Playing the Name Game: A review of advertising practices and success of Canadian sex workers

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Abstract

Previous studies that considered factors associated with success in sex work used measures such as hourly rates to identify more successful workers. However, such indicators are only an indirect measure of client interest. This study considers a prominent classified advertising venue in Canada that provided statistics on how often ads were viewed, providing a potentially more direct measure of client preferences. Daily views were calculated for a collection of 62582 classified ads generated by 12477 advertisers between July 9, 2023 and August 9, 2023. Factors associated with daily views and language use in ads were considered. During this period, ads were viewed median 128 times per day per ad (IQR 64-248, mean 195, SD 234). Significant findings were that spending more on advertising was not found to result in more daily views. BIPOC advertisers could be associated with more or fewer views compared with White advertisers, with Asian and Black advertisers having fewer views and Hispanic, Middle Eastern, First Nations, and Indo Canadian having more. Male advertisers received ~50% fewer views. Advertisers with large numbers of daily views were much more likely to restrict clients based on race and age than advertisers with fewer daily views. Further work is needed to understand the relationship between ad views and actual ad response. Some assumptions about sex buyers' race based preferences were shown to be accurate while others were not, suggesting that these preferences are not adequately accounted for by existing theory. Also highlighted is class separation among sex workers, with increased views being associated with greater ability to set boundaries during client interactions.

Keywords: sex work, advertising, race, Canada, privilege

Introduction

The sex working community is an underground culture which has been excluded from society generally and as such has evolved with unique cultural practices and language. The "Name Game" is a term used by sex workers to describe strategies for making money. A change in persona or "name" in advertising can generate client interest under the premise of "new face money". "Name Game" also refers to building credit, paying taxes and creating a financial safety net for the future or in case of emergency. "Playing" is a term which refers to working in sex work more broadly. "The Game" or "Got Game" are terms used for sex work, and "playing the game" is a term used to describe activities of sex workers or their support staff. However, this begs the question: how accurate are our intuitions, such as the effectiveness of "new face money", in generating income? This study considers a more direct measure of client interest, daily ad views, that may provide better insight into what prospective clients find desirable in how sex workers are presented in advertising.

Most previous studies considering this question have used advertised hourly rates as a metric (Capiola et al., 2014; Dünn, 2018; Griffith et al., 2016; Logan, 2010; Nelson et al., 2019; Pruitt, 2016; Sohn, 2019) or earnings ratings that partly depended on these rates (Jones, 2015). Three of these studies used rates to confirm hypotheses regarding evolutionary psychology (Dünn, 2018; Griffith et al., 2016, 2016) where youth, physical fitness, and sexual availability are considered important factors influencing mate choice. These studies exclusively consider cis-female advertisers. Two studies consider how race affects the success of erotic workers (Jones, 2015; Logan, 2010) and two consider factors that are associated with increased advertiser success (Nelson et al., 2019; Sohn, 2019). One study (Pruitt, 2016) compares male workers who advertise for female clientele (M4F) with male workers who advertise for male clientele (M4M).

Most studies used advertising profiles on popular websites as source data. However, one study (Sohn, 2019) used survey data to compare workers. In most studies, hourly rates are a dependent variable.

Since 2001, at least three large scale classified advertising venues have been heavily used by sex workers in Canada. These have been described in previous Sex Work Population Project (https://populationproject.ca) studies (Kennedy, 2022, 2023b, 2024c). We use the nomenclature of Kennedy (2022) when describing the sites where Site 1 was the first to allow sex workers to advertise in 2001, followed by Site 2 which rose to prominence in the mid 2000s when Site 1 removed erotic services advertising. The current study examines Site 3, still heavily used by sex workers, which provides cumulative statistics on the number of times an ad is viewed in addition to hourly rates, offering an alternative measure of client interest. Ads on the site could also include other demographic information such as self-identified age, gender, ethnicity, type of service offered, and locale. Furthermore, Site 3 depended on advertisers paying to "bump" ads and, by logging when ads were seen, we could estimate how much advertisers were paying to advertise on the site.

The term "advertiser" refers to entities (individuals or collectives) that could be directly identified in ads. In our case, advertisers could be identified using a common "chat name" used for an internal chat service that was present in all ads. Authors of ads could use multiple advertiser identities, a potential example of "new face money", (see Kennedy, 2023b preprint) and could represent themselves or other workers. For our analysis, the emphasis was on the ads themselves. We were curious what factors influenced the number of views for any given ad. In particular, we wanted to see what association existed between daily ad views and ethnicity, as previous literature had shown that people of color could be at a disadvantage in online dating

(Bany et al., 2014; Gianettoni & Roux, 2010; Lin & Lundquist, 2013) and, more specifically, in sex work advertising (Jones, 2015).

Our experiences with advertising

All the authors have direct experience using Site 3. SS was a long-time client who periodically used the site to find providers from 2014 to 2017. AT and SD are workers who have been regular users of Site 3 and other advertising venues for many years.

After posting an ad, AT gets many more inquiries than she is willing to respond to, including harassing messages from previously banned clients, a phenomenon described elsewhere in the literature (Campbell et al., 2019; Jiao et al., 2021). In addition, the advertising platform could be difficult to use, and customer support is sporadic at best. She observes that many prospective clients appear to scroll the site on a regular basis and contact many advertisers at once. Screening, only providing hour or longer sessions, and not booking sessions the same day are important strategies to find courteous clients who do not waste time with excessive text or email communication. AT also uses an external website to screen clients. Changing the title photo and text were important strategies for increasing contacts from ads. AT finds that consistent posting, once per week, may not increase bookings immediately, but leads to more consistent bookings in general.

SS originally used Site 3 because it was the only one where advertisers were accountable because they had to pay to advertise. In contrast to AT's clients, he did not find scrolling through ads to be a productive strategy for seeking out providers and instead would rely on the search function provided by the site. Clients, like workers, experience risk (Horswill & Weitzer, 2016;

Lowman & Atchison, 2006; Sanders, 2020, Chapter 8). To mitigate risk, he would use a review site to identify providers associated with scams before making contact.

SD is a long time user of online advertising. SD originally used Site 1, the first of its kind in Canada, and SD recalls there being between only 5 and 10 ads in the beginning. The lack of competition meant far greater exposure to potential clients. SD would only post an ad every few days and recalls doing brisk business. When Site 1 closed the erotic services section due to government pressure, the removal sent the client-provider meeting process into a spiral.

However, the community found a new home at Site 2 which looked similar to Site 1 and had the same kind of online architecture, making it easy to adapt and get back to work. In 2018, Site 2 experienced the same fate as Site 1 with the site developers recently being sentenced to prison even though they had broken no laws.

Site 3 was the third iteration of this online meeting space. SD would post daily using a feature which would automatically "bump" the ad all day to keep it on the "front page" and more visible to potential clients. Competition on Site 3 could be intense. SD notes that some community members in collectives could "bump" their ads up to 200 times in one day.

SD based her business in a large urban center where competition for views could be quite heavy. As time went on, SD noticed automated features of the site were evolving and that ads were cheaper during "low traffic" times on the site. SD would wake up at 6 AM to "bump" her ad and set it for automated renewal for the day. This time of low traffic would also increase her visibility, as fewer sex workers were available and a surprising number of potential clients would check the site when they woke up in the morning. Furthermore, to reduce the number of competing ads, she would post ads in neighboring locations, reaching new potential clients.

Over time, SD noted that one of her ads had over 32,000 views. Similar to SS, her "regular" clientele were using the search function to contact her. Some potential clients had disclosed viewing SD's ad on multiple occasions, but not booking an appointment. One client would use the ad as a pornographic stimulant and even sometimes call to hear her voice and description of services as part of that stimulation. SD referred to this as "shoplifting", a theft of services with no remuneration.

Competition for views and potential clients is complex and filled with many nuances which are not immediately clear in the ad content alone. The ingenuity and adaptability of both sex workers and their clients causes this dynamic to shift and evolve constantly.

Study objectives

The objectives for this study are threefold. Firstly, we would like to better understand how variables such as services provided, hourly rates, novelty, age, gender, and ethnicity affect advertiser success. This is meant to be practically useful for advertisers. Secondly, we wanted to better understand the relative cost-effectiveness of advertising based on estimates of how much advertisers spent. Lastly, we wanted to understand how more successful advertisers communicate with prospective clients.

Materials and methods

Data for the study comprises two datasets from the Sex Work Population Project (Kennedy, 2024b, 2024a). The Ad Views dataset (Kennedy, 2024a) consists of a set of 62582 classified ads generated by 12477 advertisers, visible between July 9, 2023 and August 9, 2023. Views were recorded daily for each ad based on a field, "Viewed NNN times", visible in all ads.

These ads are part of a larger collection consisting of 984792 ads generated by 65189 advertisers between December 9, 2022 and November 30, 2023 (the *pp2022* database in Kennedy, 2024b). Site 3 is organized such that pages in the "Personals" section are segmented by region and service type. Users are only shown ads that fall within these two mandatory filters. To collect the data, ads from all Site 3 "Personals" pages were automatically downloaded every 10 minutes during this period. Ad text was cleaned (non-alphanumeric characters were removed and text was rendered lowercase) and anonymized (all phone numbers and email addresses were replaced with "_PHONE_" and "_EMAIL_" tags, respectively). Regional advertising rates, the base price to "bump" and ad, were identified and multiplied by the number of days the ad was visible to estimate how much advertisers paid to advertise on the site.

Advertisers were identified by a "chat name" field visible in each ad that identified the advertiser's login on the site. Other metadata, such as self-identified age, hourly rate, self-identified ethnicity, and service type (which includes gender), were also extracted from the collected ad data. In addition, all ads from the "male-escorts" section were categorized based on service provider gender (cis-male, couple, or trans-male) and client gender (cis-male, cis-female, trans, or couple). One service type, "gigs-jobs", was excluded from the analysis as ads in this section were mainly directed at prospective workers rather than prospective clients. The age group variable was limited to ads where age was posted as 60 or less, as some ads used ages such as 69 or 99 which were not considered likely to be references to workers' self-reported ages.

Statistical measures

All statistics were calculated using a 95% confidence level. The daily views for each ad were calculated by taking the total increase in ad views through July 2023 and dividing it by the

number of days the ad was visible. Median and mean daily views were calculated for each identified advertiser based on all of their associated ads. Pearson correlations between daily views and ads with exposed face images versus no face images and daily views and number of images per ad were calculated. For each advertiser, the Pearson correlation between average daily views and number of ads was calculated. Pearson correlations between advertised rates and number of images with faces were also tested. Pearson correlations were calculated using the R *cor.test* function.

The daily views and, when available, the hourly rate for each ad were then compared with other metadata identified in ads and Kruskal-Wallis tests were run using the R version 4.3.3 function *kruskal.test* (R Core Team, 2024). Effect sizes and between group differences were calculated using the *kruskal_effsize* and *dunn_test* functions from the R *rstatix* package version 0.7.2 (Kassambara, 2023).

Given the possibility that variables may interact with each other, the R *lme4* package version 1.1.35.5 (Bates et al., 2015) was used to generate linear fixed effect regression models to test for interaction effects of the variables of advertised age, advertised ethnicity, and service type, where geographic region was treated as a fixed effect. As can be seen below, daily views were heavily positively skewed. However, linear mixed effects models have been found to be robust even with skewed data (Schielzeth et al., 2020).

Attempts were made to replicate the results of two of the evolutionary psychology studies (Dünn, 2018; Griffith et al., 2016) where age and BMI were compared with hourly rates. A subsample of ads with height and weight, used to calculate BMI, and a subsample of ads with age were used to calculate Pearson correlations with daily views. Pearson correlations were used to compare hourly rates with age and BMI when these variables could be identified.

Ads in the "male-escorts" section were segmented based on whether the advertiser represented male workers (cis or trans) and what clients the advertiser was willing to see. Median, IQR, mean, and SD daily ad views were calculated based on client type and gender. T-tests were run comparing daily ad views for each category of prospective client using the R *t.test* function. Male advertisers were further segmented by province to better understand where most advertised.

Economic analysis

To generate a lower bound estimate of how much an advertiser paid for each posted ad, the number of days that each ad was visible was tracked throughout 2023 using logging data. The number of days was multiplied by the advertising fee required to "bump" each ad to calculate the lower bound of what each ad cost over the year. The estimated total paid by each advertiser was calculated by summing these ad totals. Advertising expenditure was segmented based on the ceiling log base 10 of the total amount spent by each advertiser in 2023. Total ad spending was then summed for each segment to see what each group contributed to the estimated overall total cost of advertising. In addition, estimated expenditure was categorized by age group, self-identified ethnicity, and service type. Per capita estimated expenditure was calculated for these demographic categories.

Keyword analysis

To see if there were differences in how advertisers used language, two samples of ads from July 2023 were selected from the "female-escorts" section on Site 3. Ads were included if they had been identified as containing English using the Perl 5.30.0 package *Lingua::Identify* 0.56 (Simões, 2013). One sample had at least 584 daily views (N=2548, 93rd percentile) and the

other sample had at most 32 views (N=2558, 7th percentile). These ads were chosen because they represented the extremes in the data and produced roughly equal samples. Words from cleaned ad texts were identified, removing English stop words using the Python NLTK list of English stop words (sebleiber, 2010). In addition, "_PHONE_" and "_EMAIL_" tags were removed.

The number of documents containing each word was then calculated. The top 50 most distinctive terms were identified based on the Log Likelihood ratio (LL) and Bayes Information Criterion (BIC) using a formula from Rayson and Garside (P. Rayson, 2008b; P. Rayson & Garside, 2000) based on the rationale described in Dunning (1993) and Rayson (2008a; 2003). Each term was assigned a relative rank based on how common they were in each set of ads, and terms that were more prominent in ads with more daily views were extracted from the top 50 terms.

The identified terms were then searched for in the ads and were coded to identify how the terms were used. The coding process for each identified term involved identifying three or four word strings where the target term was the second last word. If the meaning of the term was not clear, the string containing the term was searched in the original ad text. Proportions of meanings were calculated based on their coded values. Qualcoder 2.3 (Curtain, 2023) was used to code the short texts and the Linux *grep* program (Free Software Foundation, Inc., 2020) was used to identify ads from the original sample when meanings were not clear.

Ethics statement

All source data used in this study consisted of publicly available data at the time it was collected and was collected in accordance with the policies of the sites in effect at the time. The

methods used are conformant with the ethical standards of the Canadian Sociology Association (section 4.10 II) and the American Sociology Association (section 10.5 c) (American Sociological Association, 2018; CSA-SCS Policy, Ethics, and Professional Concerns Subcommittee, 2018). As the replicability of the main results of this paper is important, datasets are provided as part of the supporting information along with the code used to process it. However, in order to protect the safety and privacy of advertisers and third parties, all identifying information has been removed, including the names of the source websites.

Results

Median daily ad views for all ads for the month of July 2023 were 128 times per day per ad (IQR 64-248, mean 195, SD 234). Kruskal-Wallis tests of daily ad views versus self-identified age, self-identified ethnicity, and service type were all significant ($p < 0.001$). However, only the service type variable had a large effect size.

Table 1 shows the rank order for the demographic variables age group, service type, and ethnicity based on median daily ad views for each variable. Figure 1 displays box plots of daily ad views segmented by age group, service type, and ethnicity respectively. Dunn tests for age groups showed that the differences in daily views were all highly significant ($p < 0.001$). Comparing service types, Dunn tests also revealed that all pairwise differences were significant (at least $p < 0.01$). Comparing ethnicities, Dunn tests revealed that differences between those self-identifying as Caucasian and other ethnicities were significantly different (at least $p < 0.05$) except for Middle Eastern (N=967 ads) and First Nations ("Native", N=486 ads).

Table 1: Demographic categories ranked by median daily ad views.

rank	service type (median daily views, ads)	age group (median daily views, ads)	ethnicity (median daily views, ads)
1	female-escorts (161.92, 43405)	18-20 (159.58, 4438)	Indo Canadian (177.00, 1131)
2	shemale-escorts (140.50, 5895)	21-30 (134.50, 47539)	Native (170.60, 486)
3	dom-fetish (70.70, 2376)	31-40 (109.00, 6701)	Middle Eastern (159.00, 967)
4	female-massage (69.22, 5991)	41-50 (108.55, 2210)	Latino/Hispanic (151.00, 4875)
5	male-escorts (60.14, 3821)	51-60 (97.06, 459)	Caucasian/White (144.25, 30590)
6		60 or older (50.98, 128)	Mixed (131.00, 7854)
7		Unknown (25.27, 1107)	Black (118.63, 4322)
8			Canadian Born Chinese (114.92, 265)
9			Asian (98.67, 10709)
10			Unknown (33.63, 1383)

Figure 1: Box plots of daily ad views (log₂ scaled) segmented by age group, service type and ethnicity.
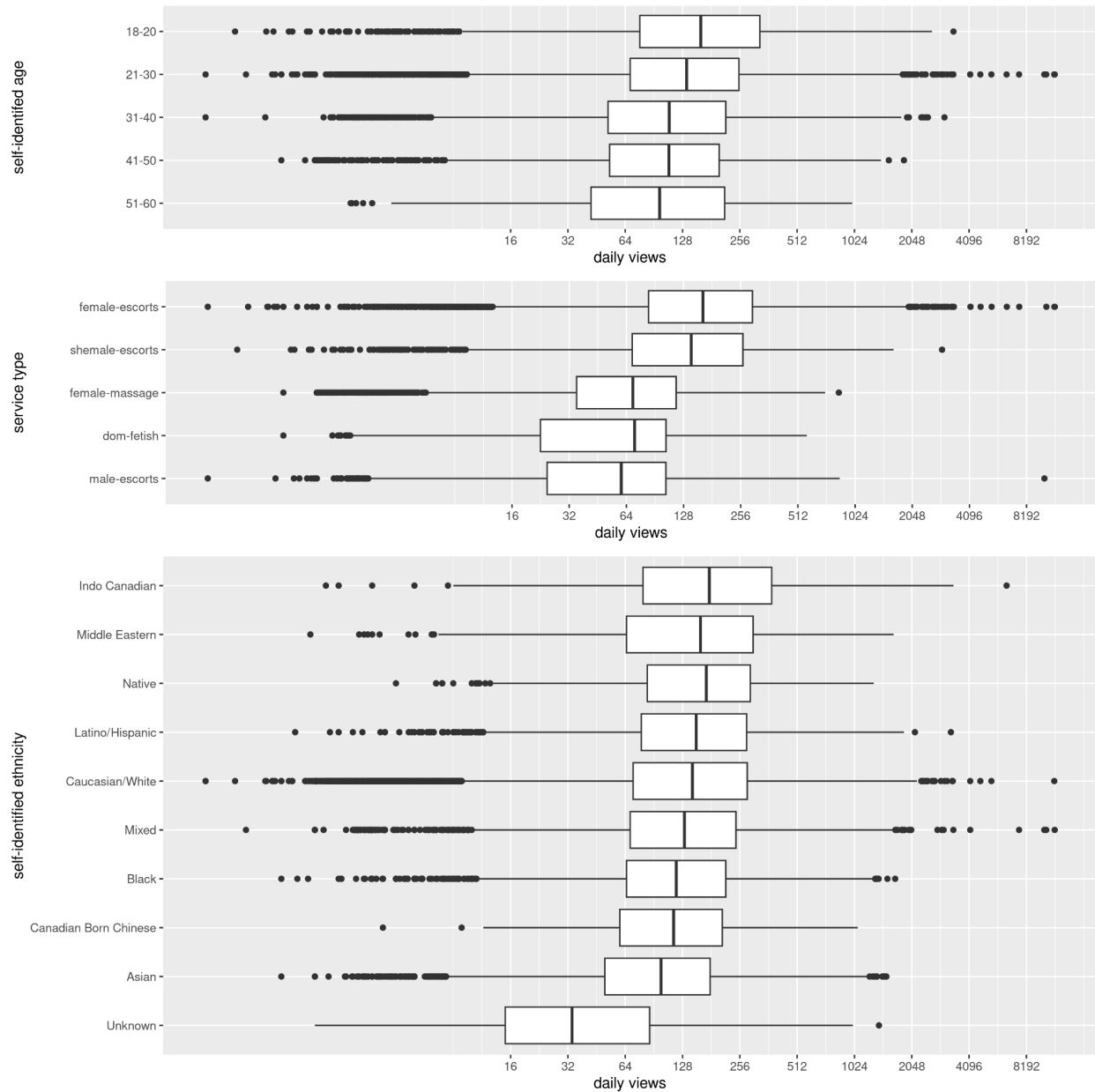
Log likelihood tests of linear mixed effects models showed that there were significant interaction effects between all of: service type, age, and ethnicity (*dailyviews ~ ethnicity * age * servicetype + (1|chatregion)*) when compared to a model that did not include interaction effects

between these variables (*dailyviews ~ ethnicity + age + servicetype + (1|chatregion)*, $\chi^2 =$ 298.61, df = 74, p < 0.001). This was also the case when hourly rate was used as the dependent variable ($\chi^2 = 1411.4$, df = 74, p < 0.001).

Some variables did not appear to be strongly correlated with daily views. Hourly rates were only slightly correlated with daily views (0.024, p < 0.001). However, only 32% (N=21031) of ads provided information on rates. Having an image with a face in it was weakly positively correlated with the number of daily views (0.019, p < 0.001) and having multiple images was weakly negatively correlated with daily views (-0.018, p < 0.001). For advertisers, the number of ads was significantly negatively correlated with average daily ad views (Pearson correlation -0.19, p < 0.001).

Considering hourly rate as the independent variable, Kruskal-Wallis tests showed that age group ($\chi^2 = 202.78$, df = 6, p < 0.001), service type ($\chi^2 = 2992.8$, df = 5, p < 0.001), and ethnicity ($\chi^2 = 853.92$, df = 8, p < 0.001) were all significant, but the effect sizes were small. Table 2 shows descriptive statistics comparing hourly rate with ethnicity. Note that the ranking by hourly rate puts Black advertisers, who advertised median $280 per hour, at the top, whereas they were ranked 7th overall based on median daily views.

Table 2: Ethnicity versus advertised hourly rate. Rows are displayed in descending order by mean rate.

rank	ethnicity	median rate (CAD)	mean rate (CAD)	ads
1	Black	280 (IQR 200 - 300)	273.88 (SD 88.17)	1825
2	Caucasian/White	250 (IQR 200 - 300)	264.42 (SD 102.38)	10945
3	Mixed	250 (IQR 200 - 300)	256.38 (SD 88.18)	1997
4	Latino/Hispanic	250 (IQR 160 - 300)	243.61 (SD 102.16)	2544
5	Middle Eastern	240 (IQR 180 - 300)	227.00 (SD 89.3)	318
6	Indo Canadian	220 (IQR 150 - 280)	213.06 (SD 81.72)	204
7	Native	220 (IQR 200 - 265)	235.44 (SD 60.61)	455
8	Asian	200 (IQR 160 - 270)	212.40 (SD 85.42)	2629
9	Canadian Born Chinese	200 (IQR 60 - 250)	183.55 (SD 119.14)	112

Both age and BMI were found to be significantly negatively correlated with both daily views and hourly rates. However, again, the correlations were not large. Price had the strongest correlation with BMI (-0.18, 95% CI [-0.21, -0.14], $t = -10.14$, df = 3228, $p < 0.001$) compared to daily views (-0.046, 95% CI [-0.067, -0.024], $t = -4.0652$, df = 7948, $p < 0.001$). For advertised age, daily views had a slightly stronger correlation (-0.088, 95% CI [-0.088, -0.072], $t = -20.468$, df = 64970, $p < 0.001$) than hourly rate (-0.06, 95% CI [-0.074, -0.047], $t = -8.7521$, df = 21027, p-value < 0.001).

Male escorts

Ads in the "male escorts" section of Site 3 had 76.5 median daily views (IQR 31.5-126.1) during July 2023. They were viewed about as often as ads for female massage (median 69.2) and dom-fetish (median 70.7). Around 40% (N=2146) of the male escort ads described services for women or couples. Summing the maximum number of views for any ad for each region during July 2023 suggests that up to 5181 (mean 207.3, SD 136.8, range 0-663) prospective clients viewed ads for male advertisers who saw women or couples and up to 17274 (mean 575.8, SD 1792.3, range 92-10169) viewed ads for advertisers who did not.

Table 3 shows t-test results comparing daily ad views for male advertisers in July 2023. During this period, 9.7% of all advertisers (N=1210) self-identified as male. Among these advertisers, 593 (49.0%) catered to women, 261 (22.0%) catered to couples, 27 (2.2%) catered to trans clients, and 6 (0.5%) identified as trans men. T-tests revealed that ads advertising cis or trans male workers who sought men as clients got slightly but significantly more daily ad views on average than ads which did not (mean 115.4, SD 121.5 versus mean 91.9, SD 223.19). Differences between ads catering to couples or trans clients were not viewed significantly more often than other ads. Median views appear to be more similar, suggesting that outliers may be influencing the test results.

Table 3: T-test comparisons of daily ad views for ads in "male-escorts" segmented by client type. Significance: *** $p < 0.001$, * $p < 0.05$, (ns) not significant.

category	mean	median	ads
sees men does not see men***	115.41 (SD 121.51) 91.89 (SD 223.19)	87.78 (IQR 38.00-142.08) 63.86 (IQR 27.15-113.00)	2727 2509
sees women does not see women*	97.28 (SD 99.78) 108.27 (SD 211.53)	73.51 (IQR 30.50-122.00) 78.65 (IQR 31.83-129.13)	1968 3268
sees couples does not see couples (ns)	98.08 (SD 100.24) 105.62 (SD 192.28)	78.02 (IQR 33.92-120.42) 76.02 (IQR 30.93-127.70)	1028 4208
sees trans does not see trans (ns)	98.29 (SD 104.47) 104.24 (SD 179.05)	65.39 (IQR 28.44-121.01) 76.68 (IQR 31.61-126.45)	90 5146

Male escorts advertised mostly in Ontario (43%, N=525 advertisers), Quebec (24%, N=296), British Columbia (17%, N=206), and Alberta (15%, N=179). Those providing services to women or couples followed a similar pattern (Ontario 25%, N=200; Quebec 10%, N=121; Alberta 8%, N=97; British Columbia 8%, N=96).

Ad spending

Figure 2 segments estimated ad expenditures by the estimated total spent by each group. Fifteen percent of advertisers (N=7276) were estimated to have generated 82% of the income for Site 3 in 2023 or CAD $28,465,442 out of an estimated CAD $34,762,250.

Figure 2: Advertisers (in boxes) and total ad expenditures, segmented by the estimated yearly total spent by each advertiser. The X axis represents the ceiling of what advertisers were estimated to have spent in 2023. The blue bars represent the cumulative total spent by each group of advertisers. The maximum estimated ad spend was CAD $354,528.00.
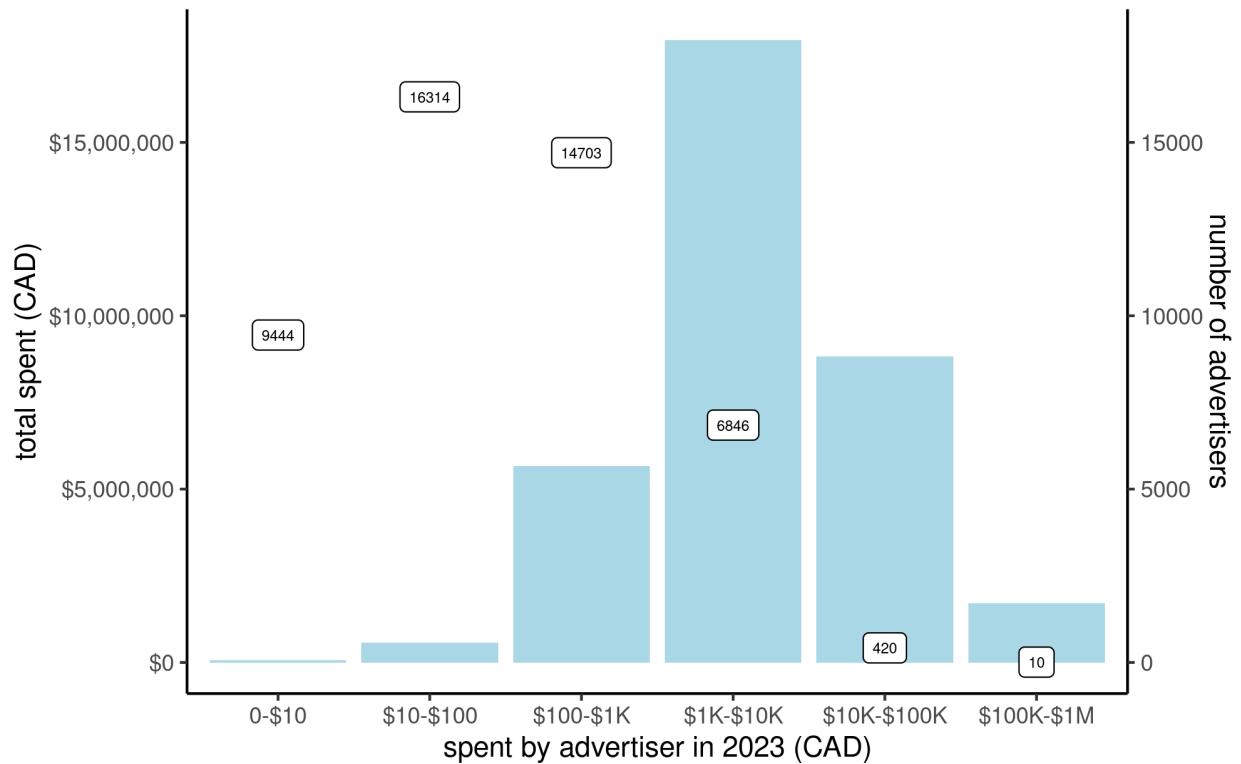

Figure 3 segments estimated expenditures by demographic category. The groups that spent the most on advertising were the 20-30 year old age group ($25,271,922.55, 73%), female escorts ($21,741,962.19, 63%), and those advertising White ethnicity ($15,235,574.60, 44%). However, the average amount spent per advertiser by ethnicity was higher for the Asian ($820), unknown ethnicity ($697), and Mixed ($635) ethnic categories compared to White ($580). This was also the case for the age group variable where the 40-50 year ($819), 30-40 year ($736), and the 50-60 year ($709) groups all spent more than the 20-30 year group ($631). The most striking difference in estimated average ad expenditure was perhaps the service type categories where

female massage ($1280), dom-fetish ($1214), and trans female ("shemale") escorts ($933) were estimated to have spent considerably more than female escorts ($542).

Figure 3: Ad spending for 2023 by demographic category. Boxes indicate the number of advertisers. Blue bars represent total ad spending for each category.
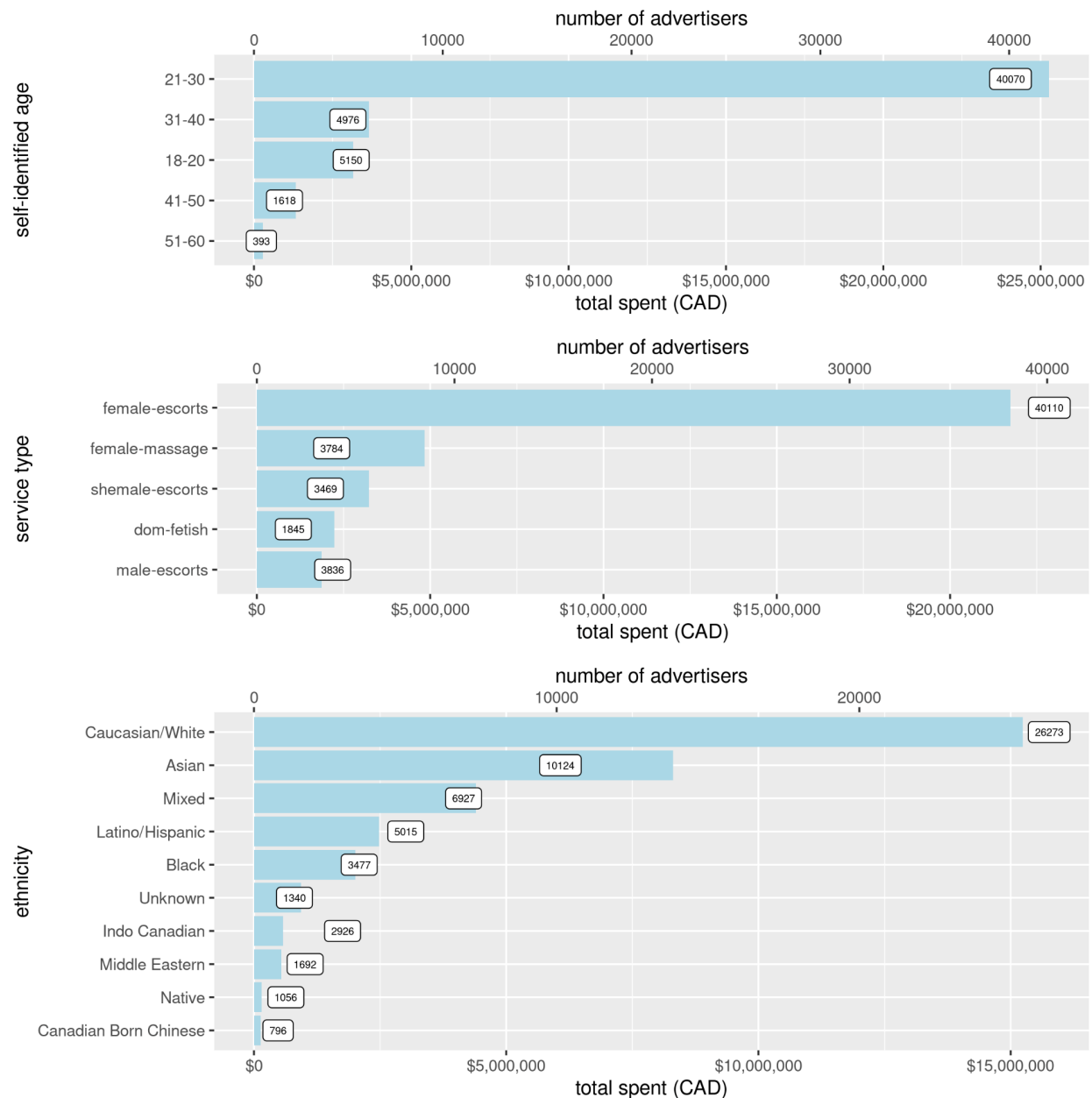
Keyword usage

In the sample of ads with 584 or more daily views (2548 ads, 2342 unique), 148857 terms were found (9374 unique), generated by 1411 advertisers each associated with mean 1.8 ads (SD 1.6). In the sample of ads with 32 or fewer daily views (2558 ads, 1932 unique), 139880 terms were found (9252 unique), generated by 1229 advertisers each associated with mean 2.1 ads (SD 4.6). Figure 4 contains two word clouds that compare the distinctive keywords more common in high and low daily view ads based on the 50 most distinctive words found in the samples. Most of the top 50 distinctive keywords were associated with low daily view ads. The words more common in ads with low daily views appear to relate to three themes: race ("asian", "chinese", "korean"), massage services ("massage", "nuru", "spa"), and online ("skype", "cam", "videos", "shows", "chat").

Figure 4: Keyword comparison. Word cloud a) shows distinctive keywords from ads with 584 or more daily views. Word cloud b) shows distinctive keywords from ads with 32 or fewer daily views. "Nd" and "Nmins" in b) refers to a number followed by the letters.

a) High daily views

b) Low daily views
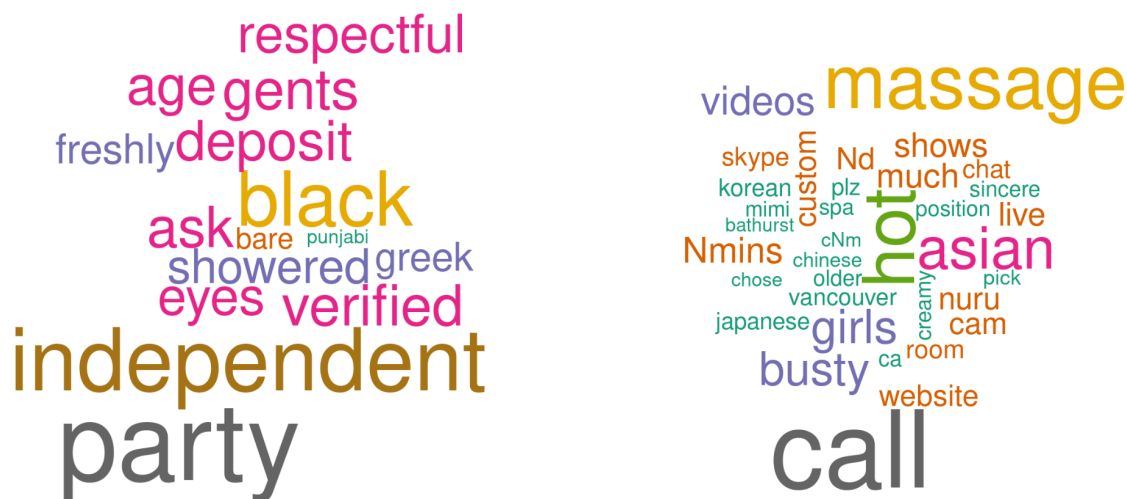
Based on Bayes information criterion (BIC), 256 terms had BIC greater than 10, indicating that usage of these terms was highly distinct between the two samples of ads. Table 4 shows the top 15 distinctive terms that were more prominent in high daily view ads. Meanings were coded based on 3483 distinct three or four word phrases identified in the ad texts. All statistics for the 50 most distinctive terms can be found in supplemental materials file S1 File (see "Keywords" and "Keywords with meanings" tabs). Rankings of all terms by log likelihood are available in supplemental materials S2 File.

Table 4: Top 15 distinguishing terms ranked by log likelihood ratio more commonly found in ads with high daily views. LL = Log likelihood ratio, BIC = Bayes information criterion, rank = the relative rank of the term based on number of ads containing that term, ads = the number of ads displaying a term. OR = odds ratio of the term being used in a high daily views ad versus low daily views ad. All LL, BIC were significant (p < 0.001).

term	LL	BIC	low views: rank / ads	high views: rank / ads / OR	common meanings in high daily view ads
black	150.81	138.23	**111** / 239	**25** / 618 / 2.59	"no black (men)" (86%) worker description (11%)
gents	121.43	108.86	**192** / 151	**49** / 428 / 2.84	gender (100%)
showered	117.23	104.66	**285** / 105	**79** / 341 / 3.25	hygiene (100%)
verified	91.46	78.89	**153** / 181	**48** / 433 / 2.40	client reassurance (100%)
freshly	83.31	70.74	**323** / 94	**106** / 277 / 2.95	hygiene (100%)
party	65.36	52.79	**25** / 575	**6** / 934 / 1.6	intoxicants allowed (92%)
age	64.52	51.94	**139** / 198	**56** / 413 / 2.10	client background (91%) worker description (6%)
independent	63.53	50.95	**44** / 423	**16** / 727 / 1.73	client reassurance (100%)
greek	63.43	50.86	**290** / 103	**113** / 264 / 2.57	restricted (49%) no restriction (48%)
ask	62.54	49.97	**129** / 210	**51** / 427 / 2.04	"please ask" (57%) "don't ask" (30%)
punjabi	60.96	48.39	**4397** / 2	**515** / 57 / 28	worker description (100%)
respectful	58.3	45.73	**140** / 193	**63** / 394 / 2.05	client behavior (100%)
eyes	57.22	44.64	**142** / 191	**65** / 389 / 2.04	worker description (100%)
bare	55.94	43.37	**589** / 47	**214** / 157 / 3.35	safe sex (94%) unsafe sex (6%)
deposit	55.91	43.33	**128** / 212	**54** / 417 / 1.97	requested (92%) waived (8%)

As shown in Table 3, for ads with the most daily views, most keywords had a single dominant meaning except for "greek" and "ask". "Greek" here refers to penetrative anal sex and was offered as a service in almost half (48%) of the examples. The term "ask" was similar in that, for 57% of the examples, the context is "please ask" and, in 30% the context is "don't ask". In contrast to "greek", "Bare (back)", a term used to describe sex acts without condoms, was prohibited in virtually all (94%) of the examples. "Party" almost always referred to drug use. Terms aimed at reassuring clients such as "independent", "verified", "showered", and "freshly", emphasizing hygiene, were more common in the high visibility ads. Notably, two of the terms appeared to be used in the context of selecting clients. The term "age" was used 91% of the time in the context of advertisers asking prospective clients to describe themselves. The phrases related to "age" often also included requests that clients describe their "background". This is similar to the most significant term, "black", which referred to restrictions on Black clients 86% of the time.

Discussion

During July 2023 advertisers on Site 3 could expect that their ads would be viewed 195 times (SD 234) on average. However, the median value of 128 (IQR 64-248) suggests that there are significant exceptions to this rule, which indeed was the case: a handful of ads in most categories significantly outperformed other ads, sometimes leading to thousands of views per day. When considering the variables that factor into larger daily views, service type was the only variable with a large effect size. Other variables such as self-identified ethnicity and age showed

significant differences between identified groups, but the differences were typically small. Testing using linear mixed effects models showed that these variables showed significant interaction effects, indicating that these variables are not independent.

Ads by male advertisers who provided services to women and couples were viewed significantly less than ads providing services to men. However, the difference was relatively small (17% when comparing median daily views and 19% when comparing the mean). Whether the number of female clients of male sex workers are changing is a subject for future research.

Differences in daily ad views between ethnicities were significant. However, the effect size was small. The ethnic identities of "Indo Canadian", "Native", and "Latino/Hispanic" performed similarly to, or better than, the majority ethnicity on the site, "Caucasian/White". However, echoing findings of previous research (Jones, 2015), some identities such as "Asian" or "Black" did not do as well. It is possible that the larger number of ads produced by Asian advertisers, and the higher hourly rates of Black advertisers, may have influenced client interest.

Measures of how workers were presented in ads were also only weakly correlated with daily ad views: ads with images with faces were weakly positively correlated and overall number of images was weakly negatively correlated. However, novelty appeared to be important, with advertisers posting fewer ads garnering larger daily views on average.

We did find some support for associations between BMI, age and daily views as well as hourly rates. The strongest association was between BMI and hourly rates, with lower BMI being associated with higher rates. The association between BMI and views was substantially weaker.

Advertisers with large numbers of daily views were more likely to advertise safe sex, emphasize hygiene, and request deposits. A minority of these advertisers referenced drug use in ads. These advertisers also appeared to be more likely to restrict clients on race and age, a

phenomenon described before (Kennedy, 2024c). Racial discrimination may influence interest in specific worker demographic segments, as clients affected by discrimination in the industry may seek out workers who are less likely to engage in it.

Per capita spending by advertisers tended to be higher for advertisers who were not advertising as 21-30 years old, cis-female, or White. Increased ad spending may be evidence of increased competition experienced by advertisers outside dominant groups but also may be an indicator of greater commitment to the industry by these minority advertisers.

In our personal experience, we have seen an increase in the use of social media platforms given the relatively high cost of classified advertising. This could partly account for the large number of advertisers with few ads. Often workers need to make money fast in a crisis and the cost of classified ads may be a barrier in those situations.

Social media platforms improve on classified advertising by allowing sex workers to build a "following" by highlighting their personality and other aspects of their lives to prospective clients (see also Kennedy, 2023a preprint). The availability of these social platforms is being impacted by anti sex work groups fighting to remove sex workers from these spaces and from the internet more generally.

Strengths and limitations

Daily views, we believe, is a strong measure of client interest but could be influenced by search engine bots and other automated processes downloading ad pages. Enumerating potential clients using daily views as a statistic will likely tend to overestimate the number of clients as a result. We assume that bots download all available pages on the site, thereby evening out their effect when comparing daily views between ads. The very large daily views of some ads may be

influenced by advertisers bumping ads repeatedly throughout the day described in the introduction.

The question of how many ad viewers actually contact an advertiser is an open research question. This is a question that advertisers would be in the best position to answer, as they alone know how often they are contacted when they post an ad.

For measures such as hourly rates, BMI, age, and ethnicity, data were not consistently available in all ads. This missing data may affect some statistical tests. In general, the findings using these measures should be taken as suggestive rather than definitive.

Conclusions

The evidence presented in this study shows that support for theory can be dependent on how theoretical constructs such as "desirability" are measured. How "class" is defined in sex work may not be effectively captured in what workers charge for their services. Comparisons of hourly rates versus daily views were not consistent, and hourly rates may not be a reliable indicator of how prospective clients respond to advertising.

In this study, there was no single factor that was unequivocally associated with client interest. Small effect sizes and the lack of strong associations suggest that clients are not one homogenous group, and the within-group differences between clients are an important research area.

There are rich opportunities for citizen science in social research. Indeed, industry involved people may be the only source for some types of information. Better collaboration

between researchers, sex workers, clients, and third parties where experiential people can participate will likely improve the relevance of studies in this area.

 More broadly, we believe that the ethics policies set out by the Tri-Council Policy Statement (TCPS2 Canadian Institutes of Health Research et al., 2022), which governs research involving human participants in Canada, provides a framework for best practices for researchers. While most of the research cited in this study is not authored by Canadians, better understanding of this policy, especially sections 4 ("Fairness and Equity in Research Participation") and 9 ("Research Involving the First Nations, Inuit and Métis Peoples of Canada"), could go a long way to ensuring appropriate inclusion of sex workers, clients and third parties in the interpretation of data and research outcomes to better reflect our lived realities.

A minority of advertisers, representing about 15% of the total, appear to be providing over 80% of the income for the site. This suggests that, while there are many small, part-time advertisers, there are some well organized advertisers who have capital. We believe the decriminalization movement in Canada and these advertisers have a mutual interest in improving the legal standing and working conditions of sex workers.

This study highlights the challenges sex workers face in trying to connect with their clients online and the level of competition that exists within some categories of sex work, racial background and age groups. We hope that the information provided here will be a benefit to advertisers and that industry involved people will be encouraged to contribute to the literature reflecting their lives.

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Declaration of interest statement

The authors have declared that no competing interests exist.

Supplemental Materials

Large images: https://populationproject.ca/NameGameImages.zip

Supplemental materials site: https://osf.io/bu6sn/

S1 File. Spreadsheet containing all tables. https://osf.io/tcxa8

S2 File. All terms ranked by log likelihood ratio. https://osf.io/z7fx4

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