Oakland, California	1	0.3
San Jose, California	1	0.3
Great Falls, Montana	1	0.3
Fargo, North Dakota	1	0.3
Marietta, Georgia	1	0.3
Total	320	100.0

Backpage.com Advertisement Content Details

Age Details

Each advertisement had an age listed for the person being advertised for sex. The age listed on the advertisement ranged from ages 18 to 26 years old with the average age of 20.72 years old (SD =1.98). The actual age of the victims in the advertisements was verified for 272 of the advertisements. The actual age ranged from ages 14 to 18 with the average age of 16.61 years old (SD = 0.57). The remaining 48 were identified by law enforcement as “minors” or “under age 18.”

Phone Number

There were phone numbers listed in 68.8% (n = 220) of the advertisements. Eighty-eight percent (88.1%, n = 282) of the advertisements did not attempt to obfuscate or hide the phone number from electronic searching. This would include using letters, symbols or numbers within the phone number. For example, six02 two*11*0000. Twenty-nine percent (29.1%, n = 93) of the phone numbers listed in the advertisements were from area codes outside the city where the advertisement was placed.

Advertisement Art

Symbols were used in the title (top of the advertisement page) including crowns, emojis, and clip art in 51.6% (n = 165) of the advertisements. A photo nameplate, where a name is placed on top of the photo in the advertisement, was found in 3.4% of advertisements (n = 11).

Time Posted

The advertisements were most likely to be posted between 7pm and 12am.

Time	Frequency	Percent
7pm-7:59pm	22	6.9
9pm-9:59pm	21	6.6
11pm-11:59pm	21	6.6
8pm-8:59pm	19	5.9
10pm-10:59pm	19	5.9
5pm-5:59pm	18	5.6
12pm-12:59pm	16	5.0

6pm-6:59pm	16	5.0
3am-3:59am	14	4.4
12am-12:59am	14	4.4
11am-11:59am	13	4.1
3pm-3:59pm	13	4.1
1am-1:59am	12	3.8
1pm-1:59pm	12	3.8
2pm-2:59pm	12	3.8
4pm-4:59pm	12	3.8
6am-6:59am	11	3.4
10am-10:59am	11	3.4
5am-5:59am	10	3.1
2am-2:59am	9	2.8
4am-4:59am	8	2.5
9am-9:59am	7	2.2
8am-8:59am	5	1.6
7am-7:59am	2	0.6

Language in Advertisements

In 33 (10.3%) advertisements, the advertisements were offering doubles or two girls at once. In 99 (30.9%) advertisements there was language about specials or deals in the advertisement. In 117 (36.6%) advertisements included youthful descriptors such as ‘bubbly’, ‘cute’, ‘barely legal’, ‘first time’, and ‘just turned 18’. In 12 (3.8%) advertisements, language about ‘finding a Daddy’ or ‘looking for a Daddy’ was found in the advertisement. Offers to travel to ‘all locations’ was found in 145 (45.3%) of the advertisements. In 14 (4.4%) advertisements the statement ‘No Black Men’ or ‘No AA Clients’ was found. In eight (2.5%) advertisements the advertisement placer requested that customers contact them through text only. In 97 (30.3%) advertisements language in the advertisement was text-speak based. For example ‘lol’ or ‘hmu’ (hit me up). In 220 (68.8%) advertisements, there were misspelled words or grammatical errors. In 44 (13.8%) advertisements the text was originally written as first person ‘I’ and switched in the body of the advertisement to third person ‘she’.

Photos in the Advertisements

One in three advertisements (35.6%, n = 114) of the advertisements had photos that were obviously taken in a hotel with signs, hotel furniture, hair dryer attached to the wall, or hotel bedspreads/pillows in view. In 223 (69.7%) advertisements the photos were taken by someone other than the person in the photo. In 242 (75.6%) advertisements the photos were from multiple locations and in multiple outfits.

Other information from the photos included that the face of the person being advertised was not hidden and could be seen clearly in 175 (54.7%) advertisements. When analyzing the photos the following were identified as being physically youthful. Childlike fat on cheeks (n = 59, 18.4%)

Little to no curve at waist (n = 93, 29.1%)
Gangly arms/legs (n = 126, 39.4%)
Youthful staging including pig tails, stuffed animals, knee-high socks, holding school books (n = 3, 0.9%)

Most Common Features Found in the Advertisements

The poster did not try to hide or obfuscate the phone number: 88.1%
Misspelled words/grammatical errors: 68.8%
Photo taken by person not in the photo: 69.7%
Photos were from multiple locations and in multiple outfits: 75.6%
Face of the victim can be clearly seen in photos: 54.7%

Case Study

This case study includes a 16-year-old female victim, *Client H* (this is a pseudonym). *Client H* was identified and age confirmed by law enforcement. She was linked and profiled in 35 advertisements on Backpage.com between the dates of January 9 to January 27, 2016. All of the advertisements (N = 35) were placed in the Escorts section on Backpage.com.

Age Details

The age listed in the advertisements for *Client H* ranged from 18 to 21 years old, with the majority of advertisements listing her as 19 years old (85.7%).

Phone Number

Thirty-four (97.1%) of the 35 advertisements featuring *Client H* had the same phone number. Of the 34 advertisements with the same number, 100% of them did not attempt to obfuscate or hide the phone number from electronic searching. Obfuscating would include using letters, symbols or numbers within the phone number. For example, six02 two*11*0000.

Advertisement Art

Symbols were used in the title at the top of the advertisement page including crowns, emojis, and clip art in 14.3% (n = 5) of the advertisements. A photo nameplate, where a name is placed on top of the photograph in the advertisement, was found in 8.6% of advertisements (n = 3). These photo nameplate advertisements were placed on the photographs of the victim only in Las Vegas, Nevada.

Language in Advertisements

In three advertisements (8.6%) of *Client H*, the advertisements were offering doubles or two girls at once. In these same three advertisements, there was language about specials or deals in the advertisement. These three advertisements were posted only in Portland, Oregon and Salem, Oregon.

In three different advertisements (8.6%) of *Client H* that were found in Las Vegas, they included youthful descriptors such as ‘bubbly’, ‘cute’, ‘barely legal’, ‘first time’, and

'just turned 18'. Offers to travel to 'all locations' was found in 33 (94.3%) of the advertisements. In nine (25.7%) advertisements, the statement 'No Black Men' or 'No AA Clients' was found.

In 12 (34.3%) advertisements of *Client H*, language in the advertisement was text-speak based. For example 'lol' or 'hmu' (hit me up). In all 35 advertisements, there were misspelled words or grammatical errors.

Photos in the Advertisements

Eighty-eight percent (n = 25) of the *Client H* advertisements had photos that were obviously taken in a hotel with signs, hotel furniture, hair dryer attached to the wall, or hotel bedspreads/pillows in view. In one advertisement, the photos were taken by someone else (not a selfie) while the rest were selfies. In 34 advertisements (97.1%) the photos were from multiple locations and in multiple outfits.

Other information from the photos in *Client H's* advertisements included that her face was not hidden and could be seen clearly in 27 (77.1%) of the advertisements. When analyzing the photos of *Client H*, the following were identified as being physically youthful.

Childlike fat on cheeks (n = 1, 2.9%)

Little to no curve at waist (n = 35, 100%)

Gangly arms/legs (n = 35, 100%)

Youthful staging including pig tails, stuffed animals, knee-high socks, holding school books (n = 0, 0%)

Victim Movement

Within 18 days, *Client H* was moved more than 1,300 miles between three different states. Below is an explanation of her movement and a map of the movement.

Oregon → California → Nevada

Portland, Oregon: January 9-11 (5 advertisements)

Salem Oregon: January 13-14 (6 advertisements)

Portland, Oregon: January 15 (2 advertisements)

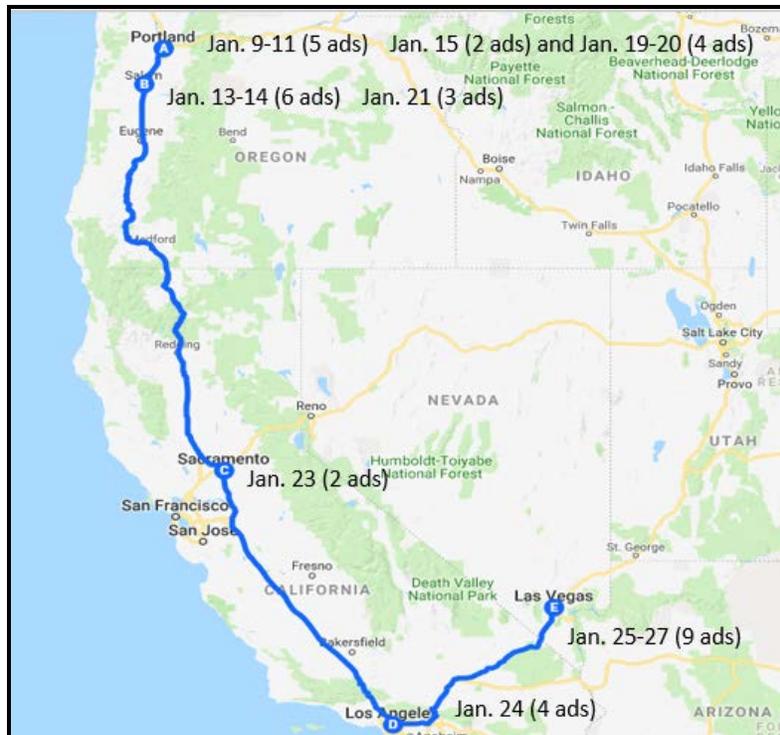
Portland, Oregon: January 19-20 (4 advertisements)

Salem, Oregon: January 21 (3 advertisements)

Sacramento, California: January 23 (2 advertisements)

Los Angeles, California: January 24 (4 advertisements)

Las Vegas, Nevada: January 25-27 (9 advertisements)



Conclusion

This Research Brief is a summary of 461 confirmed child sex trafficking online sex advertisements. While online advertisements supply limited information about the victim, the information in this Research Brief can be used to build the knowledge of law enforcement to detect advertisement elements when interacting with online sex advertisements. The findings from this study includes an exploration of the specific times advertisements are more likely to be posted, examples of language and writing found in the advertisements, and details about photos.

When the Arizona State University Office of Sex Trafficking Intervention Research team began this study, we realized to our horror that there were data collection 24-hour periods when there were more than a dozen advertisements posted in any city in the United States that met the criteria of identifying child sex trafficking victims that we were developing. More than two hundred advertisements were reported to the National Center for Missing and Exploited Children as we conducted this study and this truth set in some form has been shared with multiple law enforcement units for training purposes and DARPA to develop advanced machine learning to combat sex trafficking. The Sex Trafficking Matrix has been shared with dozens of police departments with the hope of building awareness that some indicators of child sex trafficking in online advertisements are subtle but when combined, can help create opportunities for data driven decision making to use police resources to investigate.

Add ID #: _____ CITY: _____ Phone # _____ Date _____ Time posted _____

Title Analysis		
Check	Indicators	Description
	Use of symbols	Example: •*~*•-:;! ~~~ (o)(o)
	Age listed _____	Ages between 19 and 21; may include youthful descriptors
	Ad post time	Most common post times: 5pm-6pm 7pm--10pm

Text Analysis		
Check	Indicators	Description
	Using text speak	"txt" "i" "plz" "pls" "ppl" "lol"
	Poor grammar	Misspelled words, lack of education in writing, incorrect punctuation
	Specials or Deals	"Specials" "Two girl special" etc. <i>**May also be found in title</i>
	Youthful descriptors	"bubbly", "petite", "new to the game", "young"
	Will travel to all locations	Under <i>Location</i> it says "ALL"; also "available 24/7"

Picture Analysis		
Check	Indicators: Context	Description
	Photos in hotel rooms	décor, toiletries in bathroom, hair dryer on wall, luggage stand etc.
	Photo taken by someone else	Not a selfie
	Photos in multiple locations/multiple outfits	
Check	Indicators: Person	Description
	Able to see face clearly	
	Child-like fat on cheeks	
	Little to no curve at waist	
	Gangly arms and legs	

Other Indicators to Consider		
Check	Indicators	Description
	"No black men."	Ad says "no black men" or "I love white men" <i>* May also be found as a picture</i>
	Phone out of area code	Area code doesn't match city ad is posted in
	Phone number is not spelled out	Phone number is 602-456-7899 instead of SIX 02 fOUR 5 six 78 NiNe niNE
	Ad posted on backpage.com	Was the ad posted on backpage.com?

Count each check mark as a 1. ____ SUM 4 (and over) →

____ Identified as a possible Sex Trafficking Victim if yes, are they a possible MINOR ST Victim _____

____ Did not pursue lead. Why?

____ Is the person in the ad known to you? ____ Yes ____ No; If yes, are they a known minor? ____ Yes ____ No

____ Pursued the lead and: Attempted contact Made contact