



Markets

Red Light States: Who Buys Online Adult Entertainment?

Benjamin Edelman

This feature explores the operation of individual markets. Patterns of behavior in markets for specific goods and services offer lessons about the determinants and effects of supply and demand, market structure, strategic behavior, and government regulation. Suggestions for future columns and comments on past ones should be sent electronically to James R. Hines Jr., Professor of Economics, University of Michigan, at jrhines@umich.edu.

Why Study Online Adult Entertainment?

The online adult entertainment industry is most often in the news for attempts to limit its availability. As early as 1995, when only 7 percent of U.S. households had Internet connections and home broadband connections were nearly nonexistent, politicians like Senator Charles Grassley decried the “flood of vile pornography” available online and called for legislation “to stem this growing tide” (*Congressional Record*, 1995).

Since then, online adult entertainment has been the target of dozens of bills including three major federal laws: the Communications Decency Act of 1996, the Child Online Protection Act of 1998, and the Children’s Internet Protection Act of 2000. However, the first two laws were substantially overturned as unconstitutional in *Reno v. ACLU* (521 U.S. 844 [1997]) and *Ashcroft v. ACLU* (542 U.S. 656 [2004]) on the grounds that there is no nationwide community standard for offensive material, that the statutes improperly restricted protected speech among adults, and that the statutes were more restrictive than feasible alternatives. The third law

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remains in effect, requiring filters in libraries and public schools receiving certain federal funding. However, the Supreme Court's decision in *U.S. v. American Library Association* (539 U.S. 194 [2003]) requires that a library disable its filter for any interested adult library patron, without inquiring into the patron's reasons for requesting unfiltered access.

For economists, the adult entertainment industry offers several aspects of interest. On the production side, for example, the adult entertainment industry has repeatedly proven to be among the first to adopt new imaging technologies. For example, Johnson (1996) concludes that adult videos spurred early purchases of home video cassette recorders. More recently, as studios evaluated competing high-definition DVD formats HD-DVD and Blu-ray, at least some studios chose Blu-ray upon observing that adult studios favored that format (Mearian, 2006). Looking back, adult entertainment was an early adopter of a wide variety of image-related technologies—including ancient sculpture (Diver, 2005), the book (Moulton, 2000), and the photograph (Loth, 1961).

However, this paper focuses on the consumption side of adult online entertainment, and in particular on subscriber demographics and consumption patterns of those who subscribe to such websites. On the surface, this business would seem to face a number of obstacles. Regulatory and legal barriers have already been mentioned. In addition, those charging for access to adult entertainment face competition from similar content available without a fee. In the context of adult entertainment, free access offers consumers an extra benefit: online payments tend to create records documenting the fact of a customer's purchase; consumers of free content may feel more confident that their usage will remain confidential. More broadly, measured levels of religiosity in American are high—for example, 68 percent of Americans state that the Bible is the actual word of God and is to be taken literally, according to the National Election Survey. At the same time, social critics like Levy (2005) and Paul (2005) often argue that the rise of Internet pornography is contributing to a coarsening of American culture. Do consumption patterns of online adult entertainment reveal two separate Americas? Or is the consumption of online adult entertainment widespread, regardless of legal barriers, potential for embarrassment, and even religious conviction?

Industry Basics

The AVN Media Network, an adult entertainment trade publication, reports that U.S. online adult entertainment in 2006 reached \$2.8 billion of revenue, a 13 percent increase from 2005. Table 1 describes online entertainment within the broader U.S. adult entertainment industry. Online adult entertainment now exceeds spending at adult clubs, although the total remains less than for adult videos and video rentals.

Much U.S. production of adult entertainment occurs in southern California, principally the San Fernando Valley. California offers at least two important ben-

Table 1
Adult Entertainment Subsectors

| Category | Retail sales in 2006 (millions of \$) | % Growth from 2005 |
|-------------------------|--|--------------------|
| Video sales and rentals | \$3,622 | -15.4% |
| Internet | \$2,841 | 13.6% |
| Clubs | \$2,000 | 0.0% |
| Cable/pay-per-view | \$1,745 | 34.2% |
| Novelties/merchandise | \$1,725 | 15.0% |
| Magazines | \$950 | -5.0% |
| Mobile | \$39 | 11.4% |
| Total | \$12,815 | 0.0% |

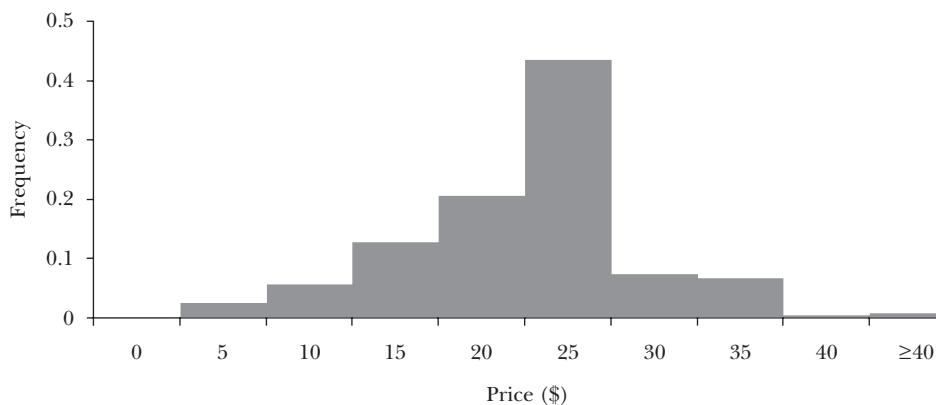
Source: "Industry Stats," AVN Media Network (2008).

efits to producers of adult entertainment. For one, southern California offers access to talent, both on-screen and off, from the entertainment industry; talent is at least partially mobile between adult and non-adult productions. Furthermore, the California legal climate is receptive to adult entertainment. In most states, producers of adult entertainment face possible charges of "pandering," or paying persons to perform sexual acts (a charge ordinarily levied against "pimps" and other coordinators of prostitution services). But the California Supreme Court's decision in *People v. Freeman* (46 Cal. 3d 419 [1988]) held that a person does not commit pandering if the purpose of the payment is the production of a legal entertainment product rather than the sexual gratification of an actor or observer. A New York district court recently reached a similar result (*People v. Paulino*, 6687/04 [2005]), but the production of adult entertainment in other states continues to present significant legal risk.

U.S. consumers also receive substantial adult entertainment from firms in Montreal, where zoning and immigration laws tend to facilitate production of adult entertainment. Through 2004, Canada issued visas to would-be adult entertainers. Applicants had to demonstrate their skills through, among other visa requirements, "stage photographs" of their prior work in adult entertainment (BBC, 2004; Struck, 2004). Canada issued 880 such visas in 2003 (Godfrey, 2004).

While top firms in online adult entertainment are substantially vertically integrated from production to website and marketing, even large firms rely on specialized suppliers and distributors. Typically, some firms focus on production of the underlying adult media, while others bundle materials into websites, and still others perform marketing, billing, and customer support functions. Even large providers typically contract with external vendors to process credit card charges—not just to charge consumers' accounts and remit funds, as on ordinary e-commerce sites, but often also to host the portion of the website on which payment details are collected. The variety of specialization is striking: For example, the November 2007 issue of AVN Media Network featured 43 advertisers seeking to pay partners to link to their sites, ten advertisers offering payment-processing

Figure 1

Subscription Prices*(in dollars for subscriptions of one month duration)*

Source: Analysis of reviews from Rabbit's Reviews.

services, eight advertisers offering content for license under a licensee's own brand name, and a variety of advertisers offering traffic measurement, server rental, outsourced customer support, investment capital, and other ancillary services.

The Product and Its Competitors

As of June 2008, 36 percent of Internet users visit at least one adult website each month, according to comScore (2008) (based on comScore's monitoring of web browsing by users who agree to install comScore's tracking software). An average visit lasts 11.6 minutes. Of users who visit at least one adult site per month, the average such user visits adult websites 7.7 times per month. Adult websites typically offer subscriptions on a monthly basis, with short-term and long-term subscriptions also available. Figure 1 shows a histogram of monthly subscription prices for 5,451 adult sites examined by leading reviewer Rabbit's Reviews: the most common prices are in the range of \$20 to \$30 per month. Prices among AVN advertisers are similar.

Sellers of adult entertainment face a variety of competing free material. For one, almost all sellers make a portion of their material available without charge, often styled as a "tour" or "preview" intended to draw attention to paid offerings. Such free trials act as an imperfect substitute for a paid subscription. Paid subscriptions also compete with pirated copies; users often scan, encode, or otherwise capture commercial materials, typically without permission of the original rights-holders. Video-sharing site Pornotube, the 298th-most trafficked site on the web (per Alexa), faces copyright infringement litigation analogous to Viacom's claims that Google's YouTube infringes Viacom's copyrights: just as users upload Viacom

videos to YouTube without Viacom's permission, so too are adult videos distributed on adult video-sharing sites without permission from the corresponding rights-holders. (See *Vivid Entertainment LLC v. Data Conversions, Inc. et al.*, filed before California's Central District Court in December 2007.)

Paid sellers of adult entertainment employ a variety of strategies to defend against free competitors. Often, a single fee covers unlimited usage of a variety of content for a prescribed period, typically a month. Having prepaid for access, a subscriber has little incentive to seek materials elsewhere. Of the sites Rabbit's Reviews examined, all but 7 percent let subscribers view or download as much material as they want.

Sellers typically use automatic renewal to retain subscribers. In a dataset I received from a top-10 seller of online adult entertainment, discussed in further detail in subsequent sections, 54 percent of customers continued subscriptions beyond their first month of service via the seller's automatic renewal service. Of the sites Rabbit's Reviews examined, 47 percent offered short trials (three days or less), which typically automatically become monthly subscriptions at the end of the trial period.

To further distinguish their services from free competitors, many online adult entertainment providers have begun to offer materials in new formats—not just images and videos, but interactive systems such as real-time “chat” communications, which are typically unavailable from free sources. Materials are also provided in increasingly high quality: whereas videos at YouTube typically show just 240 lines of video resolution, 49 percent of the sites Rabbit's Reviews evaluates have 480 or more lines of resolution, and 5 percent of sites have videos with 720 or more lines of resolution (somewhat better than DVD quality).

Traffic to online adult entertainment sites is less concentrated than other commercial sites. Data from Hitwise indicates that the top 500 adult sites account for only 56 percent of adult site traffic, whereas the top 500 retail sites account for 76 percent of all retail site traffic (Tancer, 2008). (Hitwise data reflects usage tabulated by Internet service providers, based on their customers' browsing.)

Marketing Methods

Major online adult entertainment providers typically operate not just a single site at a single domain name, but a set of sites on dozens or hundreds of distinct domains. Several advertisers in AVN Media Network boast of offering dozens of separate sites for partners to promote, and analysis of domain registration and hosting indicates that top providers often hold hundreds of different domain names. A subscription to one site often includes access to a variety of others.

Online adult entertainment providers also promote their services through a network of marketing partners. Typically, these partners are paid only if a user actually makes a purchase—a fee structure the online advertising industry calls “CPA”—or cost per action. (In contrast, at leading news sites, a fee is typically due

if a user merely *sees* an ad. At search engines, a fee is charged if a user *clicks* an ad, whether or not the user makes a purchase.) Contingent fees partially protect adult entertainment providers from marketing partners who send users unlikely to make purchases: since ineffective marketing partners earn low fees, adult entertainment providers feel more freedom to accept small or unproven partners without rigorous vetting. This inclusive approach earns CPA advertising the informal label “affiliate marketing”—reflecting that an advertiser keeps its marketing partners at arms length, typically declining to supervise the details of their operations.

Some marketing partners engage in unlawful advertising practices, creating possible liability for the providers they promote. Federal Trade Commission regulations (16 C.F.R. Part 316) require that all unsolicited “sexually oriented” emails contain the label “SEXUALLY-EXPLICIT” in their subject lines. Furthermore, the CAN-SPAM Act of 2003 makes advertisers liable for unsolicited commercial email sent by their marketing partners. The FTC has brought suit to enjoin unlabeled explicit emails and to penalize content providers’ whose affiliates send such emails (for example, *United States v. APC Entertainment*, FTC File No. 052-3043).

Other marketing partners use expired or misspelled web addresses to present adult materials without a user’s request. For example, in 2002, I uncovered Domain Strategy, a Montreal firm that registered domain names after their prior registrants failed to pay for renewals. I reported more than 4,500 affected domains, including *bicyclebills.com* (previously a Boston bicycle repair shop), *ridgefieldhighschool.com*, and *savannah-bbb.org*. Users requested these web addresses in hopes of receiving the content previously available at the specified sites. Instead, Domain Strategy showed explicit images and promoted adult websites via affiliate links. Shortly after my article was published, Domain Strategy abandoned this business (Edelman, 2002). But others extended Domain Strategy’s approach. For example, typosquatter John Zuccarini registered slightly misspelled domains like *cartoonnetork.com* and *dinseyland.com*. Zuccarini also perfected “mouse-trapping”—disabling web browsers’ back buttons and “x” (close) buttons to prevent users from leaving the explicit sites. Zuccarini was ultimately sentenced to 30 months in prison for deceptively showing explicit material unrequested, in violation of the federal Truth in Domain Names Act of 2003 (Edelman, 2003).

More recently, marketing affiliates turned to spyware and adware—advertising software installed on a user’s computer, typically without the user’s informed consent, which could then show explicit pop-up ads to users who had requested no such thing. In 2006, I documented a series of these unrequested explicit displays—some displays occurring through just a single marketing affiliate, while others routed traffic through a lengthy series of intermediaries that sequentially resold the advertising placement. In one particularly convoluted example, I showed spyware sending traffic through ad networks operated by both Yahoo (Right Media YieldManager) and Google (DoubleClick/Falk AG) as well as several smaller advertising resellers, en route to a highly explicit image. This long chain of intermediaries made it hard for any individual partner to know what ad was going to be shown, to whom, why, or how. In general, all partners denied both knowledge and responsibility. In addition, distributors sometimes

made the ads particularly hard to close—including intentionally placing an explicit popup’s “x” button off-screen (Edelman, 2006). In 2007 the Federal Trade Commission brought suit to enjoin such advertising practices by AdultFriendFinder (*Federal Trade Commission v. Various, Inc. d/b/a/AdultFriendFinder*, FTC File No. 072-3000).

Subscription Patterns

Who buys online adult entertainment? From a top-10 seller of adult entertainment, I obtained a list of the zip codes associated with all credit card subscriptions for approximately two years, 2006–2008. While it is difficult to confirm rigorously that this seller is representative, the seller runs literally hundreds of sites offering a broad range of adult entertainment.

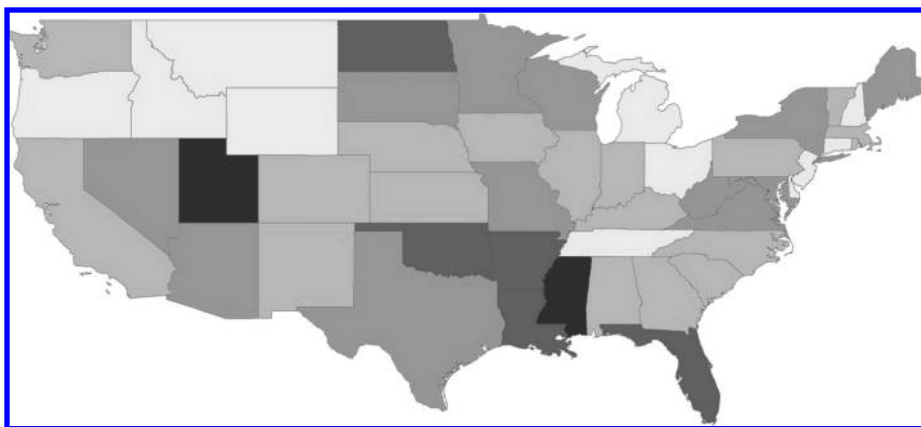
To analyze subscription patterns, I control for the amount of broadband access available in each region. Broadband connections offer high-speed data transfer—letting images, video, and other graphical materials load more quickly. As of June 2008, broadband users outnumber narrowband users 18 to 1 at sites that comScore (2008) classifies as adult. I obtain aggregate state broadband installation rates from FCC Broadband Deployment data (as of March 2008). For the distribution of broadband connections within states, I also control for CPS Internet and Computer Use responses. Analysis controlling for overall Internet usage (both dial-up and broadband) is generally similar. Figure 2 presents a map of subscriptions by state, controlling for broadband Internet usage.

In principle, my analysis of subscription patterns to online adult entertainment websites could suffer from reverse causation: That is, interest in adult entertainment could cause users to obtain broadband Internet access, whereas my analysis takes broadband access as given. If users obtain broadband to improve their ability to access adult entertainment, regression estimates would be biased towards zero. Thus, to the extent that my analysis yields correlations that appear to be statistically significant, reverse causation does not taint the significance of the estimates.

Controlling for broadband access, states show remarkable similarity in their subscription quantities, as shown in Table 2. Dividing state subscription counts by the FCC’s Broadband Deployment quantities, the most-subscribing state is Utah (where 5.47 of every 1,000 broadband households subscribed to the service at issue), while the least-subscribing state is Montana (1.92 per 1000 broadband households). The ratio of these extremes is just 2.85—relatively small in comparison to states’ diversity in other respects. For extremes in overall population density (excluding Alaska), compare New Jersey (1,175 people per square mile) to Wyoming (5.25), a ratio of 223:1. In truck ownership, compare North Dakota (590 trucks per thousand people) to New York (0.15), a ratio of 3933:1. In proportion of the population over 65, compare Pennsylvania (15.2 percent) to Alaska (5.3 percent) and Utah (7.3 percent), ratios of 2.86:1 and 2.08:1.

My adult website subscription data is available on the zip code level. Thus, it is possible to take a closer look at how a number of other variables are correlated with

Figure 2

Subscriptions to the Analyzed Provider

Legend

- < 2.4 subscriptions per thousand home broadband users
- 2.4 to 2.7 subscriptions per thousand home broadband users
- 2.7 to 2.9 subscriptions per thousand home broadband users
- 2.9 to 3.6 subscriptions per thousand home broadband users
- >3.6 subscriptions per thousand home broadband users

these subscriptions. Table 3 presents several regressions where the dependent variable is share of subscribers per 1000 households with broadband, thereby adjusting for the spread of broadband.

Standard demographic variables like income, age, and education seem to be associated with adult online subscriptions. For example, at mean values of other variables considered, a \$1,000 increase in average household income in a zip code is associated with a 0.36 percent increase in subscriptions. As shown in column 3, subscriptions are particularly widespread where young people are prevalent. A 1 percent increase in residents aged 15–24 (as a proportion of zip code population) yields a 0.19 percent increase in subscriptions at this adult entertainment service. Conversely, the elderly are less likely to subscribe: a 1 percent increase in residents of age 65 or older (as a proportion of zip code population) yields a 0.13 percent reduction in subscriptions. When a zip code hosts a higher proportion of people with college degrees, that zip code has slightly more subscribers to these adult entertainment sites: a 1 percent increase in college graduates is associated with a 0.12 percent increase in subscribers. However, graduate degrees tend to cut in the opposite direction: 1 percent more graduate degrees yields 0.30 percent fewer subscriptions.

Even after holding constant income, age, and education, adult entertainment subscriptions are most prevalent in urban areas. Controlling for broadband, we see that subscriptions are 38 percent more prevalent in urban areas (1000 to 5000

Table 2
States with Most and Fewest Subscriptions

| <i>Per thousand people</i> | | <i>Per thousand home Internet users</i> | | <i>Per thousand home broadband users</i> | | <i>Difference in subscribers per thousand home broadband users relative to subscription rates predicted based on demographics^a</i> | |
|----------------------------|------|---|------|--|------|---|-------|
| Utah | 1.69 | Utah | 2.49 | Utah | 5.47 | Utah | 1.89 |
| Hawaii | 1.37 | Hawaii | 2.19 | Alaska | 5.03 | Florida | 1.26 |
| Alaska | 1.15 | Nevada | 1.85 | Mississippi | 4.30 | Alaska | 1.08 |
| Maryland | 1.11 | Florida | 1.72 | Hawaii | 3.61 | Mississippi | 1.07 |
| Nevada | 1.11 | Arizona | 1.68 | Oklahoma | 3.21 | Hawaii | 0.80 |
| New Jersey | 1.08 | Maryland | 1.64 | Arkansas | 3.12 | West Virginia | 0.64 |
| Massachusetts | 1.07 | Massachusetts | 1.62 | North Dakota | 3.05 | Arkansas | 0.56 |
| Florida | 1.05 | New Jersey | 1.59 | Louisiana | 3.01 | Oklahoma | 0.48 |
| Connecticut | 1.01 | Alaska | 1.56 | Florida | 3.01 | North Dakota | 0.44 |
| Virginia | 1.00 | California | 1.56 | West Virginia | 2.94 | Maine | 0.40 |
| ... | | ... | | ... | | ... | |
| North Dakota | 0.69 | Minnesota | 1.18 | Michigan | 2.32 | Indiana | -0.45 |
| Michigan | 0.69 | Michigan | 1.15 | Wyoming | 2.29 | Delaware | -0.49 |
| New Mexico | 0.67 | Oregon | 1.14 | Connecticut | 2.28 | Wyoming | -0.53 |
| Idaho | 0.66 | Iowa | 1.10 | Delaware | 2.28 | South Carolina | -0.54 |
| Alabama | 0.64 | Wisconsin | 1.09 | New Jersey | 2.27 | Georgia | -0.55 |
| Kentucky | 0.60 | North Dakota | 1.07 | Oregon | 2.21 | Ohio | -0.58 |
| Mississippi | 0.59 | Kentucky | 1.07 | Ohio | 2.20 | New Mexico | -0.71 |
| Arkansas | 0.58 | Idaho | 1.06 | Tennessee | 2.13 | Michigan | -0.71 |
| South Dakota | 0.55 | South Dakota | 0.90 | Idaho | 1.98 | Montana | -0.77 |
| West Virginia | 0.50 | West Virginia | 0.89 | Montana | 1.92 | Idaho | -1.11 |

^a The demographic variables are income, age, education, and marital status.

people per square mile) than in rural areas (less than 40 people per square mile). However, interest tapers off at the highest levels of density: In high-density urban areas (more than 5000 people per square mile), subscriptions drop somewhat.

Both marriage and divorce are associated with reductions in subscription to this adult entertainment service. A 1 percent increase in marriage rates is associated with a 0.65 percent decrease in subscription rates, while a 1 percent increase in divorce rates is associated with a 0.28 percent decrease in subscription rates.

The fourth column reports that in regions where more people report regularly attending religious services (per National Election Studies 2004), overall subscription rates are not statistically significantly different from subscriptions elsewhere ($p = 0.848$). However, in such regions, a statistically significantly smaller proportion of subscriptions begin on Sundays, compared with other regions. In particular, a 1 percent increase in the proportion of people who report regularly attending religious services is associated with a 0.10 percent reduction in the proportion of purchases that occur on Sunday. This analysis suggests that, on the whole, those who attend religious services shift their consumption of adult entertainment to other days of the week, despite on average consuming the same amount of adult

Table 3
Subscription Patterns

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Household income | | | | | |
| In thousands | 0.0141**** (0.0012) | 0.0061**** (9.98×10 ⁻⁴) | 0.0060**** (0.0010) | 0.0057**** (0.0010) | 0.0043**** (9.44×10 ⁻⁴) |
| In thousands squared | -3.64×10 ⁻⁵ **** (6.09×10 ⁻⁶) | -1.95×10 ⁻⁵ **** (5.41×10 ⁻⁶) | -1.93×10 ⁻⁵ **** (5.44×10 ⁻⁶) | -1.79×10 ⁻⁵ **** (5.58×10 ⁻⁶) | -1.35×10 ⁻⁵ **** (5.44×10 ⁻⁶) |
| Proportion aged | | | | | |
| 15–25 | 1.047**** (0.1162) | 0.1805* (0.0950) | 0.1877** (0.0936) | 0.2594** (0.1042) | 0.1251 (0.0808) |
| 65+ | -0.5745**** (0.0707) | -0.1901*** (0.0675) | -0.1262* (0.0680) | -0.0951 (0.0680) | -0.0791 (0.0610) |
| Education of | | | | | |
| College or more | -0.3550**** (0.0604) | 0.1490** (0.0584) | 0.1217** (0.0584) | 0.1947**** (0.0594) | 0.2368**** (0.0548) |
| Graduate degree | 1.970**** (0.1457) | -0.1821 (0.1382) | -0.3044** (0.1374) | -0.5243**** (0.1381) | -0.5258**** (0.1244) |
| Population density | | | | | |
| Suburban (40–325 people/square mile) | | 0.2533**** (0.0058) | 0.2507**** (0.0058) | 0.2373**** (0.0059) | 0.1909**** (0.0062) |
| Exurban (325–1000) | | 0.2850**** (0.0052) | 0.2830**** (0.0052) | 0.2684**** (0.0052) | 0.2123**** (0.0054) |
| Urban (1000–5000) | | 0.3792**** (0.0043) | 0.3772**** (0.0043) | 0.3614**** (0.0044) | 0.3119**** (0.0051) |
| High density (>5000) | | 0.2562**** (0.0051) | 0.2528**** (0.0051) | 0.2385**** (0.0051) | 0.1862**** (0.0051) |
| Marriage rate | | | | | |
| | | | -0.6513**** (0.0743) | -0.6063**** (0.0716) | -0.4457**** (0.0646) |
| Divorce rate | | | | | |
| | | | -0.2811** (0.1312) | -0.3303**** (0.1273) | -0.1490 (0.1160) |
| Regularly attend religious services | | | | | |
| | | | | -0.0016 (0.0083) | -6.49×10 ⁻⁴ (0.0079) |
| Participate in volunteer activities, community projects, or blood donation | | | | | |
| | | | | | 0.0895**** (0.0255) |

Note: The DDB Life Style Survey, used in the fifth specification, covers metropolitan areas only. *, **, ***, **** means significance at 10, 5, 1, and .1 percent levels. Marginal effects in logit regressions. Standard errors shown in parentheses.

entertainment as others. (As an interesting comparison, Malhotra, 2008, finds that religious people are more charitable only on Sundays.)

The fifth column shows that subscriptions are more prevalent in regions with higher measures of social capital. Following the Social Capital Index developed in Putnam (2000), I obtain DDB Life Style Survey data from 1991 to 1998 on consumers in 340 metropolitan areas, and I form a social capital index based on prevalence of people donating blood, engaging in volunteer activities, or participating in community projects. In a region where 1 percent more people participate in these activities, subscriptions to the adult entertainment service are 0.09 percent more widespread.

Table 4

Subscriptions and Conservative Positions on Religion, Gender Roles, and Sexuality

(difference, in subscriptions per thousand broadband households, between a hypothetical state where all residents disagree with the quote versus one where all residents agree with the statement)

| | |
|---|----------------------|
| “Even today miracles are performed by the power of God.” | 2.74 ($p = 0.002$) |
| “I never doubt the existence of God.” | 2.74 ($p = 0.004$) |
| “Prayer is an important part of my daily life.” | 1.82 ($p = 0.153$) |
| “I have old-fashioned values about family and marriage.” | 3.60 ($p = 0.004$) |
| “AIDS might be God’s punishment for immoral sexual behavior.” | 3.56 ($p = 0.009$) |

Note: These coefficients come from ordinary least squares regressions using subscriptions (as a proportion of broadband households) for the dependent variable and Pew survey responses with the listed questions as the independent variables. I code “completely agree” and “mostly agree” as endorsement of the corresponding quotations.

Subscriptions are slightly more prevalent in states that have enacted conservative legislation on sexuality (regression results on file with the author). In the 27 states where “defense of marriage” amendments have been adopted (making same-sex marriage, and/or civil unions unconstitutional), subscriptions to this adult entertainment service are weakly more prevalent than in other states ($p = 0.096$). In such states, there were 0.2 more subscribers to this adult web site per thousand broadband households, 11 percent more than in other states.

As shown in Table 4, subscriptions are also more prevalent in states where surveys indicate conservative positions on religion, gender roles, and sexuality. In states where more people agree that “Even today miracles are performed by the power of God” and “I never doubt the existence of God,” there are more subscriptions to this service. Subscriptions are also more prevalent in states where more people agree that “I have old-fashioned values about family and marriage” and “AIDS might be God’s punishment for immoral sexual behavior.” Survey results come from the Pew Value Surveys (1987–2007 combined dataset).

I experimented with a number of other variables, but did not find statistically significant results. In the 13 states that forbade sodomy immediately prior to *Lawrence v. Texas* (2003), subscriptions to this adult entertainment service are more prevalent than in other states, but insignificantly so. Furthermore, I found no significant relationship between subscriptions to this adult entertainment service and presidential voting in 2004, based on poll data by congressional district. However, using individual-level data from a Hitwise sample of ten million anonymized U.S. Internet users, Tancer (2008), finds that adult escort sites are more popular in “blue” states that voted for Gore in 2004, while visitors from the “red” states that voted for Bush in 2004 are more likely to visit wife-swapping sites, adult webcams, and sites about voyeurism.

On the whole, these adult entertainment subscription patterns show a remarkable consistency: all but eleven states have between two and three subscribers to this

service per thousand broadband households, and all but four have between 1.5 and 3.5. With interest in online adult entertainment relatively constant across regions, there's little sign of a major divide.

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