

Power users: Canadian sex workers' use of technology post COVID

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Abstract

Background: The transition from physical to online advertising by sex workers in Canada has been well documented. However, few studies use rigorous sampling methods. This study considers how a technically sophisticated group of advertisers from a large Canadian sex work classifieds site used multiple online resources to promote or provide services during the COVID-19 pandemic.

Methods: Advertisers were identified from internal chat names found in a collection of 891695 ads downloaded between September 15, 2021 and September 22, 2022. Advertisers qualified for the study if they used a URL as part of their contact information and were actively advertising between August 23 and September 22, 2022. A random sample of 1000 of these advertisers were selected for further study out of which 783 had accessible contact URLs. Thematic analysis was performed on downloaded website texts and ad metadata was used to identify demographic and behavioral variables.

Results: Almost all (99%) sampled advertisers provided in person services and most (70%) provided online services. They advertised more frequently, were more affluent and were more likely to be trans-female, White, and collective. Themes of *security*, *health*, *identity*, and *social networks* were identified. Advertisers emphasized physical, emotional, and financial security. Most workers did not work in isolation and many participated in extensive social networks.

Conclusions: Rigorous sampling methods are feasible in sex work research. The sampled advertisers represented distinct subgroups underlining the need for researchers to provide context for samples used in research. Advertisers showed considerable adaptability in the wake of the COVID-19 pandemic.

Keywords: sex work, identity, health and safety, research methods, social media

Introduction

This study explores how sex workers use online resources in the context of marketing and providing their services. It considers how a select group of sex work advertisers, who might be considered “power users”, integrate multiple modes of promotion and service delivery. How do these advertisers describe themselves, how are they discussing health and security, and what do they expect from prospective clients?

Information and communication technologies (ICTs) have become an essential tool for sex workers in Canada (Agresti, 2009; Argento et al., 2018; Bernier et al., 2021, 2021; Castle & Lee, 2008; Jiao et al., 2021; Kennedy, 2022; Kille et al., 2017; Machat et al., 2022; Minichiello et al., 2013). Online classified advertising in particular is heavily used by Canadian sex workers and is an important resource for researchers trying to understand demographics (Kennedy, 2022), migration patterns (Boecking et al., 2018), or health and safety messaging (Kille et al., 2017). However, even for a relatively small country such as Canada, getting a representative dataset from online advertising can result in collections containing millions of documents. It is a significant challenge for researchers using these materials to find practical strategies for analyzing this type of data.

Online classified advertising can provide rich demographic metadata but, importantly, it localizes advertiser behavior in time. In an industry where it is likely that high turnover is the norm (Abel et al., 2007; Kennedy, 2022) this is an important consideration to avoid arriving at invalid conclusions (Cusick et al., 2009). Sex work is not legally recognized as work in Canada and it can be a challenge find representative samples of participants as many workers do not want to be identified. There is an understandable belief among some researchers, (Weitzer, 2005) for example, that it is impossible to use more rigorous sampling techniques and randomization.

This study addresses these issues by using sex work advertisers identified from classified ads as a sampling frame. Advertisers selected for further study were characterized by a combination of metadata from classified ads and additional external web materials associated with the advertiser. Thematic analysis (Braun & Clarke, 2006) of the external web materials is an important component of this study. Doing thematic analysis on external web materials rather than the ads themselves is practical: it greatly reduces the amount of material to be reviewed and also provides details that would not be found otherwise. Metadata from the classified ads, however, can provide information on gender, ethnicity, and where advertisers work in a more consistent way than external web materials can. It also provides a snapshot of behavioral variables such as how often advertisers advertised and how visible they were compared to other advertisers. This metadata is used to better understand how the sampled advertisers differ from the sample frame population.

The external web resources used by advertisers provide information that is difficult or impossible to gather from online classified ads alone. For example, beyond in-person services, what other types of services do contact sex workers provide? How, and how much, are workers paid? How socially connected are advertisers and workers? As these source materials often represent a stable online identity it is possible to get a sense of how sex workers present themselves (or are presented) and what they expect from clients including extensive health and safety messaging.

As the aim of the study is to better understand how workers use multiple ICTs, advertisers were included if they represented contact or online sex workers who used external websites in their contact information. These websites, described in more detail below, could be

profile pages, social media, personal websites, content delivery sites, or links pages where multiple sites can be accessed when an advertiser uses a combination of external resources.

In contrast to street based sex work, where interactions with prospective clients are typically brief (Krüsi et al., 2014) online advertisers often engage in extended interactions with clients. This can result in improved occupational health and safety for many workers (Kruesi et al., 2012; Machat et al., 2022). However, managing privacy online can be risky (Jiao et al., 2021). Furthermore, differentiating oneself from the crowd can be a challenge and many workers go to great lengths, as is shown in this study, to develop distinct sex work personae, a phenomenon reported elsewhere in the literature (R. Bowen & Bungay, 2016; R. R. Bowen, 2013, 2015). Social capital, in particular behaviors engendering trust, is a central theme in the external website data and this study refines and expands evidence for the emotional, physical and financial safety strategies reported elsewhere in the literature (Argento et al., 2018; Bernier et al., 2021; Jiao et al., 2021; Kille et al., 2017; Machat et al., 2022; Minichiello et al., 2013).

There is a continuing urgent need to provide relevant, representative data on what sex workers' concerns actually are. This work follows up on earlier work (Jiao et al., 2021; Kille et al., 2017) extending the empirical literature on how Canadian sex workers present and protect themselves publicly. However, unlike most previous Canadian research, this study situates its subjects among a much larger group of other Canadian sex work advertisers providing context for its findings.

Materials and Methods

This study is a qualitative examination of web materials generated by Canadian sex work advertisers to better understand their attitudes, concerns and safety strategies. Advertisers were

identified by chat names used for an internal chat function from ads downloaded between September 15, 2021 and September 22, 2022 from a prominent Canadian sex work classifieds site (“Site 3”) employing methods described in (Kennedy, 2022). The three most commonly posted ads for each advertiser were visually inspected and advertisers were included if they represented a sex worker with contact information. These advertisers represented the initial sample population for the study.

All ads on Site 3 had standardized contact metadata which allowed for the identification of advertisers who had used a URL as a contact. An initial random sample of 1000 advertisers who had used a URL as part of their contact details who were active between August 23, 2022 and September 22 2022 were selected for further study. Ad urls for the sampled advertisers were identified and manual downloads of ads were attempted between the 24th and 30th of September, 2022 using a clean install of the Firefox web browser (Mozilla, 2022). Manual downloads were necessary to expose the contact metadata in the ads.

On Site 3, advertisers can activate and deactivate ads. While most sampled advertisers had active ads some did not. For those that did not have active ads, profile pages on the classifieds site were often available and were downloaded when no recent ads were available. For some advertisers, these profile pages could also be used as contact URLs. Once ads had been downloaded and contact information exposed, URLs were extracted for further study. Data from sites associated with these urls was manually downloaded and web page screenshots were taken between the 1st and 8th of October, 2022. Text captures of all downloaded web pages were made for further coding and analysis. Text extraction for HTML pages used a custom regular expression filter (Supplemental materials S1 File) and Tesseract (*Tesseract*, 2019) was used for web page snapshots. All text captures for a given advertiser were combined into a single

document. These combined documents were initially coded using QualCoder (Curtain, 2023). All coded texts were then imported into a MariaDB database (MariaDB & Widenius, 2017) which simplified combining the text capture data from external websites with the classified advertising data. A LibreOffice spreadsheet (The Document Foundation, 2020) was created using the most relevant texts for more detailed analysis. This spreadsheet is available in Supplemental materials S2 File. The thematic analysis was refined following the protocols described in (Braun & Clarke, 2006) where the initial text capture codes were used to identify sub-themes. These were then grouped into broad subject areas for inclusion. Downloaded pages were examined for evidence of collective advertising, where the principal advertiser was an escort agency, collective, massage parlor.

Statistical measures

Counts of advertisers associated with identified themes were tabulated. What workers charged per hour from both advertising data and external websites were calculated and compared. As payment options for sex workers have expanded in recent years, counts of workers mentioning different payment methods were tabulated. In addition, descriptive statistics regarding how advertisers were using social media were collected (posts, follower and following counts). LibreOffice calc (The Document Foundation, 2020) was used to calculate descriptive statistics (Supplemental materials S3 File).

As a point of comparison, statistics from online classified ads were generated for demographic and behavioral variables for all included advertisers and segmented for downloaded advertisers and advertisers who did not use URLs as contacts. Counts of ads, days advertising, and average ad views were generated. Counts of advertisers were segmented based on the

demographic variables of self-identified gender (based on ad URL), self-identified ethnicity (based on ad metadata), locale (*Incall*, *Outcall* or *Online* based on ad metadata) and geographic location (based on ad URL). The R *prop.test* and BSDA package *tsum.test* functions (Arnholt & Evans, 2021; R Core Team, 2021) were used to compare proportions and means respectively between segments. R version 4.2.2 was used to perform all tests using a 95% confidence level.

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, a data set is provided as part of the supporting information along with the code used to process it. However, 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

Sample selection

The downloaded web pages contained 54558 chat names. From this original group, 39558 chat names were included as advertisers. The 14996 excluded chat names comprised 11962 who were clients seeking services, 1718 with no contact information, 845 who represented

“hookup” sites, 457 representing other services (drivers, condo rentals etc.), and 14 who offered non-sexual therapeutic services. A large sample of classified ads associated with the included advertisers (N=891695) was used to identify advertisers who were using URLs as part of their contact information.

For the entire year-long data collection period 5043 advertisers had at least one ad which had contained a URL in the advertiser’s contact metadata. Advertisers active between August 23, 2022 and September 22, 2022 who had used a URL in their contact information were used as the sampling frame for inclusion in the study. There were 2452 active qualifying advertisers from which 1000 advertisers were randomly selected where 783 advertisers had downloadable external website or profile data. These advertisers comprised the sample used for further study.

Website data from the extracted contact URLs was downloaded between October 1 and 9, 2022. When a contact URL was for a personal website all pages from the site were downloaded. When a contact URL was for a links page all links in the page were downloaded. In total 2334 HTML documents from 392 domains were downloaded for thematic analysis. Advertisers provided links to different types of websites in their contact information including profile pages (205 advertisers), personal web pages (325 advertisers), social media sites (189 advertisers) and content creator sites (232 advertisers).

Site 3 allowed advertisers to use multiple chat names. In practice this did not appear to be common. Based on similar web links, 12 advertisers were suspected of using more than one chatname (N=32 chatnames). Similarly, 11 individual advertisers were found to use multiple names on rare occasions. Reasons for using more than one name included having different names for different work venues, an advertiser changing their name because the original name was too common and an advertiser directing prospective clients to reviews using an older name.

Themes

Thematic analysis of the website capture data revealed four overarching themes: *security*, *identity*, *health* and *social networks*. The *security* theme was the most common, associated with 336 advertisers (43%), followed by *identity* associated with 325 advertisers (42%), *social networks* associated with 313 advertisers (40%), and *health* associated with 276 advertisers (35%). These themes are explored in more detail in the following sections.

Security

The concept of security, defined as the mitigation of risk, is a large topic. In this context, it encompasses all risks apart from those pertaining to health or substance use, considered separately in the Health section. The sampled advertisers used multiple strategies to implement security that broadly could be divided between physical, emotional and financial security.

Working online

Based on advertising metadata, the majority of the sampled advertisers combined online and in person services (70%, N=546). This is significantly more than the proportion for all included advertisers (42%, N=16720, *prop.test* CI [0.24, 0.31], $p < 0.001$). Advertisers who advertised in person services exclusively were less common (30%, N=234) and only 3 advertisers were exclusively online.

Despite the fact that a majority of advertisers advertised some form of online sex work, only a minority of advertisers (30%, N=232) provided links to content creator sites. These sites allow advertisers to sell videos and still pictures on a per item or subscription basis. Many online services were provided more informally via text, video, or voice calls. A small number of

advertisers sold physical goods such as panties (N=21), lubricant (N=4), bodily fluids (N=2) or other goods and services.

While online work is far less risky than meeting clients in person it is likely to be far less profitable. Based on advertised subscription rates for online content (mean CAD \$21.51 per month, SD CAD \$14.32, N=214 based on an exchange rate of CAD \$1.37 for USD \$1.00) and online sex work (mean CAD \$152.37 per hour, SD CAD \$97.34, N=51) workers earn substantially more doing in person sex work. The mean hourly rate based on advertising data was CAD \$276 per hour (SD CAD \$87, N=569). However, some advertised rates from ad metadata might have referred to online services. Based on external website data, hourly rates for in person services were much higher than those from classified advertising data (mean CAD \$348, SD CAD \$108, N= 94).

Sampled advertisers were also significantly more likely to advertise outcall work, where the worker visits the client, with 83% (N=822) providing this service compared to 74% (N=29287) for all advertisers (*prop.test* CI [0.07, 0.12], $p < 0.001$). A small number (5%, N=33) of the 652 providing outcall service mentioned some form of safety measure in their external websites. The most common was restricting outcalls to hotels (42%, N=14) and, less commonly, homes (24%, N=8). Some advertisers explicitly prohibited outcalls to cars (21%, N=7) and some would only provide outcalls to regular clients (18%, N=6).

Consent, respect and privacy

The concepts of consent and respect were mentioned by 195 of sampled advertisers (25%). Consent was explicitly discussed by 17 advertisers. It was particularly important for advertisers providing services that might involve pain or psychological distress on the part of the client or worker. As one advertiser described it: "*Safety and consent are always a top priority*

and non-negotiable. ... I always practice R.A.C.K – risk-aware consensual kink. Every session is discussed in advance, including any potential risks, and mutually consented to.” [advertiser 501]

Respect in the form of not being rude, verbally aggressive, or wasting the advertiser’s time was discussed by 72 advertisers and not indulging in explicit talk was mentioned by 20 advertisers. Other related concepts were prohibitions on negotiating rates, mentioned by 101 advertisers, and hygiene, discussed further in the section on Health, mentioned by 112 advertisers. Overall these practices help workers avoid bad actors who could potentially turn violent. As one advertiser explained: *“I take rudeness and aggression as a red flag and will not book, or will end a session immediately if either is demonstrated.” [advertiser 287]*

Privacy, explicitly mentioned by 92 of sampled advertisers (12%), was a potential source of conflict when clients felt the need to hide their identity. For example, there appeared to be a debate over the use of text apps, which hide the identity of the sender. A client posting to a forum page linked by one advertiser explains it this way: *“the men that do this are in committed [sic] relationships. And do not want to use their real numbers as it could lead to issues.” [advertiser 155]* However, the consensus among advertisers discussing this topic is that the benefits of a potentially broader clientele are outweighed by the risks of poor interactions: *“I’ve made a decision to avoid no-shows and game players to only allow gentleman [sic] who I’ve seen before to text me ... I know the voice interaction would make both parties feel much more comfortable”.* [advertiser 6]

However, advertisers were divided regarding how they wished to be contacted. The convenience of text based communications was weighed against safer voice or video calls. A total of 157 of sampled advertisers (20%) expressed a preference. Most of these advertisers (N=112) allowed text as the initial form of contact and 39 allowed email or web form contact and

47 allowed voice calls. Video calls for screening were mentioned by only one advertiser and one advertiser required prospective clients to interview before seeing them.

Screening and deposits

The sampled advertisers often employed some form of screening in addition to texting or talking with prospective clients. Screening was mentioned by 74 of sampled advertisers (9%). The most popular form of screening was requiring prospective clients to send a copy of some form of government issued identification required by 31 advertisers. References from other workers were required by 30 advertisers followed by LinkedIn profiles required by 17 advertisers, deposits required by 10 advertisers, forum or social media handles required by 9 advertisers, voice calls required by 3 advertisers, photos required by 2 advertisers. One advertiser asked for proof of vaccination and one required a video call before booking an appointment.

The use of references was controversial. Two advertisers explicitly disallowed them as a form of identity confirmation. Eight advertisers mentioned acting as references with only five being willing to provide this service to other workers. As one explained: *“I believe every experience is different and there is no way to predict if either party will be respectful.”*

[advertiser 396]

Even when screening did not involve providing identification, prospective clients were often required to divulge personal information as part of the screening process. Examples included cell phone number, full legal name, age, occupation, or ethnic background. One or more of these types of information was requested by 64 of sampled advertisers (8%). Age was by far the most commonly requested with 44 advertisers requiring this information. However, this was not surprising as many advertisers required clients to be above a certain minimum age. For these advertisers, the median minimum age was 21 years (IQR 19-29, mean 23.4, SD 6.7, N=43

advertisers) and one advertiser restricted clients to 50 and older. Most advertisers did not mention a maximum age but two set this limit at 60.

Deposits were more common than screening. These were mentioned by 154 of sampled advertisers (20%). Deposits could range from a small nominal fee to 100% of the agreed upon compensation for an appointment. The practice of requiring deposits has only become possible as anonymous online forms of payment have become available. In addition to cash payments there were 9 other compensation methods mentioned by a total of 167 of sampled advertisers (21%). The most common, shared by both online and in-person workers, were wish lists used by 81 advertisers, where clients could buy the worker goods online, followed by email funds transfer (e-transfer) used by 53 advertisers, a form of chequing that can use anonymous email addresses to identify parties in a transaction, gift cards, used by 24 advertisers, online payment processors used by 21 advertisers, and crypto currencies used by 21 advertisers. Credit cards were used by 16 advertisers, debit cards by 9 advertisers and 11 advertisers had an on site ATM machine. One advertiser even offered to barter gold. In no cases did advertisers accept wish list items for deposits and in some cases some payment types such as e-transfer (8 advertisers) and online payment processors (3 advertisers) were forbidden either because the advertiser was banned by the financial service or felt activity could identify them.

Health

Hygiene and COVID-19

As mentioned above, one of the most commonly discussed health topics was hygiene with 112 of sampled advertisers (14%) mentioning this topic. Covid was another topic mentioned

by 68 of sampled advertisers (9%) who discussed disinfection procedures, vaccination and restricting contact with clients who were currently or recently ill.

Sexual practices

Online sex work is a safe alternative to meeting in person and, based on advertising data, the majority of sampled advertisers (70%, N=546) combined in-person and online services. However, in person sex work was still offered by 99% of the sample (N=782). This proportion was not significantly different from the larger population of advertisers (99%, N=34236) where 87% (N=34469) had availability data.

Many of the sampled advertisers (17%, N=131) discussed sexual practices of any kind in the context of health. The majority, 106 advertisers, discussed safe sex. Condom use, mentioned by 71 advertisers, was the most common safe sex practice followed by restrictions on fluid exchange mentioned by 70 advertisers and 15 advertisers mentioning STI testing.

A minority, 51 advertisers, discussed unsafe practices. The most common risky practices described were uncovered oral sex on the client (42 advertisers), anal sex (covered or uncovered) (12 advertisers), rimming (12 advertisers) and oral sex on the worker (11 advertisers). There were 27 advertisers who discussed both safe and unsafe sexual practices.

Sobriety and substance use

The topic of substance use and sobriety was discussed by 152 of the sampled advertisers (19%). Many advertisers (N=51) described their own sobriety or expected sobriety from clients.

The most commonly discussed substance was alcohol with it being mentioned by 62 advertisers mostly in the context of gifts, social encounters (often provided as an additional service) or descriptions of personal tastes. Other, less frequently discussed substances were

tobacco mentioned by 38 advertisers (where the majority of 26 were non-smokers), cannabis (32 advertisers) and other drugs (29 advertisers).

Identity

“The modern Matryoshka doll...because I too am many women in one.” [advertiser 496]

How do advertisers describe themselves? Many of the sampled advertisers had a personal web page (42%, N=325) some of which were quite elaborate. While most of these sites could be characterized as marketing materials, 132 of the sampled advertisers (17%) included detailed information on their opinions, attitudes and interests including blog posts (41 advertisers), links to podcasts or media interviews (6 advertisers), and political views (10 advertisers).

Of the 58 advertisers who discussed attitudes about working, 36 expressed positive attitudes about their work. For example, one described it this way: *“I absolutely adore what I do. I love the magic that happens when meeting someone for the first time”* [advertiser 76]. Other advertisers described work in terms of freedom (7 advertisers), choice (3 advertisers), pride (1 advertiser) and 13 advertisers discussed authenticity as [advertiser 191] stated: *“It's important to me that our time together never feels transactional.”*

Many advertisers (N=51) described sex work in the greater context of their lives. Eleven advertisers described sex work as being their main occupation. However, a larger number described other activities. The most common non sex work activity was being an artist or musician (16 advertisers) followed by having an outside job (15 advertisers) or having external responsibilities (12 advertisers).

Education or intelligence was mentioned in the self descriptions of 61 advertisers with 58 advertisers describing themselves as either having completed a degree or being in the process of completing one. As one advertiser put it: “*Book for the ass, stay for the brain.*” [advertiser 560]

Gender, ethnicity and place

The sampled advertisers also differed from other advertisers on some demographic measures. Table 2 shows proportions of advertisers by gender. Downloaded advertisers exclusively advertising as cis-males were significantly less likely to use contact URLs. However, trans-female identified advertisers were significantly more likely to use contact URLs.

Table 2: Comparing gender(s) associated with sampled advertisers and advertisers without contact urls. Genders are identified by: *f* cis-female, *m* cis-male and *t* trans-female. Trans-female and cis-male were significantly different between the two groups. P-values and CI from the R *prop.test* function.

genders	sample (N=783)	no contact url (N=34683)	p	CI
<i>unknown</i>	12 (2%)	413 (1%)	n.s.	
<i>f</i>	655 (83%)	29614 (85%)	n.s.	
<i>f,m</i>	17 (2%)	861 (3%)	n.s.	
<i>f,m,t</i>	10 (1%)	71 (0%)	p < 0.001	[-0.02, -0.00]
<i>f,t</i>	20 (3%)	255 (1%)	p < 0.001	[-0.02, -0.00]
<i>m</i>	16 (2%)	2685 (8%)	p < 0.001	[0.05, 0.07]
<i>m,t</i>	6 (1%)	113 (0%)	n.s.	
<i>t</i>	50 (6%)	671 (2%)	p < 0.001	[-0.06, -0.03]

Table 3 shows the proportional differences of advertisers based on self-identified ethnicity from advertising metadata. Sampled advertisers identifying as *White* or using *Multiple* ethnicities were significantly more likely to use external URLs. Sampled *Multiple* advertisers were a combination of 74% *White*, 62% *Mixed*, 36% *Asian*, 36% *Latino/Hispanic*, 25% *Black*, 13% *Middle Eastern*, 12% *Indo Canadian*, and 4% *Native*. Some advertisers were less likely to use external URLs as contacts: *Black* identified advertisers and advertisers with no ethnicity data, *Unknown*, were somewhat less prevalent in the sample.

Table 3: Comparing self-identified ethnicity of sampled advertisers with advertisers not using URLs. *Multiple* refers to advertisers associated with multiple ethnic identifiers whereas *Mixed* is a single self-identification used by advertisers of mixed heritage. P-value and CI from the R *prop.test* function.

ethnicity	sample (N=783)	no contact url (N=34683)	p	CI
<i>Asian</i>	50 (6%)	2193 (6%)	n.s.	
<i>Latino/Hispanic</i>	29 (4%)	1652 (5%)	n.s.	
<i>Mixed</i>	61 (8%)	2810 (8%)	n.s.	
<i>Multiple</i>	200 (26%)	5278 (15%)	p < 0.001	[0.08, 0.14]
<i>Native</i>	2 (0%)	194 (1%)	n.s.	
<i>Black</i>	40 (5%)	2412 (7%)	p < 0.05	[-0.03, -0.0]
<i>Unknown</i>	1 (0%)	6973 (20%)	p < 0.001	[-0.21, -0.19]
<i>Caucasian/White</i>	403 (51%)	13171 (38%)	p < 0.001	[0.08, 0.14]

Significantly more of the sampled advertisers were associated with multiple provinces (45%, N=350 versus 17%, N=6030, *prop.test* CI [-0.21, -0.18], p < 0.001). There were also somewhat more advertisers from British Columbia (13%, N=100 versus 10%, N=3504, *prop.test*

CI [-0.05, -0.03], $p < 0.001$). However, significantly fewer advertisers from Quebec were represented in the downloaded advertiser data (8%, $N=62$ versus 33%, $N=11404$, *prop.test* CI [0.22, 0.24], $p < 0.001$).

Advertising behavior

The sampled advertisers were different from other advertisers on four behavioral measures related to advertising: days advertising, number of ads, hourly rates and views per ad. They tended to advertise for more days (mean 335 days, SD 98, $N=783$ versus mean 204 days, SD 124, $N=34683$, *tsum.test* $p < 0.001$) and significantly more frequently (mean 98 ads, SD 431, $N=783$ versus mean 18 ads, SD 346, $N=34683$, *tsum.test* $p < 0.001$). They also charged more hourly (mean CAD \$276, SD \$87, $N=569$ versus CAD \$231, SD \$80, $N=17018$, *tsum.test* $p < 0.001$). Mean views per ad were also significantly higher for downloaded advertisers (mean 30606 views per ad, SD 53293, $N=783$ versus mean 6734 views per ad, SD 21061, $N=34677$, *tsum.test* $p < 0.001$).

Sexuality

“YOUR FETISH IS NOT THAT WEIRD. TRY ME.” [advertiser 760]

Only 113 sampled advertisers discussed sexual orientation (14%). Most who did mention sexual orientation (98 advertisers) indicated some form of queer identification. In addition, 59 advertisers were willing to accept couples as clients. In total 102 advertisers were either explicitly queer identified or accepted couples as clients. Workers who explicitly stated that they were straight (16 advertisers) or would not work with couples (7 advertisers) were relatively rare. However, given the limited information on sexual preferences it would be misleading to conclude that most of the downloaded advertisers and associated workers are queer identified.

The number of fetish providers in the sampled advertisers was significantly higher than in the population of advertisers who did not use contact URLs (16%=123/783 versus 4%=1292/34756, *prop.test* CI [0.09, 0.15], $p < 0.001$).

Social networks

Collectives

While most of the sampled advertisers represented themselves as individuals (87%, $N=681$), the majority of workers worked in collectives. It was estimated that 2320 workers were represented in the collected web data after correcting for advertisers using multiple chat names. The majority of identified workers, 1631 (71%), were associated with 102 businesses such as massage parlors, escort agencies or self-identified collectives.

Worker counts from the downloaded websites could be incomplete. To see what might have been missing, a visual inspection of active classified ads from the sampled advertisers was undertaken. The classified ad data contained fewer names ($N=1976$) than the contact URL data. However, both downloaded contact URLs and classified ads were missing data on individual workers. There were 732 advertisers with name data from any source but 214 of these advertisers (29%) did not identify all their workers in classified ads and 52 (7%) did not identify all workers in external web pages. One advertiser, who appeared to represent only one individual in the external website data represented 262 names in the online data.

Many of the advertisers representing themselves as individuals also collaborated with other sex workers. Some directly worked together as duo partners and some shared resources with other workers. Content analysis of 325 personal web pages found 77 advertisers who had duo partners and at least 11 advertisers who shared resources.

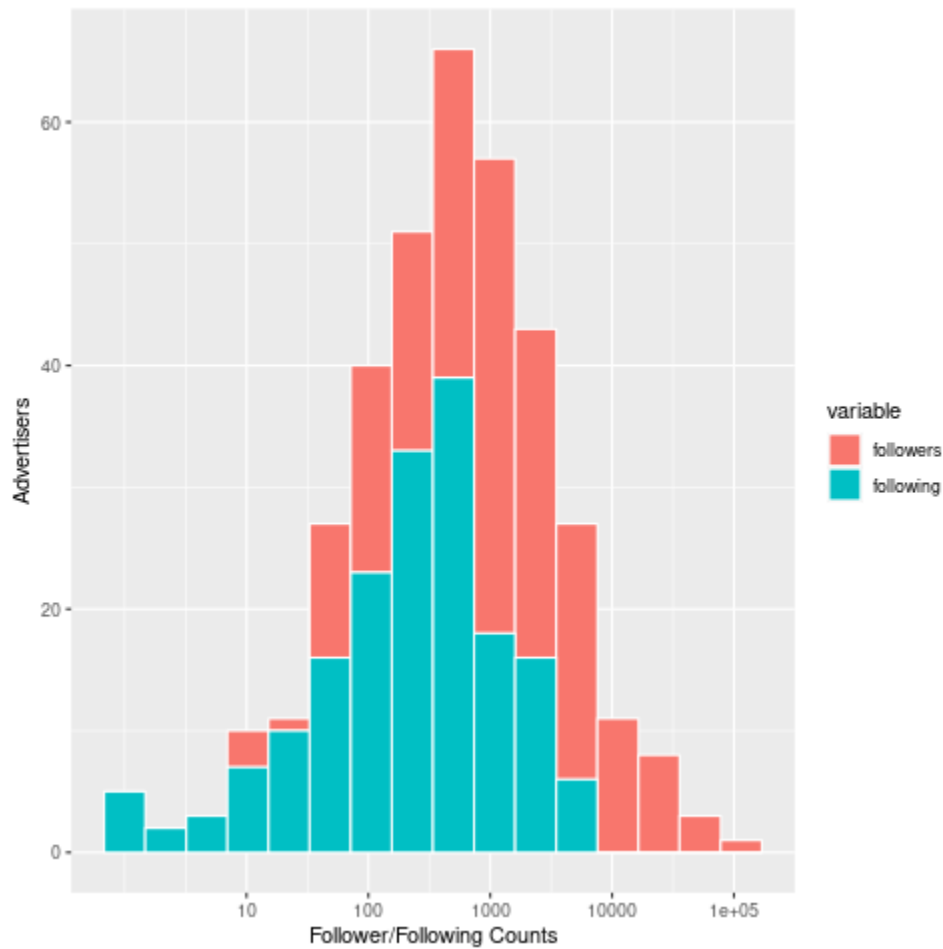
Social media

Social media sites were common with at least 308 advertisers mentioning using them (39%=308/783). Advertisers who used social media were associated with median 1 site (IQR 1-2, mean 1.7, SD 1). As part of the data gathering process 221 social media profiles from three major social media sites were downloaded for 189 advertisers (12 collective and 177 individual). Out of the original 221, 192 profiles used by 164 advertisers could be viewed. Of the pages that could not be viewed, 9 had been suspended, 4 required a login and 16 profiles were described as missing. Of the viewable profiles, 47 pages were private.

Post counts on social media can be undercounted as it is a common practice for some social media users to delete old content. However, advertisers could be quite prolific with one advertiser posting over 53500 times. The distribution of social media posts was very positively skewed (skew 6.5, median 159, IQR 27-1026, mean 1809, SD 5673, N=185).

Social media follower and following counts provided additional evidence of extensive social networks for many advertisers. Once again these counts may underestimate the number of social connections for advertisers who had older accounts that had been suspended and were in the process of rebuilding their networks. Figure 1 shows the log scale distributions of followers and following counts. Both follower and following counts were heavily skewed distributions (follower skew=6.2 versus following skew=3.2). Advertisers typically had much larger follower counts than following counts: median 959 followers (IQR 299.5-3039.5, mean 4361, SD 11407, N=187) and median 249 following (IQR 59-675, mean 621, SD 1008, N=187). Some advertisers had huge followings on social media: 24 advertisers had over 10,000 social media followers with the largest social media presence exceeding 114800 followers.

Figure 1: Log scaled social media follower and following count distributions.



Discussion and conclusions

This study provides evidence for how sex work advertisers have diversified their use of the internet in the ongoing COVID-19 pandemic. Advertisers who used external websites in their contact information advertised significantly longer and more frequently and charged more for their services than other advertisers. These advertisers are demographically distinct: they tended to be more Anglo, White and female-identified compared to the other advertisers. It was clear that a significant proportion of the sampled advertisers are part of a very socially connected,

affluent group with a long term commitment to the industry. However, advertisers could be quite varied in how they used online resources outside of classified advertising. Also, the majority of workers represented were not advertisers but workers associated with a small number of collectives. Clearly the workers represent a mixture of distinct subgroups.

Sex workers are often part of large social networks of other sex workers, clients and third parties, a phenomenon discussed elsewhere in the literature (Jiao et al., 2021; Kennedy, 2022; Strohmayr et al., 2019). These networks are important for sex workers both in terms of attracting clients, interacting with peers and safety. It appears that, for some, these networks may be considerably larger than those in their “straight” life.

This study shows that, post COVID-19, sex workers have diversified how they market services and the types of services offered. Other than incall and outcall, offered services could include web camming, phone sex, sexting, “dick rating”, being a virtual “girlfriend”, and selling self-generated content. However, there is little evidence that online services have replaced in-person sex work. Workers, especially those who are independent advertisers, likely make far more money providing in-person services compared to online. Out of the online services, content generation, arguably the safest, appeared to be the least lucrative.

If the frequency that safety strategies are mentioned is any indication, advertiser concern for safety goes well beyond risks to health or physical harm. The concept of safety also encompassed important financial and emotional dimensions. Strategies to mitigate these risks overlapped as potentially dangerous clients were seen to identify themselves with inconsiderate, rude or pushy behavior. Nevertheless, screening and deposits do not appear to have become universal in the industry. Nevertheless, it appears that online financial technologies will continue

to disrupt the industry in the same way the adoption of ICTs and online advertising has over the last 25 years.

It is clear that many advertisers make a substantial effort to identify like-minded potential clients. More broadly, the debate, exemplified by these advertisers, over reasonable behavior addresses the urgent need for workable norms in the industry. The Canadian legal environment, embodied in the (PCEPA Protection of Communities and Exploited Persons Act, 2014), impedes this process as many clients may refuse to cooperate with safety strategies that may put them at risk.

This study extends previous work on occupational health and safety of Canadian sex workers. The data presented provides a timely snapshot of the state of the industry during the ongoing COVID-19 pandemic and illustrates the creativity, resilience and agency of sex workers in Canada in the face of significant structural obstacles.

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Declaration of interest statement

The authors have declared that no competing interests exist.

Supplemental Materials

All supplemental materials can be found at <https://osf.io/ba64d/>

S1 File. Regular expression for HTML text extraction. <https://osf.io/a5zmd>

S2 File. Spreadsheet containing coded texts. <https://osf.io/3tykh>

S3 File. Descriptive statistics. <https://osf.io/sbcpd>

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