Harassment Experiences of Women and LGBTQ Live Streamers and How They Handled Negativity

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ABSTRACT

Live streaming is a form of interactive media that potentially makes streamers more vulnerable to harassment due to the unique attributes of the technology that facilitates enhanced information sharing via video and audio. In this study, we document the harassment experiences of 25 live streamers on Twitch from underrepresented groups including women and/or LGBTQ streamers and investigate how they handle and prevent adversity. In particular, live streaming enables streamers to self-moderate their communities, so we delve into the methods of how they manage their communities from both a social and technical perspective. We found that technology can cover the basics for handling negativity, but much emotional and relational work is invested in moderation, community maintenance, and self-care.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in collaborative and social computing**; *Empirical studies in HCI*.

KEYWORDS

LGBTQ; women; online harassment; live streaming; interactive media; coping strategy

1 INTRODUCTION

Harassment is defined as a wide range of behaviors with offensive nature and is a common factor in internet behavior [1]. The topic of harassment on the internet, especially towards women and LGBTQ users is nothing recent [52]. There exists a wide landscape of research regarding harassment towards women and LGBTQ individuals, ranging from topics such as sexually harassing messages in the workplace to online bullying [45, 57, 61]. Live streaming shares many qualities with other online mediums, but is a relatively

new phenomenon and media context [40]. While comments, forum posts, and in-game chats can sometimes fall under live interaction, the option to step away or switch to a different tab is always there. With this medium, streamers are always expected to be interactive and "present" in the midst of whatever they are streaming. Being live, streamers get automatic feedback from their viewers in chat. This live interactive relationship between the streamer and viewers is unique to live streaming. While streamers can benefit from these features, there also exists detriments to them.

While the streamer is in the spotlight during a live stream, the viewers in chat hide behind a screen. Influxes of negativity may be more difficult for the streamer to cope with during a live stream versus a comment section on a video as they are forced to cope with the negativity in real-time [75]. Furthermore, in other online platforms, gender and sexuality may not display or be simpler to hide or dismiss. Streaming, due to face cam and audio, puts streamers in the line of criticism regarding factors such as appearance, voice, and gender identity [63]. Live streaming potentially makes the streamers more vulnerable to internet harassment because of the nature of streaming: the interaction with the viewers, and the commonly featured face cam where viewers see the streamer's live reactions and emotions, bring in unique attributes of harassment to the table.

Our focus in this paper is the harassment experiences of women and LGBTQ streamers and how they handle and overcome them. In particular, live streaming enables streamers to self-moderate their communities, so we delve into the methods of how they do so. With the findings of this study, we hope to provide insight on how to improve the moderation interfaces and experiences for live streamers. It is important to think about inclusive technology and examine different users and their experiences with a certain technological platform to pave way for improvements.

2 LITERATURE REVIEW

2.1 Harassment Towards Marginalized Groups Online

Harassment is a prevalent online phenomenon existing for as long as the Internet and online communities have [16]. Harassment, which refers to negative behaviors towards another/ other parties, can range from subtle name-calling to more aggressive behaviors [18]. Online harassment specifically refers to offensive behaviors that are enabled by technology platforms [5, 7]. Typical forms of online harassment include flaming (negative language, insults), doxing (public release of personally identifiable information), impersonation, public shaming [7], and cyberstalking (preying and targeting victims in a repetitive and intimidating manner) [2, 60].

Women and the LGBTQ community are particular targets of online harassment [19, 36, 45]. Reports of online dating sites in 2020 show LGB users are more likely than their straight counterparts to experience negative behaviors like physical threats [9], and more women than men under age 35 experience continuance of contact after they express no interest [4]. Prior work also suggests that sexual harassment is more frequent in online communities where men outnumber women, and the job tasks are perceived as masculine [27]. For example, in the online gaming community, reports reveal 38% of women and 35% surveyed reported experiencing sexist, homophobic, or transphobic harassment within multiplayer gaming spaces [33]. Sexist players maintain stereotypes regarding women's motives and participation in video games [28], and those who try to draw attention to gender inequalities are targeted for harassment or labeled 'feminist killjoys' [8]. Women's voice receive three times as many negative comments as men's [48].

Harassment without adequate social support leads to female gamers playing alone, playing anonymously, and moving groups regularly [55]. The stress of marginalization and unsupportive environments negatively influence health and well-being [71], causing outcomes such as anxiety and loneliness [55], emotional distress, diminished self-esteem, sleeplessness, depression, post-traumatic stress disorder [50, 72], self-blame [58], changes to the technology use, and privacy and psychical safety concerns [25]. These consequences cause much physical and emotional labor for targets.

2.2 Harassment in Live Streaming

2.2.1 Digital Affordances of Live Streaming. Live streaming is a unique social medium with high-fidelity computer graphics and video, and low fidelity text-based communication [40]. It combines the hot media of video, compellingly showing surprises and reactions, with the cool media of text chat, limiting expressiveness, but allowing large-scale participation [40]. Streamers create authentic real-time content to attract viewers coming together to form communities and engage in interactive performances [39, 40, 75]. On the one hand, live streaming contains a broadcasting element that allows streamers to transmit visual and vocal content through the camera to a large number of pseudonymous viewers. In this sense, streamers use multi-modality, such as vocal inflections, physical appearance, bodily movements, and facial expressions, to present themselves and communicate with the viewers. The immediacy and immersion of live streaming make it more engaging than other media [39]. On the other hand, viewers can only interact with each other or the streamer through text chat, which lacks nonverbal cues that the streamer presents. However, the anonymity, a lack of nonverbal cues, and the minimization of authority online cause people to feel less constrained by social norms than when they interact offline and to engage in uncivil behaviors like harassment without consequence [69].

The popularity and the affordances of live streaming spur research around the engagement and motives of users (e.g., [10, 40, 41, 54]) and streamer-viewer relationship (e.g., [17, 51, 66, 75]), with growing but still limited research about how streamers manage audience and content [62, 74]. In line with research about streamers' audience and interaction management in live streaming, we delve into negative aspects and explore marginalized streamers' harassment experiences and coping strategies.

2.2.2 Harassment Towards Marginalized Streamers on Twitch. Twitch has become the global leading live steaming platform, with over 15 million average daily streamers [1]. It is estimated to surpass 40 million US users by the end of 2021 [2]. Twitch allows its users to use pseudonymous usernames and change usernames frequently. Different from streamers, Twitch viewers are also less likely to use real photos as profile images. Because real-time streaming is time-constraint, other communication platforms such as Discord and Twitter commonly reside within the ecology of a streamer's community when streamers are off-stream. Streamers also promote their social media accounts for viewers to follow by posting sporadic updates regarding their everyday lives and professional schedules.

Since the major content is still gaming dominated by white streamers and perceived as a masculine space [20, 34], female and LGBTQ streamers are perceived as a marginalized group and experience various harassment. While the platform promises and takes measures to reduce harassment, female streamers report that their concerns are not taken seriously with limited support to handle instant harassment [67]. For example, one of the most popular women live streamers on Twitch, Imane "Pokimane" Anys, is commonly victim to a popular meme surrounded her being "thicc" (having a curvy body). She laughs it off but often walks away from her facecam backward to avoid viewers taking screenshots of her turned around. Furthermore, a clip of Pokimane went viral in 2018 when she started the stream off with no makeup on and proceeded to show her getting ready process. Many shamed her bare face and the chat was full of toxicity overseeing it. This event also sparked a movement where other women streamers posted themselves without makeup on in support of Pokimane, and to shut down unrealistic expectations of women streamers [35].

The visual aspect (face cam) and the audio aspect (voice chat/ microphone) may have a big play in the harassment experiences of women and LGBTQ streamers. A prior study found that women and LGBTQ streamers are aware of the risks of using face cam and audio, such as confrontations and confusions about their identities [29]. The Pokimane experiences also exemplify the impact these factors can make in one's Twitch experience. It is known that women and LGBTQ people experience and online harassment and that harassment to women and LGBTQ exists within the streaming space. However, beyond the media reports of popular streamers, there are many unknowns about online harassment in the context of live streaming.

RQ1: *What are the harassment experiences of women and LGBTQ streamers and within these, what is unique to live streaming?*

2.3 Handling Online Harassment

At the organizational level, to manage harmful content and improve participants' civility, communities use norm-setting to enforce standards of appropriate behaviors such as explicit guidelines, community norms, and reputation systems [15, 56, 65]. They

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[1]https://www.twitch.tv/p/press-center/
[2]https://www.emarketer.com/newsroom/index.php/twitch-on-pace-to-surpass-40-million-viewers-by-2021/

also apply and combine moderation techniques [70], such as pre-moderation (checking content before publishing, such as moderation on Wikipedia [24]), post-moderation (publishing immediately and moderating within the next 24 hours, such as posts on Facebook and Reddit are removed by moderators [32]), automated moderation (technical tools applying pre-defined rules to reject or approve without human intervention, such as Twitter's Blocklist [30, 43] and News bots [53]), and distributed moderation (relying on users' participation, such as rating scores on Slashdot [49] and flagging on Facebook [22]). Though the combination of moderation strategies can remove harmful content at scale, to some extent, harassers always circumvent the algorithm and abusive language is still pervasive [31].

At the individual level, people generally respond to online harassment by deleting their profile, changing their username, ceasing to attend certain offline places, or contacting law enforcement [25]. Women cope with harassment in gaming spaces through five different strategies: leaving online gaming, avoiding playing with strangers, camouflaging their gender, deploying their skill and experience, or adopting an aggressive persona [21]. They also actively hide their identity via gender neutralization through screen name or avatar choice, avoid verbal communication with other players [28, 55], and seek social support inside and outside the game [28]. Specifically, a cross-platform study of queer females reveals that formal governance mechanisms fail to protect them from harassment and constrains their participation and visibility on these platforms; they often self-censor to avoid harassment, reduce the scope of their activities, or subsequently leave the platform [26]. Organizational responsiveness plays a crucial role in whether women will subsequently withdraw engagement in the community [28].

In live streaming communities like Twitch, their architecture provides a multi-agent mechanism to manage its users [74] and handle harassment [12]. The platform has terms of service and community guidelines to set explicit rules that the entire community has to follow; however, these guidelines contain social biases [62] and can further marginalize women and other diverse streamers [23]. Meanwhile, each individual streamer can set specific guidelines for the stream with their expectations and preferences. They also have the option to apply various moderation tools, either the AutoMod, which can automatically remove harassment and toxicity and ban harassers, or other bots that are developed by third-party developers. These bots are popular due to the fact their settings are more customizable than Twitch AutoMod [11]. The platform also allows streamers to set human moderators with a special badge to indicate the status and authority and with the permission to access remedies that the streamers own [73]. Moderators are considered the representatives for streamers and are tasked with enforcing streamer's rules, mediating the connection between streamers and viewers, and removing questionable content [44]. While most research relevant to harassment focuses on the platform governance and individual's coping mechanisms in online communities, there is a lack of understanding on how streamers address harassment with the unique digital affordances of live streaming. Particularly, we focus on the marginalized streamers who are more vulnerable and likely to be harassed and ask:

RQ2: *How do female and LGBTQ streamers cope with harassment?*

3 METHODS

This study is part of a larger research on social dynamics on live streaming platforms. The project and interview protocol were reviewed and approved by the Institutional Review Board (IRB). We recruited English-speaking streamers who were women and/or self-identified as LGBTQ, using a variety of methods. We attended TwitchCon in person, a convention for Twitch streamers, where we recruited five participants. We also contacted groups for and/or advocating ethnic minorities, LGBTQ, and women, such as AnyKey, a non-profit organization that advocates for diversity in gaming. Finally, we used keywords such as "female streamer" or "LGBTQ streamer" to search for people on Twitter who identified as being a woman and/or LGBTQ live streamer in their Twitter profile and/or had tweeted about being harassed during streaming. We then directly contacted them either via Twitter messages or emails, if their contact was listed on their profile.

We conducted in-depth, semi-structured interviews with all streamers who responded to our recruitment messages and were willing to be interviewed. As a result, 25 interviews were conducted. Participants were interviewed either by telephone or audio chat on Discord. Interviews lasted between 60 and 90 minutes, and participants were given a $50 gift card. Interviews started with questions on basic information about participants' streams, such as how often they stream, how long they had been streaming, and the content they stream. The main interview questions were related to their interactions with the audience, self-presentation, and moderation practices. Aside from the purposeful recruitment of women and LGBTQ streamers, there were no specific questions about their experience based on their gender or sexual identity, but participants naturally brought up this aspect as a crucial part of their streaming experiences.

These interviews were transcribed both manually and through an online transcription service. The authors thoroughly read through the interviews and sorted relevant information under each research question into a spreadsheet. 2 authors participated in the thematic analysis of the results. We worked in a spreadsheet to organize the quotes relevant to each RQ. We analyzed the data using empirical qualitative analysis. The authors each examined and associated the codes that appeared under the quotes under each research question individually. Within each research question, the reoccurring and relevant codes were distilled. We then met together and using thematic card sorting, we grouped relating codes accordingly. Then, we looked at the groupings to identify the high-level themes they unified under. sorting out the higher level concepts. For example, the codes "sexual solicitation, sexual harassment, sexual comments, rape" were grouped into the high-level theme "sexual harassment".

Among the 25 participants, 18 are cis women, two are trans women, and five are cis men. Seven participants self-identified their sexual orientation as being bisexual, lesbian, queer, or gay. Of the 24 participants who shared their ethnicity, 12 are Caucasian, two are African American, five are Asian, three are Latino, and two are mixed race. Table 1 summarizes the demographic information of the participants.

Participants	Gender	Age	Race	Sexual Orientation	Streaming Content
P1	Cis Female	30	Latino	Bisexual	Variety
P2	Trans Female	26	Caucasian	N/A	Gaming
P3	Cis Female	24	Mixed	N/A	Variety
P4	Cis Female	41	Caucasian	Straight	Creative
P5	Cis Female	20	Caucasian	Straight	Gaming
P6	Cis Female	19	Caucasian	Lesbian	Creative, Gaming
P7	Cis Female	44	African American	Queer	Creative, Gaming, Talk
P8	Cis Female	24	Caucasian	Straight	Variety
P9	Cis Female	32	Caucasian	N/A	Gaming
P10	Cis Female	31	Asian	N/A	Creative, Gaming
P11	Cis Female	N/A	Asian	N/A	Art
P12	Cis Female	19	Asian	N/A	Art, Gaming
P13	Cis Female	25	Caucasian	Straight	Creative, Gaming
P14	Trans Female	N/A	Caucasian	N/A	Gaming
P15	Cis Female	26	Latino	Straight	Gaming
P16	Cis Female	52	Caucasian	N/A	Gaming
P17	Cis Female	24	African American	N/A	Gaming
P18	Cis Female	31	Latino	N/A	Gaming
P19	Cis Female	22	Asian	Straight	Gaming
P20	Cis Female	33	Asian	N/A	N/A
P21	Cis Male	N/A	N/A	Gay	N/A
P22	Cis Male	25	Caucasian	Bisexual	Gaming
P23	Cis Male	29	Caucasian	Bisexual	Gaming
P24	Cis Male	28	Latino	Bisexual	Gaming
P25	Cis Male	34	Caucasian	Gay	Gaming, Tabletop

Table 1: Demographic information of interviewees

4 RESULTS

4.1 RQ1: Streamers' Harassment Experiences

4.1.1 Sexual Harassment with Lewd Comments, Sexual Solicitation, and Sexual Images . Sexual harassment is known to be a prominent experience of Twitch streamers, distinctly high with female and LGBTQ streamers [45, 61]. The data from the participants highlights this, as the bulk of streamers reported sexual harassment as part of the negativity they face. Sexual harassment falls into subcategories of lewd comments, sexual solicitation, and sexual images.

Sexual/lewd comments were an experience shared by 14 of the participants. We term these as sexual commentaries towards the streamers. P18 recalled, *"People have told me that this stream is dumb because my tits aren't out"*, while P1 noted that, *"Every time I stream. No matter what I wear, if I am wearing a full-fledged long sleeve t-shirt that goes all the way to my neck, a loose t-shirt, if I am wearing a big sweater hoodie... you can't even see any curve of my body. I have still gotten comments lewd and otherwise"*, showing criticism and sexual comments occurred both for showing skin and for not showing skin. On either side of the coin, viewers sexually harassed the streamers. A comment of this nature even escalated to be as extreme as a viewer saying, *"Hey I wanna rape you"*, to P3.

Sexual solicitation is distinct and a step further from lewd comments in that it involves propositions, offering money or goods in return for sexual images or acts. Nine of the participants recounted clear instances of sexual solicitation. P4, a creative/ art streamer detailed:*"I have been propositioned, I have been asked to give private shows... they think because you are a woman... on Twitch that you are there to please them."* This shows how some viewers see that

streamers are already on camera, oftentimes raising money for a goal, and push to see if streamers will take up sexually solicit offers. P3, an IRL and gaming streamer, shared a similar experience: *"Once someone offered me $10,000 for a private cam show and I was just like 'uh no'. I've gotten offered $5,000 for a cam show, which I also declined."* These two examples are on the extreme side as they ask for the streamer to transition into sex work. Furthermore, gaming streamer P19's experience showed that viewers can take innocent content, and turn it into a sexual outlet for themselves, as she received a message asking: *"I just wanted to ask your permission if I could jack off to you?"*

The final sub-category of sexual harassment was receiving unsolicited sexual imagery outside of the Twitch platform. Variety streamer P8 stated she received such images multiple times: *"And offline there are people... who have sent me dick pics, they might've popped into my channel once and saw my Twitter and sent me a dick pic, that was less than ideal."*

4.1.2 Hate Speech Related to Racism, Sexism, Homophobia, and Transphobia. Hate speech, defined as all forms of speech that incite prejudice against particular groups of people, is heavily experienced by the participants. Within our findings, we have divided hate speech into subcategories: sexism, racism, homophobia, and transphobia.

Racism, which 13 streamers reported as a form of negativity they deal with, comes in different forms, both direct and indirect. For example, P13 who is a partnered Caucasian gaming and creative streamer, accounted: *"I'm German so I get the 'H' word sometimes."* Racial comments and slurs are sometimes thrown around such as

the *"n-word"* without being directed at any particular person but are still discriminatory in nature.

P23's experience with comments towards their significant other for instance, shows how something intended as a compliment by a viewer can still be racist: *"'Oh, you're the type of black girl I really like because most black girls, they don't talk normal."* P23 commented, *"Maybe [they] meant well, but that's still super racist."* Alongside this, usage of terms such as *"exotic"* like what P3 received, maybe intended as compliments to the streamer's appearance, but in reality objectify and fetishize the ethnicity of the streamer.

P14 detailed an experience of antisemitism: *"So a random person joined [Discord] and had the text-to-voice communicator. It was repeating the words 'kill all the Jews' so [we] had to mute the stream so it would stop saying that."* In this incident, not only did the viewer want to spread the hatred to the streamer and the Discord members, but they wanted the message to repeat on loop to the masses viewing the stream.

While filtering racist language helps minimize it, P17 brought up that there are many workarounds to filters. People will use alternate spellings to get past filters and get racist messages across to the stream: *"You'll be surprised how many different types of ways they'll try to spell n*****... We have a moderation list [with] over 10 different variations of that word just because I've seen it typed so many different ways... One time they came into my chat and type in one letter at a time."* There are certain tactics in which racism will get through no matter what. For instance, as noted above with typing a letter at a time, even if a human moderator were to catch up to the word before completion, the racist intent would still be shared from context.

As entertainers and internet personalities, some streamers use their platform to speak out and address issues important to them. Feminism has received a negative reputation in recent years and many times there is a backlash to feminist talks. P1 is a streamer that does this and notes receiving sexist insults, such as being called a *"feminazi"* because of it: *"When you are vocal about... women on Twitch and female empowerment... people just love to hate that... so people... try to troll because they don't like the message I am sending... They don't like women streaming on Twitch... They will try to call me an SJW, as an insult."*

Homophobia, which is exhibiting negativity towards LGBTQ people, is another prominent form of hate speech that was prevalent in our results. P7, a queer gaming, talk show, and creative streamer said that LGBTQ communities exist on Twitch as a platform for people to connect and feel a sense of community. However, having one's sexuality publicly displayed, particularly if it is anything but heterosexual, has a tendency to draw in trolls according to P7, especially if the gameplay also features homosexuality: *"They start sharing their homophobia really quickly and horrifyingly if playing a game where same-sex romance is an option."*

P25, a gay tabletop games streamer said the negativity they receive *"is almost always homophobic"* in their channel. Furthermore, they said they receive homophobic comments and harassing emails through their contact form. They get this influx of hate because of how public and vocal they are about their sexuality. However, he says it's a price he is willing to pay to better his community and to help make Twitch a more comfortable space for queer people.

He does not mind the emotional hits when he thinks of the bigger picture and the impact he has.

P14 is a transgender woman and often gets comments about her voice, *"Somebody went 'oh the voice' and then they went 'oh that's a guy'. So that's when it got weird to me. They would say 'she' as some streamers do, but then they would go 'he' cause they assume because of my voice and that's frustrating."* P2, who is also a transgender gaming streamer said she is used to getting called *"the usual transphobic stuff"* such as *"shemale, dickgirl, and tranny"*. These are extremely degrading terms, so viewers who make these comments are intentionally belittling the streamers.

4.1.3 Involvement from Online Obsessive Engagement and Doxing to Offline Following. Many streamers set out to make their stream fun and friendly, yet some viewers take it too far. P6 talked about how she often played games with her moderators and viewers, but one of them had a crush on her and would get very angry or show jealousy when she talked about her boyfriend. P6 let the viewer off the hook and told the viewer not to act like that again. However, the behavior grew increasingly obsessive and erratic: *"He would spam message me throughout the day about random things. He was... Possessive and jealous and angry over pretty much anything, if I decided to play games with anybody else. If I... spent my time with other, if I was streaming and I didn't acknowledge him immediately he would get very riled up and very angry."*

Some viewers take it a step further to be more intrusive about the streamer's personal lives by seeking personal information on the streamers and even divulging personal information about the streamer to the public. P10, despite being careful not to post too much personal information online, had a viewer who started calling her by her real name in chat. She said that maybe the viewer was someone she went to high school with since this was not public information that she put out.

While the above examples illustrate milder uncomfortable online interactions, P9 shared a more extreme experience. This participant was at work and going about their usual routine until a co-worker asked if they streamed, information that the participant had not shared with their co-workers prior: *" Someone who watches my stream had come into my workplace spoken to the coworkers about my stream when my coworkers didn't know that I did stream and then left. And I still to this day don't know who it was or what they really wanted... but I mean that kind of stuff is not uncommon."* While the intent was unclear, the experience is without a doubt creepy and shows that P9's safety was potentially at risk.

4.1.4 Appearance Attack. Women and LGBTQ streamers also experienced appearance attacks because of the visual presentation in front of the camera. Streamers who use face cam do so to put a face to the gameplay or activity, and face cams are often preferred by viewers. However, face cams also make women and LGBTQ streamers vulnerable to comments on their appearance. P1 stated, *"They either... don't like my colored hair, or they don't like that I am a girl... the piercing on my face or they just don't like my face."* Similarly, P15 had viewers comment on her weight and many made fun of her. P1 commented that most times negative comments like these are not personal at all, some viewers simply find viewers with face cam easy targets and say negative things to get a live reaction, that some

viewers poke fun at streamer's appearances to make themselves feel better.

4.1.5 Backseating. While streamers are open to input and constructive criticisms on their content, there is a fine line between that and obnoxious backseating. Backseating, a term derived from "backseat driving", is when someone makes comments regarding the streamers' actions, typically in the context of (but not limited to) gameplay. When viewers do this, it can become very insulting to the streamer. P8, who is an artist, said: *"If I'm doing art streams and doing stuff for fun and people come in and try to backseat and tell me exactly... how to do the art. I'm just like 'listen I have a degree in design already I don't need you to be telling me this'."*

Similarly, P23, who streams and podcasts Pokemon detailed an instance of a viewer trying to correct him on something he is an expert in. A viewer tried to argue with him about Pokemon statistics and brought up points such as the history of the games and where the viewer believed they are headed. The viewer also did not consider the game *"Pokemon Go"* a real Pokemon game and criticized P23 for playing it, saying that P23 is not a *"true Pokemon fan"*. This frustrated P23 because they said the viewer was using opinions to argue against P23's area of expertise and facts.

4.2 RQ2: Strategies Coping with Harassment

Streamers showed a variety of tactics in handling the negativity and harassment they face. Depending on how much a streamer is affected by the negativity, streamers demonstrated that there are a variety of outlets and ways to cope with being harassed online.

4.2.1 Emotional Management.

Venting to Close Ones and Therapy. Many streamers reported that they had offline support that significantly helped them deal with the harassment they experienced online. Both P1 and P8 vented to real life and online friends and sought out others who deal with similar harassment. Furthermore, P8 said, *"My friend... she has a talk show on Saturdays... and we've talked about harassment there and it's a bunch of ladies and we all talk about our stories of harassment. It's no surprise that every single one of them has a story. It's common, it happens, it's tiring, to say the least, but it's a reality."* Through reaching out to others who face similar situations, P8 found a support group that confides in each other and publicly discusses the harassment they all face. This way, the harassment is publicly addressed and labeled as bad behavior, and the behind the scenes effects of the harassment is highlighted to ideally deter viewers from behaving in such ways.

Therapy is also a support system that streamers reported using. On top of having a network of supportive close ones, like how P1 and P8 do, therapy plays a big role for P25. P25 detailed that he had depression his entire life and because of it he has developed ways to cope with feeling down: *"I have a support network of people that I trust and care about me, that I can talk about these things. I have tools that I can use and can learn through counseling and therapy."* Through therapy for his depression, P25 found the strategies for coping with negativity in real life translates to coping with negativity he faces on Twitch.

Emotional Release Alone by Crying or Entertaining. The negativity faced while streaming can leave people emotional; people deal with high emotions in many different ways. Aside from talking to others, it is natural for people to need to release their emotions and have outlets for them. P1 said they would *"just turn off [their] stream and cry"* to feel the sadness, let it run its course, and let it go. In contrast to this, some streamers countered negativity with comedy and would laugh off situations. P20 said that she *"awkward chuckles"* and changes the conversation to silly things, such as puppies and hats, to deter from awkward or negative situations. Similarly, P6 said they would respond with weird remarks. If a viewer said something lewd to her, she would say it back sarcastically and it would make the stream funny.

P9 uses humor as well and recounted a time she was playing World of Warcraft, people in her chat began making fun of the way she was playing. Viewers were picking on her macros (the way her controls were set up) and the way she was using her keyboard. They said things like, *"You're doing everything wrong! Oh my gosh, you suck"* along with name-calling. P9 dealt with this situation by responding with something purposely meant to weird the viewers out: *"Can you help me fix it!? Tell me what to do!! ...Are you going to buy me a new keyboard?"* It would make the specific viewers get bored and leave. P9 called this tactic *"out-trolling"*. Using this type of tactic, P6 and P9 drive away from the trouble-causing viewers while making their stream unique and entertaining to the supportive viewers.

Adjusting the Mentality by Either Ignoring or Taking a Break. In contrast to the emotional reactions to the negativity, some people are very genuinely unaffected; others feel bothered, but feign being unaffected as they feel like ignoring is the best strategy to cope. P9 said she is patient and has confidence, she knows that people online cannot actually do anything to disrupt her life unless she allows them to: *"I think it's kind of pushed me towards insensitivity towards negativism towards me for no reason in general."* Similarly, from experiences in P19's past, they have formed a thick skin to negativity so Twitch chat does not have a big effect on them. P19 reminds herself the negativity that happens in Twitch chat towards her is irrelevant and has no real rhyme or reason to it, that the viewer can just go if they do not like her and it is not her problem. P24, who felt somewhat affected decided to *"compartmentalize, try to keep a happy face and kind of show it's not getting to me."* These examples are slightly distinct from P19's and P10's in that they are simply indifferent, while P24 has to force the mindset and outwardly pretend to be like P19 or P10. Inside, P24 is affected to a degree, but as long as she does not let this slip into her public persona, the negativity soon dissipates.

Furthermore, the approach of ignoring is seen as effective by P12 who said that responding to *"trolls"* only makes them keep going. Ignoring usually makes them go away in her experience and if they do not go away, there is always the ban option. P23 skips negative and *"troll"* comments, as well as suspicious users. Interestingly enough, P23 said they know signs for *"set ups"* and when they spot them, they try to ignore them before they can escalate. An example he provided was when a viewer he had never seen before said *"You're my favorite streamer"*, with context it meant that the

viewer was setting up to embarrass him, so he skipped it and the viewer simply left.

Another coping mechanism reported is to step away and take a break. P1 does this and said that while it is important to acknowledge inappropriate and unacceptable behavior, there comes a point where they need to give themselves a break. They said they took a break from streaming for a few weeks and it helped them get rid of their frustration and negative emotions. Furthermore, P8 talked about how the first time they experienced sexism and negativity, they simply shut down their stream: *"Women have always kind of been ostracized from this community on the internet for awhile until we started reclaiming our spaces... when it happened... it was really uncomfortable and I... shut down my stream."*

4.2.2 Calling Harassment Out in the Stream or on Other Social Media.

Before hitting the ban button, some streamers said they liked to address and talk out the problem(s) at hand. P2 said, *"if it's something I think might be misguided or from a misunderstanding I just talk it out calmly."* P9 said some viewers prefer to take the time to attempt to *"turn the troll around"* if they can. This tactic has stirred debate for P9 because some argued that in allowing the negative comments to go through as opposed to immediate blocking, that she is not making her stream a safe space. P9 defended her tactic and the benefits that come out of talking out negative situations. P13 also tried to be understanding while bringing her point across, she acknowledged *"they might not know any better. Potentially they're young. You know, they're just seeking some social contact"*. And so she sometimes called things out by pointing out the consequences to the viewers' words and actions.

A tactic some streamers reported doing was using their social media platforms to address and call out the negativity they received. It is common for Twitch streamers to provide other socials such as Twitter, Facebook, and Discord for community connection. These platforms also give them a way to publicize the aggression, bring awareness, and vent to their followers. P1 vented on their Twitter and publicly posted the negative things they received. They would have their following *"look at [the] stupid comment that was just made to [them] and... have a good laugh about"*. The reassurance from the community helped P1 make light of a negative situation.

P8 also uses Twitter and has a network of other streamer friends. The negativity P8 faces is common throughout their other streamer friends as well. P8 said if something bad happened, they would mention it on Twitter or have their friends mention it on Twitter. Her and her streamer friends formed this network to have each other's backs and this helped to shame the behaviors, as well as widespread the shame to a bigger audience. This participant also took part in a Twitch talk show with other women streamers. Through the Twitch talk show, followers can see first hand what negatively affects women streamers and what kind of impact the negativity makes.

4.2.3 Moderation.

Activating Twitch AutoMod. Streamers have a variety of options when it comes to moderation. Twitch provides a couple of tools by default. AutoMod and Blocked Terms are commonalities shown in the data. Many participants discussed their heavy usage of these features.

AutoMod is a smart and automated system that is designed to detect and catch risky messages in the chat, preventing them from going through into the chat before reviewed by the streamer or a moderator. The big deal with live streaming is that it is live; therefore chat messages can come out very fast, and if left unmoderated a lot of toxic languages can easily make their way on a streamer's live stream and community. And because it's live, once it is out there, there is no taking it back. Even if a message were caught and deleted, people may have already seen it. AutoMod has 4 different levels that can be configured and detect tiers of specific toxic language (such as hate speech, sexually explicit words, etc) accordingly. Streamers can choose between the four levels depending on what they deem is necessary for them.

P1 used AutoMod and said that in her experience it successfully *"automatically catches quite a bit of derogatory terms and phrases"* for her. P4 said she once had AutoMod set to *"super strict"*, but mentioned that too high of a setting can filter out regular conversations, overly restricting the chat. It was annoying to deal with for her, so now she uses a medium setting.

Filtering the chat by blacklisting specific words in Twitch's blocked terms list is a common practice as well, and works in conjunction with AutoMod. Streamers have the capability to add their own words for AutoMod to filter through, on top of certain phrases AutoMod by default detects. P2 filters out the racist and homophobic language and puts in her own specific list of transphobic words. Common words that P20 and P21 filter out as well are the "n-word" and common homophobic words.

P6 uses Twitch tools alongside her moderators in her chat. On top of the common sexist, sexual, and racist terms, she said: *"I have a few key phrases that I set for automatic such as my personal information because there have been a couple of people in my chat that have tried to release my personal information."* This was an interesting result; it is smart and unique usage of the blacklist feature and helps protect P6's privacy. Again, if that type of information makes it through into chat, even if a mod catches it, viewers could have already seen and saved the information.

Applying Third-Party Bots. Close to all of the participants reported using bots for moderation. On top of Twitch's default features, there are popular third-party tools (many Twitch verified), particularly heavily developed chatbots that exist with various usages. These are integratable into Twitch chats, as well as Discords. Most commonly, bots help moderate in a wide range of ways and are more efficient, in-depth, and customizable than Twitch default features.

P1 uses Nightbot, which has a spam filter and also blacklists words. However, instead of automatically banning someone for using a word that is blacklisted it times the person out first for five seconds as a warning and removes the message from chat. P3 listed the bots she had experience with: *"Right now I'm strictly using H&L bot, MooBot... I used NightBot before."* In regards to bots, P16 said: *"I have accumulated them over time as I saw a need for each thing... When I added other websites or saw the other streaming platforms, I looked for bots on them as well."* P20 also mentioned a bot that deletes links, because they want to avoid *"potential porn or viruses"* in the chat. Viewers have to ask for permission to override this bot, but that has to be allowed by human moderation.

While these bots are widely used and helpful to many Twitch streamers, it is important to note that they are 3rd party and require set up. P19 discussed needing help from a *"techie friend"* to set up her bots, implying that the set up is not an intuitive process for all users.

Human Moderator. Human moderators are very common on Twitch. There are certain things that Twitch tools and bots miss, no matter what, like alternate spellings or context. Or, filters can be too sensitive so streamers cannot have them on to the highest setting without censoring their chat to the extreme. Because of this, streamers will often self-moderate or have a few human moderators despite having moderation technologies available.

9 streamers self-moderated their chats. P2 said *"If they use slurs on me, it's a ban".* P7 said after pointing out *"the fallacy of what they're saying",* she just blocked or timed out the viewer(s). Specific toxic language easily stands out, and can easily be handled by the streamer themselves if it comes in spurts. However, the participants still stressed the importance of having other moderators. Depending on what the streamer is streaming, sometimes they cannot pause the game or activity to deal with hateful language.

5 streamers reported having human moderators, either friends or active viewers. P25 said he had about 6 to 10 active moderators. He found people he trusted and some of his mods were his friends. He also had a moderator chat in his Discord and held moderation meetings. P17 stated preferring human moderators over Twitch tools and also held moderation meetings: *"I even had a preparation stream where I sat there for about an hour showing my moderators... how you do [things] on Twitch."* P25 and P17 hold these moderation meetings because moderation criteria can differ significantly depending on the community and the streamer(s) themselves.

The commonality for the participants in the selection process for moderators was that they were trustworthy people. P17 defined those they chose to moderate as *"colleagues"* and said, *"Some of them are friends and some of them are viewers... they're kind of a mix."* Most moderators are voluntary, although it can be a lot of work, such as P13's. Some moderators are friends, while some are regular viewers that have been loyal and shown they can do the job. The relationship streamers hold with their moderators vary from streamer to streamer, but as moderator is a voluntary role, it is a closer relationship than a regular community member.

4.2.4 Setting Privacy and Streaming Boundaries. Being cautious is an approach taken by some of the participants. Privacy is an important concern. As P13 said, it was important for them to set boundaries between their private life and stream. She personally did not talk about her private life on stream or tried to keep it very minimal. Sometimes she shared details with her moderators but was still cautious in doing so. P2 shared how her internet name is not her legal name and she does not even reveal her internet provider because she fears "swatting". P16 takes extreme measures and has an entirely different online persona to her offline self: *"I've always been very aware of the dangers of showing your real identity online... Since day one, I have been very careful to keep my real identity entirely separate from my online persona... except for one person, the one that I trust the most... my gaming group, nobody there knows."* P9 said that since *"nothing dies on the internet",* she makes sure that she does not put things out in public that she would regret. She

also said that she dresses more conservatively on stream than in real life as a precaution. P14 does not even use a face-cam. She said because she is transgender and had witnessed other transgender streamers with face cams receive toxic comments, she avoided face cam altogether.

5 DISCUSSION

5.1 Affordances of Live Streaming Facilitate Gender Harassment

5.1.1 Real-time Multi-modality Caused Asymmetrical Exposure Between the Streamer and Harassers. As multimedia with multi-modal communications, live streaming with a face camera and microphone empower streamers to present themselves with many visual and vocal cues in addition to verbal cues (hot media)[40]. The visual presence along with audio communication facilitates identity information exposure, such as race and gender. Unlike strategies in general online communities that marginalized group can hide their online identity through avoiding voice communication, masking their gender via username and avatar change[21, 28, 55]. The visual and vocal exposure make streamers less likely to hide and escalate the harassment. In contrast, harassers can sit comfortably and hide behind a pseudonymous name in the chat (cool media) [40]. Furthermore, while content on platforms like YouTube feature visual and audio similarly, the content is in prerecorded form and therefore the exposure is not real-time; the real-time factor adds a layer of vulnerability using multi-modal communications. Streamers sometimes feel difficult to figure out harassers' intents (e.g., whether it is a serious threat or not) through the limited verbal cues. The uncertainty evokes streamers' concerns.

The visual presence of streaming content alongside the streamer can also work as a cue to provoke harassment like backseating, a form of harassment exclusive to live-streaming, as backseating can only be done when viewers can see the streamer's actions in real-time. Participants detailed experiences of backseating, such as being a professional artist yet having viewers try to correct them on their techniques and knowledge or having uncommon macros to a game and having them ridiculed and being told to change them.

Furthermore, the streamers visually presenting in real-time are susceptible to negative comments. Their reactions to harassment are raw and unedited. The streamer who wants to continue cannot hide, versus the options to shut off a phone or computer and walk away, from negative comments like on a post or YouTube video. Certain harassers poke fun at streamers specifically to provoke them and watch real-time reactions. To some extent, harassment also limits marginalized streamers' digital technology use. Some streamers chose not to open the camera with the specific intention to avoid harassment, and only kept the audio communication. The forced non-use of visual modality supports prior work that suggests that harassment increases the possibility of withdrawal from communication technology [6, 59]. This phenomenon also raises concerns about how the platform should use technology to create a democratic environment and ensure a balanced growth between the marginalized and the main group [59].

5.1.2 Aggregation of Social Media Information Discloses Streamers' Identity and Blurs the Harassment Boundaries Between Online

and Offline. In line with prior work that transgender individuals actively manage their online identities by controlling the boundaries between public and private online profiles [13] and selectively disclosing information on different platforms [37], we found that female and LGBTQ streamers set private and streaming boundaries to protect their identities. However, as a new form of social media, Twitch, with their panel system, provides the features to connect and display streamers' social media accounts, such as Instagram, YouTube, Twitter, and Facebook, under their streaming pages as a way to promote themselves. The linking to other social media on Twitch is a norm that builds up the streamers' community and ecosystem. Therefore, usage of this feature is encouraged, and is more front and center on the platform than on other sites'. Though the streaming platform is pseudonymous, harassers can easily check their aggregated social media accounts and construct their real identity offline.

While this paper was not focused on exploring the aspect of identity for live streamers in general, the results show that much more needs to be investigated on this topic, especially regarding privacy and safety. Streamers discussed being cautious on their presentation, but while many are aware of letting information such as location, real name, etc slip through, some areas are overlooked as even small details that seem harmless can reveal a lot more information unintentionally. Some streamers feel they have been followed by strangers, like talking to their coworkers near the workspace, though no harm happens. How to keep their identity safe while promoting them on other social media is an interesting topic for further research.

Other social media also provide alternatives to harass this group of streamers. In addition to the harassment that occurs live in chat, harassers also go through other platforms to provoke streamers with unsolicited sexual images, commonly in the form of *"dick pics"*. While Twitch chats often filter links and images, either through Twitch filters, bots, or human moderators, other platforms that are open for followers to connect with streamers have flaws in that the sexual images make it through. Twitter for instance, has no filter for sexual images, making direct messages an easy opening for unsolicited images to get through to the streamer. Other common platforms that streamers have open to the public, such as Discord, have no such filtering either. The intended purpose of having direct messages open is for business inquiries, networking, or simple conversation but simultaneously leave streamers vulnerable to this type of advance. Many accounts of participants experiencing sexual comments and solicitation did not happen in the Twitch chat itself but bled into other platforms.

5.2 Platform Governance and Emotional Work

Knapp et al.'s research about harassment in the workplace reveals a pattern of coping method including four strategies: (a) avoidance/denial— psychically avoiding the harasser and job situation or cognitively ignoring the behaviors and doing nothing; (b) social coping—seeking emotional counseling and social support from sympathetic others; (c) confrontation/negotiation— directly asking the harasser to stop or discipline the harasser; and (d) advocacy seeking—seeking individual or organizational support and remedies that focus on the response on the harasser [47]. The pattern has been

applied to align coping strategies in online gaming communities [21, 28].

We found that female and LGBTQ streamers' strategies fit into these categories. For example, streamers apply the advocacy seeking strategy and rely on the architecture and governance mechanism of the platforms to moderate the community (self-moderating or assigning human moderators, tools, and bots setting with specific restrictive rules); streamers apply the social coping strategy and vent their feelings to close friends online and offline; streamers merely apply the confrontation strategy and call out the harassment in the stream; and streamers apply the avoidance strategies and cope with the harassment (set privacy and stream boundaries, emotional release alone by laughing or entertaining, adjusting mentality by ignoring or taking a break). Overall, the marginalized streamers commonly use advocacy seeking and avoidance strategies in addition to social coping and confrontation.

5.2.1 Platform Governance Mechanism with Insufficient Technical Support. Women and LGBTQ streamers commonly apply the advocacy seeking strategies, which are less likely used in gaming spaces [21]. However, the platform's governance structure requires much effort on human labor though it provides platform-owned tools and third-party bots. Among the advocacy seeking strategies, streamers know of these bots through word of mouth and popular usage; however, third-party integration requires certain technical knowledge to integrate and maintain. P19 for instance needed assistance to set up her bots. There is a technical barrier that exists here. This suggests that there is much to improve on within Twitch's basic moderation features. AutoMod, which comes with Twitch, is the easiest to use but shows to have limitations. While bot usage shows to be popular and better, bots also show limitations. These technical tools currently cover a baseline in moderation, but there is an inevitable need for human moderation. Current auto-moderation focuses on negating and filtering out abusive languages. However, certain forms of harassment can only be detected by a human (moderators or streamers). Since every streamer is different and each streamer fosters unique communities, the threshold of rules varies accordingly.

Prior work shows that platform policies and moderation tools are mainly designed for a homogeneous user base without the consideration of individual experience and systems of social oppression [7]. Current moderation tools in live streaming communities can only automatically detect and remove basic harmful content. Some streamers express the willingness to set restrict rules and sometimes have to manually put their identity information into the bot settings, suggesting that this group of streamers has particular concerns about harassment, which are not fulfilled by current moderation tools that are commonly designed for the mainstream. Recent work considers moderators' opinions during the tool design and achieves higher accuracy than traditional algorithms [14]. Therefore, future moderation tool design might engage more with this group of streamers and extend to train algorithms or factors considering this marginalized group's characteristics.

5.2.2 Emotional Labor and Emotional Management. Women are more likely than men to use avoidance strategies because they are more stressed by attacks [68]. The avoidance strategies indicate

that streamers have significant emotional investment in their communities. To regulate their feelings in front of the camera and not alienate other viewers, they often choose to avoid the harassment and the harasser, experiencing emotional labor. Hochschild defines emotion„al labor as *"the silent work of evoking and suppressing feeling—in ourselves and in others"* and there are three emotional management strategies: cognitive, bodily, expressive [42]. Streamers cognitively adjust their mentality that the harassment does not target them and have" thick skin"; they also expressively release their emotion via crying or entertaining. Though there is no direct evidence showing bodily strategy that involves physical symptoms to change emotion such as using a deep breath to relief, mental adjustment via taking a break indicates that streamer might adjust their bodily status to the desired emotion.

Social coping strategies and using human moderators can also be considered as emotional management strategies by providing social support and emotional release. While streamers appear independent as streaming is typically considered a "one-person show" where streamers typically brand themselves as individuals, the results show otherwise. Within the world of streaming, there shows to be an underlying structure of social support. Streamers are very reliant on having a social support network throughout the many factors that live streaming encompasses. This social support ranges from real-life friends to human moderators. This is important to acknowledge as streamers need to understand how essential the community aspect is, whether it's others that help set up the technical aspects of the streamer, help to moderate and maintain in or help to cope with harassment. It is also important to note that it is potentially harder for women and LGBTQ streamers to establish support systems because they are minorities in the space currently. That is why we see groups, such as the LGBTQ streamer network (Gay nerds) emerging. We see streamers choosing to be a part of these groups to support and shield them, as this way, they are entering the space as a community rather than alone.

The confrontation strategy also costs the emotional labor of streamers. To combat negativity and harassment, some streamers took to outing situations and harassers using their social media platforms. This type of action is done as a form of humor, to educate and attempt to reform perpetrators and to mock and shame unacceptable behaviors. Prior work shows that adopting a progressive persona is an effective strategy to combat harassment in gaming spaces [21]. The results show how this may be effective on a case by case basis, as certain streamers found this put them as an individual at ease. While some streamers see success in call-out culture, as some perpetrators do listen and reform, it does not always work and requires much emotional labor from the streamer. In conclusion, available technologies cover only the basics for handling negativity, moderating, and community maintenance, but psychical labor and emotional work need to be done by humans at the end of the day.

5.3 Design Suggestions

According to the above discussion of platform governance and emotional work to cope with the harassment facilitated by the digital affordances of live streaming. We propose two mechanisms to either provide social and emotional support to marginalized streamers or reduce harassment and harassers in the community.

5.3.1 A Third Virtual Space Specific for Women and LGBTQ Streamers to Seek Social and Emotional Support on the Platform. The results show that most women and LGBTQ streamers form a network of social support. However, most of these supports are from close circles offline and other online communities like Twitter. Prior work suggests that marginalized groups like transgender users can benefit from their specific spaces online, where they can share similar experiences of struggles and joys [38], and popular social media sites, such as Facebook, Instagram, and Twitter, lack affordances and support for marginalized groups [46]. As a growing online community dominated by men, Twitch also lacks in affordances and support for marginalized streamers. The architecture of live streaming provides ways for viewers to gather around different streaming categories and streamers, but no affordance for streamers to gather and socialize. Though streamers are under the same streaming categories, they work independently. Instead of seeking support outside of the live streaming communities, an online space for this marginalized group to communicate and share their experiences and challenges is helpful. The live streaming platform does not have virtual spaces for homogeneous streamers to gather and socialize. We propose a virtual lounge space that only allows a specific type of streamers to join and talk, similar to video conferencing systems such as Zoom and Webex - more private for only female or LGBTQ streamers. Streamers can optionally open the cameras and vocally communicate, sharing their experience with other streamers, asking for suggestions, and posting resources before stream, during the stream break, or after.

5.3.2 A Multi-layered Verification Mechanism to Proactively Prevent Harassers in the Chat. One way to effectively reduce the administrators' moderation workload is to increase the workload of the users. For example, Seering et al. use CAPTCHAs to stimulate viewers' positive emotions and mindset before joining the chat [64]. Verification as a vetting method can potentially ensure the safety of a specific marginalized community [38]. Following this logic, we propose that a multi-layered verification mechanism can curtail the potential harassers in the chat and reduce the harassment and moderation workload toward this group of streamers. First, we propose a pop-up mechanism that briefly presents the streaming content and warns the viewers before entering the channel, similar to the warning notification at the beginning of some YouTube videos or rated movies. Such a way might prevent some random viewers from coming across. Second, a request mechanism containing one or two required-answer questions prompts before viewers join the chat, similar to a pre-screening survey, that only viewers who choose specific options and meet the standard are qualified. Otherwise, it has to be approved by either the streamer or the moderator. For example, Twitch currently has follow-only, subscriber-only chat mode. Maybe the streamer wants only females or LGBTQ people who share similar community values to join the chat and can have the "request-answer mode" with questions like "Are you a woman or LGBTQ?" The viewer answers "yes" to automatically join the chat and "no" with the streamer or moderator's approval.

In addition to the main implications, we also point out some other designs to protect marginalized groups' mental health and safety. To avoid excessive identity disclosure, for example, the platform

can add a reminder to the social media setting page and explicitly inform the streamer of the potential leakage of personal information and the result of the harassment. The platform can also update the policy and provide guidelines to marginalized streamers to seek professional support like training and therapy to relieve from the impact of harassment.

5.4 Limitations

There are several limitations of this study. First, we focused on streamers on Twitch that had unique affordances. The findings may be more suitable for other live streaming communities sharing similar architecture and governance structure, but not general online communities. Second, we preliminarily group women and LGBTQ as a whole, while many other studies explore the groups separately, such as queer, transgender, and women in general in other online communities. Future research can extend this study and explore each specific type of streamers' behaviors and needs, for example, how to apply the voice-training technology that helps transgender people [3] in live streaming communities.

6 CONCLUSION

In this work, we explored marginalized streamers' harassment experience and coping strategies on Twitch. We identified five types of harassment that women and LGBTQ streamers suffer and discussed how the affordances and platform design of live streaming facilitate, even amplify the harassment. We identified eight coping strategies involved, both social and technical, and explained these strategies with Knapp et al.'s coping methods, and intertwined these methods with platform governance and emotional work to show the impact and limitation of these strategies. Generally, marginalized streamers rely heavily on human labor with insufficient technical support from the platform to handle harassment, consequently suffering emotional labor and requiring emotional management. We also suggested design implications related to reducing emotional work and enhancing platform governance in the live streaming context.

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