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## Estimating demand for illicit massage businesses in Houston, Texas

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### ABSTRACT

Illicit massage businesses are growing in number across the United States, yet they remain an understudied niche of the underground commercial sex economy despite implications for public health and criminal justice. This research fills an empirical gap in our understanding of illicit massage businesses by estimating actual demand for these businesses in one U.S. city, Houston, TX. We find that there are roughly 2,869 customers per day at illicit massage business in Houston, and that this yields total annual gross revenues of \$107 million.

### KEYWORDS

Illicit massage parlor; brothels; human trafficking; Houston; volunteered geographic data

### Introduction

For over a decade “massage parlors” have garnered some attention among scholars and activists as frequently being fronts for sex trafficking (e.g., Bales & Lize, 2005; Dank et al., 2014; Levar, Kanouse, & Berry, 2005; Weitzer, 2009). Recently, anti-trafficking organizations have become increasingly vocal about the intersection of “massage parlors” and sex trafficking. For example, the Polaris Project, one of the leading anti-trafficking organizations in North America, dedicates an entire page on its website to explaining the ways in which these “illicit massage businesses” are engaging in sex trafficking. Despite the best efforts of anti-trafficking groups, as well as news and law enforcement reports of the rapid increase in the number of massage parlors across the United States (e.g., Birr, 2017; Rood, 2016; Sivasankaran, 2014; White, 2014), the documented health risks—including HIV and sexually-transmitted infections—among Asian women who work in these establishments (Nemoto, Iwamoto, Wong, Le, & Operario, 2004; Nemoto, Operario, Takenaka, Iwamoto, & Le, 2003; Takahashi et al., 2013), and the increase in online forums of sex buyers that share information about massage parlors (Holt & Blevins, 2007), “massage parlors” continue to be an understudied niche of the broader sex trafficking discussion.

At the same time, there has been a growing movement toward examining demand for commercial sex in the United States. Most studies of demand for commercial sex services focus on understanding the people and culture of those who purchase sex (e.g., Blevins & Holt, 2009; Brewer et al., 2007; Durchslag & Goswami, 2008; Farley, Bindel, & Golding, 2009; Monto & Julka, 2009; Monto & McRee, 2005). There are very few studies that estimate overall demand for commercial sex in the United States (e.g., Monto, 1998), but a review of this literature reveals “that methodological difficulties plague research into clients of prostitutes” and that “estimates vary depending on the method of calculation” (Wilcox, Christmann, Rogerson, & Birch, 2009, p. 1). These sorts of methodological challenges are common in analyses of grey and black market economic activities, where record-keeping and public information access are extremely limited (Venkatesh, 2006). One way to develop more precise estimates is to examine specific sectors of commercial sex in more localized contexts. For example, one study examined online review sites of sex buyers in 10 U.S. cities to determine how buyers share information on price and how this impacts their buying behavior (Holt, Blevins, & Fitzgerald, 2016). Another recent study estimated the volume of demand

specifically for online prostitution across 15 U.S. cities (Row-Sepowitz, Hickie, Gallagher, Smith, & Hedberg, 2013); however, the study is limited in that it measures only the intent to purchase sex, not whether or not the transaction actually took place. Moreover, even fewer studies have attempted to measure the economic impact of demand for commercial sex (Dank et al., 2014). Most relevant for the present study, there have been no attempts to measure demand specifically for “massage parlors.”

The purpose of the article is first to develop an operational definition of what we henceforth refer to as “illicit massage businesses” (IMBs). We then aim to empirically measure demand for illicit massage businesses. We ask three specific questions: (a) what variables are correlated with demand for commercial sex services in IMBs; (b) what is the total demand for commercial sex services in IMBs; and (c) what is the economic impact of IMBs in the commercial sex industry? In order to answer these questions, we designed a study that investigates demand for commercial sex services in IMBs in one U.S. city, Houston, TX, commonly referred to as a hub for sex trafficking (e.g., Farrell, McDevitt, & Fahy, 2008). Drawing on user-generated locational data from online IMB review sites, we identified 292 parlors where commercial sex services were reported to be available. We placed cameras on public property outside 32 of the Houston-area IMBs for a 24-hour period on random days of the week between March and September 2016. We then analyzed the camera footage, coding for the number of people that walked through the door, at what time, and for how long. Combining this demand data with neighborhood census data and data available on an Internet review site about each IMB in Houston, we are able to estimate what variables predict demand for IMBs, and then use those estimations to predict total demand across all IMBs in Houston, which then allows us to estimate the total daily and annual gross revenues for the IMB industry in Houston. This methodology is unique in that it is the first to measure demand using measures of actual foot traffic. Overall, we find that across all IMBs in Houston, there are approximately 2,869 customers/day and this demand translates to total annual gross revenues of approximately \$107 million for IMB services in Houston, TX alone. This research bolsters empirical and theoretical understanding of the operation of IMBs, an area that remains understudied within the social sciences (Weitzer, 2009).

## Background and literature review

### *Commercial sex work background and literature*

Illicit massage parlors represent a growing area of the broadly defined commercial sex work industry. Despite the growth of research on sex work from a variety of social and medical science disciplines over the past 20 years, IMBs remain understudied, as the bulk of literature focuses on sectors of the commercial sex industry that are more publicly visible and thereby accessible to researchers. Although there is very little literature on the illicit massage industry, evidence suggests that it deserves more scholarly attention among those engaged in research across a variety of issue areas—including those studying the commercial sex industry, sexual exploitation, sex trafficking, and organized crime.

Regardless of discipline, research on sex work tends to adopt one of three theoretical perspectives: the oppression paradigm, the empowerment paradigm, and the polymorphous paradigm (Weitzer, 2009). The oppression paradigm frames all commercial sex work as an example of exploitive, patriarchal gender relations. Conversely, the empowerment paradigm frames commercial sex work as a legitimate form of labor that women can, and do, enter into voluntarily, and through which women can display agency at the individual and group levels. Our research falls under the polymorphous paradigm in that we use empirically-grounded research methods to examine the industry from an economic standpoint. Our analysis is motivated by a concern regarding the ways that IMBs are used by human trafficking organizations to generate revenue, launder income from other illicit sources, and otherwise profit from the work of women who may be involuntary participants in the commercial sex industry. It is important, therefore, to explicitly define IMBs for this research and illustrate the links to human trafficking and other illicit activities.

## Defining illicit massage businesses

There is currently no operational definition by which to empirically examine the illicit massage industry in the United States. This article sets forth the following definition: Illicit massage businesses are establishments with registered business names that ostensibly provide massage, wellness, and/or spa services while in fact deriving some clientele and revenue through the provision of commercial sex acts. As such, IMBs operate in violation of state and federal laws, which may include criminal statutes regarding human trafficking (including sex trafficking and severe forms of sex trafficking), debt bondage, as well as organized criminal activities such as money laundering, visa and immigration fraud, smuggling, and/or tax evasion. In addition to such criminal activities, they often operate in violation of zoning, licensing, and workplace safety laws, regulations, and ordinances. As such, IMBs can be considered part of the illicit economy, which is notoriously difficult to measure (Portes, Castells, & Benton, 1989; Venkatesh, 2006).<sup>1</sup> The following review of federal court cases, media reports, and online review sites provide illustrations for each of the provisions of this definition.

## Commercial sex acts

IMBs advertise themselves as legitimate businesses, often located in strip malls, with legitimate registered business names. The necessary *and* sufficient condition classifying an IMB (as opposed to a licit massage business) is that the establishment derives some clientele and revenue through the provision of commercial sex acts. The federal definition of a commercial sex act is “any sex act on account of which anything of value is given to or received by any person” (18 U.S. Code § 1591). A sex act is defined in 18 U.S. Code § 2246 as follows<sup>2</sup>:

- (1) contact between the penis and the vulva or the penis and the anus, and for purposes of this subparagraph contact involving the penis occurs upon penetration, however slight;
- (2) contact between the mouth and the penis, the mouth and the vulva, or the mouth and the anus;
- (3) the penetration, however slight, of the anal or genital opening of another by a hand or finger or by any object, with an intent to abuse, humiliate, harass, degrade, or arouse or gratify the sexual desire of any person; or
- (4) the intentional touching, not through the clothing, of the genitalia of another person who has not attained the age of 16 years with an intent to abuse, humiliate, harass, degrade, or arouse or gratify the sexual desire of any person.

<sup>1</sup>Although part of the illicit economy, IMBs behave more like licit retail businesses. First, for most illicit economies the market is networked with sale and purchase exchanges among known partners, which minimizes risk but limits sales (Eck, 1995). Conversely, the market transactions of IMBs, like most retail establishments, are “open network” or among strangers. Second, illicit markets for goods such as drugs and weapons do not have visible storefronts, making it more difficult for law enforcement to identify (Eck, 1995). IMBs, on the other hand, operate with visible storefronts, just like licit retailers. Given that purchase and sale is “open network” and that they have visible storefronts, the risk of operating for IMBs is very high. Nevertheless, they are able to operate akin to licit retail businesses with relative impunity for several reasons: (a) their ability to cover their illicit activity by ostensibly providing licit services; (b) structuring the business such that the workers are considered “independent contractors” rather than employees of the business; (c) actively screening customers to ensure they are not wearing microphones or cameras and using specific language to identify potential law enforcement before illicit services are rendered; (d) advertise in traditional advertising outlets such as newspapers or billboards; (e) using outdoor cameras and buzzer systems to screen who enters the doors; (f) paying rent to legitimate landlords; (g) sometimes paying taxes; and (h) sometimes acquiring proper permits and licensing (Polaris Project, 2011).

<sup>2</sup>Given that the empirical analysis in this article examines Houston, TX specifically, it is important to note that Houston does not explicitly define a “commercial sex act,” though it does have an ordinance defining “sexual activities” which include: “(a) human genitals in a discernible state of sexual stimulation or arousal; or (b) Acts of human masturbation, sexual intercourse or sodomy; or (c) Fondling or other erotic touching of human genitals, pubic region or pubic hair, buttock or female breast or breasts; or (d) Any combination of the foregoing.” Section 28: 121–150 set forth the provisions for sexually oriented businesses, or businesses that engage in these “sexual activities.”

Several scholarly publications examine the public health risks of commercial sex acts that take place in the massage parlor context (Handlovsky, Bungay, & Kolar, 2012; Kolar, Atchison, & Bungay, 2014; Nemoto et al., 2004, 2003; Takahashi et al., 2013), indicating that these establishments are engaging in risky commercial sex. Beyond this, an evaluation of various online forums that provide reviews for people looking for commercial sex, broadly known as “John Boards,” reveals that “massage parlors” across the country attract clientele by providing commercial sex acts as part of the service. USA Sex Guides is one such forum. “The founder of the USA Sex Guide writes that ‘this website is all about assisting people in obtaining commercial sex services,’ and other users describe the forum using terms such as ‘this here hooker board’” (Janson, 2013, p. 19). Notably, USA Sex Guides has a specific section titled “Massage Parlor Reports,” which contains reviews of IMBs and tips shared by the users. A report examining sex buyers’ attitudes and online behavior based on content analysis of USA Sex Guides published the following quotes from the “Massage Parlor Reports” message board from the Chicago, IL area:

Never done anything but amp’s [Asian massage parlors] but next I want some latina but sounds like they can be a pain with haggling and charging too much. If anyone could tip me off to the best latina places where fs [full sex] could be had that would be great. especially I like them straight off the boat and not too Americanized. (User on Chicago Massage Parlor Reports forum; Janson, 2013, p. 39)

Had C\*\*\* who was very cute, very sweet, and just an amazingly tight body. It’s pretty obvious that she likes to fuck. Kept telling me how much she likes my dick but I’m sure she says that to everyone. (User on Chicago Massage Parlor Reports forum; Janson, 2013, p. 42)

In addition to the USA Sex Guides “Massage Parlor Reports” section (and many other online review sites with sections dedicated to reviews of massage parlors), other websites exist exclusively for the purpose of reviewing massage parlors. These include RubMaps.com, AAMPmaps.com, EroticMP.com, MPReviews.com, among others. The explicit sexual content of the reviews for these “massage parlors” make it clear that these establishments derive some clientele and revenue through the provision of commercial sex acts. On that basis alone, these are illicit massage businesses (IMBs).

### ***Sex trafficking and severe forms of sex trafficking***

Sex trafficking is neither a necessary nor sufficient condition to be classified as an IMB. Nevertheless, some IMBs engage in sex trafficking, and some in severe forms of sex trafficking.<sup>3</sup> The legal definition of sex trafficking is “the recruitment, harboring, transportation, provision, obtaining, patronizing, or soliciting of a person for the purpose of a commercial sex act” (22 U.S. Code § 7102). This definition is enough to prosecute a case that involves a minor victim who is under the age of 18 years old because, by definition, cases involving minor victims constitute a “severe form of sex trafficking” regardless of the means. However, in order to prosecute a case involving adult victims, the means must include “force, fraud, or coercion,” which then classifies the case as a “severe” form of sex trafficking.

A review of federally-prosecuted sex trafficking cases in the United States reveals that some IMBs engage in both sex trafficking and severe forms of sex trafficking. There is evidence suggesting that individuals that work in illicit massage businesses are recruited, harbored, transported, provided, and/or obtained for the purpose of commercial sex acts. In the case of *U.S. v. Yang et al.* (2005), Korean females were recruited in both South Korea and Canada, transported to the United States and throughout the San Francisco Bay area, harbored at the IMBs, and provided to customers for the purpose of engaging in commercial sex acts. Another case demonstrating IMB engagement in sex trafficking is *U.S. v. Strunk*

<sup>3</sup>Although sex trafficking has been found and is suspected in massage parlors, law enforcement noted that the percentage of women trafficked in massage parlors is small relative to those voluntarily involved in prostitution. One official estimated that of the cases they have seen, 70 percent of the women are voluntarily involved in prostitution and about 30 percent are sex trafficked. Proving whether the women involved are sex trafficked or voluntarily involved in prostitution is difficult” (Dank et al., 2014, p. 71).

*et al.* (2008), in which women from China were recruited and transported to the United States to work at Swan Day Spa where they were expected to perform sex acts with male customers.

Illicit massage businesses also engage in “severe forms of sex trafficking” through the use of force, fraud, and coercion of adult victims, or by recruiting minor victims. For example, in the case of *U.S. v. Butler, et al.* (2009), a group of co-conspirators coerced adult and minor females into providing commercial sex acts at massage parlors and health spas, which were disguised as legitimate businesses, and used force and threats of force in order to make the victims comply. In *U.S. v. Alex Campbell* (2010), vulnerable women with questionable immigration status in the United States were coerced to work in massage parlors, then they would eventually be beaten, branded, threatened, blackmailed, and forced to pay thousands of dollars in “fines.”

There are several other aspects of coercion evidenced in the IMB model that these cases reveal. First, IMB owners often confiscate the passports of their victims. Second, victims sometimes live at the IMB, some of which are open 24 hours/day (Levar et al., 2005, p. 118; Nemoto et al. 2004, p. 478). Third, victims are usually transported by drivers to different IMBs in the same city or region, or across the country, on a circuit that provides a fresh supply of new women in order to keep customers coming back (Dank et al., 2014, p. 281). Collectively, these factors create an environment in which the female victims are often scared to leave. And one law enforcement officer noted that, even when freedom of movement is not restricted, the massage parlor environment is still controlling and coercive:

So let's say that it is a case with a vast majority of these girls in massage parlors that they're not suffering from physical assault and threats and things of that nature. But it's that, it's that game. After years and years of living in this, you don't come from here anyway. It's that coercion. It's that constant coercion. And so they may not have that lack of freedom of movement, they can go to the gym, they can do this. But at the end of the day, are they still under someone's control? Yeah. (Dallas law enforcement official; Dank et al., 2014, p. 72)

### **Debt bondage**

Beyond sex trafficking, some IMBs also use debt bondage as a coercive tactic to compel victims to continue to engage in commercial sex. The U.S. State Department (2017) explains: “Sex trafficking also may occur within debt bondage, as individuals are compelled to continue in prostitution through the use of unlawful ‘debt,’ purportedly incurred through their transportation, recruitment, or even their “sale”—which exploiters insist they must pay off before they can be free” (“Sex Trafficking,” para. 1).

In 1999, U.S. immigration officials conducted Operation Lost Thai, in which they identified 250 massage parlors across 25 cities, and found that debts can range anywhere from \$30,000 to \$50,000 (Richard, 1999), although other reports have provided lower numbers ranging from \$10,000 to \$30,000 (Herdy, 2005; Meyer, 2006). The women are forced to work for no pay until the debt is completely paid back.<sup>4</sup>

The debt bondage process generally begins with recruiters or brokers in the country of origin enticing vulnerable women to come to United States. Sometimes the women are aware that they will be working in the commercial sex industry (e.g., Lin, 2000), other times they are told they will be working as waitresses, nannies, or housekeepers (e.g., Herdy, 2005). The brokers secure passports and visas for the women, mostly using fraudulent means. The women are charged for the documents, the transportation costs, and the smuggling fee, which they are unable to pay. The women are transported straight to the United States, or to Mexico or Canada and smuggled across the border. The recruiter or broker then provides the women to an IMB owner, who pays the full debt, at which point the women become bonded laborers of the IMB owner. Thus, while debt bondage is neither a necessary nor sufficient condition to classify a massage parlor as an IMB, it does constitute a means by which some massage parlors operate, and is an additional coercive tactic used to maintain the complicity of the victims.

<sup>4</sup>One report noted that after debts are paid, many women voluntarily continue to do the work, which leads to questions about whether the individual is a victim of sex trafficking or a woman voluntarily engaging in prostitution. “Law enforcement acknowledged the often blurred lines between women that were initially sex trafficked in massage parlors and then voluntarily continued working in prostitution after they paid their debts” (Dank et al., 2014, p. 72).

## Other criminal activities and violations

Thus far, we provided justification for the first part of our definition of an IMB: establishments with registered business names that ostensibly provide massage, wellness, and/or spa services while in fact deriving some clientele and revenue through the provision of commercial sex acts, which may include sex trafficking, severe forms of sex trafficking, and/or debt bondage. The second part of the definition states that IMBs also may engage in other organized criminal activities, including but not limited to, money laundering, visa and immigration fraud, smuggling, and/or tax evasion, and that they often operate in violation of zoning, licensing, and workplace safety laws, regulations, and ordinances.

First, there have been several federally-prosecuted cases demonstrating that IMBs may engage in visa or immigration fraud. For example, in *U.S. v. Valdma* (2003), an Estonian man recruited Estonian women to work in his two IMBs in the Boston area. He was convicted, among other things, of visa fraud as he obtained fraudulent visas for the women to enter the United States. In *U.S. v. Yoshiko LLC* (2010), defendants were charged with bringing in and harboring Korean aliens to work at their IMB.

Additionally, many charged in cases involving illicit massage businesses are also charged with money laundering or cash smuggling. In the case of *U.S. v. Malcolm* (2005), the defendant was convicted of reports of exporting/importing monetary instruments and bulk cash smuggling as part carrying out the business operations of his IMBs—including Ruby Spa, Venetian Body Work, and Palm Tree Relaxation, all in Dallas, TX. Defendants in *U.S. v. Frey et al.* (2008), were charged with money laundering and racketeering activities as they operated two shell companies, Crown Venture Capitol and Crown Venture Management, through which to launder the money from their three Seattle-based IMBs—Aloha Tanning Resort, Malibu Tanning Spa, and Avalon Spa.

IMBs also have been investigated for violating licensing, zoning, and the Occupational Safety and Health Administration (OSHA) rules. For example, Cai Spa in Ohio and Simple Serenity in Rhode Island were both shut down after investigations found that the businesses advertised on adult classified Internet sites and were therefore deemed to be a sexually-oriented businesses that violated zoning ordinances. In addition, both of these IMBs violated licensing laws as none of the workers was licensed massage therapists (Rantala, 2016).

## Hypotheses and exploratory questions

### What factors predict demand?

The first question this research aims to answer is what factors predict demand for IMBs in the United States. We highlight four factors that impact the number of customers seeking IMB services per day: location, quality, price, and hour. As in many other business models, each of these factors plays a role in maximizing the utility to the customers (e.g., Eiselt & Laporte, 1998). We provide context for each of these factors below.

First, we hypothesize that the location where the IMB operates will significantly impact demand. As with any business, location matters. “The location of facilities is a strategic decision for a firm that competes with other firms to provide goods or service to customers” (Pelegrín, Fernández, & Pérez, 2014, p. 1). Specifically, when firms make strategic decisions regarding where to locate, they take into consideration their customer base and attempt to locate in an area convenient for customers that have high foot traffic. Thus, we hypothesize that neighborhood characteristics—specifically population and affluence—will influence the number of customers an IMB attracts. IMBs located in neighborhoods with larger populations and those located in more affluent neighborhoods will experience greater demand.

Second, we hypothesize that the perceived quality of the IMB significantly impacts demand. A large body of literature shows that the perceived quality of a service significantly impacts customer loyalty in the service sector (e.g., Cronin, Brady, & Hult, 2000; De Ruyter, Wetzels, & Bloemer, 1998). This is, perhaps, why the “John Boards” are so important in the commercial sex buying culture. Buyers can rate establishments and provide feedback on specific providers, all of which

contribute to buyers' perceived quality of the IMB. Thus, IMBs with more reviews and those with higher ratings overall will experience greater demand.

A third factor that we hypothesize impacts demand is the price, including the convenience of the payment options. Here, price is defined simply the average cost of the service, where we anticipate that those firms with lower costs will experience higher demand, *ceteris paribus*. Additionally, those that provide the option of credit card payment will experience higher demand than those that accept only cash as this makes it more convenient for the customers. While customers may be reticent to pay with credit card given the ability to trace the transaction, research suggests that some of these businesses have to conceal service fees from credit card companies "in order for the credit card companies to approve them" (Dank et al., 2014, p. 209). This not only provides cover for the business to the credit card companies, but also "decrease[s] the likelihood that the customer's wife or girlfriend would become suspicious" (Dank et al., 2014, p. 209). Therefore, the lower the average price and the more convenient the payment options, the higher the demand.

The last variable that impacts demand is exogenous to the business itself, but relates to the temporal aspect of demand, specifically time of day. There is a large literature on time-of-day analysis for service marketing because of the "pervasive recognition of the fact that much of social life—and in industrialized nations in particular—is temporally structured in accordance with clock time" (Dacko, 2012, p. 376). Demand will ebb and flow throughout the 24-hours of the day, and this ebb and flow could be related to work or leisure schedules, which are also likely to vary from city to city depending on the culture of a particular city. Regardless, we expect that demand will be higher or lower given the time of day.

### ***What is the demand for illicit massage businesses?***

The second research question asks what is the demand—based on customer counts—of IMBs? To date, there are no empirically-derived estimates of the scale and scope of IMB economic activity. The lack of empirical rigor in estimates of economic activity is a common shortcoming in research on informal (grey market) and/or illicit (black market) economies (Portes et al., 1989; Venkatesh, 2006). Therefore, there are no specific hypotheses associated with this question; however, the amount of traffic on the massage parlor review sites and the number of reviews on these sites indicates that demand is quite high.

For example, MPReviews.com boasts on its homepage that it has over 100,000 reviews on over 40,000 providers across the United States. A 2014 report on the underground sex economy found that "the number of erotic massage parlors is increasing in the United States (from 4,197 in 2011 to 4,790 in 2013), and they are proliferating beyond the West and East coasts where the majority of them are clustered" (Dank et al., 2014, p. 56). Therefore, we seek to examine daily customer counts for IMBs in order to discern what the actual demand is for these establishments.

### ***What is the economic impact of this demand?***

The final question relates to the economic impact of this demand, measured in gross revenue. Many news articles that have reported on law enforcement raids of IMBs reveal astonishing amounts of cash that were seized. For example, in October 2016, police in Oaklyn, NJ raided an illicit massage business (IMB) and found over \$46,000 in cash at the site (Skoufalos, 2016). In the same month, police in Indianapolis, IN and Houston, TX uncovered \$55,000 and \$24,000, respectively, during an IMB raid in each of these cities (Hays, 2016; Ptashkin, 2016).

Another report states of an owner of a massage business, "The owner started to franchise her business and sold the business to a pimp for \$250,000 plus a percentage of the profits earned. Law enforcement took down the operation and seized \$1,000,000 in business properties, \$180,000 from her home, and \$40,000 to \$50,000 in jewelry, and vehicles including a Hummer, cargo van, and a leased Mercedes. These assets totaled \$1.2 to \$1.5 million" (Dank et al., 2014, p. 74). Collectively, this evidence suggests that IMBs are big business fueled by demand for commercial sex.

## Research methods

In order to test these hypotheses, we collected data from a variety of sources and use several methodological techniques in our analysis. We describe below our data collection efforts—including the process of selecting Houston as the case study, selecting sample IMBs, scraping user-generated data, calculating an error rate, counting customers, and merging IMB data with U.S. census data. We also discuss our empirical methods of analysis.

### Case study selection

Answering these questions required counting actual demand for commercial sex at illicit massage businesses. In order to do this, we selected Houston, TX as our case study. Houston is thought to be a major center of sex trafficking. According to statistics from the National Human Trafficking Hotline, 340 victims of sex trafficking were identified in Houston via the hotline in 2016 alone, and the plurality of these victims were working in commercial brothels, which includes illegal massage businesses (National Human Trafficking Hotline, 2016). There are several potential reasons for the large numbers of sex trafficking victims in Houston. One study noted:

... local geo-economic conditions make [Houston] especially vulnerable to human trafficking. For example, the area is characterized by a close proximity to the 450 mile border with Mexico, three major interstate highways that run close to the Mexican border pass through the Houston area and on to the rest of the United States, and the 25 mile long Port of Houston connects with the Gulf of Mexico and ranks first in foreign waterborne commerce in the United States. Additionally the Houston area supports a variety of research facilities, diplomatic corps, and international businesses sponsor a large number of H1B visa applications for workers. The Houston area has a large agricultural economic sector creating a demand for cheap unskilled labor and has a significant economic sector in and demands for sex-related businesses including massage parlors, modeling studios, strip clubs and cantinas. (Farrell et al., 2008, pp. 99–100)

In other words, Houston's geography, economy, and diversity all contribute to sex trafficking in that city. In addition to the attention Houston has received as a hub of sex trafficking, Houston's law enforcement community has been active in investigating human trafficking cases, and a number of nonprofit organizations have existed to serve victims. Governmental and nongovernmental agencies at both the local and federal levels have collaborated to investigate and prosecute perpetrators, and provide services to victims. Thus, Houston was an ideal location to examine these questions given the prevalence of sex trafficking, despite law enforcement activity to combat it.

### IMB sample selection and user-generated data

After selecting the city, we generated a list of illicit massage businesses in Houston using the website RubMaps.com. This is a user-generated site “where fantasy meets reality” in which “[u]sers submit the location of the business, pictures of the business, and also the reviews. None of these has been verified by Rubmaps. Therefore, it is unknown whether these locations are accurate, if the pictures actually depict the locations, or if the reviews are factual” (RubMaps.com, 2017). We accessed this list on December 1, 2015, which generated a total list of 444 IMBs, of which 144 were reported on the site as being closed, with another eight being duplicates. This led to a total population of 292 reportedly open IMBs. We collected the following data from the website on each of the 292 locations: average star rating, the number of reviews, the average cost per service (which includes both the door fee and the tip), and the types of payment methods that are accepted.<sup>5</sup>

We then selected a targeted sample of 45 IMBs that we would survey to determine: (a) the likelihood that they were illicit massage businesses (as opposed to legitimate massage businesses);

<sup>5</sup>We did not conduct a qualitative analysis of the reviews to determine whether the reviews were positive or negative. We simply counted the total number of reviews that an establishment received. Future research can examine the qualitative nature of the reviews as this is likely to impact demand, as well.

and (b) whether they were still open. The initial sample was selected by mapping all 292 locations to examine the geographic dispersion of the establishments (see Figure 1). We selected establishments in locations roughly proportional to the overall geographic distribution within the city, as well as selecting a few outliers. In addition to the geographic considerations, we also considered the number of reviews per establishment when selecting our sample. One IMB in the sample had 102 reviews, while two sample sites had no reviews.

The survey and surveillance portions of our study served two important purposes. First, we used the number of verified customers from each location in our economic analyses. Second, the process of surveying and analyzing the video of each site allowed us to verify the user-generated information drawn from the IMB review website. There is considerable discussion within academic and public policy circles regarding the quality and validity of user-generated data (Flanagin & Metzger, 2008; Goodchild, 2007; Haklay, 2010). Our surveillance allowed for the site locations and activities to be verified empirically. For example, we were unable to conduct surveillance on two IMBs because their entrances were not visible from the street. One was inside a purported pharmacy and the other was inside a gated apartment complex. A further four sample locations were determined to be legitimate massage businesses because the majority of customers were women.<sup>6</sup> An additional seven establishments were closed and appeared to be no longer in business. In all, we were left with a sample of 32 IMBs out of 45 from the initial sample.

### Calculating error rate

That only 32 of the 45 IMBs in the sample were open and clearly illicit amounts to a 29% error rate. In other words, of the 292 establishments listed on RubMaps.com, the initial estimate is that 71% of them (or 207 establishments) are *actually* illicit massage businesses that are currently operational while 29% (or up to 85 establishments) are either legitimate businesses or are closed for business.

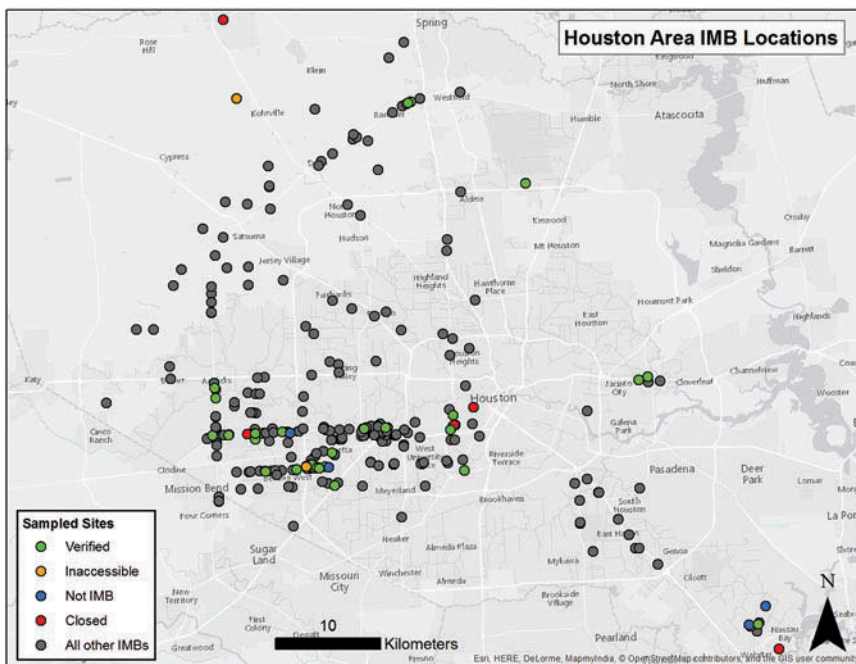


Figure 1. Houston area IMB locations.

<sup>6</sup>In the final sample of IMBs, every customer that entered the establishment was male.

However, there are several reasons to believe the 29% error rate is inflated. First, there is no reason to believe that the two establishments that were in somewhat hidden locations are not IMBs. Although one of them did not have any reviews, the reviews for the other seem to indicate that the business is erotic in nature.<sup>7</sup> This increases the number to 34 out of 45 sampled being IMBs. Second, among the seven businesses that we found closed, it is likely that some of them will reopen, possibly in the same location, under a different name. A 2010 article in the *Houston Chronicle* quoted a Houston vice officer: “There are so many [IMBs] that open and close so fast, change names and change ownerships. We definitely can’t keep track of all of them” (Wang, 2010, para. 5). The article describes one IMB that has opened and closed in the same location under four different names over the course of 2 years:

Last year, the Houston city attorney issued an injunction against the property owner, who, in turn, evicted the King Spa (previously known as VIP Spa). It opened again with a new name, first as Montage Massage & Day Spa and then as Du Soleil, with a new owner in the same spot in the same strip mall from which it was evicted. (Wang, 2010, para. 9)

Given the rapid rate at which these businesses open and close, it is highly probable that at least some of the seven IMBs that appeared closed were not closed permanently. We estimate conservatively that three out of the seven will reopen under a different name, which increases the number to 37 out of 45 sampled being IMBs. This leads to an 18% error rate. In other words, of all the massage businesses listed on RubMaps.com, we estimate that 18% of them are legitimate businesses or are no longer in business, while the remaining 82% are IMBs. We describe in more detail below how we apply this 18% error rate to customer demand and revenue estimates for IMBs in Houston.

### **Customer counts**

Upon finalizing the targeted sample, we set up surveillance videos on public property outside the sample establishments on random days of the week for a 24-hour period. Analysis of surveillance video is common in a variety of academic fields, from nursing (Caldwell & Atwal, 2005) and consumer analysis (Underhill, 1999) to urban planning and design (Whyte, 2009). Video surveillance analysis is particularly appropriate when the researchers’ presence would alter the individual or group behaviors in ways that would invalidate the findings (Ghel & Svarre, 2013). In this context, the surveillance video allowed us to capture the number of people that entered and exited the IMBs during a 24-hour period in such a way that would not interfere with the behavior of the customers and would also allow us to maintain the anonymity of the customers as the video did not capture any identifying information of the individuals that entered and exited the establishments.<sup>8</sup>

After the video was collected, we viewed the footage and coded the relevant demand data to obtain the dependent variable for the study. For each person who entered the establishment, we recorded the time they entered and the time they left. We also took detailed notes regarding failed attempts of customers who walked in and immediately walked out, or those who tried to enter when it was closed or locked. These “failed attempts” were not counted in the total demand numbers and they are not used to calculate the gross revenues. Thus, the demand variables constitute the most conservative count of actual paying customers who received services. This generated two different dependent variables: total demand and hourly demand (in 2-hour increments).

### **U.S. census data**

Finally, we collected additional independent variables from the 2013 American Communities Survey, published by the U.S. Census Bureau. Census demographic data were assigned to each IMB in the data set by establishing the “neighborhood” for each location. The IMB neighborhood was defined as

<sup>7</sup>One review for this IMB stated: “Nice looking Japanese girl. Pretty face and a nice rack. Nipples were poking out of her tshirt.”

<sup>8</sup>This project received IRB approval on December 16, 2015. It was determined by IRB to be exempt under Category 2 because the research observes public behavior of human subjects that cannot be personally identified.

all of the census tracts that fell within 0.5 miles of each IMB. The neighborhood variables calculated include population per 1,000 residents, percentage of housing units that are unoccupied, percentage of residents that are renters, and the percentage of residents that are White.

### **Empirical methods**

To answer our first research question—what variables are correlated with demand for commercial sex services in IMBs—we ran an ordinary least squares regression model in which the dependent variable is hourly demand, measured as the number of customers that received services every 2 hours throughout the day (e.g., from 12 a.m.–1:59 a.m., 2 a.m.–3:59 a.m., etc.).<sup>9</sup> In these models, we cluster by IMB. The first independent variable in this model is the hour of the day in 2-hour increments. This variable ranges from 1 to 12, where 12 a.m.–1:59 a.m. takes on a value of 1 and 10 p.m.–11:59 p.m. takes on a value of 12. The next set of variables codes for the characteristics of the neighborhood in which the site is located. These include population per 1,000 residents, percent of unoccupied housing, and percent renters. Next, we include a set of variables that measure perceived quality of services. The first is the total number of reviews on RubMaps.com, which takes on a value of 1 if the establishment has between 0 to 10 reviews, a value of 2 if it has between 11 and 25 reviews, and a value of 3 if it has more than 25 reviews. The second is the percent star rating on RubMaps.com, which is computed as the average rating given to the IMB based on user reviews. The last set of variables relate to the economic characteristics of the sites, including the total cost for services (calculated based on the door fee and the average tip amount as reported by reviewers on RubMaps.com) and a dichotomous variable for whether or not the establishment accepts only cash for payment.

The second question examines the total demand for IMBs in Houston. We take a two-step process to answer this question. First, we ran an ordinary least squares regression model wherein the dependent variable is total demand per establishment over the course of the entire 24-hour period. The independent variables are identical to those described in the model above with the exception of the hour variable given that the new dependent variable is based on total demand, regardless of the time of day. Second, after running this model, we develop a forecasting model that predicts total demand across all 292 IMBs in the data set to derive fitted demand based on the actual demand from the sample population. We then assume that these are unique visitors (i.e., the same person is not purchasing from different sites on the same day), and calculate the total number of customers per day across all 292 IMBs. Finally, we reduce our estimate by 18% to correct for potential errors from the user-generated data.

Finally, we examine the question regarding gross revenues of all IMBs in Houston, TX. We do this by multiplying the fitted demand values by the average cost for services of each of the 292 IMBs as listed on RubMaps.com to get the gross revenue per IMB per day.<sup>10</sup> We then add up these values to get the gross revenue of all IMBs in a single day. Finally, we multiply by 365 days/year in order to derive the estimate of total gross revenues of Houston, TX IMBs per year.

## **Results**

### **Predicting demand for IMBs**

To reiterate, our first research question examines those variables that predict demand for IMBs. Specifically, we examine factors that relate to the locational features of the IMB, the perceived quality, the economic characteristics, and the time of day. We begin with an analysis of the results of Model 1 in [Table 1](#). The first three rows of Model 1 reveal that, overall, the neighborhood particularities in which the IMB operates does impact demand. Specifically, as the population of

<sup>9</sup>Given that the dependent variable is a count variable, we initially ran negative binomial regression models. The results between the negative binomial and OLS regression were very similar, so for ease of interpretation and parsimony, we report the OLS results.

<sup>10</sup>There were 32 IMBs that did not have average cost data on RubMaps.com. For these 32 IMBs, we used the overall average cost per service of \$106.

**Table 1.** Predicting Demand for IMBs.

	Model 1 Predicting Hourly Demand	Model 2 Predicting Hourly Demand	Model 3 Predicting Daily Demand	Model 4 Predicting Daily Demand
Population/1,000	0.03 (0.01)***	0.04 (0.01)***	0.43 (0.13)***	0.53 (0.13)***
Percent Unoccupied Housing	-0.04 (0.02)**	-0.05 (0.01)***	-0.55 (0.23)**	-0.67 (0.21)***
Percent Renters	-0.01 (0.00)**	-0.01 (0.00)**	-0.22 (0.20)**	-0.18 (0.08)**
Number of Reviews				
1	-0.64 (0.28)**	-1.06 (0.25)***	-7.80 (3.29)**	-12.92 (2.89)***
2	-0.87 (0.25)***	-1.02 (0.24)***	-10.53 (2.93)***	-12.30 (2.81)***
Star Percent	0.37 (0.37)	0.62 (0.34)*	3.15 (4.27)	7.28 (4.12)*
Cash Only	-0.28 (0.17)*	0.78 (0.33)**	-3.48 (2.05)*	9.32 (3.92)**
Total Cost/10	-0.04 (0.23)*	-0.04 (0.19)**	-0.52 (2.74)*	-0.58 (2.26)***
Worker Diversity	0.17 (0.23)	0.12 (0.15)	2.38 (2.74)	1.68 (1.87)
Number of Reviews*Cash Only	—	-0.52 (0.16)***	—	-6.30 (1.98)***
Hour				
2	-0.08 (0.14)	-0.08 (0.14)		
3	-0.33 (0.14)**	-0.33 (0.14)**		
4	-0.36 (0.15)**	-0.37 (0.15)**		
5	-0.30 (0.17)*	-0.30 (0.17)*		
6	0.57 (0.26)**	0.56 (0.26)**		
7	1.44 (0.27)***	1.44 (0.27)***		
8	1.22 (0.25)***	1.22 (0.24)***		
9	1.03 (0.28)***	1.03 (0.28)***		
10	1.07 (0.29)***	1.06 (0.29)***		
11	0.69 (0.26)***	0.69 (0.26)***		
12	0.44 (0.14)***	0.44 (0.14)***		
Constant	2.02 (0.79)***	1.71 (0.62)***	29.89 (9.41)***	26.17 (7.52)***
N	384	384	384	384
R <sup>2</sup>	.34	.37	.48	.60

Note. Coefficients from ordinary least squares regressions are reported. Robust standard errors are in parentheses.

\*\*\* $p \leq .01$ . \*\* $p \leq .05$ . \* $p \leq .10$ .

the neighborhood in which the IMB is located increases by 1,000 residents, hourly demand increases by 0.03 people ( $p \leq .01$ ). On the other hand, as the percentage of unoccupied housing and the percent of renters in the neighborhood increases by 1%, hourly demand decreases by 0.04 ( $p \leq .05$ ) and 0.01 ( $p \leq .05$ ) customers, respectively. In other words, there is more demand in more populated areas that are also potentially more affluent.

The next two rows in Model 1 of Table 1 reveal the relationship between perceived quality of the IMB and hourly demand. Compared to IMBs that have over 25 reviews on RubMaps.com, IMBs with less than 25 reviews have significantly less demand.<sup>11</sup> However, the user-generated average star percentage of the IMB as reported on RubMaps.com does not have a significant effect on hourly demand for IMBs. The coefficient is positive, but not statistically significant. These results indicate that the number of robust qualitative reviews has a greater impact on demand than the easier task of simply clicking stars.

Next, the results show that the economic characteristics of the IMB also impact demand. Whether or not IMBs take credit cards or only cash has a significant effect on demand. IMBs that take only cash payments have 0.28 fewer customers in a 2-hour time increment than those that accept credit cards ( $p \leq .10$ ). Moreover, demand is impacted by the average cost of a service. Increasing the average cost per service by \$10 decreases hourly demand by 0.04 customers ( $p \leq .10$ ).

Model 1 also suggests a very significant relationship between time of day and demand fluctuation. Compared to the 12 a.m.–1:59 a.m. time frame, there is significantly more demand for IMBs in Houston, TX between 10 a.m.–11:59 p.m. The highest demand is during the lunch hours from 12 p.m.–2 p.m. with 1.4 more customers at this time than during the midnight hours ( $p \leq .01$ ).

<sup>11</sup>It is possible that those with higher demand receive more reviews; in other words, the causal arrow could be pointing in the opposite direction. Nevertheless, the results indicate that more reviews do lead to more foot traffic; this may, in turn, lead to more reviews. Untangling the possible cyclical nature of these relationships is outside the scope of this research. Future research could explore these questions with a different research design that tracks how foot traffic and number of reviews influence one another overtime.

The only difference between Model 1 and Model 2 in Table 1 is that Model 2 includes an interaction term for number of reviews and whether the establishment accepts only cash. This allows us to examine whether customers are willing to make the trade-off between being inconvenienced by having to pay cash when they have greater assurances of the quality of the establishment. The results reveal that the negative impact on hourly demand of an IMB taking only cash payment is significantly offset when that establishment has a lot of reviews on RubMaps.com. In fact, for those establishments that take cash only but have over 25 reviews on RubMaps.com, demand is actually greater than those that allow for credit cards but have less than 10 reviews ( $p \leq .01$ ). Figure 2 visually depicts this difference. When customers are confident in the quality of the service based on the quantity of reviews on RubMaps.com, they are more willing to be inconvenienced by paying in cash than when they can pay by credit card but lack information on the quality of the establishment due to there being fewer online reviews.

Models 3 and 4 in Table 1 predict daily demand rather than hourly demand. The results are identical to the models predicting hourly demand, but the magnitudes of the coefficients are larger because these models aggregate demand across an entire 24-hour period. Examining Model 3, the neighborhood characteristics of the where the IMB is located impact total demand in the same manner as hourly demand. Perceived quality also impacts daily demand. Compared to IMBs with over 25 reviews on RubMaps.com, those with 10 or less reviews can expect 8.49 less buyers on average per day ( $p \leq .05$ ), and those with between 10 to 25 reviews can expect 10.52 less buyers per day ( $p \leq .01$ ). As with hourly demand, average star percent, does not predict daily demand. However, the economic characteristics of the IMB do. Those that take cash only can expect on average 3.63 less buyers per day than those that permit credit card payments, suggesting that buyers appreciate the convenience of alternative payment methods beyond cash ( $p \leq .10$ ). Also, the higher the average cost per service, the less the demand. Raising the average cost per service by \$10 is predicted to decrease daily demand by 0.57 buyers per day ( $p \leq .10$ ).

Model 4 reveals the same results, except it also includes an interaction between perceived quality (number of reviews) and payment method (cash only or credit cards). Again, the results suggest that the perceived quality of the IMB as revealed by the number of reviews on RubMaps.com offsets the inconvenience of being allowed to pay only cash for the service. There is significantly greater demand among cash only IMBs with more than 25 reviews than there is for IMBs that accept credit cards but have less than 10 reviews

( $p \leq .01$ ). In other words, the number of reviews conditions the negative effect on demand of an IMB accepting only cash. Figure 3 reveals that daily demand for IMBs with more than 25 reviews that take

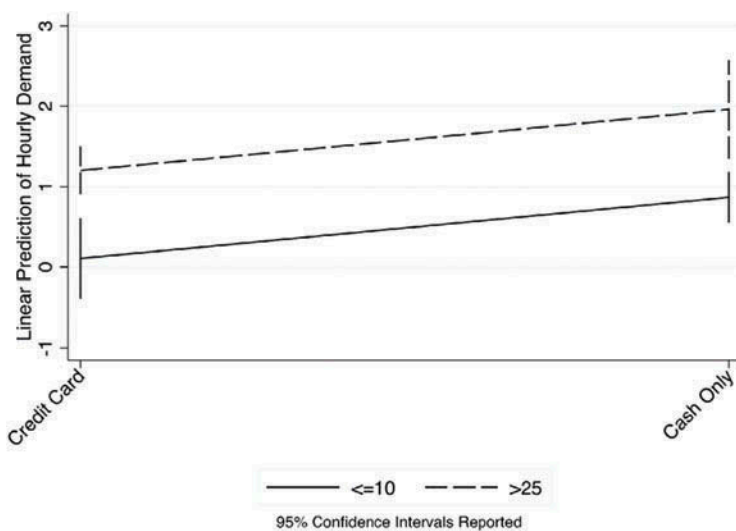
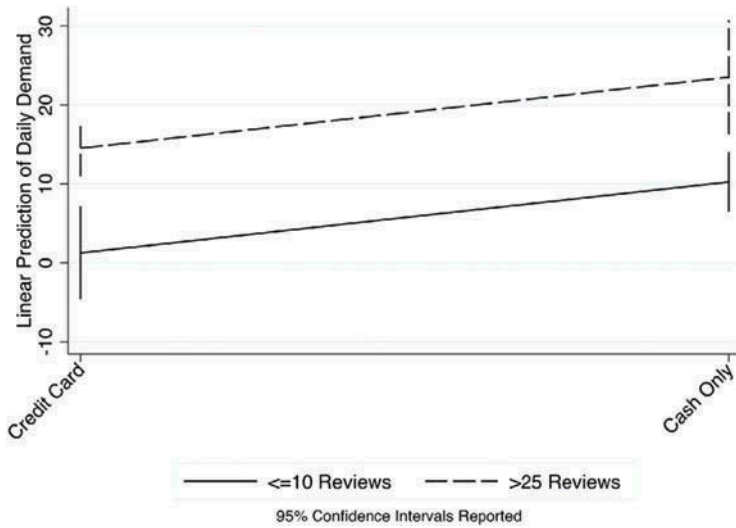


Figure 2. Conditional effect of number of reviews on hourly demand given payment methods.



**Figure 3.** Conditional effect of number of reviews on total daily demand given payment methods.

cash only is predicted to be about 23 customers per day, whereas those that have less than 10 reviews but take credit cards can expect only one to two customers per day (all other variables held at their means).

### Estimating total demand for IMBs in houston

The second question asks what the total demand is for IMBs in Houston. Using the beta coefficients from Model 3 in Table 1, we estimate total demand for all 292 IMBs in Houston based on the variables in that model that predict total demand to generate fitted demand for each IMB. The specification is:

$$\begin{aligned} \text{Demand} = & \beta_0 + \beta_1(\text{average star rating}) + \beta_2(\text{number of reviews}) + B_3(\text{average cost per service}) \\ & + B_4(\text{cash only}) + \beta_5(\text{worker diversity}) + \beta_6(\text{population}) + \beta_7(\%\text{unoccupied housing}) \\ & + \beta_8(\text{percent renters}) + \varepsilon \end{aligned}$$

Using locational and review board data for all 292 IMBs in Houston, we were able to estimate the average demand per day for each IMB. We find that the estimated total demand across all 292 IMBs is 3,499 customers per day. We then apply the 18% error rate, leading to an estimate of 2,869 total customers per day across all IMBs in Houston. On average, each IMB has 12 customers per day.

In order to determine the extent to which these estimates map with actual demand, we graph the difference between actual demand and fitted demand values for the 32 IMBs in our sample population. Figure 4 illustrates that the fitted values are very close to the actual values in the sample population. It also illustrates the mean of both the actual and fitted values hover around 12 customers per day. Therefore, we can be very confident that our estimate of total demand across all Houston IMBs is an accurate estimate of actual demand.

### Estimating gross revenue

Next, we use the fitted demand estimated from above for each IMB to calculate the total gross revenues of the IMB industry in Houston, TX. Specifically, we calculate the following:

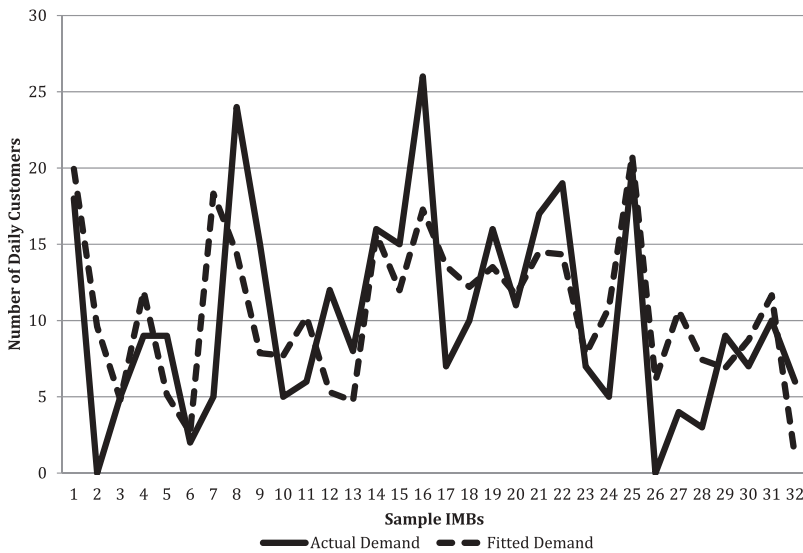


Figure 4. Actual versus fitted demand for IMBs.

$$\text{Total gross revenue} = \sum_{i=1}^{292} [(\# \text{ daily customers})(\text{average cost})(365 \text{ days per year})] * 0.82$$

This yields an estimate of \$107,574,004.60 total annual gross revenue for the IMB industry in Houston, TX.<sup>12</sup>

### Limitations and discussion

This analysis has a few limitations that must be acknowledged. Drawing on user-generated data necessarily includes error that must be accounted for. In our study the largest clear source of error was the result of IMBs closing and online data not reflecting that change. This is a challenge for IMB research as locations open and close with great frequency. A second limitation from our research is that we observed our sample IMBs mostly on weekdays. We observed only four of the 32 IMBs on a weekend (Friday or Saturday). Although it is not clear if demand varies based on the day of the week, there is reason to believe that it might. On the one hand, demand in Houston could be higher during the weekday when people are at work, taking lunch breaks, or stopping in on the way home. On the other hand, demand could be higher during the weekend when people have more free time. Given the lack of equal data on weekdays and weekends, we are forced to assume that demand does not vary significantly based on days of the week. It is also understood that demand for commercial sex services increases around major events, professional sports play-offs and championships, the world cup, and even industry conferences (Bonthuys, 2012). Future research should explore the changes in demand by day of the week, as well as around destination events more fully. A final, and related, limitation is that we cannot reliably use this data to make inferences about demand across the United

<sup>12</sup>In order to estimate gross revenue for the IMB industry across the United States, we collected data on the total number of IMBs listed on RubMaps.com in all 50 states. As of May 25, 2017, there were 7,345 total IMBs listed. Applying the 18% error rate leads to an estimate of 6,023 active and open IMBs across the United States. Although the Houston market differs from other markets across the country, we use the Houston numbers to assume that each IMB has on average 12 customers/day that pay an average of \$106 per transaction. Multiplying this by 365 days/year yields the following calculation:  $6,023 \times 12 \times \$106 \times 365 = \$2,796,358,440$  in annual gross revenue for the IMB industry in the United States. In other words, this is a roughly \$2.8 billion industry in the United States. Though this estimate is flawed in that we use numbers from one city to extrapolate to the country, it is perhaps the most empirically-grounded estimate to date of the profitability of the illicit massage industry.

States given the locational constraint of measuring demand in only one city. Demand for IMBs may vary not only by day of the week and time of day, but also from city to city, and different cities may experience different temporal patterns of demand. For example, while we find that demand peaks during lunch hours in Houston, it may peak around midnight in other cities (e.g., New Orleans). Future work might extend this methodology to other cities to examine similarities and differences in demand and patterns of demand.

Despite these limitations, this study makes a number of contributions. First, it contributes to the knowledge base on illicit massage businesses in the United States, which is understudied relative to street-based prostitution in academic literature (Weitzer, 2009) and which criminal justice stakeholders have relatively limited knowledge (Dank et al., 2014). Law enforcement reports that they suspect “higher levels of organized crime . . . within Asian massage parlors” but they are unable to confirm this “due to resource limitations and the challenges of investigating organized crime” (Dank, et al., 2014, p. 287). This report suggests that IMBs constitute an extremely profitable criminal enterprise with annual gross revenues of roughly \$107 million in Houston. In order to combat this, law enforcement must invest considerable resources—both human and capital—into monitoring, investigating, and prosecuting IMBs.

Second, this research contributes to filling knowledge gaps regarding actual demand for commercial sex in the United States. This is among the first studies to estimate demand using data from foot traffic and actual transactions. This methodology could potentially be replicated to produce empirically-grounded estimates of demand for other aspects of the commercial sex economy. Moreover, this study sets forth a theoretical framework by which to estimate demand for certain types of commercial sex establishments: location, perceived quality, cost, and time of day. Using this type of methodology and statistical modeling allows researchers to develop much more precise estimates for demand and economic impact of the commercial sex economy.

These findings are also significant for international, federal, and local stakeholders and policymakers. There is anecdotal evidence to suggest that the IMBs are highly structured and organized, comprising a vast international criminal network in countries of origin such as Korea, China, Vietnam, and Thailand (Richard, 1999). Federal court records suggest that these organizations transfer money overseas in international money laundering schemes, and also commit visa and immigration fraud against the U. S. government. Additionally, IMBs have been thought to engage in tax evasion (Dank et al., 2014, p. 209), which, based on our findings in Houston, represents nearly nine million dollars per year in lost sales-tax revenue alone. IMBs often operate in violation of zoning regulations in that they are operating in areas not zoned for sexually-oriented businesses when, in fact, the services they offer are sexually-oriented in nature. They have also come under scrutiny in various jurisdictions for lacking proper licensing to operate as a massage business, as well as violating OSHA regulations. These are all issues that federal, state and local authorities can more closely investigate and monitor.

IMBs are growing rapidly in number across the United States (Dank et al., 2014), and we believe there are roughly five areas that, if addressed in tandem, could begin to mitigate the problem. First, the problem of IMBs and their ubiquity should be publicized more aggressively to the American public to raise awareness and build public pressure. Second, the supply of foreign women working in IMBs and the process by which they enter the United States should be examined more closely by federal authorities who oversee the processing of nonimmigrant visas by which many of these women enter the United States. Third, law enforcement should be trained to view some of the workers at IMBs as victims rather than perpetrators and attempt to glean information from them as they investigate the larger criminal networks. Fourth, federal and local authorities and policymakers should coordinate best practices to learn from others’ successful legal, investigative, and prosecutorial strategies. Finally, the demand for commercial sex should be addressed through greater enforcement of the sex buyers.

While the criminal side of this business is problematic, ultimately the problem of IMBs is one of public health and human rights. Some of the workers at IMBs are victims who are recruited from abroad, held as bonded laborers, forced to work long hours, contract STIs, endure the abuse of multiple customers per day, and live at the establishment under conditions of linguistic and social

isolation. Then, they are often arrested on prostitution charges and effectively used as scapegoats while the owners and the buyers of sex operate with relative impunity. In order to address this problem, international, federal, and local actors, as well as the public at large, should engage more actively to drive these criminal enterprises out of business.

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