Exploring online dating technology's opportunities, challenges, and tensions within Korean LGBQ+ women's social interactions

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박서라

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지도교수   이 준 환

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위 원 장 _____ 김수아 _____ (인)

부위원장 _____ 홍화정 _____ (인)

위   원 _____ 이준환 _____ (인)

Abstract

In conservative societies, such as Korea, LGBQ+ women still face significant challenges in openly expressing their identities and establishing social companionship in offline space due to severe stigmatization and stereotypes against them. Consequently, these women have turned to dating technologies as a channel to engage with the queer community. However, what specific opportunities and challenges the technology afford and what tensions emerge in their interaction practices within such social contexts, remain largely unexplored. To address this gap, we conduct semi-structured interviews with 17 Korean LGBQ+ women, encompassing individuals who identify as lesbian, bisexual, queer, questioning, or belonging to other sexual minority groups. This study aims to attain an ample understanding of their perceptions and practices on social interactions facilitated by online dating technologies. While online dating platforms serve as a virtual queer sphere wherein these women can readily access social connections and cultivate a sense of belonging, they simultaneously present challenges in initiating, engaging in, and sustaining interactions, often leading these individuals to failures in relationship establishment and repetition of short-term encounters. Furthermore, the perceived lack of robust technological regulation creates a tension between inclusivity and safety. Based on these findings, we present a comprehensive discussion with practical design implications for online dating technologies tailored to the needs of LGBQ+ women in socially conservative cultural contexts. *(216 words)*

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Chapter 1.   Introduction

Recently, online dating technologies mediate various social interactions not confined to romantic and sexual encounters. Studies in HCI and CSCW communities have noted the goals of interactions pursued by individuals who use online dating technologies, which have become more specific and diverse. As an example, Zytko et al. (2022) found that the technologies fostered non-sexual relationships such as friendship, activity partners, and even advertisements and employment. Now the online dating technologies are not just for dating. They function as a social networking service that mediates various social experiences.

Likewise, for lesbians, gay, bisexual, transgender, and queer (LGBTQ+) populations, online dating provide ample opportunities for social life, which is less accessible offline. LGBTQ+ individuals not only hook up with potential dating partners but also explore identity, seek friendship, gain emotional and/or social support, and belong to a community via the technologies (Cui et al., 2022; Miao & Chan, 2021; Tang, 2017; Wu & Ward, 2020). These media mediate their life experiences as sexual minorities while bypassing low visibility in the offline world and avoiding the high risk of unwanted outing. With such prominent roles, many online dating technologies for this population emerged on the market and enormous numbers of LGBTQ+ users engage with the technologies. For example, 'Zoe', the international online dating platform for LGBTQ+ women, has 63,854 reviews in the Google play store and 27,289 reviews in the App store as of October 2022 (Link1; Link2).

However, for LGBTQ+ women, online dating can simultaneously play intricate roles as both safe and risky opportunities to interact with others. Though these individuals also identify the platforms as powerful means of connection (Smith, 2022), they must handle double burdens as women and sexual minorities when interacting with strangers via anonymous platforms (Cui et al., 2022; Murray & Ankerson, 2016). For example, LGBTQ+ women in Korea face higher anxiety when encountering strangers due to misogynistic violations and sexual harassment from 'non-female people' and explore their intentions and safety more cautiously than other populations (Ghim, 2020; Jeong, 2002; Kim et al., 2020). The location-based curation feature of online dating technologies can intensify the fear these individuals have to endure while using them because it can transfer virtual violations into physical ones by revealing their real-world locations. On the other hand, the user authentication process of the technologies can mitigate this anxiety and ensure a sense of safety within a same-sex community (Hillier et al., 2012; Petrychyn et al.,

2020). In the complicated functions of online dating technologies, they engage in constant negotiations between opportunities and challenges.

A part of prior work has explored female users' negotiations of tensions from the technology use. Cama (2021) reported women's challenges with sexual crimes in apps, such as sexual harassment, unsolicited sexual imagery, and sexual assault. Both heterosexual and LGBTQ+ women tend to bear this fear as inextricable experiences to access relational opportunities via the apps. Likewise, LGBTQ+ individuals also participate in negotiations about privacy and safety while using the technology (Albury & Byron, 2016; Hjorth et al., 2018). However, there are limited academic attempts to understand the negotiating process of LGBTQ+ and women from an intersectional perspective.

Given the complex nature of online dating technologies for LGBTQ+ women and the limited understanding of their experiences, this study aims to explore the experience of social interactions among these populations mediated by online dating technologies and to unpack their intricate perceptions and practices. While prior research has investigated the experiences of LGBTQ+ women in online dating within Western and Chinese contexts (Choy, 2018; Cui et al., 2022; Liu, 2017; Tang, 2017), limited number of studies explored the perception and practices of these individuals associated with their variety of interaction goals pursued through online dating technologies. Furthermore, the question of how this new avenue for interaction is incorporated into the established LGBTQ+ community in conservative non-Western contexts remains largely unexplored. Consequently, this study seek to attain a comprehensive understanding of the landscape of technology-mediated social interactions within these women's community and to address the opportunities, challenges, and tensions presented by these technologies specifically within the Korean context.

To this end, we conduct semi-structured interviews with a total of 17 LGBQ+ women (lesbian, bisexual, queer or questioning or from other sexual minorities) who have experience interacting with other women via online dating technologies. We collect ample empirical data about the participants' life experiences of social interactions and relationship development via online dating technologies including dating and romantic partnerships. Our findings identify the technologies enable accessible and immediate diverse types of interactions among LGBQ+ women in Korea offering a secured space, where they can explore their identities and establish a sense of the community. At the same time, these individuals yet face challenges in initiating, engaging in, and sustaining interactions due to high privacy concerns and technologically lacked contextual information, which in turn

make LGBQ+ women to abandon the technologies or trap in impasse. We also find tensions which adoption of the technologies newly emerge into the LGBTQ+ women's community in Korea. Furthermore, based on the design ideas gathered from interview sessions, we discuss the design considerations for such technologies to facilitate inclusive and safe social interactions and successful relationship establishment among these women in conservative socio-cultural contexts.

The contributions of this thesis are three-folded. First, this study offers an ample understanding of LGBQ+ women's interaction practices and perceptions via online dating technologies in non-western contexts. Second, it unpacks the opportunities, challenges, and tensions of online dating technologies for LGBQ+ women within conservative and collectivist cultures. Third, the discussions presented in this study provide insights to design technologies for facilitating safe and inclusive interactions among these populations.

Chapter 2.   Background

2.1.Social Interactions of LGBQ+ Women in Korea

LGBQ+ women in Korea still encounter severe marginalization and discrimination within legal and institutional contexts (Jeong & Choung, 2022; NHRC, 2014). The enactment of comprehensive anti-discrimination legislation, known as the Anti-Discrimination Law, which aims to prohibit discrimination based on social backgrounds including disability, race, sexual orientation, and gender identity, remains pending for 16 years due to the lack of so-called "social consensus" on the favorable stance towards LGBTQ+ populations. LGBTQ+ individuals in Korea often face hate speech that seeks to abnormalizing their gender identities and/or sexual orientations, even from judicial authorities (NHRC, 2014). Moreover, they confront unjust treatment, including intensified criminal charges or the denial of recognition for the harm they experience (NHRC, 2014). Among LGBTQ+ subgroups, lesbian and bisexual women, who bear the dual burden of being women and sexual minorities in a conservative society, exhibit a heightened perception of potential harms associated with their identities and orientations and a relatively higher level of institutional distrust compared to other LGBTQ+ subgroups (Korean Gay Men's Human Rights Group, 2014). Shockingly, only 4.9% of lesbians who directly experienced discrimination and violence reported or sought help, with bisexual women who had the lowest reporting rate among LGBTQ+ subgroups at 2.7% (Korean Gay Men's Human Rights Group, 2014). When asked about the reasons for not reporting, these women cited a belief that there is no effective way to address the discrimination and violence they face. Unlike other subgroups, whose primary concern about reporting was identity exposure during the institutional process, these populations expressed a lack of confidence in the system, doubting that reporting would lead to any meaningful change (Lesbian 65.3%, bisexual women 62.5%, Gay 58.8%, bisexual men 53%, non-LGBT 61.5%) (Korean Gay Men's Human Rights Group, 2014).

Amidst the prevailing apprehensions surrounding potential harm and a lack of confidence in societal systems, these populations at the same time exhibit a tendency to put weight on the intimacy within the private sphere as a valuable resource for navigating their lives as sexual minorities facing widespread discrimination. Specifically, lesbians in Korea are likely to have considerable experiences of coming out and have steadily cultivated close relationships with intimate others, including family, heterosexual friends, and LGBTQ+ networks, where they can disclose their identities. A mere 4.6% of lesbians have chosen not to

disclose their identities to anyone, 12.0% have opted not to disclose to any important individuals in their lives, and 35.0% have decided not to come out to friends or teachers during their adolescence—a lower percentage compared to the overall respondents (Korean Gay Men's Human Rights Group, 2014). In terms of their perception of social change, lesbians and bisexual women exhibit a higher propensity for recognizing social changes through perception changes within their personal networks. Unlike gay and bisexual men, who are inclined to engage in activities for a queer-friendly society in the public domain, such as research, artistic activities, participation in human rights organizations, and political activism, lesbians and bisexual women intended to change the perception of sexual minorities through direct and personal connections, such as engaging in conversations and coming out to close others (Korean Gay Men's Human Rights Group, 2014). Notably, when compared to other LGBTQ+ subgroups, lesbians display the lowest preference for political activities such as elections and participation in political parties (4.7%), while exhibiting the highest inclination towards coming out (15.3%) (Korean Gay Men's Human Rights Group, 2014). In summary, these results shed light on the unique dynamics and preferences of lesbians and bisexual women in Korea, who value personal relationships and intimate connections against prevailing discrimination and lacked institutional interventions.

Therefore, these women in Korea have sought out alternative spaces to establish a sense of security while expressing their identities and fostering social connections. As a result, these individuals have actively engaged in various forms of offline and online communities via physical spaces, social media, and online dating technologies to build intimate connections. According to the Korean Gay Men's Human Rights Group's survey (2014), 98.2% of lesbians and 72.5% of bisexual women had participated in online communities, with lesbians demonstrating the highest participation rate compared to other subgroups (Gay 97.3%, Bisexual men 81%, non-LGBT 80.8%, transgender 83.9%). Additionally, 79.5% of lesbians and 49% of bisexual women reported involvement in offline community experiences, such as schools, hobbies, religious-based clubs, or human rights organizations, illustrating their active engagement in the community activities (Korean Gay Men's Human Rights Group, 2014).

Historically, these women initially encountered each other in offline physical spaces, including LGBTQ+ women-friendly restaurants, bars, clubs, and parks. Specific regions within Seoul, such as Myeongdong in the 1970s and 1980s, Sinchon in the 1990s, and Hongdae since the 2000s, have emerged as prominent hubs for LGBTQ+ women's communities (Youn, 2013). To mitigate the risk of discrimination and harm from society, these women have strategically concealed

their communities and cultures within these spaces (Youn, 2013; Jeong & Choung, 2022). For example, offline clubs often are located on upper floors in back alleys, unlikely locations for clubs, making it less likely for non-lesbian and bisexual individuals to accidentally stumble upon the clubs (Youn, 2013).

The realm of community interactions extends beyond offline spaces and encompasses the digital sphere. Commencing in the mid-1990s with the advent of the Computerized Bulletin Board System (CBBS), online communities have served a significant avenue for Korean LGBTQ+ women to establish connections (Kang, 2015; Han, 2011). For lesbian and bisexual women in Korea, who often struggle with social isolation and a lack of supportive resources, the online space has provided an alternative community experience, offering newfound opportunities for social interactions. One notable example is TGNet, the first and largest online website catering to LGBTQ+ women, which boasted tens of thousands of users and facilitated active online and offline interactions and gatherings since 2008 (Han, 2011).

Following its closure in 2015, online interactions have become more branched out into various social media platforms, including private websites, online forums (including sub forums within large online communities particularly for universities), Twitter, and anonymous group messengers. Similar to TGNet, most of them run anonymous membership systems, in which only approved members can exclusively post and access to the contents of the communities. Likewise, the anonymous group messengers maintain a limited number of enterers through not searchable but sharable hyperlinks of the chat rooms only accessible to room owners. These anonymous and exclusive characteristics of online communities contribute to build a perceptually closed spaces within digital environments, facilitating easier blocking of outsiders. In summary, these individuals have constructed a safe space from society, where they can attain emotional and social comfort and avoids self-doubt, hostility, fear, or the absence of positivity (Jeong & Choung, 2022), with a perceived sense of security from offline physical spaces to online spheres.

Then, starting with TopL in 2014, various online dating technologies have been introduced and/or developed for these communities. As drawing lots of users, the cumulative number of downloads of TopL exceeds 100,000 as of June 2023 (Link). However, studies have yet to research how the introduction of this technology affects the social interaction practices among these individuals and the unique characteristics of the technology-mediated connections compared to the previous communication avenues. Previous studies have illustrated that lesbian and bisexual women generally value the accessibility, diversity, and informativeness of

existing private online communities, but exhibit significantly lower levels of satisfaction on its safety, inclusivity, and trustworthiness compared to other LGBTQ+ subgroups (Korean Gay Men's Human Rights Group, 2014). Given that this data was collected prior before the proliferation of online dating technologies, it is necessary to reexamine the experiences of social interactions among these populations via such technologies and explore their perceptions of the opportunities, challenges, and tensions involved with the community experiences afforded by the technologies.

2.2. Online Dating Technology for Korean LGBTQ+ Women

Online dating technologies are media designed to connect individuals with potential dating partners and to help them build relationships through computer-mediated communication among users. For LGBTQ+ populations with low visibility and high vulnerability in face-to-face encounters, the anonymous and virtual environment of online dating offer secured places and adequate opportunities to explore social connections. Therefore, many systems for these populations have developed and drawn LGBTQ+ users to initiate romantic relationships online more than their heterosexual counterparts (Lever et al., 2008; Smith, 2022; Sumter & Vandenbosch, 2019).

Online dating technologies available for LGBTQ+ women in Korea exhibit the proximity between users with location-based curating systems. Such technologies, including Zoe, Her, and Pink, provide 'Search nearby' features that display physically proximate users' profiles based on their real-time locations. The geolocation functionality of such technologies is designed to facilitate immediate offline meetings anywhere at any time since it allows users to search for someone at a close location in real-time (Sumter & Vandenbosch, 2019; Wu & Ward, 2020).

If users enter this type of platforms, what users can see at first is numerous profiles consisting of pictures, text bios, and keywords of other users. For example, *Zoe*, one of the mobile dating apps for LGBTQ+ women, provides informative fields in profiles, including pictures, text bio for self-introduction, sexual orientations, gender identity, interaction goals (i.e., friends, dating, and relationship), relationship status (i.e., single, in a relationship), interests, and description of appearance (i.e., the color of eyes and hair, tattoo, piercing, and body type) (Figure 1). In this affordance, profiles are essential resources that can be present to nearby users and be utilized for all interactions occurring through the media. As such, mobile dating apps are very visually dominated media (Wu & Ward, 2020).

The profiles are stacked like card dummies in the interface, and users are induced to swipe each profile following binary dichotomies of like/dislike. If users like a present profile, they can swipe it to the right and, if not, to the left (Figure 2). If both users swipe to the right, which means 'I like you', they are 'matched' and can enter the interpersonal chatting through in-app messengers. Most mobile dating apps promote the chance of swiping and matching among users by 'push notifications' when someone swipes the user's profile in a positive direction.

These structures mentioned above are the most salient affordance of online dating technologies that adjust proximity among users. Grindr for LGBTQ+ men,
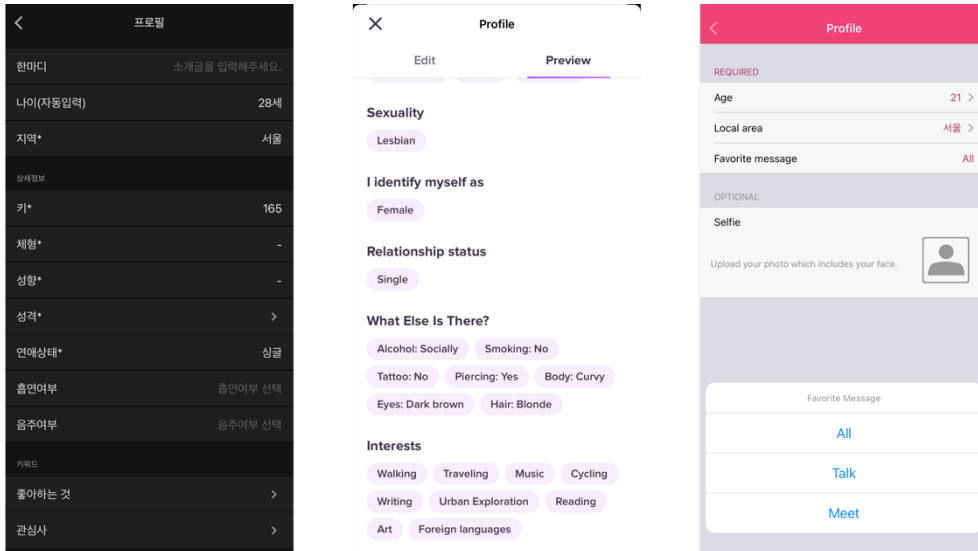
Figure 1. Screenshots of profile categories in online dating technologies for Korean LGBTQ+ women. These criteria consist of sexuality, gender identity, categories of interaction goals, relationship status, region, appearance (height, body shape, eye and hair color, piercing, and tattoo), types of physical touch, whether the subject smoke or drink, interests, as well as selfie.

Zoe for LGBTQ+ women, and Tinder or Bumble for all populations are all included in this category. The difference between these systems is the exclusivity of user groups. Grindr and Zoe only approve the entrance of LGBTQ+ users by implementing a user verification process. On the contrary, though being open to all populations with various gender identities and sexual orientations, Tinder employs a configuration feature in which users can select the desired gender of partners like 'seeking women' or 'seeking men'.

Moreover, in Korea, there are newfound types of online dating technologies which integrate the person-to-person matching systems based on search nearby features and forms of online communities. While providing the interpersonal matching systems on the one tap, such platforms, such as 'TopL' and 'Sis', do not limit the accessibility to others' information by physical location-based proximity but open it to all users who participate in the technological network by providing anonymous online forums on another tap. In this environment, users can not only participate in swiping of others' profiles, but also voluntarily upload a post to ask for hanging out or respond to others' posts with replies and direct messages to take part in interactions with others.
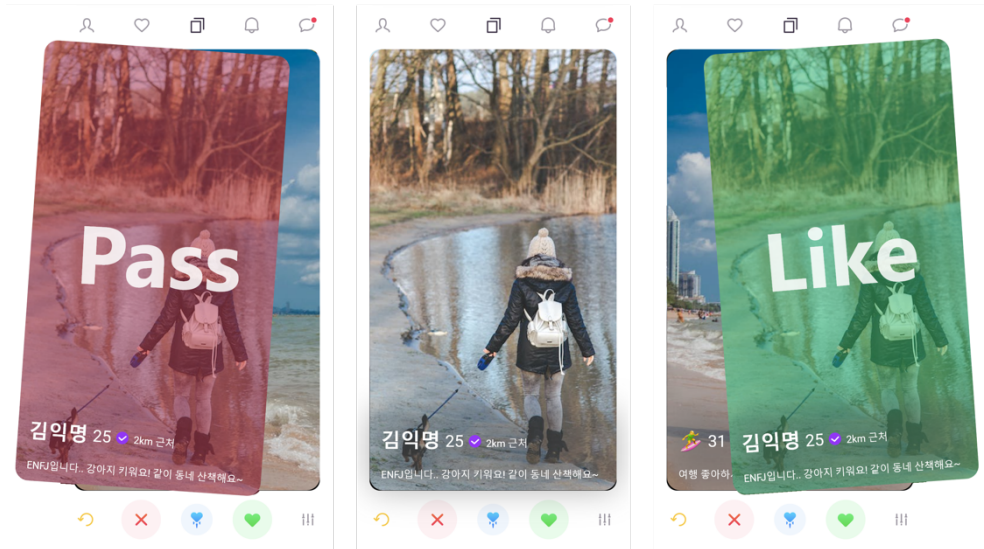
Figure 2. Binary swiping mechanism. If users swipe left, it means pass (or dislike) (left). If users swipe right, it means like (right). When users swipe each other right, they are matched and allowed to participate in private messaging. The profile in this figure including loyalty-free photographs, name, age, distance and descriptions is fabricated by a researcher, which represents invented identity.

In this study, we focus on participants who have utilized both types of online dating technologies mentioned earlier. However, we analyze interview data only that explicitly addresses their user experiences with person-to-person matching features within these systems. By adopting this approach, this thesis aims to obtain a clear understanding of user experiences associated with the predominant characteristics of online dating technologies, thereby differentiating our findings from the user experiences typically pertinent to anonymous online communities and forums.

Chapter 3.   Related Work

3.1. Roles of Online Dating Technology for LGBTQ+ Populations

Online dating technologies mediate various types of social interactions beyond romantic and sexual encounters. As well as dating and hook-ups, the technologies foster broader social connections, including friendships, activity partners, traveling, and community belonging (Van Berlo & Ranzini, 2018; Byron et al., 2021; Zytko et al., 2022). The online dating technologies have enhanced the accessibility to such wide range of interactions as well as romantic connections. In general, the technologies which offer features to expose profiles of oneself and the potential partners (access), ample tools for computer-mediated communication (communication), and algorithmic matchmaking systems to select potential partners for users (matching) (Finkel et al., 2012). Through the aid of these systematic tools, users can initiate interpersonal relationships with a simple touch on the screen with relatively less cost than conventional (offline) interaction.

For LGBTQ+ populations, the online dating technologies particularly can contribute to constructing a sense of identity and community. Hardy & Lindtner (2017) investigated how these technologies design and user practices produce the sexuality of LGBTQ+ men by iterating exposure to performances and negotiations of homosexuality. Likewise, Cui et al. (2022) reported that sexual minority women experiment their gender identities and sexual orientations within the same-sex environments constructed by online dating sphere. They concluded that the platforms functions as a crucial space for identity formation. The sense of same-sex environment is fostered by user verification processes in such technologies, which filter users of heterogeneous identities or orientations and allow entrance into the media space to approved users exclusively can create intimate publics for women and convey a sense of security (Hillier et al., 2012; Petrychyn et al., 2020). In the perceptually secured sphere for LGBTQ+ populations, these individuals can establish their sense of intimacy and connectivity to LGBTQ+ community (Albury & Byron, 2016; Chan, 2021).

The sense of community empowered by online dating technologies, can be extended to the users' spatiality perception on offline physical spaces. Since the location-based curation feature iteratively evokes the physical proximity between LGBTQ+ individuals and visualizes nearby users more saliently, this affordance transforms physical locations where mundane experiences occur into queer-friendly

spaces (Miles , 2017, 2021). Therefore, LGBTQ+ subjects, who have felt isolated in a heteronormative world, feel the existence of queer community in my neighborhood through the dating app affordances and develop the optimistic prospects of the environment (Albury & Byron, 2016; Miles, 2021; Pym et al., 2021). In most research, the constructing phenomenon of queer spatiality has been studied within LGBTQ+ men's experiences (Baudinette, 2019; Chase, 2015; Cummings , 2020; Miles, 2017, 2021).

However, the specific questions for LGBTQ+ women, including how diverse interaction goals they have and what affects on their sense of identities and community the technology promote are relatively less explored. For the dynamics of their experiences, we can only speculate on based on previous research that has shown a correlation between users' sexual orientation, gender identity, and usage patterns in other user groups such as LGBTQ+ men (Chan, 2016; Sumter & Vandenbosch, 2019). For example, LGBTQ+ users, both men and women, are more likely to value encounters in online dating to achieve self-worth validation than their heterosexual counterparts because they are harder to be sure about their romantic charms (Sumter & Vandenbosch, 2019). However, critical questions remain concerning how mundane or distinctive the experience of LGBTQ+ women are among user groups. Given the expansion and significance of the roles of online dating technologies, it is crucial to investigate It is important to investigate the role of these technologies, especially in LGBTQ+ women's social interactions and life experiences.

3.2. Relationship Development Process in Online Dating and Associated Challenges

Finkel et al.'s work (2012) elaborated the prototypical process of online dating into nine stages: seeking information about online dating systems, registering for the systems, creating profiles, browsing others' profiles, initiating contact, receiving contact, engaging in mutual computer-mediated communication, meeting face-to-face, and developing an offline relationship. First, after entering to the online dating platforms with their own profiles, users explore and evaluate others' profiles and decide whether initiate interactions as swiping them right or left (initiating). If both users swipe each other right, which means they assessed each other positively, they get matched. Second, after that they can engage in interpersonal text-based communication within private chat room of the platforms (engaging in). If the conversation within the platforms are engaging enough to motivate to develop relationships, users tend to switch to other social media platforms such as Instagram and/or Facebook messengers (Cui et al., 2022; Fitzpatrick & Birnholtz, 2018; LeFebvre, 2018; Smith, 2022; Wu & Ward, 2020), which implying the potential of future relationships with reliable information on non-dating-specific social media (Cui et al., 2022). Third, at the sequential stages of computer-mediated communication, individuals meet in-person offline when they accumulate sufficient trust for each other and developed sustained relationships online and offline (meeting and developing). This is general phases of relationship development mediated by online dating technologies and shared by the app users, though there is some variation between populations and app affordances (Cui et al., 2022; Fitzpatrick & Birnholtz, 2018).

In this context, the conventional process of relationship development, which entails meeting potential partners, gauging one's compatibility with them through encounters, and then gradually learning more details about them, has significantly altered. In online dating, users now have to learn a range of facts about the encounters and base their decision of whether to initiate interaction solely on this information. Swiping feature which predominantly appears in many online dating technologies, lead users to rapidly screen others' profiles and make decisions on binary choices, like or dislike (David & Cambre , 2016; Koch & Miles, 2021). The swiping practices guided by the technologies eliminate exchanging process of contextual information between individuals, collapse contexts in dating and transfer the process of romantic decisions as a form of shopping, where individuals have to decide to buy objects or not (Albury et al., 2017; Carlson, 2020; Choy, 2018; Hobbs et al., 2017; Illouz, 2007). Consequently, the "hook-up culture (Cama, 2021)" in online dating induces limited

romantic outcomes in relationship establishment and stucks users in endless trial-and-error (Finkel et al., 2012; Joung, 2022; Stinson, 2010), which lead to harm affects on well-being of individuals especially looking for profound partnerships within the technologies (Zervoulis et al., 2020).

Although a part of prior work has focused on the relationship development of LGBTQ+ women within online dating platforms (Cui et al., 2020), the interaction goals of these women have not been specified. As reported in Zervoulis et al.'s study (2020), the purpose of using the technologies can influence one's sense of achievement or frustration pertinent to relationship establishment. Thus, this study aims to investigate the process of relationship development through online dating technologies and explore the perceptions of LGBTQ+ women associated with various interaction goals.

3.3.Challenges in Safety in LGBTQ+'s Online Dating Experiences

Though online dating technologies may open opportunities for LGBTQ+ people to obtain social companionships within various types of interactions, LGBTQ+ users often encounter challenging moments associated with privacy and safety. For instance, the location-based 'search nearby' feature of online dating technologies could leak the personal and sensitive information of LGBTQ+ users, such as physical locations, and be exploited for an unanticipated outing or stalking offline. The simplicity of verifications and reporting systems simultaneously enhances users' perceived risk and concerns about the infiltration of strangers (Cui et al., 2022; Smith, 2022).

Also, users struggle with concern about potential crimes. For instance, the abuse of 'intimate data' such as message content and demographic information by third parties is prevalent among female online daters (Petrychyn et al., 2020). On the other hand, because of the anonymity of users in online dating, the possibilities of sexual crimes, such as scams, sexual harassment, and nonconsensual pornography, are salient (Phan et al., 2021; Waldman , 2019). In particular for LGBTQ+ women, since the infiltration to the spaces for LGBTQ+ by scam accounts, including those of heterosexual men, couples, and non-LGBTQ+ women, is frequently reported, the fear of harassment by non-LGBTQ+ intruders prevails among LGBTQ+ women (Cui et al., 2022; Ferris & Duguay, 2020). This fear can be intensified by the lack of perceived security in the user registration and verification process (Cui et al., 2022).

Moreover, the possibility to conceal or disguise personal information within online dating encounters decreases trust and hampers the establishment of relationships among individuals. Given the ease of deception on online dating, a pervasive sense of skepticism permeates communication between users. Without available information for trust-building, gay individuals showed a tendency to rely on intuition as an alternative means of safety verification to assess each other's authenticity and avoid potential harms (Arthur & Cabaniss, 2021). Similarly, LGBTQ+ women opt to engage in phone calls to verify whether the encounter is actually female or not or attentively scrutinize others' posts, as taking a risk of identity exposure or investing excessive time (Cui et al., 2022).

Due to these concerns, LGBTQ+ populations face double burdens in assessing other users' trustworthiness with limited resources while disclosing their personal information on their profiles or in private messaging with other users. Because of the prevailing privacy concerns, they felt obliged to constantly persuade

their authenticity to other users not to be misjudged as scam accounts. Thus, some LGBTQ+ women compromise by disguising their sexual orientations into well-known terms such as lesbian and bisexual rather than risk other users' unfamiliarity with more specific labels such as pansexual (Ferris & Duguay, 2020). This implicit and inauthentic self-disclosure is a negotiating practice employed by users to mitigate these potential risks while using dating technologies.

However, much scholarly attention has been paid to LGBTQ+ men's self-presentation in online dating (Brinholtz et al., 2014; Chan, 2016; Fitzpatrick & Birnholtz, 2018; Wu & Ward, 2020). There is a lack of understanding that accounts for LGBTQ+ women's managing practices around self-presentation through online dating technologies. Furthermore, previous studies have implied other negotiating practices than self-presentation on profiles across other populations' all everyday use of online dating technologies while deciding whether to connect with the platforms, swipe, exchange photos, share locations and meet offline. Fitzpatrick & Birnholtz (2018) investigated continuous negotiations of LGBTQ+ men to participate in interpersonal relationships with strangers encountered within Grindr, an online dating platform for men searching for men. Around the whole phase of technology-mediated interactions, users are invited to continuous negotiations where they should decide whether to connect/disconnect to the technologies, open/close their personal information such as location, and maintain/terminate connections with other users by themselves while compromising goals with other users. Even though profiles involve initial negotiations, LGBTQ+ women are rarely included in the study of a broader range of negotiating experiences. Considering LGBTQ+ women' high anxiety and hesitancy in relationship building and physical encounters (Ghim, 2020; Jeong, 2007; Kim et al., 2020), it is critical to understand how they manage various tensions in all processes of social interactions with random people from online dating space.

Chapter 4.   Research Questions

As mentioned above, online dating technologies for LGBTQ+ women can serve significant roles in their life experiences. However, scholarly knowledge of LGBTQ+ women's social interaction practices and associated perceptions within various interaction goals remains scant. To address this gap, this study addresses three research questions to capture the dynamics of these populations' experience of online dating technology:

1. **What opportunities do online dating technology offer to Korean LGBQ+ women's social experience?**

2. **What challenges do Korean LGBQ+ women face when initiating, engaging in, and sustaining interactions via online dating technology, including in-app and offline practices?**

3. **What tensions are emerging as online dating technology are involved in social interaction practices of Korean LGBQ+ women?**

In line with previous work reviewing the process of relationship development through online dating technologies (Cui et al., 2022; Finkel et al., 2012; Fitzpatrick & Birnholtz, 2018), this study aims to identify challenges in initiation, engagement, sustain stages of relationship developments on a stage-by-stage basis.

Chapter 5.　　Study Design

This thesis aims to investigate the dynamics of LGBQ+ women's social interaction through online dating technologies and explore their practice and perception within such technologies in the conservative non-western context, such as Korea. To this end, a qualitative user study is employed with semi-structured interviews with a total of 17 participants to comprehend the perceived opportunities, challenges, and tension regarding online dating technologies.

5.1. Recruitment

The participants of this thesis were recruited through online communities and social media. To recruit LGBTQ+ (lesbian, gay, bisexual, transgender, queer or questioning or from other sexual minorities) adult women in Korea who have experiences with online dating technology to search for interaction with other LGBTQ+ women, we posted our recruiting document on multiple social network service (SNS) platforms such as sub-forums for LGBTQ+ women in university-based online forum 'Everytime' and community-based mobile applications for these populations 'Sis'.

The recruitment document specified information about the research subject, process, purpose, compensation, and participants' rights. The conditions for the participants, who are (1) over 18 (adulthood) and (2) have experiences of seeking any type of interactions through online dating technologies, were described. The scope of online dating technology covered in this research includes platforms designed exclusively for LGBTQ+ women (e.g., Zoe, Her) and platforms open to all populations and configure settings of partners' gender (e.g., Tinder), which is also described at the recruitment document. We also presented the summary of the principle of this study regarding to participants' privacy protection on it, including the detailed processes of in-person and online minimizing their identity exposure, the list of asked personal information, management principle about their storage and disposal. With the hyperlink presented on the document, individuals can enter the private messaging room with researcher anonymously and ask questions about the study or sign up for the participation. If they reveal their intention of involvement, the researcher send an online sign-up form and ask them to submit it. The form consisted of the nicknames they hope to be called (not real name), the way they want to participate (in-person or online), age, self-reported identity, and contact information.

5.2. Participants

This study recruited a total of 17 participants. The age range was from 20 to 29 (M=24.47, SD=2.718). All lived in Korea at the time the study was conducted. 16 out of 17 participants were self-identified as women (including five participants specifying themselves as cisgender). One participant identified self as nonbinary close to female (P7). Majority of participants were identifying as lesbian (N=11), bisexual (N=5), asexual (N=2), and other orientations (each of pansexual, panromantic, biromantic, and queer). Five participants identify themselves as multiple sexual and romantic orientations. Though we have attempted to recruit participants with various identities and orientations including transgender, we were not successful. All participants reported having used online dating systems for between one month (P14) to 12 years (P10), and their mean period of technology use was 4.563 years. Thus, participants initially had begun to use such technologies at their average age of 21.911. The number of online dating systems they have experienced was ranged from one to five, 3.058 systems on average. Among our participants, seven have used TopL, five have used Sis, four have used Zoe, and one have used Tinder most frequently. Table 1 below present the key demographic characteristics of our participants.

Table 1. Demographic Characteristics of Participants

ID	Gender Identity	Sexual Orientation	Age	Years on Online Dating	Number of System Used	Most Frequently Used System
P1	Cisgender women	Lesbian	23	4	2	TopL
P2	Cisgender women	Panromantic Asexual	28	3-4	3	TopL
P3	Women	Queer	24	4	3	Zoe
P4	Women	Lesbian / Bisexual	20	2-3	1	TopL
P5	Women	Bisexual	24	3-4	1	Tinder
P6	Women	Bisexual	22	2	2	TopL
P7	Nonbinary close to women	Biromantic Asexual	24	4-5	4	Zoe
P8	Women	Lesbian	25	2	3	TopL
P9	Women	Bisexual / Pansexual	29	4	4	TopL
P10	Women	Lesbian	28	12	4	Zoe
P11	Cisgender women	Lesbian / Bisexual	27	5	5	Sis
P12	Women	Lesbian	20	2-3	3	Zoe
P13	Cisgender women	Lesbian	24	6	3	TopL
P14	Women	Lesbian	27	1 month	4	Sis
P15	Women	Lesbian	26	8	4	Sis
P16	Women	Lesbian	23	8	3	Sis
P17	Cisgender women	Lesbian	22	6	3	Sis

5.3. Semi-structured Interview

The study conducted semi-structured interviews with 17 LGBQ+ adult women, who have experience of social interaction through online dating technologies. The purpose of the interview sessions was to understand their life experience around mediated interactions through online dating technologies, including prior technology-use context, interaction goals, related perceptions, and engaging practices.

In the interview session, participants were in interpersonal interviews with a researcher in-person or online. After the general introduction about the study, including research motivation, purpose, process, and principles regarding to privacy protection and personal information management, participants were asked questions about initial motivation to use of online dating technologies, specific interaction experiences through online dating, current interaction goals and expectations, perception on the achievement for pursued interaction goals, perceived opportunities and challenges, and the role and meaning of such technologies in their lifetime experiences and social relationships. Also, questions about specific practices were included, such as how they have consisted of their profiles, how they have used location-based features, what conversations they have had in chat, what processes they have engaged in interactions, and what criteria or information they had applied for decision-makings at various stages of interactions.

In the last part of interview, we also asked participants to brainstorm and speculate their ideas for technology design to mitigate challenges they mentioned. On the paper and/or online whiteboard in Miro, participants drew brief sketches and took part in debriefing. Figure 3 presents an example of sketches based on the template. During the five-minute break prior to the idea sketch activity, the researcher summarizes the participants' needs and pain points mentioned in the interview so far and lists them in post-it on the Miro board. When the idea sketch activity begins, participants select several items that they want to deal with through this activity and set design goals according to the researcher's instructions. Participants then freely draw their ideas on a prepared Miro board or paper and debrief the researcher with the problems that this idea will solve and expected issues that will cause.

Figure 3. An example of idea sketch activity (P2). The template for the idea sketch activity includes post-it items to display participants' needs and pain points mentioned in the interview, their design goal sentences, and an idea sketching field.

Each interview lasted 60-90 minutes and was audio-recorded and transcribed for analysis with the interviewee's permission. Each participant was compensated KRW 25,000. In principle, the interview was conducted online in a virtual environment through video-telephony software programs such as Zoom, but if participants hope to participate in-person, it was run in independent and secure space accessible only to researchers and participants. As a results, only four participants participated in the interview in-person (P9, 11, 14, 17), while others were connected to a researcher online.

5.4. Ethical and Privacy Considerations

As the psychological burden or concerns was expected regarding to the participants' specific contexts of high privacy concerns, we took serious care during the entire research process to minimize the possibility of direct and indirect exposure of participant's identity or personal information. In the recruitment, all contacts with potential participants, including people who ask questions about this research and participation, were conducted via anonymous chats with a researcher from Kakao talk, the most frequently used private messaging systems in Korea. Individuals can enter the chat room with randomly generated or self-written nicknames. We noticed the personal information management and protection principles of this study at the recruitment document distributed at the multiple social network services.

In principle, all research processes were conducted online via video chat systems, encouraging participants to turn off their videos. In the case of when participants hoped to participate the study in-person, we conducted in-person sessions at an independent and secure space where only participants and the research can access during the whole day of the sessions so that the contents of the conversation or identity are not exposed to the outside.

In the interview sessions, participants read the consent form before participating in the study, and they all understood and agreed to the content. Since our study addressed participants' personal experiences on relationships, which might be a sensitive or potentially traumatic issues at some degree, we informed participants at the beginning of each interview that they could skip uncomfortable questions or quit their participation in the middle of the study.

During the entire research process, participants were named only by the nickname they wish to be called, not by their real name, and personal information such as a geographic location was not asked. In the course of the study, the recording was conducted after verbal and written consent was obtained from the participant, and the recording was discarded immediately after transcription was completed.

Each participant was assigned a randomized ID in place of their nickname. The interviewers carefully reviewed each recording right after the interview, and removed any identifiable content from the records prior to further analysis. The transcription file was saved after such inspection so that the participant's personal information was not included in the analysis process. Even during analysis, the researcher eliminated contents judged to be excessively personal and private to protect their privacy. The study received approval from the Seoul National University's Institutional Review Board (IRB).

5.5. Data Analysis

All interview data were audio-recorded for qualitative analysis. Recordings were transcribed by a speech recognition engine, Naver Clova Note, and inspected by a human researcher iteratively. A thematic analysis was conducted with the qualitative data from semi-structured interviews after the transcription to organize high-level themes and identify recurrent ideas and concepts.

In the thematic analysis process, Constructivist Grounded Theory Methods were be employed to explore the underlying implications of qualitative data, develop them into theoretical categories, and theorize the themes of a phenomenon (Charmaz, 2006, 2008; Furniss et al., 2011). The constructivist grounded theory proposed by Charmaz (2006) recognizes all scientific descriptions and ideas regarding the participant's present as a social construction contextualized in a particular culture and interpreted within the subjectivity of researchers (Charmaz, 2006; Muller & Kogan, 2010). Thus, constructivist grounded theory has been utilized to attain knowledge of marginalized people's life experiences, such as LGBQ+ populations (e.g., Asakura, 2017; Ning et al., 2019; Willis, 2011), while acknowledging the subjective presence of researchers across the whole research process (Ning et al., 2019; Willis, 2011). Also, in HCI fields, studies have applied constructivist grounded theory to derive the complex meaning of experiences that have not yet been explored sufficiently or lack the theoretical basis and to establish a theory to explain the phenomenon (Muller & Kogan, 2010). Therefore, this study also aims to analyze qualitative data from interviews with constructivist grounded theory methods to understand the meaning and effect of engagement between LGBQ+ women and online dating technologies.

Following the constructivist grounded theory analysis method proposed by Charmaz (2006), meaningful implications mentioned in the interview sessions were be identified and compared. First, through the initial coding process, every interview line was labeled with relevant concepts or terms. The labels belonging to a similar phenomenon were arranged into a cluster at the focused coding process, where a researcher iterated clustering and revised theoretical categories by comparison. Next, as examining the relationship between the categories and synthesizing it into higher categories at the theoretical coding process, this study aims to identify the multi-layered and comprehensive meaning of online dating technologies for LGBQ+ women.

Chapter 6.   Findings

In this chapter, we present three major findings about opportunities, challenges, and tensions when the online dating technologies are involved in social interactions among Korean LGBQ+ women. Based on themes resulting from the qualitative analysis, we describe what opportunities the technology provides to LGBQ+ women in section 6.1. We then present the details of challenges participants encounter when participating in social interactions within the platform with their coping strategies and design suggestions in section 6.2. Finally, we report newly emerging tensions of the online dating from Korean LGBQ+ women's community in section 6.3. Table 2 below present the summary of our findings.

6.1. Opportunities of Online Dating Technology for LGBQ+ Women

The online dating technology offers supportive roles for Korean LGBQ+ women who struggle severe social isolation and stigmatization. Through this technology, participants are granted accessibility to immediate social interaction with other women. Furthermore, the technology facilitates the recognition of queer existence, thereby fostering a sense of self-positivity and acceptance of identities among the participants. Finally, the platform serves as a significant queer space wherein LGBTQ+ women can exclusively congregate, facilitating interactions and community-building.

6.1.1.   Increasing Accessibility and Immediacy of Interactions

Online dating technology has emerged as the most accessible channel for Korean LGBQ+ women to interact with other women. Given the persisting challenges of social isolation and pervasive stereotypes faced by these population in Korean society, traditional offline avenues for meeting and connecting with others are often limited or unavailable. In contrast, online dating platforms afford a pathway for these individuals to access to interactions unbounded by temporal and spatial contrasts.

Table 2. Opportunities, Challenges, and Tensions of Online Dating Technology

Themes	Subthemes
Opportunity	1. Accessibility and immediacy of interactions 2. Expansion in interaction types 3. Recognition about other LGBQ+ individuals' presence 4. Space for identity experiment 5. Sense of belonging within secure space
Challenge	In **initiating** interactions - Lack of richness in available information - Rarely initiated conversations In **engaging** in interactions - Ghosting - Reluctancy in self-disclosure due to lack of trust - Disengagement from repetitious conversations In **sustaining** interactions - Discouragement in addressing conflicts - Dating-centered atmosphere - Cumulated failures in relationship sustain
Tension	1. Privacy concerns vs. unavoidable self-disclosure 2. Perceived incompatibility of inclusivity and safety 3. Classification based on (appearance-oriented) dichotomy

Among the participants in our study, a significant number (N=14) had already established diverse avenues for engaging with other LGBTQ+ women. These channels included offline friends' networks (P2, 16-17), LGBTQ+ clubs at universities (P1, 9), Twitter (P2, 7, 9-12, 14), online forums for universities (P3, 8-9, 15), and various social media platforms for LGBTQ+ women (P10, 13, 15). Despite their involvement in these communities, our participants mentioned their initial motivation for using online dating technologies was a desire to meet other women, as they expressed the perceived limitations in the existing means of encountering. P16, for instance, shared her experience of turning to online dating technology after her high school friends, who had previously introduced her

encounters with other LGBTQ+ women, became less available due to changes in their life circumstances.

> *When I was working, my high school buddies taught me everything. They arranged the meeting for me and introduced me to their own circles. I met my friend's friends there, hang out together and went out with them if we hit it off. ... But now some of them are dating with men, some have built a stable partnership and no longer rely on the dating app. Some of them have moved to the countryside. (P16)*

Due to these fluctuations in availability of other avenues, most of our participants perceived the online dating technologies as the primary platform to explore new social connections. This was especially evident for five participants (P3, 5-6, 12, 15) who resided or had previously lived in rural areas, where opportunities for social networking were scarce. The online dating technologies served as a vital supplement to their limited options for relationship building in rural regions. Additionally, the outbreak of the pandemic further emphasized the benefits of networking opportunities provided by these technologies. For instance, P5 found herself confined to her rural hometown due to the pandemic right after becoming an adult. Consequently, she turned to a dating application as her sole means of searching interactions to overcome feelings of isolation.

> *I'm originally from a small rural area. When the COVID-19 pandemic hit, I had to stay at home for more than two and half years even after becoming an adult and there was no way to interact with people in my neighborhood. ... Rural small towns really don't have practical programs for socializing, so I couldn't get enough opportunities for social connections and felt like I was trapped at home all through the Pandemic. That is the reason why I started using the dating app not to find someone to love or date, but simply to find someone to be a friend. (P5)*

In particular, the immediate mediation of interaction is regarded as a prominent advantage of the technologies. Participants firmly believe that utilizing online dating technologies enables them to connect with other women at any given

time and from any location. P1 said that she *"can access to people to hang out immediately whenever I feel bored"*. Likewise, P6 and 15 have actively participated in social gatherings with nearby individuals, facilitated by the location-based matchmaking algorithms that mediate users in proximity. The "search nearby" feature has proven beneficial to participants like P3, 9 and 17, who employ it to find one-time activity partners in their neighborhood, such as mates to study or work together at a local cafeteria.

> *The technology is useful when I want to find someone who will gather suddenly without any appointment, just on impulse. I ask them like "It's Friday today, so who wants to meet and drink with me?" or "Who wants to do something together on the weekend." (P9)*

6.1.2. Expanding Types of Interactions

Online dating technologies afford LGBQ+ women the opportunity to engage in a wide range of interactions not confined to romantic encounters. Our interview data reveals that participants employed these platforms for various purposes, not only for romantic partnerships (N=10, P3, 7-17) but also hook-ups (N=3, P8-9, 14) and friendships (N=11, P1-5, 8-11, 16-17) including friends within same college (P1) and neighbors in close proximity (P3, 8-9, 14). Moreover, participants found value in the technology's ability to connect them with social groups, such as impromptu gatherings for enjoyment (N=8, P1, 6, 9, 13-17) and hobby clubs (N=3) centered around activities like gaming (P11-12) and wine appreciation (P2). For one-time events, participants (N=4) arranged meetups for activities such as Christmas celebrations (P1), studying at a café (P9), co-working (P17), and attending the annual Pride event together (P11). Additionally, participants utilized the dating technology to find individuals for random calls or conversations (N=5, P4, 7, 12, 14-15), browse through profiles for leisure (N=5, P1-3, 7, 13), reconnect with offline acquaintances (P15), and seek recommendations for LGBTQ+-friendly stores such as restaurants and bars (P11, 13, 16).

Aligned with the participants' life stages, their primary purposes for engagement also evolved, illustrating the flexibility of online dating technologies in facilitating diverse interaction goals. For example, participant P16 initially joined the online dating platform eight years ago to cultivate additional friendships beyond

her limited offline LGBTQ+ circle. However, as she transferred to university and became less connected with her offline friends, her opportunities for romantic introductions diminished. Consequently, she shifted her purpose on the dating technologies to explore potential romantic relationships. More recently, she has been utilizing the platforms to organize offline gatherings for recreational purposes. Similarly, participant P8 initially sought friendships through the technologies two years ago but unexpectedly found a professional collaboration with a matched individual. Thus, the technologies expand the repertoire of available interaction modalities for participants, accommodating their evolving needs and desires.

6.1.3. Facilitating Recognition of the Presence of Other LGBTQ+ Women

Furthermore, the participants reported that they could recognize an actual presence of other LGBTQ+ women coexisting within the same society through online dating technologies. This experience led to the alleviation of feelings of loneliness and isolation. Especially the features such as user profiles, location-based and recommendations facilitate the recognition of co-presence by showing the representations of individuals located in the physical surroundings of the subject. For example, P13 expressed the astonishment she got from her nearby users who self-disclose their facial photos on the profiles since she can sense *"There are so many adult lesbians in this world!"* Likewise, P3 stated that her primary motivation for using the technologies was to mitigate her loneliness as sexual minorities by witnessing the existence of 'somebody like me' who would share similar identities with her but just be there.

> *Rather than turning the platforms on because I want to meet and interact with someone directly, I just go in there when I feel I'm surrounded by the straightness in this world and feel a bit lonely. If I go into the platform, I can sense that everyone is always there anytime and anywhere and get relieved as thinking "Everyone is living well somewhere anyway."*
> *... It is very helpful for me to realize that such many people within a 10-kilometer radius of where I am are all LGBTQ+ women. (P3)*

6.1.4. Providing a Space for Identity Exploration and Confirmation

Moreover, our participants (P2, 4, 8-10) appreciated the role of online dating technologies for identity exploration as LGBQ+ individuals. When participants were confused of their sexual orientations, the experience of interacting with other women exchanging romantic affinity within the dating technologies provided an opportunity to explore and experiment with their identity. This echoed with previous research that found that iterative exposure to performances and negotiations on online dating platforms resulted in the creation of sexuality in LGBTQ+ males (Hardy & Lindtner, 2017). Notably, P10 mentioned that the existence of the dating technologies for LGBTQ+ women itself offered her the experience of acknowledgement about her sexual orientation and desire as a woman who loves a woman.

> *In the past, online dating seemed primarily geared towards heterosexual people. However, the existence of dating technologies designed for LGBTQ+ women has given me a sense of comfort and validation. It's like a sense of being acknowledged "I am also a person who can desire." (P10)*

> *I believe the technology itself can be helpful for self-identification as LGBTQ+. As one of the cases of bisexual orientation, I also have faced a lot of confusion from my internal dichotomous questions like "Can truly love women?" or "Can I regard women as potential dating partners", after my first identification as a bisexual. In that regard, the practical experiences of encounters with other women at the platforms helped me break down and reconstruct my self-identity. (P2)*

Participants also can attain a confidence about their identities and lives as LGBQ+ women by appreciating the diverse facets of other women's lives through the encounters made within the technologies. A diversity of women encountered within the technologies provide an understanding of a spectrum of LGBTQ+ women in the society and empower participants to develop an optimistic perspective about their diversity of own identities and life experiences. As a notable example is P12, who limited to interact with other queer women before using the dating technology. She becomes confident of living as a lesbian in this society after experiencing multifaceted lives of LGBTQ+ women via the technology.

Back in the day, I used to think that I should attend Pride events at least once because I am a lesbian. But then I started using dating platforms and met all kinds of LGBTQ+ with different opinions on politics and everything else. And that's when it hit me that being a lesbian is just a part of who I am, one of the many things that make up my life. It's not this special thing and I'm okay to live like this. That realization has brought me a sense of ease. (P12)

In particular, they appreciated a sense of inclusivity about their identity when they realize the technologies systematically guarantee a representation of their gender identities and sexual orientations at the profiles. P1-3 and 8 shared an experience when the technologies displayed various options for identities and orientations presented at their profiles.

I think it (the online dating technology) is pretty cool to have various options at profiles. Seeing various sexual orientations, including platonic ones, listed there gave me a sense of safety and relief. I also appreciated the technology allowed users to indicate various things about themselves, not limited to gender identities, like whether they drink or smoke. I think it's deliberate approach. (P2)

6.1.5. Establishing a Sense of Belonging within Secure Space for LGBTQ+ Women

The exclusive space for LGBTQ+ women within the online dating sphere offers participants a secure space for disclosing about themselves with comfort. The sense that it is a space where only LGBTQ+ women are gathered make them feel convenient, comfortable to share their experiences. Particularly comparing to offline environment where there are significant challenges in revealing one's identity as LGBQ+, the online dating sphere alleviate the burden and anxiety of self-disclosure and social stigma. In this regard, P3, 8 and 9 perceived the online dating platforms as serving a traditional role of offline physical spaces where these populations had conventionally gathered, such as a square for Pride events, lesbian clubs and bars. Even though such offline spaces for LGBTQ+ populations have challenged them due

to privacy concerns and accessibility, this newfound online square provide a sense of being secured based on the similarity of user groups.

> *It seems to be relieved for me to know the other person's sexual orientations in the dating platforms. You know, in offline, I'm literally trying my best not to anticipate (the other's orientations). So even though I hate that kind of world, I have been just expecting everyone would be heterosexual (in offline). But within the dating platforms for LGBTQ+ women, I feel glad and pleasant basically to meet all encounters, who are supposed to have similarities with me. It feels like I met my neighbors at the remote desserts. (P10)*

> *Sometimes, even when I'm surrounded by people, I can still feel lonely. Especially in those moments when I have some struggles to talk about but find it hard to disclose about myself to someone I know, or when I feel not being fully understood by them although I know they are good people. That's when I turn to the applications for some consolation. In such place, I can easily share my thoughts to someone anonymous within a space to be myself. … Using this technology feels akin to my reasons for going to offline the annual Pride event. It's all about finding a place where I can truly be me. (P3)*

The similarity between users in the dating platforms also empowers users to establish a social companionship easily and enhance a sense of belonging to the LGBQ+ women's community. Participants mentioned that the dating platforms played a critical role as a safe base shielding them from the discrimination, anxiety, confusion, and fear experienced within a heteronormative society. As P2 aptly pointed out, these platforms provide a gateway for individuals to transition from a predominantly heterosexual-centric world into a space where LGBTQ+ identities are naturally embraced. Remarkably P4 and P12, who had not disclosed their sexual orientation to anyone in their offline lives, appreciated the supportive solace and connection they got from the commonality of shared identities within online dating platforms.

The sense of belonging is the most important thing for me. Even if I don't have the specific purpose of making friends or someone, I go in and see the platforms regularly, because I like the feeling that similar people are gathered here. That's why I keep watching it. (P4)

I think I was greatly influenced (by the technologies in establishing my sense of belonging). Though it's hard to meet people in real life where there is a lot of negative views, but here, there are people with similar experiences as making their own society and sharing personal stories nothing special. Being a lesbian didn't mean they have special concerns. It's just the way that people live on the same way, which is so comfortable. (P12)

Such companionships with LGBTQ+ friends provide me a safe fortress to come up with resources to address my thoughts on my identities and to refresh discrimination, fear, confusion, and anxiety which I have faced as a sexual minority. (P2)

6.2. Challenges of Korean LGBQ+ Women in Relationship Development Process through Online Dating Technology

In spite of prominent opportunities of online dating technology, participants believe it challenges them when developing relationships with other women into sustained connections. In this section, we elaborate the specific challenges LGBQ+ women encounter in online dating technologies. Align with prior work which elaborated the process of relationship development via online dating technologies (Cui et al., 2022; Finkel et al., 2012; Fitzpatrick & Birnholtz, 2018) as initiating and searching interactions via profiling and swiping, engaging in computer-mediated communication, and cultivating relationships beyond online, we illustrate challenges LGBQ+ women confront when they attempt to initiate, engage in, and sustain social interactions within the platforms on a stage-by-stage basis. Furthermore, we present participant's strategies to cope with these challenges and related struggles.

6.2.1. Challenges in Initiating Interactions

Initiating interaction with unknown strangers via online dating platforms is perceived not only beneficial but also challenging for participants. At the whole process of initiating interactions, including searching other users' profiles, swiping them left (dislike) or right (like), and beginning conversations at the private text-based messaging, lack of information richness and rarely initiated conversations hinder participants to initiate interaction with other women.

1. Lack of available information to decide initiation

After entering the online dating platforms, users are introduced to multiple stacks of other users' profiles, in which they browse and search their potential interaction partners. However, our participants claimed that information about other users, presented at the profile, was insufficient to utilize in their decision-making to determine whether they initiate conversations with the other person or not. Currently, profile interfaces of online dating technologies display photographs, nickname, age and categories including interaction goals (i.e., friendship, dating, relationship), interests, description of appearance (e.g., eye and hair colors, body shapes, piercings, and tattoos), and whether they drink and smoke (Figure 1). Among these categories, users can select the buttons that correctly describing about themselves (Figure 1). In interviews, our participants explained or showed their profiles of dating platforms, where they selected categories of nothing (P17), purpose of use (P3, 7-9), interests

(P6, 8-10) and smoking and alcohols (P8). Additionally, a bio profile field offers a free text form, where participants can write down descriptions about themselves. Emoji (P1), occupations status (P8), personality type of MBTI (P13), zodiac sign (P9), interests (P6, 8, 13-14), interaction goals (P3), height and weight (P10, 16) and values such as queer feminism (P7, 9-10) are presented by our participants.

However, a broad array of information at their profiles are perceived to be inadequate for our participants to figure out what type of person the subject would be and to evaluate the compatibility in interaction. In particular, P3, 7, 11 and 16 expressed their difficulties in identification of whether they would have a romantic chemistry with the others when expecting a romantic interaction in online dating. Given that the information presented on profiles primarily consists of text-based descriptions, short keywords, or images, participants perceive it as insufficient for capturing the richness of a person's traits, tastes, behaviors, attitudes, and values. These aspects are considered valuable criteria for initiating new relationships, which have been consistently identified as deprived in online dating technologies (Finkel et al., 2012; Pidoux et al., 2021).

> *It is difficult to examine whether the person would hit it off with me or not solely based on text-written information about them. (P3)*

> *To be honest, I can get an understanding well on what kind of person they would be just by looking at several photographs at profiles. (P7)*

Coping strategies Therefore, P7, 8 and 9 have developed a particular preference for profiles that contain detailed descriptions. They have found that these profiles provide them with more information to make informed decisions about initiating interactions. As a result, they have been more inclined to swipe positively on profiles offering such detailed descriptions.

> *It's actually better when a profile has a detailed description or explanation that includes hobbies or even their MBTI personality type. When someone takes the time to write about themselves in detail, I'm more inclined to swipe right because I get the chance to learn more about them. Honestly, you can't really judge what kind of person someone is just by*

looking at their pictures alone. Even some fragmentary
information like "9-6, office workers" can give me an idea of
their availability on the chats and when they would be online. It
helps me gauge our compatibility to some extent. (P7)

Even if the descriptions at the profiles are not too long, participants have detected implicit sensibilities from subtle nuance within the profiles and utilized them as critical criteria for swiping. These cues include various elements, such as the genre of books posted on profile photographs, the musical taste from screenshots of playlists, the sense of humor from meme images on profiles, and more. When asked the factors they considered important for swiping, participants frequently employed ambiguous terms such as "taste" or "sense", indicating their reliance on delicate qualities to guide their decision-making process.

I swiped (someone) because what she wrote on her
profiles seemed to align with my sensibility. It was like that she
was in women's college, too, liked what kinds of music and
books, and searched for friends to go to exhibitions with her.
(P8)

I tend to swipe if her profile has emotional photos,
common things I like, or books or if she just seems to match me
well. (P17)

Moreover, our participants require the technologies to externalize such implying information with more explicit information on the profiles. When asked what they wanted to add on the profile interfaces, P5 and 7 needed more categories, such as personality type or interests. Likewise, P8 suggested augmenting profiles in more romantic and sexual way, inspired by a 'ideal type chart' frequently posted on the online dating profiles by who seeking for romantic and sexual partners in the platforms. The 'ideal type chart' is a table listing up the conditions of appearance and personality of the user and her ideal type, such as (preferred) hair length, fashion style, terms of messaging, level of disclosure, and types in physical touch. Similar to the chart, P8 suggested to augment details to categories to inform one's attitude and behaviors in a relationship. P8 already had posted the chart on their profile.

> *(With the ideal type chart,) the process of matching hasn't completely shortened, but a bit decreased. I felt like I could draw a sketch of the person.… When I was looking for someone to date, the chart was helpful because it informed me what type of person she likes or is like. Likewise, it would be good to be informed what kind of person someone is in a relationship and how many times she wants to meet her girlfriend a week.*

2. Conversations are rarely initiated

If users swipe each other in a right direction, which means they like the other, they can be matched and enter to one-to-one chat interface. In that chatting room, users can start a conversation with the other and engage in text-based communication. However, our participants commonly indicated that conversations are rarely started even after mutual matching. P7 said, *"People don't say anything. They rarely talk even after getting matched. No one says hello to me first. Even if I talk to them, no reply at all."* Including P7, seven participants (P2-3, 7-8, 10, 13-14) reported that they have experience of failure to initiate conversations after they got matched with someone and sent a greeting message in the chats. They reported they failed to receive any answers. P3 and 14 share their opinions about the reason, the high privacy concerns of Korean LGBTQ+ users, comparing their experience of online chatting with men.

> *Even if we got matched, we tend to be careful and sensitive, so it's harder to talk actively than heterosexual online dating systems. (P3)*

> *When I was matched with a guy on Tinder, I got "hello" messages 100%. But when I got matched to a girl at Zoe, nothing came. Since then, I have not said anything even after matching. I think everyone has a lot of suspicion in this space. (P14)"*

Coping strategies Given this context, to capture others' willingness in communication is important work for users to start conversations. Thus, the perceived level of seriousness from profiles become a significant clue to distinguish

potential communication partners with just passing-by encounters. As such, P3, 8, 10 and 15 was echoed that they have tried to detect seriousness in others' profiles to match with sincere people in relationship.

> *I've always placed a lot of importance on how sincere someone appears in their profile. When I come across someone who has taken the time to write a lot and shows a real desire to connect with others, I tend to swipe right more often. They seemed likely to engage in conversations once we match. (P8)*

To effectively catch this implicit signal of seriousness, P8 further envisioned the informing features of the average answer time on the profiles. She though it would be helpful for her to distinguish the possibility of inceptions.

> *If the profile shows how many hours this person has been active in the chat and how many hours she usually replies to the chat, wouldn't it be easier to judge the possibility of conversations? (P8)*

6.2.2. Challenges in Engaging in Interactions

After initiating the interactions, participants tend to engage in text-based computer-mediated communication with other users, usually through in-app private messaging feature of online dating technologies. However, challenges of ghosting, lack of trustworthiness, and repetitive conversations discourage them to participate in engaging conversation and develop interactions into more sustainable relationships.

1. Ghosting

The majority of participants (P2, 4-6, 8, 14-15) reported instances of sudden termination of interactions they have undergone at the platforms, such as undoing matching, blocking, or being ignored by individuals they had engaged in chats with. Participants commonly claimed these unexpected breakoffs are common phenomena at online dating. Even after making an appointment to meet offline, the meeting is rarely realized because of the prevailing ghosting. For instance, P2, 6, and 15 shared experiences of being stood up by someone they were supposed to meet offline, either without any prior notice or with a last-minute cancellation. These occurrences of ghosting, along with negative feelings from rejection and disregard, were identified by participants as a inherent aspects of online dating life.

> *There are still a lot of people who leave abruptly while talking well. Due to the anonymity, it's too easy to leave. (P15)*

> *There have been times when the conversations abruptly ended, or the other people disappeared after saying we should meet up. I even had experiences where someone didn't show up on the day we were supposed to meet. I was waiting for her at the offline appointment spots, and she just didn't come. Some even actually came to the meeting spot but then ran away. (P6)*

> *It's crazy how many times I've experienced conversations abruptly ending without a word. It feels like this is just a normal part of life here. There were also plenty of instances where we made plans to meet offline, but they ended up not showing up. (P4)*

When asked about the reasons behind frequent unexpected discontinuation of interactions, P2 and 17 attributed it to the fear of self-disclosure among these women. In Korea, LGBTQ+ individuals still constitute a minority and face social vulnerability, thereby making connections with strangers a anxious task. Thus, either party engaged in a conversation can easily disconnect the connection with the anonymous nature of online dating platforms if they feel burden or unease.

> *Personally, I think such negative experiences can stem*
> *from the hesitation of LGBTQ+ individuals. For example,*
> *suddenly canceling meeting appointments 10 or 20 minutes*
> *before the agreed time might come from concerns or anxieties*
> *about being outed. You know, everyone has varying degrees of*
> *fear when it comes to coming out. (P2)*

Coping Strategies Given the prevalent ghosting, participants require explicit assurance to ensure them the continuity of the connection. Therefore, most of the participants shifted to other social-media platforms such as Kakao talk and Instagram's private messaging which they use more often to have daily communication. Even in most of cases the conversations still are anonymous without revealing real names, participants said it can mitigate the anxiety of unexpected ghosting since the switch imply the will to keep the connection. Prior work also reported the meaning of platform switching for assurance of the potential of further relationships on non-dating-specific communication channels (Cui et al., 2022).

> *The concerns about unexpected end of chat make*
> *everyone switch to another messenger platforms. In fact,*
> *because many people on online dating are not fully committed*
> *and may just be looking for some casual fun for 30 minutes,*
> *there's always this underlying uncertainty that it could end at*
> *any moment. (P5)*

To prevent unforeseen disconnections at the online dating technologies, participants suggest that a sense of intimacy between conversation partners should be established more quickly within the in-app chats. To this end, P11 and 14 suggested to facilitate short video sharing features for users to realize the partners' live existence and easily get attached to each other.

*It would be more interesting if we could share short
videos in chat, similar to Instagram Reels. Like, the video starts
with someone saying, "Hey, I'm blahblah. I talk to you because
I liked something about you." Since it's moving, we can be
more engaging ... and can get to know the person better than
just photo-sharing. It might make us feel more connected. When
exchanging text messages only, people tend to take thing
lightly. Even if we had a great conversation all night, but the
next day sometimes the chat room are blown away and ended
abruptly. But if exchanging videos like this, it's not as easy to
just cut off the connection. (P14)*

2. Lack of trustworthiness lead to scarce self-disclosure

The anonymity of online dating also challenges participants in building trust and sharing information about themselves to others who they encounter at the platforms. Participants express concerns about the lack of trustworthiness, for which they must rely on what strangers said to them even if the information might be manipulated or falsified. It makes participants uncomfortable and difficult to place confidence when engaging in interactions at the online dating platforms. P4 and 10, for instance, stated that they consistently harbor suspicion about the honesty of others while engaging in chat interactions.

*I tend to trust people only after meeting them offline.
Until we meet in person, I always have doubts on the other
person. (P4)*

*To establish the trust that this person is really okay, it
usually takes at least two weeks of continuous contact,
assuming we're in touch every day. (P10)*

Due to a difficulty in trusting about anonymous conversations, participants perceived a reluctance of self-disclosure among the other users they have interacted with at the technologies. For instance, P14 stated a burden and discomfort when it comes to asking others about the details of themselves during the conversations within the platforms. This tendency leads conversations frustrating and less engaging.

> *The biggest issue is that most people do not disclose any*
> *of their details. Since I don't know their real identity, there are*
> *limits to the questions I can ask, and I don't provide precise*
> *information, either. At the same time, if I ask too many personal*
> *questions, they would be scared and harbor suspicion on me.*
> *Because of this, the details are rarely shared. (P14)*

Coping Strategies In this context, an attitude that displays a willingness to self-disclosure becomes important virtue which is preferred by participants in the online dating context. From the interaction initiation stage, participants appreciated signals from least self-disclosure from others' profiles to figure out someone who have willingness to share details about themselves. Even if they do not present their facial photos, posting on photos of hands, hairs, and wearing and any signals that they try to disclose themselves are preferred attitude.

> *If someone doesn't present either a profile picture or a*
> *bio, I usually swipe left. Sometimes I saw profiles with only a*
> *black screen or images taken from the internet, and in those*
> *cases, I can't know anything about them. I have revealed my*
> *face but the other person hasn't. That's an asymmetry of*
> *information. On the other hand, even if someone only uploads*
> *pictures without any text, it's the same for me. (P9)*

> *At least a little bit of themselves should be disclosed for*
> *me to swipe right. Such as just their nails, shoes, or even the*
> *bottom of their clothes, something should be shown for me to*
> *consider swiping right. ... Even if someone is afraid of being*
> *outed or revealing too much, they should still show a hand*
> *picture or something so that I can know that I'm talking to a*
> *real woman and have a sense of relief. (P16)*

To align the speed of self-disclosure with the speed of trust establishment in the technology, P14 proposed a function that open information about each other one by one as more messages are exchanged in-app chats. This approach would alleviate user burden to self-disclose along with the speed of building trusts. Likewise, P3 desired to disclose her location information only with chosen partners who already build trust with her.

It would be great if I could selectively open my location on a village level or a nearby subway station, so that I can reveal it to someone I want to develop a friendship or romantic relationship with. (P3)

3. Repetitive interactions with unknown demotivate them

Majority of our participants (N=9, P1, 3-4, 6, 9-10, 12, 14, 17) expressed a shared perception that conversations within online dating platforms often tend to be repeated everyday, such as "good morning", "how was your day?" and "good night", which become redundant. This recurring pattern diminishes participants' attention and motivation to engage in each conversation, making it challenging to establish a sense of intimacy and to keep connected with the other party. For example, P1 and 14 was discouraged in interactions when they cannot have engaging conversations but redundant answers.

There are people who respond without asking me anything in return. For example, if I ask them, "Did you have lunch?" they would simply reply with "Yes." without asking me the another question. In those cases, the conversation is done and I just delete them.

I wonder, "what am I supposed to say?" many times in meaningless conversations with automated responses machines. Keeping asking "What did you do today?" or saying "Good morning" "Good night" is just not enjoyable. It drives me crazy. I'm really, really exhausted. It's so difficult to keep a conversation going, and I don't even know if this person really wants to talk to me. (P14)

Regard to dating, P17 found the repetitive talks taking place in the online dating technology is too monotonous and awkward to sense and develop romantic interests.

Regardless of how attractive the person is, the way of conversing and acting are so typical that it makes everything in

online dating awkward. Meeting through these apps rarely
leads to anything special. Everything feels the same, and the
conversations become repetitive. (P17)

P4 and 9 attributed their struggles to discuss an engaging talk to a lack of commonalities. The online dating technologies, which matchmake individuals nothing in common but queer identity, do not afford any other engaging subjects of conversations. Thus, conversations are limited to topics that extend no further than superficial things, such as the daily routines and today's menu.

It feels awkward to interact solely because we are queer,
especially when we have no other shared interests or common
ground. (P9)

It becomes really difficult to continue the conversation
when our interests are so different because no matter what we
talk about, it doesn't resonate well. (P4)

Coping strategies Therefore, some participants (P1-2, 6, 14) find a way to avoid redundant talks online and meet people offline through the technologies, preferring a one-to-many social gathering situations, where they can explore and have a conversation with people in more natural atmosphere. P14, for example, goes for sudden gathering to talk to other women in face-to-face settings. Notably, P1 prefer a one-to-many sudden gathering rather than one-to-one interactions especially when she tried to seek a romantic situations.

When I meet someone in person, I try to have a
wholesome and friendly interaction, but when there are
multiple people in gathering, things can get a bit romantic or
sexual. It's because my purpose of interactions is clear in those
cases. In a one-on-one situation, I often find myself having
nothing more to say than "Oh, really? I see." And it makes me
burdened and awkward. So, this approach (of finding romantic
partner in group settings) is less mentally burdensome for me.
(P1)
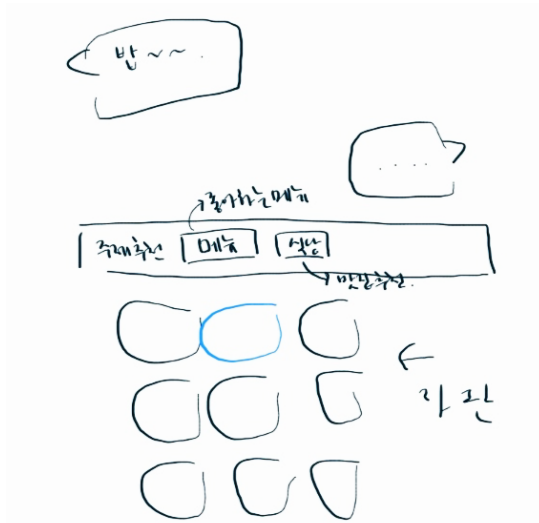
Figure 4. A sketch of topic recommendation interface (proposed by P4). Artificial intelligence can analyze conversations in private chat rooms and recommend related topics and questions for newly emerging keywords (e.g., *meal*). Topics are presented in the horizontal prompter, above the keyboard interface (e.g., *menu, restaurant*). If users touch a button of topic in the prompter, subtopics are displayed in it (e.g., *favorite menu, recommending restaurant*)

> *I've been tired of going into chats and constantly asking, "Did you sleep well?" in the morning and "What did you eat?" in the evening. Nowadays, I actually prefer face-to-face conversations, so I recently use the dating app for sudden gathering. (P14)*

To make conversations with strangers within the dating technologies pleasant, the gamification is proposed by 2 participants. P4 and 8 suggested to adopt simple games to the one-to-one conversation room in the technology like Tinder and IOS message feature do. Furthermore, P4 and 14 suggested the recommendation of conversation subjects to help users to participate in unbroken conversations. In details, P4 suggested the adoption of artificial intelligence to advise appropriate topics by learning the contents of previous conversations or providing a random pick feature. In her ideas, the AI-recommended topics are displayed at the top of keyboard interface to make it easier for users to come up with the next interesting topic of conversations (Figure 4).

when we first meet offline not knowing each other's interests, sometimes things are going to be awkward as the conversations dying out. So, I thought it would be nice if AI could analyze our past conversations in the chat room and recommend topics like, "Based on your recent conversation, how about discussing this and that?" Or pick random conversation topics and saying like "Try discussing this." ... For example, if we were talking about food, keywords such as menu, restaurant, etc., would appear, and by clicking on those keywords, a list of related questions would be displayed. For instance, favorite dishes, least favorite dishes, the worst dish you've ever tasted, special dishes, dishes you've tried while traveling, and so on. (P4)

6.2.3. Challenges in Sustaining Technology-mediated Relationships

Korean LGBQ+ women encounter challenges when attempting to cultivate enduring and sustained relationships with the individuals they interact with at online dating technologies. Participants exhibit diminished motivation to actively address conflicts or seek middle ground with their interaction partners, largely due to the abundance of other potential partners at the platforms. Moreover, the interactions facilitated by the platforms are predominantly confined to romantic connections, which make participants difficult to envision the potential for various types of relationships. As a result, the inability to establish long-term and meaningful relationships prompts them to explore alternative avenues for forging connections, such as other social media or offline friendship networks, or leaves individuals trapped in a repetitive cycle of exiting and reentering.

1. Less motivated to address conflicts

Given the volatile nature of online connections, participants forwent addressing conflicts and instead opt to terminate the interactions with their online interaction partners. There is a perceived lack of incentives to invest effort into resolving disharmony with individuals met online. As P5 highlighted, this approach allows participants to simply avoid involving the burdensome negative emotions from resolution and easily leave chat rooms fraught with discord.

> *To be honest, I feel like I don't make much effort to compromise unless it's in offline situations. When it's offline, I tend to make an effort to find some middle grounds with other people, but online, there doesn't seem to be a reason to do so. So, I lean towards not compromising (in online dating). It's quite tiring but there's no need to try to align with that person (P5).*

Especially when faced with disparities in interaction goals, P7 found they had no way to deal with it but sever the ties and block the other. Likewise, P10, currently enduring the dilemma of how to adjust the difference of purposes of the interaction with the interaction partner, found no alternative other than abruptly terminate the connection.

> *While casually talking, she (the other person) asked me,*
> *"What's your purpose for using this app?". So, I answered*
> *"Oh, I'm looking for a relationship." Then she said she was*
> *looking for friends with benefits, so I ended the conversation*
> *saying "Well, I hope you meet someone nice." (P7)*

> *In those cases, there's no other way but to simply cut it*
> *off. Now I'm drawing a line to her (the other person) saying*
> *like "I hope we can be good friends." I am trying to establish*
> *just a friendship with her. ... Well, if she still doesn't*
> *compromise, then I guess it's time to end it. (P10)*

Coping strategies In the aftermath of unsuccessful conflict resolution and relationship dissolution, participants reported a pronounced tendency to swiftly engage in swiping in online dating platforms and search for new interaction partners. The vast pool of alternative users of online dating technologies enables these strategies. However, the abundance of available profiles facilitated a repetitive cycle of meeting and parting, wherein participants seldom approached each interaction with a serious mindset, knowing that there were numerous alternatives to connect with.

> *Even if we exchange messages on Kakaotalk, there's still*
> *no need to engage in arguments or go through complicated*
> *processes of compromise, once we start feeling uncomfortable*
> *with each other. We simply go to the dating apps and make new*
> *friends. It's easier to just block each other and meet new*
> *people. ... If I do so, it doesn't matter much because there are*
> *so many people out there. (P5)*

Therefore, some participants (N=6, P7, 9-10, 14-15, 17) displayed a pattern of promptly reentering the online dating technologies following a breakup, aiming to alleviate its' emotional aftermath through new interactions. However, the cycle of meeting and parting is still repeated in online dating platforms, which introduce users another experience of relationship dissolution. In turn, this strategy to overcome breakup by new encounters proved to be largely ineffective to mitigate the negative feeling such as fatigue, hurt, and skeptics and facilitate their recovery.

I have a habit of installing dating apps right after I broke up. It's not a good habit, I know. But I cannot help telling myself, "let's forget about it right away." As a result, I end up going to offline gatherings through dating apps, engaging in uninteresting conversations with unknown people I have no common ground at all, spending money and repeating this pattern. (Researcher: Does this pattern help you overcome the break-up?) No, not at all. It didn't help me at all. (P9)

One shortcomings of dating technologies is that they tend to accelerate the cycle of meeting and parting compared to heterosexual people's relationships. There have been many cases where I searched immediate gatherings right after I broke up, went to there and drank alcohol. But since I wasn't emotionally stable and prepared enough to meet new people, it often led to more problems and complications. That's why using online dating apps frequently lead to emotional and psychological issues. (P6)

To address individuals' commitment in interactions through online dating technologies, P3 and 8 desired an implementation of mediators to ensure the compatibility between matched users, such as AI recommendation system and personality-based matching mechanisms. They expected such matchmakers confirm their chemistry before engaging in conversations, which resembling the role of human mediators in traditional relationship development practices (Finkel et al., 2012). This approach is expected to allow participants to perceive each matched partner more special. P3 envisioned an additional matching system by artificial intelligence, as anticipating it to make a matching instead of her. She thought she can be confident to engage in conversations since the mediator convince the potential chemistry of them.

On Tinder, the technology ask users questions about how you would respond in certain situations between two options.Then it matches people who select the same options, increasing the compatibility between them. (P8)

If the AI or system recommends someone to me, I would tend to think that they might be good chemistry with me. It would give me a bit more motivation to engage in conversations with them. Somehow, AI has determined that our personalities align well, and that thought makes it feel like we have a special connection among all the other people in online dating. (P3)

2. Limitation of relationship types into dating.

Despite our participants' diverse motivations of interactions, participants claimed that the online dating technologies canalize their various intentions into romantic pursuits and confines other possible types of interactions. participants perceived the entire practices within the technologies are geared towards the purpose of dating. A predominant instance of this is the binary swiping interface, wherein users are required to make instant choices of "like" or "dislike" based on one's appearance, which affords participants to perceive the judgement is relevant to romantic purpose. As an example, P14 shared her experience of feeling pressured to initiate a deeper relationship, such as romantic one, with users who are matched with her since she already made a binary assessment of the other's appearance.

The overall atmosphere of the platforms, in which the romantic interactions are predominant, make participants restless and burdened of establishing every interaction into romantic relationships. Participants reported that when the interaction deepened to a certain level, usually when they meet the interaction partner offline first, they felt compelled to decide to whether or not to maintain a romantic connection immediately. To this end, our participants (P1-3, 6, 15, 17) felt pressure that they should look attractive to the other person and appeal to them in a romantic way since the interaction is made within the online dating platforms. P17 expressed her pressure on building romantic relationships immediately via online dating from the words urging her.

When you meet someone through dating apps, there can be a lot of pressure. There are typical rules and guidelines like, "On Zoe, if you want to date, you have to match with someone and meet offline within three days. You should start dating before meeting three times offline, or else it fizzles out." These are quite rigid. (P17)

Therefore, participants found themselves enforced to make immediate judgements and block any possible relationships but romantic one, even before reaching a sufficient understanding of the other person. This prevalent atmosphere within online dating platforms, significantly oriented towards immediate romantic connections, tends to be less inclusive to other dynamics of connections but romantic affair, such as platonic love and psychological attachments, which in turn discourage participants who identify as asexual, such as P7.

> *As an asexual individual who is not particularly focused on sexual relationships, it is hard for me to engage with the online dating technologies. (P7)*

> *In the past, I preferred other online communities or Twitter because there, we engage in conversations for a longer time. I could get to know others gradually in such media. However, in dating apps, people tend to push for quick offline meetings if I don't share photos. Even if we meet quickly, it feels more like drinking rather than having meaningful conversations, which can be a bit disheartening. I can't forget about it and keep going back to it, though. (P10)*

Consequently, participants encounter significant challenges in establishing sustained friendships through online dating technologies. The nature of these technologies, which promote binary and immediate decisions for dating, poses difficulties for users to abandon romantic expectations. As an instance, P10 noted that individuals she encounters within these technologies often either *"desire to go on a date with you or keep you on the hook within somewhere between friendzone to endzone."* In such circumstances, participants (P7, 16) have tended to employ no choice but to quietly sever the connection.

Coping strategies To maintain enduring friendship through the technologies, P1, 9-10 and 16 highlighted it is necessary to be disinterested in each other in romantic way and all of each party in connections need to be aware of that fact. Therefore, they employed the strategy of displaying detailed descriptions of their purpose and motivations for interaction at their profiles, emphasizing their desire to real friends without any romantic interests or possibilities. Notably, for P9 and 16, this approach has proven to effective in maintaining friendships avoiding any romantic feelings involved.
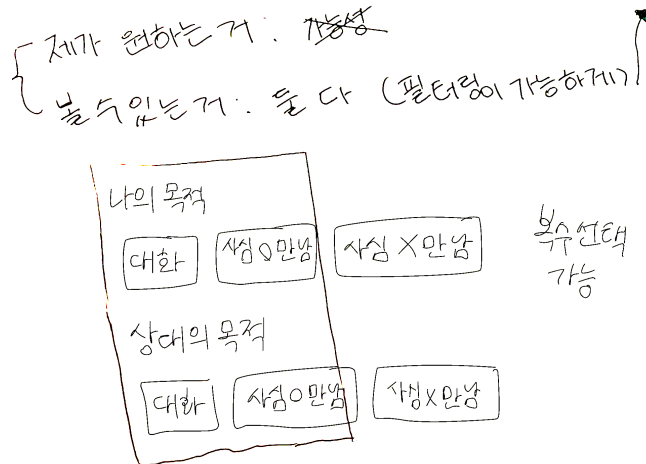
Figure 5. A sketch of purpose filtering system (proposed by P1). Users have the option to state their purposes of interactions and expectations on relationships, such as "just chatting," "casual hangouts (without romance)," or "exploring each other (with romantic interest)" on their profiles. There is also a filtering feature that allows users to see only the profiles of people who have selected similar intentions.

At some point, I became tired of the whole process of exploring someone's romantic intentions while treating each other with ambiguity. So, I decided to throw away all those conditions and actively sought someone to be real friends with. "Let's be genuine friends. Let's be best, best friends. You should not come with other (romantic) motives. Let's be true friends." I emphasized my intention in such a way, and eventually, I was able to make a really close friend. (P16)

In February, I was bored studying alone, so I looked for someone to study with at a cafe. I wrote on my profile, "I'm preparing for grad school, can speak English, and I don't want a serious relationship. I like certain kind of things, and since I study at cafes, let me know if you want to co-work or have a study group." I wanted the other person to clearly understand that I was looking for a friend. If I didn't specify my purpose, the others wouldn't know what I wanted exactly. (P9)
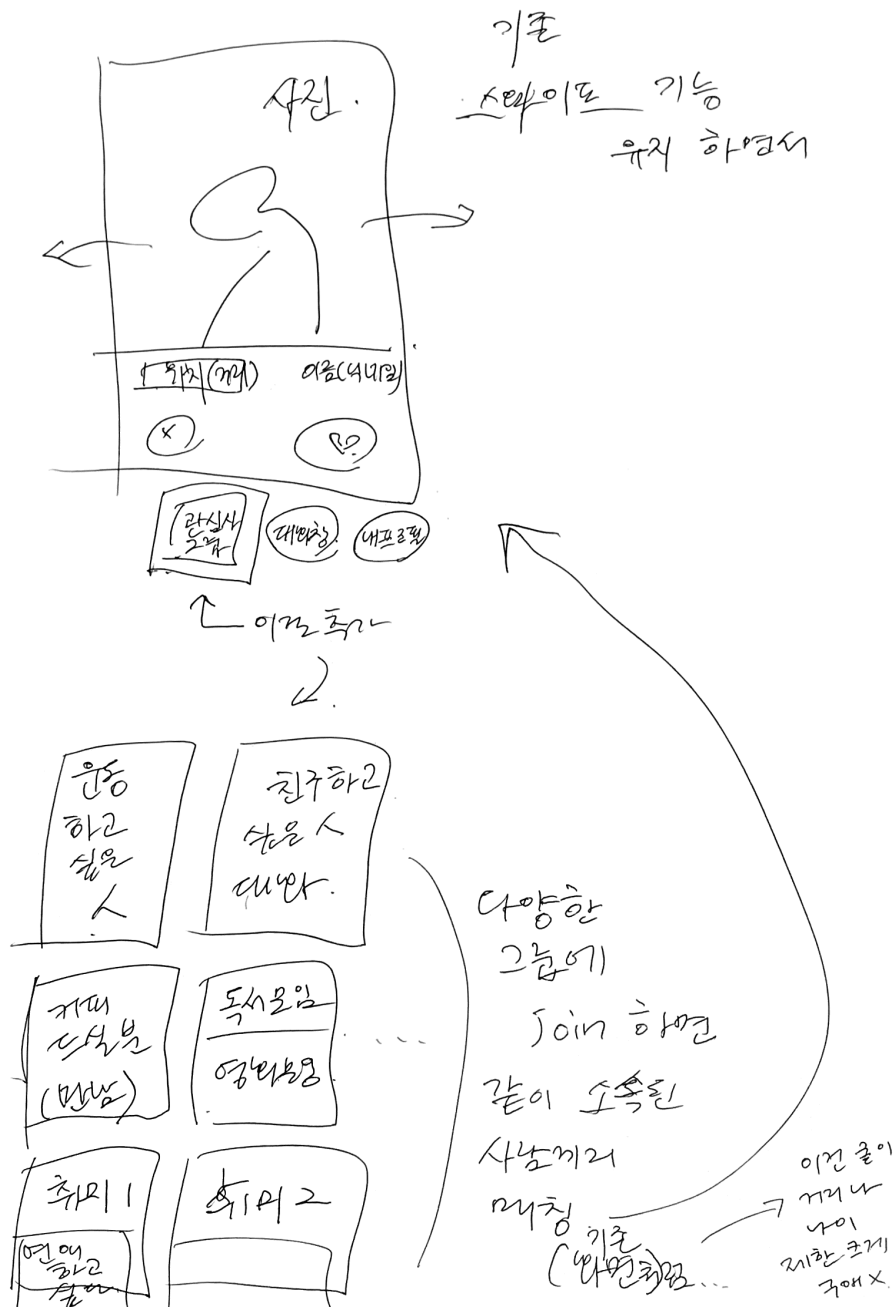
Figure 6. A sketch of group matching interface (proposed by P8). By adding the 'Interest Group' tab while maintaining the existing swipe function, online dating technology can connect users with groups based on their interests. By touching the tab, users can browse a list of various groups registered on the platform. When users select one of them to enter such group, a swipe interface appears again, enabling connections between members within the group.

Aligning with the aforementioned strategy of P9 and 16, a majority of participants (N=8, P1-3, 7-9, 15-16) expressed the desire for online dating technologies to provide means of distinguishing romantic purposes from other interaction goals. Moreover, P1, 3, 9, 15 and 16 proposed the expansion of interaction goal categories to incorporate one-time gatherings, profound friendships, hobby partnerships, or business collaborations. Even for romantic purposes, P7 suggested to specify classifications, such as seeking immediate dating, short-term sexual partnerships, and long-term relationships. Based on the desired interaction goals, participants expected the technologies to provide filtering mechanism and to make a match within users sharing same purposes (Figure 5). Notably, participants P2 and 9 expressed a particular need for interest-based categories, as they desired to participate in hobby-based clubs or communities (Figure 6).

> *Since I want to just socialize, it would be great if there were hobby-based categories. … Or categories for finding people to party or drink tonight. Even if people were far away geographically, it would allow the members of same categories to make chance to socialize someday. (P9)*

3. Cumulated experience of failures

Including challenges in sustaining friendships, participants have repetitively experienced difficulties in developing temporary interactions within the online dating platforms into long-lasting relationships, particularly a romantic relationship, which represent the predominant interaction goals of most participants. Among ten participants (P1-2, 7-8, 10, 12-16) who noted their primary purpose of use has been a romantic partnership, seven participants (P1-2, 7, 10, 12-13, 16) said that such purposes were seldom achieved through the technologies. Likewise, a part of participants (N=4, P3-4, 6, 11) have sought meaningful one-on-one relationships, encompassing both friendships and romantic relationships, yet half of them (P3-4) reported failing to achieve this goal.

These participants have employed the dating technologies for this purpose for 4.5 years on average, nevertheless, have never succeeded to relationship development and repeated short-term encounters through the technologies, shouldering the blame for the failure. As comparing their failure to other's stories of success, five participants (P4, 6, 10, 14, 17) mentioned the reason of perceived

failures of relationship building since they didn't make the conversation interesting, have enough passions in each interaction, or exert adequate effort.

> *I thought that it might be my problem that the conversation doesn't last long. I wondered if the reason why this person gradually stops responding properly is that I couldn't lead the conversation in an interesting way... I think I was not desperate in interaction enough. If I had been more eager, I would have initiated more conversations. (P14)*

Coping strategies Due to the cumulative experience of failure, participants exit from the online dating technologies. More than half participants (N=9, P1-2, 4, 6-7, 9, 11, 13, 16) ceased to use online dating technologies after learning that meeting people on other channels, both online and offline, had a much higher possibility of success to explore relationships and provided fewer negative experiences. After using the technology for half a year, P6 became disillusioned for the repetitive short encounters within the platforms and moved to Twitter and an online community of her university to explore interactions with other LGBTQ+ women. She cited the reason as the nature of such space *"where I can explore and communicate with many people without specifically purposing immediate relationship development"*. Likewise, P2 appreciated the environment *"where I can naturally interact with others"* with more commonalities than LGBTQ+ identity.

> *The application (online community based on universities) basically provides the most basic information that people in there are from the same college. This shared information creates many common topics for conversation. So, these days, rather than one-on-one matches on mobile dating apps where boundaries don't necessarily overlap, it seems that more people date or make friends through such communities that gather LGBTQ+ individuals in the same region or college. (P2)*

Similarly, P9 ceased to use the technologies for searching meaningful relationships as entering a choir club for LGBTQ+ women. She can get meaningful networks at the offline-based community, which have rarely been achievable at the online dating platforms (Figure 6).

Recently, I've found that meeting people through the online dating apps seems to be random. Even if I want to seek partners who engage in activities together, it doesn't always work. So, right now, I've joined a LGBTQ+ choir with some acquaintances. I enjoy being able to participate in activities with like-minded people who share similar interests and can have comfortable conversations about my queer identity. Going to local community gatherings and participating in choir activities with them is satisfying enough for me. ... The close relationships I have had are with people I met in college, in the choir, or through casual interactions on Twitter, rather than through dating apps. (P9)

This approach aligns with participants' expectation for future online dating technologies. P3, 6 and 12 suggested for the technology to provide one-to-group matching features to enable the online dating technologies to enhance the possibility of sustained relationship establishment. They anticipated such alternative matching systems can offer inclusive circumstance and open up the chance for a various type of interactions.

While the app introduces person-to-person connections, I think it would be beneficial to add a feature that introduces people to certain communities or groups as a whole. It would create a more inclusive space where can encompass various individuals. (P3)

I come up with the idea of having group chat rooms or similar spaces within the online dating technologies where multiple people can have conversations. ... As such, the online dating technologies could evolve into a community for LGBTQ+ individuals, more than just for dating. It would provide an opportunity for users to build friendships in a comfortable environment. (P12)

However, some participants (P3-5, 10, 17) struggling with the difficulties of relationship development via the online dating technologies continued to use it as endeavoring negative experiences, *"since this is the only way, nevertheless. (P17)"* Participants mentioned if they have alternative avenues to meet people other than the online dating platforms *"like heterosexual individuals who can meet men, I would do not these things (P17)"* or *"graduate the applications. (P10)"*

> *At the first time, I initially used the app for about a day, then uninstalled it because it didn't seem to be for me. A few days later I reinstalled it and use it for about 2-3 weeks. When I deleted the app, I realized that using the online dating applications was the only way for me to meet people, so I ended up reinstalling it. In that moment, I thought that I have to get used to the online dating, if I want to meet people. (P4)*

To mitigate the negative emotions associated the failures of relationship maintenance, a majority of participants (N=9, P1, 3-4, 8, 11-12, 14, 16-17) have had intermittent patterns of use of the technologies while repeating exiting and reentering. The intervals of exit and reenter ranged from weeks to months, but overall, participants exhibited a tendency to engage in swiping and interaction again after taking a break to heal the psychological hurts caused by repeated experiences of disconnection experiences.

> *I have a recurring cycle about the app use, where I go through such dissolution within the apps, taking a break from it due to frustration, and then getting bored and going back to using it again. (P11)*

> *The cycle seems to occur quite frequently, around every two weeks. For two weeks, I decide to use the app and for the next two weeks, then feel a sense of disillusionment and getting away from it and repeating the pattern for another two weeks. (P4)*

In other ways, P7 revealed that she had given up some expectations of a meaningful relationship in the first place while engaging in the interactions within the technologies.

I still keep using the app, not completely quitting it. However, I have let go of my expectations. When I first installed the app, I believed in destiny, but now I approach it considering it lucky if I happen to meet someone great and not dwelling on it if I don't. (P7)

6.3. Emerging Tensions in the Online Dating Ecology of Korean LGBQ+ Women

In this section, we present the analysis of the contemporary tensions experienced by Korean LGBQ+ women's community when online dating technologies are involved in their social interaction process. The participants encountered conflicts between familiar norms of social connection and newfound practices of interactions facilitated by the technologies. We begin with participants' self-disclosure practices within the platforms of which they undertake risks but perform inevitably. After that, we describe tension between inclusivity and safety, as participants perceive these values to be incompatible in online dating. Finally, reinforcement of normativity within the online dating ecology is presented.

6.3.1. Apprehensive but Inevitable Self-disclosure

The active utilization of online dating technology by participants has brought about notable privacy concerns stemming from specific technological features of the platforms. Several participants (P1, 3, 5, 16) expressed apprehension about the potential risk of unintended disclosure of their LGBQ+ identity, as the technology sends phone notifications at the outside , which could be visible to others. Therefore, most of participants used such systems only within their private space, such as home. Further, to circumvent the potential risk of personal information leakage, participants opted to use the technology without undergoing user verification (P3, 4) and take measures to deactivate the application or delete their accounts whenever they go outside (P3, 5, 16).

Similarly, a majority of participants (N=8, P1, 3, 6, 10, 12-14, 16) voiced concerns about their privacy due to features related to facial profiles and location-based curation. In the context of the online dating technologies, users are required to upload a profile photo displaying their face, after which the technology automatically tracks their current location and employs it to curate matches with other nearby users. In that matchmaking process, the distance between users is presented on their profiles, which provoking participants' concerns on privacy, in that their face and locations would be exposed to others in immediate vicinity. Participants expressed unease at this technological personal information leakage. Instances were reported by P6 and 13 where they encountered the facial profiles of offline friends on the platforms, individuals to whom they had not disclosed their sexual orientation to them before.

I once turned on the application on my college campus and encountered someone's profiles unexpectedly after a few swiping, who had a little acquaintance with me but not came out to me. Even though I haven't talked to her a lot before, I found out that she used the application. So, I thought I might be exposed to this person, too. (P6)

If I were the closet (who do not disclose their identities to others), I thought I wouldn't use this platform. I'm sure someone would be worried at displaying facial photos to random others. Actually, I have met my middle school friend on that platform. This could be an unintended coming out. (P13)"

In particular, the nature of online information intensifies participants' anxiety, in which information they shared through the platform is beyond their control. Participants are unable to know and regulate the extent to which strangers would view their facial photos at the profiles. For example, P3, 5 and 14 harbored concerns that the photos they shared through profiles and chats could be saved, disseminated, and abused without their consent, and feel anxious about the possibility of identity theft or sexual exploitation. These concerns made them reluctant to self-disclosure via the technology.

In spite of their stimulated concerns regarding self-disclosure, participants found themselves compelled to engage in it, particularly with regard to uploading facial photos, as the intrinsic romantic nature of the technology for dating forced it practically unavoidable; participants shared a collective understanding that sharing their photographs with other users was necessary to provide appearance-based information that significantly influenced the matching outcomes.

Although I was concerned about revealing my face at the profiles, I did open it. I thought I need to show my face to make friends or whatever whether offline or online … If someone don't display their face, it seems to be challenging for people who use the technology specifically for dating to go to meet the person without knowing their face. (P5)

Therefore, participants developed various strategies to protect their privacy while revealing pertinent details about themselves. P14, for example, opted to upload

her facial photos taken several years ago to prevent strangers from identifying her in the present. Likewise, P16 have refrained from uploading any photographs which have already been posted on her another social media platform. Unidentifiable photographs or images of non-facial subjects were also employed at the profiles. P8 and 16 chose to upload full-length photographs without face as their profiles to conceal their face but expose their hair length or fashion styles, which they perceived to be the minimum information that should be conveyed. P3, 10, and 17 posted pictures of things they like, such as landscapes, books, and pets, to convey their sensitivity. In summary, participants navigated the delicate balance between privacy concerns and the perceived obligation of self-disclosure by implementing these strategies.

6.3.2. Tension between Inclusivity and Safety from Potential Risks

Our participants expressed a clear understanding of the potential risks arising from using online dating technology, encompassing concerns such as the infiltration of non-LGBQ+ women, financial fraud, romance scams, identity theft, and the risk of unwanted outing. While romance scams were identified as the most prevalent risk, participants perceived infiltrators, who tended to be men in most experiences of participants, as the most dangerous threat. Six participants (P1, 7-8, 13-14, 16) shared personal experiences of encountering such intruders, which they described as frightening. For instance, P7 *"saw someone who said he was a man. He introduced himself as a cisgender heterosexual guy and said just came in the app to make friends."* On the other hand, the majority of other participants (P3-5, 9-10, 12, 15, 17) who did not have such experiences also revealed the anxiety of infiltrators which was shared and prevalent among LGBQ+ online dating users. In other words, this awareness of these perilous situations has spread through both online and offline channels, including cautionary posts from community-based forums in some dating technologies and risky experiences shared by offline LGBTQ+ friends.

To mitigate these potential risks, participants cultivated a rule of thumb to identify and filter potentially dangerous people in the anonymous space. For instance, they would scrutinize profile photos and exclude low-quality one or be cautious of individuals with significant age gap with them. Individuals who quickly required them to switching to other social media platforms also are regarded as suspicious. By closely observing the behavior and tone of unfamiliar individuals during in-app conversations, participants remained vigilant to detect implicit signals and made judgments based on a combination of these various cues. However, despite their

efforts, the effectiveness of these strategies was not always guaranteed, as noted by P7.

> *I've learned a few tricks to spot identity. If a girl's profile looks too perfect, like overly focusing on showing off her chest in unnatural way or having just a few generic words like "I want to make friends," it sets off alarm bells for me. It feels like someone is trying to deceive or steal someone else's identity. ... But here's the thing, the people who approached me to borrow money didn't have those typical profiles with pictures of so-called stunningly beautiful women. They had relatively normal-looking profiles. So, I didn't think they were trying to scam me, and I even had multiple conversations with them. That made me realize that I couldn't rely solely on those beliefs to distinguish fraud. (P7)*

The lax security is perceived as the most predominant cause of these potential risks. Among our participants, seven individuals reported the extremely low barriers to entry is the primary problem of online dating technologies, attributing this to insufficient authentication procedures that allow non-LGBTQ+ women to join the platforms (P2-3, 7, 10-13). Insufficient authentication methods, such as selfie approval and mobile phone number verification, fail to provide LGBQ+ women with a concrete sense of safety. Moreover, the lack of confidence in institutional interventions exacerbates the fear of these women that they would not be protected when victimized by such infiltrators. Participants expressed concerns that, even in cases of negative experiences or criminal activities, they would not receive adequate legal or institutional support due to their status as sexual minorities (P2-3, 9-10).

> *The major obstacles to use this technology is that it does not guarantee safety. Given that the law already is very biased, I think I'll not be protected as well as unwantedly come out if something bad happened after meeting someone here. It seems like a blind spot in the law. (P10)*

> *I think there is a significant gap when it comes to online dating for LGBTQ+ women compared to the experiences of heterosexual populations on Tinder. The unfortunate part is*

that even if something negative happens during online dating,
we don't have the legal recourse or the support of public
authorities enough to address the situation. That's very
frustrating that it definitely goes down to the shade. (P2)

To address these risks, participants emphasized the need for stronger entry barriers at the platforms by strengthening the user verification process. Six participants (P3, 7, 12, 13, 15-16) expressed the view that the verification systems should be more stringent, advocating for personal inspectors for profile photos rather than relying solely on AI-based methods. They believed that raising the hurdles would contribute to increase their comfort and trust to use the technologies.

However, while this approach stems from their fear based on encounters with infiltrators, the implementation of high barriers poses a potential problem of excluding subjects with underrepresented identities and bodies, such as transgender individuals. As current online dating technologies primarily rely on appearance-based screening systems to detect users' gender, such as facial selfie inspections conducted by humans and/or AI, women who do not conform to conventional feminine norms or transgender individuals who are not passed as female body may face obstacles in accessing the spaces. In fact, some of our participants (P2, 3) have personally experienced being blocked by these systems' arbitrary inspection mechanisms.

I tried to get verification once, but even though I sent
them a picture of my face with eyes, nose, and mouth, but it
didn't work. I was restricted. Since then, I have not used the
verification function. (P3)

These concerns underscore the importance of social matching technologies that offer inclusive and safe experiences simultaneously. Participants also acknowledged the inherent tension between inclusivity and safety, emphasizing the need for a delicate approach to boundary settings that effectively address potential risks without excluding any subgroups of potential users.

Women in online dating definitely experience a lot of
anxiety. But at the same time, I think there are marginalized
individuals in those minorities. Some identities and orientations
are less acknowledged while others are relatively more visible

and accepted. So, I think the anxiety that women actually feel,
and the invisible anxiety of exclusion are colliding currently.
These things should be discussed more. (P2)

(I think we should talk about) what kind of dating
technology would suit for this context. If we were in a culture
or society that fully embraced LGBTQ+ identities, the current
technologies might be fine. But here in Korea, where still is not
that inclusive, we need to figure out how to create a space
that's a bit safer without being overly closed, while also give
users a sense of inclusivity. (P3)

Some participants have raised concerns about the inadequate regulation of online dating technologies, which has exacerbated their fears of potential risks. Currently, certain Korean online dating platforms for LGBTQ+ women lack a blocking function for scam accounts and instead rely solely on reporting systems. Participants expressed dissatisfaction with the reporting process since it cannot afford immediate actions to prevent potential harm. They called for more proactive and systematic measures to obstruct scam accounts, such as user-reported blocking (P17) or the implementation of an IP address interception system (P13). Additionally, participants (P5, 13) underscored the need for technological interventions to address instances of harassment and inappropriate behavior, with automatically blocking individuals who engage in such behavior. In other ways, P2 suggested intensifying the current reporting system by connecting users who report risks with offline counseling centers within the technologies.

Participants also emphasized the importance of providing users with more information to assess the potential risks and make safety judgements. For instance, P2 proposed to implement a rating system where users rate each other based on their interactions, with the accumulated scores displayed at their profiles. As P17 envisioned, if one's rating falls below a certain threshold, the system could ban them from using the technology automatically. Similarly, P6 suggested to visualize a warning signal on the profiles of users who have been reported for inappropriate behaviors repetitively.

6.3.3. Reinforced Dichotomy Driven by Normativity

The norm in online dating technology reinforces the normative stereotypes. Among our participants, seven individuals (P1, 8-10, 12, 14, 16) shared their experience of exclusion from the people encountered with the words shared in the online dating platforms because their certain conditions could not match to the binary dichotomies of the mainstream of Korean LGBTQ+ communities. P12, for example, reported how she was shocked by the hate speech based on one's appearance within the platforms. P8, 14 and 16 have multiple experiences of rejection because their hair length was often perceived as short even though they did not recognize it before.

We found the gender-normative stereotypes are reinforced in online dating technologies, which foster exclusionary norms. Among our participants, seven participants (P1, 8-10, 12, 14, 16) shared their experiences of being excluded from individuals they encountered on dating platforms since they failed to meet to mainstream categorization prevalent within LGBTQ+ women's online dating. For instance, P12 expressed the shock of encountering hate speech based on appearance within the platforms. P8, 14, and 16 confessed that they have multiple experiences of rejection because their hair length was perceived as short, regardless of their self-perception about hair styles.

> *Before I started online dating, I never really thought of myself as being categorized as a "short-hair girl." But then, when I mentioned having a bob style, some people actually responded saying that I should have a more feminine vibe in my hairstyle not to be classified as "short-hair girl." It was honestly quite ridiculous. (P16)*

This categorization is rooted in appearance-oriented dichotomies. P16 described a peculiar preference within the Korean LGBTQ+ women's culture represented in online dating platforms, for long-haired women or those conforming to a "normal style" (i.e., who looks like heterosexual women and not readily distinguished as LGBTQ+), while exhibiting disdain for short hair or an "obvious butch" style (i.e., who displaying masculine fashion and traits and easily identified as butch lesbian). Although P16 had not previously identified herself as either "normal style" or "obvious butch," she was inadvertently labeled and rejected as "short hair" by other users who assessed her hair style as short and masculine. The expectation associated with short hair is to exhibit a masculine wearing and behavior and serve traditionally male roles in sexual interactions.

It felt as though I had walked into a butcher's shop. The whole scene was truly shocking. It reminded me of the wedding information market, where people would list out their preferences and conditions for everything, from body shape and hair length to smoking habits, where they lived, and even their preferred sex positions. I couldn't help but think, "Seriously?!" (P16)

P15, who has been actively involved in online social media and communities for Korean LGBTQ+ women for 12 years, noted that this culture of harsh conditioning and judgment based on appearance-oriented keywords has emerged recently. She perceived the contemporary LGBQ+ women vigorously have evaluated and excluded others based on the extent to which their keywords align with their preferences than before.

In the past, when I was involved in "this side (a slang implying being a LGBQ+ among Korean LGBTQ+ communities)" before, I didn't really define or limit myself to a specific type of relationship. I simply met people, went out with some of them who were in good moods then figure things out as we went along. Thus, my types kept evolving. But nowadays, it feels like everything is too rigidly defined before encounters, like labeling and being labeled as a "giver (a slang referring who does not want to be touched during sex among Korean LGBTQ+ women's communities)" or "taker (a slang referring who are opposite to "giver"). If someone has short hair, it becomes difficult to be accepted in certain social gatherings. ... In the past, I enjoyed random call with other women within online communities, and they would connect with me because they were interested in the chat too. It led to discovering many interesting people through these spontaneous connections. However, now it seems like everybody say things like, "I'll only call you if your hair is long enough, otherwise, I'm not interested." or vice versa. Even if someone could potentially be a great friend, they can get filtered out based on these superficial labels. (P15)

Most of all, women (in online dating platforms) are too strict. There are so many things that the people on "this side" assess, and as much as that, I become picky too when I use the app. In natural encounters, I used to meet people first and then consider our compatibility. If she was nice, we would work on building a connection. But in online dating, I find myself making quick judgments and cutting things off in advance, thinking, "This is not good, that is not good." After that, it feels like aren't many people left who meet those strict criteria. (P13)

P13's experience sheds light on a possible explanation for these dynamics, as she became calculating after using online dating technologies. These platforms saliently display users' photographs, showcasing their faces, body shapes, and styles, thereby prompting users to prioritize these physical attributes as the primary information for engaging in interactions with other women. Additionally, the binary swipe mechanism employed in these technologies compels participants to classify other users dichotomously as either "liked" or "disliked." Consequently, participants find themselves urged to make judgments based solely on visual attractiveness in order to initiate any connections. This aligns with previous research that has highlighted how mundane activities of profile checking, within social media platforms facilitate the normalization of such screening practices (Gangneux {Gangneux, 2021 #579@@hidden}, 2021). Some participants expressed the internal conflict they have encountered between the values they appreciate in initiating connections with other women and the prevailing norms of the online dating practices.

Whether we would have a good conversation or not, I think we need to meet all the preferred conditions of each other's appearance to start talking in the dating space. (P16)

I'm a person who has to keep talking to have a good feeling to someone. But if I want to start conversations on a dating app, the other person has to be attracted to me (for mutual matching) by a visual looking of me, before she has a conversation with me. It's frustrating. (P10)

Within this culture, participants who exist in the grey area of binary gender norms reported their experiences of facing unwanted normative expectations or repetitive rejection. The participants have exposed constantly to demands on conformity to these normative codes or failure in interaction initiation due to these criteria. This urged our participants gradually came to describe themselves according to those stereotypical gender roles. Ultimately, they learned that conforming to these norms was more successful and *"sold well (P10),"* despite burdened by the realization of *"being stuck myself in such frame. (P16)"*

> *Since people like certain kind of things, I become to appeal such atmosphere. For example, let's say I want to appeal to someone identifying herself as "long-hair femme". But I can't cut my hair short because of my job. Then, I might be going to work out a lot and take pictures of my muscles that are pumped up. Or I would wear masculine styles and try to appeal my long and big hands. Actually, I don't like to divide people binary. "Giver" can be cute, and "Taker" can be strong like Zarya (a game character from Overwatch). But it feels like everyone is participating in role-playing in relationships. (P10)*

Chapter 7.   Discussion

This study presents the first investigation into social interactions of Korean LGBQ+ women via the online dating technologies. By exploring their experience, we aim to not only shed light on the newfound avenue of interactions among these populations, but also uncover the potential opportunities, challenges, and tensions of these technologies. In summary, we find the online dating technologies provide prominent opportunities for LGBQ+ women in Korea to access the expanded types of interactions immediately, while enabling the recognition of presence of other women within secure online space. Our findings also identify the substantial challenges the LGBQ+ women encounter when they seek to social interactions through these platforms. When attempting to initiate interactions with the encounters, these women face lack of richness in information about potential matches and rarely initiated conversations. Even when interactions are initiated, frequent ghosting, limited self-disclosure, and repetitive conversations undermine their motivation to engage fully. Consequently, these women experience significant challenges when they aim to develop and cultivate sustained relationships through the platforms. Their struggles to address conflicts and maintain various types of connections within the online dating sphere often result in a cycle of short-term encounters and accumulating negative experiences. As a response, our participants have developed and employed strategic behaviors to mitigate these challenges. In the following sections, we situate the findings within the existing literature on online dating technologies and social networking among LGBTQ+ individuals. Additionally, we will discuss how this research contributes to the inclusive technology design for this population, with practical design implications.

7.1. The Necessity of Online Secure Space for LGBTQ+ Women in Closeted Society

Our findings indicate that the online dating technologies serve as a significant avenue for interactions among the LGBQ+ women in our sample, supplementing their existing offline networks and other online communities where they have sought connections with other women. The majority of our participants, with the exception of three, already have various avenues to interact with LGBTQ+ women through offline friends' networks, LGBTQ+ clubs at universities, Twitter, online forums for their university's students, and social media for LGBTQ+ women. Although they have involved in such communities, our participants expressed their initial motivation for using dating technologies was to establish relationships, both romantic and friendship, as they felt limitations in available ways to meet other women. These findings imply that the advantage of accessibility, immediacy, and variety of interactions the online dating technologies provided are highly valued by the sampled women in seeking connections with others. This is particularly significant for participants in rural locations, where opportunities to encounter and engage with broad LGBTQ+ communities are restricted due to low visibility in such areas. They valued the novel accessibility afforded by online dating technology, which they couldn't achieve previously. This is echoed with prior literature on online dating technologies (Finkel et al., 2012), which emphasized that the adoption of online dating technologies offers prominent advantage of unprecedented access to potential partners, particularly for individuals who may face limited accessibilities. LGBTQ+ women in conservative societies is a notable example of such individuals, as they often have restricted avenues for developing relationships with other LGBTQ+ individuals. Previous studies have reported these populations' strong motivation to use dating technologies, regarding their difficulties in forming such relationships in their daily lives due to the small size of their social circles and pervasive discrimination (Cui et al., 2022).

Furthermore, our findings also highlight the online dating technologies construct a perception of secured online space for LGBQ+ women, where the only these women would be expected to enter in. In line with prior work illustrating the critical role of online dating technologies as a space for identity formation (Cui et al., 2022; Hardy & Lindtner, 2017), our sampled LGBQ+ women can comfortably realize the existence of diverse LGBTQ+ populations and experiment with their identities and sexualities within this perceptually fortified space. Through iterative exposure to performances and negotiations of same-sex attraction, they develop self-confirmation and a sense of belonging, which they can leverage as valuable resources

to navigate their lives as sexual minorities in conservative societies. These findings resonate with prior literature on the supportive functions of online dating technologies, highlighting their ability to create secure spaces for LGBTQ+ populations and establish a sense of intimacy and connectivity with the broader LGBTQ+ publics (Albury & Byron, 2016; Chan, 2021; Choy, 2018). Additionally, we observed that enhanced visibility on these platforms contributed to a heightened recognition of the physical existence of other LGBQ+ women in close proximity. Prior studies also have reported that online dating technologies can influence perceptions of physical space by hybridizing offline spaces with the queer-friendly online dating sphere with "search nearby" function (Miles, 2017, 2021; Pym et al., 2021). These empowering roles of the technologies shed light on the necessity of constructing secure spaces for LGBTQ+ populations, particularly within closeted societies such as Korea, in order to provide emotional support for individuals in these challenging environments.

7.2. Rebuilding Contexts in Interactions by Mediating Community

In society with high stereotypes and stigmatization of LGBTQ+ populations, the typical process and dynamics of online interactions facilitated by the online dating technologies can conflict with the privacy concerns of LGBTQ+ users. Prior work has shown that lesbian women in Korea place relatively significant value on a sense of intimacy when disclosing and discussing their identities and orientations, given their heightened concerns about discrimination, harassment, and violations compared to other LGBTQ+ subgroups in same society (Korean Gay Men's Human Rights Group, 2014). However, the current online dating systems, largely employed by these women to connect with others, fail to foster a sense of intimacy between individuals due to limited richness of information and a superficial encounter.

Information provided by the technologies is perceived to be insufficient to develop a deep understanding of others and build a sense of intimacy. The profile interfaces of existing dating technologies for Korean LGBQ+ women typically exhibit photographs, nickname, age, interaction goals (i.e., friendship, dating, relationship), interests, appearance details (e.g., eye and hair colors, body shapes, piercings, tattoos), and whether the user drinks or smokes. Additionally, participants often augment their profiles with descriptions including emoji, occupations status, personality type, zodiac sign, and values related to queer feminism, which are not provided as predefined profile categories. Even when users have the option to select categories for interaction goals, appearance, and interests, they frequently write down additional details in their bios when they feel the predefined categories are inadequate to convey important aspects about themselves. This limitation arises from users' sense of being restricted in describing their personal traits and preferences, which ultimately influence the matching outcomes within the current structure and framework of online dating systems (Pidoux et al., 2021). However, this approach still falls short in capturing the richness of subjects' personal characteristics and life trajectories in the platforms. Despite of such self-augmented profiles, the sampled LGBQ+ women still reported multiple challenges in initiating, engaging in, and sustaining interactions through the technologies due to the lack of richness in available information, such as lacking trustworthiness, repetitive short encounters, and demotivation in connection maintenance, claiming the need for more specific and detailed variables in the profiles.

However, addressing these problems caused by the shallowness of information in profiles is not as simple as adding more variables. Merely increasing the number of variables can engender cognitive overload and memory confusion,

overwhelming users with an excessive range of options (Pidoux et al., 2021). Moreover, this approach could facilitate the risk of diminishing the subject's richness and promoting the objectification of the decision-making process. Especially for populations with high privacy concerns, the addition of more information to be disclosed to unknown others can trigger these concerns. Therefore, the selection of variables in online dating profiles should involve a delicate balance between the abundance of information and its quality and effect in facilitating connections (Pidoux et al., 2021).

On the other hands, our findings also highlight the structures of the technologies, including lack of rich information on the profiles except facial photographs and inducing immediate binary judgement on appearance, orient the available resources within the technologies to one's physical attractiveness and intensify the romantic nature of online dating. Multiple prior work shares an understanding of the this nature of online dating, focusing on the swiping practices guided by the technologies (Carlson, 2020; Choy, 2018; David & Cambre, 2016; Illouz, 2007). The binary swiping feature eliminate contextual information exchange between individuals, such as one's mood, atmosphere, daily behaviors, tone, and manner, as well as the diversity of the subject's purposes of interactions. The deleted contexts in relationship establishment transfer the process of relational decisions as a form of partner shopping, deciding to buy or not. As a result, the "hook-up culture (Cama, 2021)" in online dating induces limited relational outcomes and frustration from endless trial-and-error (Finkel et al., 2012; Stinson, 2010). This resonates with our findings that the sampled women challenges in limitation of the diversity of possible relational types, especially friendships, and faces accumulated failures in long-term relationship establishment at the online dating sphere.

To support the sustainability of interactions, online dating technologies should mediate a rich contextual information for these women, which aids in relational decision-making. For instance, simply by adjusting the presentation order of information in profile interfaces such that text descriptions comes first than facial photographs, it is possible to mitigate potential biases based on appearance, including racial biases (Ma & Gajos, 2022). Similarly, as suggested by our participants, prompting discussion topics to the messaging interface of online dating technologies has been shown to enhance female users' decision-making in evaluating compatibility with potential partners and determining whether to engage in further relationships (Zytko et al., 2020).

Furthermore, our participants' current practices and expectations shed light on another approach to support sustained interactions among LGBQ+ women. They

mentioned they began to seek social gatherings when they grew weary of repetitive short-term interactions within the online platforms and proposed the implementation of a one-to-group matching system that would provide access to spaces where they can engage with others in a more natural manner. These women prefer situations that involve one-to-many interactions, as it alleviates their burden of self-disclosure inherent in one-on-one communication and provides opportunities to carefully evaluate potential matches within a natural and socially enriched context. Beyond the realm of dating, their desire to interact with people who share similar identities but possess diverse backgrounds, such as varying generations, has accounted for the predominant focus of LGBQ+ women's expectations for community activities (Dawoom, 2021). To support such needs, the technologies can facilitate systematic matchmaking between individuals and various groups and communities of LGBTQ+ women, such as hobby-based small clubs, location-based spontaneous gatherings, and daily mates for special events like Pride. This approach could be implemented by utilizing a nested structure within individual profile interfaces, linking them to the profile pages of other members within the respective groups or communities (Zytko & Devreugd, 2019). By not only mediating interactions between individuals but also shaping the environment in which they can freely explore and engage with multiple others, a valuable opportunity arises for these women to assess trustworthiness and cultivate intimacy based on abundant socio-contextual information.

7.3. Systematic Interventions for Inclusive Online Dating Technologies among LGBTQ+ Women's Community

Our findings highlight a necessity of profound discussion on the matter of inclusivity and safety within online dating environments for LGBTQ+ women. Our participants express concerns the existing online dating technologies are not secure enough to safeguard against the potential harms, such as scams, identity theft, infiltration, sexual violence, and unexpected disclosure of one's sexual orientation. They underscore the shortcomings in user verification and reporting mechanism, as well as inadequate blocking systems, which contribute to increased fear and anxiety among these women regarding potential risks. This resonates with prior work which indicating the simplicity of verification and reporting processes can amplify users' perceived risks and concerns particularly related to the infiltration of strangers (Cui et al., 2022; Smith, 2022).

To mitigate the challenges, participants emphasize the importance of implementing stringent entry barriers and reinforcing user verification through voice recognition, facial photographs, identity codes, or cellphone numbers with the aim of excluding non-female individuals. This approach is not new one. It has alignment with the conventional methodology employed by Korean (LGBQ+) women's communities to foster a sense of security. In sociocultural contexts like Korea, where discussions regarding diverse identities and gender discourse have been sufficiently contested or matured, ensuring safety within communities often relies on raising entry barriers and concealing the exclusive spaces into shades to minimize discrimination and harm from society through the practice of blocking (Youn, 2013). Likewise, in the current era, the resounding voices on social media recounting experiences of sexual harassment and discrimination have gained considerable prominence, especially among young feminist women in Korea. Ironically, this heightened exposure to such statements has paradoxically led to a greater awareness of the widespread occurrence of gender violence, evoking escalated levels of anxiety and fear among these young women (Song, 2021). Consequently, a distinctive and pronounced aspiration has emerged within this generation, driving an avid desire to thoroughly identify strangers and create exclusive spaces as a means of shielding themselves from the pervasive and inescapable threats of gender-based violence (Song, 2021). However, the extension of criteria for exclusion to reclaim a sense of security must be carefully considered since it may inadvertently exclude transgender individuals due to the binary gender-based nature of such exclusionary classifications (Costanza-Chock, 2020).

Nevertheless, our findings suggest an alternative perspective that highlights profound resources to enhance the sense of security for these populations. According to our interview data, participants feel safe and included when the systematic and technological guarantee of gender identity and sexual orientation diversity is provided. For instance, individuals who identified as bisexual encountered hate speech or rejection without adequate regulation within the online dating sphere felt unwelcome and excluded from the space, leading them to perceive the technologies as lacking inclusivity and safety. This fear of exclusion constitutes a major obstacle for individuals with underrepresented identities, such as bisexual, queer, asexual, transgender, and non-binary, in their efforts to connect with broader LGBTQ+ communities (Dawoom, 2021). Conversely, our findings also indicate that when online dating platforms provide a diverse range of identity and orientation options, including not only lesbian and bisexual but also asexual, pansexual, nonbinary, and transgender individuals who are often underrepresented in online contexts such as dating platforms and communities (Cho, 2022; Ferris & Duguay, 2020; Feuston et al., 2022), participants reported a simultaneous sense of inclusiveness and safety. This chimes with previous work highlighting how experiences of identity acceptance in intimate networks positively impact the optimism of lesbian and bisexual women in Korea (Korean Gay Men's Human Rights Group, 2014). In essence, the systematic representation of diversity can contribute to the establishment of a sense of security without excluding minorities.

As such, our findings underscore the needs for inclusive and secure design of online dating technologies. We observed that LGBQ+ women in our sample have cultivated their own tactics to detect and avoid risky individuals based on implicit clues, such as one's way of talking. However, these self-developed strategies do not guarantee the exacting prevention of all unpleasant and hazardous situations within the online dating sphere. Therefore, technological interventions can play a crucial role by providing explicit cues to support decision-making pertinent to safety. In our semi-structured interviews, participants envisioned the idea of incorporating supportive data for safety assessments. For example, the technology can employ warning symbols or colored markers to indicate individuals who have accumulated a significant number of reports or blocks due to their disregarding behaviors. By providing explicit reference data of this nature, the technology can supplement pre-interaction decisions and offer users the possibility of safeguarding themselves against potential risks.

Associated with such reference data, the technology can provide the post-hoc interventions when users at risks request protection. Our findings draw attention to the need for intensification of reporting and blocking systems within the online

dating technologies, which repetitively required by the sampled women. The technology can saliently display buttons for reporting and/or blocking, and actively prompt users to report or block individuals who exhibit suspicious behavior, when someone share dubious links or harassing photographs in chat. In that regard, mediators, such as artificial intelligence, can be implemented to actively detect discomfort of users during in-app conversations (Zytko & Furlo, 2023).

Moreover, the technology can outsource partnerships with specialized institutions, such as legal agencies, hospitals, or LGBTQ+ consultation centers, to offer community-based care in dealing with scams, harassment, or violence (Liu, 2017). Previous research has highlighted the lack of social awareness regarding harassment or violence targeting LGBTQ+ individuals, leading victims to conceal their harm and impeding appropriate actions to address and recover from such damage (Korean Gay Men's Human Rights Group, 2014; NHRC, 2014). This chimes with our data presenting that the fear against potentially dangerous strangers is amplified by the anxiety of being institutionally and legally unprotected from online dating harassment as sexual minorities. In summary, online dating technology should establish an organized and proactive user protection system to instill a sense of security among users with diverse identities within the digital space.

Chapter 8.   Limitation and Future Work

While this study offers ample findings and discussions on the support of social interactions among Korean LGBQ+ women through online dating technologies, we have several limitations that should be acknowledged. First, Due to the limited demographics of our sampled participants, our results may not be generalizable to LGBQ+ women below the age of 18 (although some interviewees mentioned using the technologies at a younger age) or above the age of 28, as well as those residing outside of Korea. Furthermore, it is worth to note that a considerable portion of our sample, nine out of seventeen participants, were recruited through online anonymous forums for university students in metropolitan areas of Korea. As a result, it is likely that a majority of our participants resided in the capital city and held higher education levels, though some of them mentioned during the interview that they had lived in rural areas before attending university. Although we did not possess precise information about the participants' socioeconomic backgrounds, as we refrained from explicitly inquiring about their geographic location or educational background during the recruitment process to ensure their privacy protection, it is important to recognize that our findings may not be entirely representative of LGBQ+ women from diverse socio-economic backgrounds. To enhance the generalizability of our findings and propose more inclusive technological designs for these populations, future research should aim to collect online dating experiences from individuals with diverse backgrounds, including different age ranges, socioeconomic backgrounds, and other conservative cultural contexts. Second, it is important to acknowledge that all participants in our study reported their gender identity and sexual/romantic orientation as lesbian, bisexual, pansexual, queer, and/or asexual women, including those who identified as nonbinary but closer to the feminine spectrum. Consequently, our findings may not fully incorporate the perspectives of other LGBTQ+ women, such as transgender and genderqueers. To address this limitation, future research should encompass a variety of identities and orientations to examine the challenges of self-disclosure and inclusivity faced by individuals with underrepresented identities and orientations while they are pursuing interactions within the online dating sphere. Despite these limitations, we believe that our findings offer significant insights into the landscape of social interaction practices and perceptions via online dating technologies of non-Western LGBTQ+ populations.

Chapter 9.   Conclusion

This thesis explored how 17 Korean LGBQ+ women participate in social interactions with other women via the online dating technologies and delineate the opportunities, challenges, and newly emerging tensions the technologies bring into the Korean LGBQ+ women's communities. Though the technologies enhanced the accessibility, immediacy, and diversity of social interaction aspects among these populations and provided a secured space for identity exploration and empowerment, multiple challenges also are identified in their initiation, engagement and sustain of interactions. In particularly, these LGBQ+ women faced accumulated experiences of failures in sustaining temporary interactions into enduring relationships. Furthermore, tensions between safety and inclusivity are newly identified. Based on these findings, we discuss design considerations for safe and inclusive online social matching technologies for these populations. With this work, we hope to provide an ample understanding of social interactions practices and perceptions among LGBTQ+ individuals and benefit the future work of designing supportive social interaction technologies for these communities.

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한국 성소수자 여성의 온라인 데이팅 기술을 통한 사회적 상호작용 경험 연구 :기회, 도전, 긴장을 중심으로

박서라

서울대학교 대학원

언론정보학과

오늘날 한국 사회에서 여성과 성소수자의 이중 부담을 겪고 있는 성소수자 여성은 여전히 심각한 사회적 낙인과 고정관념으로 인해 오프라인 공간에서 자신의 정체성을 공개적으로 표현하고 사회적 관계를 구축하는 데 있어 상당한 도전에 직면해 있다. 따라서 최근 10 년 간 한국 사회에 새롭게 등장한 온라인 데이팅 기술은, 이 여성들 오프라인 공간에 산재하는 혐오와 위협을 우회하여 퀴어 공동체와 관계를 맺을 수 있는 통로로서 각광 받아왔다.

그러나 이 기술이 해당 사용자 집단에게 구체적으로 어떤 기회와 도전을 제공하는지에 대해서는 아직 학술적으로 탐구된 바가 없다. 나아가 성소수자 여성들 간의 기존 사회적 상호작용의 규범, 실천, 맥락에 이 새로운 기술이 도입됨으로써 발생하는 긴장에 대해서도 논의되지 않았다. 최근 해당 공동체의 상호작용과 관계 형성에 있어 온라인 데이팅 기술의 중요성을 고려할 때, 해당 기술이 매개하는 사회적 상호작용 경험에 대한 이 여성들의 인식과 실천을 이해하는 것은 중요하다.

따라서 본 연구에서는 레즈비언과 양성애자를 포함한 다양한 성 정체성과 성적 지향의 한국 성소수자 여성 17 명을 대상으로 반구조적 인터뷰를 실시하였다. 그 결과, 온라인 데이팅 기술은 한국 사회의 성소수자 여성들이 다양한 즉각적 상호작용의 기회에 쉽게 접근하고 퀴어 공동체에 대한 소속감을

기를 수 있는 안전 공간으로서의 역할을 수행하고 있었다. 반면, 해당 기술은 개인 간 유의미한 관계 형성에 요구되는 사회문화적 맥락을 축소하고 이 소수자 집단의 프라이버시 우려를 강화함으로써 이들이 상호작용을 시작하고, 참여하고, 지속하는 데 있어 상당한 도전을 야기했다. 따라서 온라인 데이팅 기술을 통해 반복적으로 관계 발전의 실패를 경험한 성소수자 여성들은 온/오프라인에서 서로 간의 네트워킹을 위한 다른 대안을 찾아 나서거나, 대안을 찾지 못하고 해당 기술로의 이탈과 재유입을 반복하고 있었다. 또한, 온라인 데이팅 기술의 특정 어포던스는 안전에 대한 우려를 강화하거나 정상성 규범을 강화하는 방식으로 작동하여, 결과적으로 성소수자 여성 공동체 내에 포용성에 대한 요구와 질문을 동시에 발생시켰다.

이러한 연구 결과를 바탕으로 한국 사회의 맥락에서 성소수자 여성의 요구에 맞춘 사회적 매칭 기술에 대한 시사점을 종합적으로 제시하였다.