

Beyond the Swipe: Gender Diversity and Interactions in Dating Apps

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Abstract

Relationships are related to many aspects of well-being and represent key dimensions of the life course. However, transgender, non-binary, and gender diverse (TGD) people face particular obstacles in partnering markets. As dating apps have become a central space for meeting romantic partners, this research examines how TGD individuals navigate these platforms. Using behavioral data from 34,139 users of Zoe, an LGBTQ* dating app for *queer womxn* in the United Kingdom (2023-2025), we investigate two key questions: Do TGD users show different levels of engagement compared to other groups? And do they receive different returns from their engagement in the form of matches? Negative Binomial regression models reveal that TGD users engage substantially more with the platform, with trans women giving approximately three times as many likes as women, and non-binary and other gender-diverse users also showing elevated activity. However, this heightened engagement does not translate into proportionate matches. Ordinary Least Squares regression and Coarsened Exact Matching analyses demonstrate that TGD users experience systematically lower like-to-match conversion rates, even after comparing with similar users in terms of age, profile characteristics, and liking patterns. These findings reveal significant inequality in the digital dating market. As online platforms are the primary sphere for modern partnership formation, this "matching penalty" for TGD individuals likely acts as a structural barrier in the earliest stages of partnering processes. This digital stratification may directly contribute to observed demographic disparities, such as lower percentages of TGD people in registered partnerships, and consequently perpetuate long-term disadvantages in well-being.

Introduction

Dating and relationships are important parts of life for large parts of the population, and are related to many facets of well-being (Reczek, 2020; Rodríguez Sánchez & Boertien, 2025). Understanding differences in dating experiences is therefore an important goal towards understanding inequalities in well-being. In this regard, people who challenge norms in society might experience specific obstacles when dating. In this article, we focus on people who challenge binary cisgender norms and aim to better understand their dating experiences. We use data from the LGBTQ* dating app Zoe to understand how gender diversity relates to activity on dating apps and the number of matches people receive on apps.

Existing research has shown how transgender, non-binary and other gender diverse people (TGD) experience particular challenges when dating. For instance, a Canadian study showed how only a small share of the population stated to be open towards dating a transgender person (Blair & Hoskin, 2019). In addition, TGD people have to deal with more violence and safety-issues once dating than binary cisgender individuals (Webster et al., 2025). Online dating has become the most important way in which certain marginalized groups date and find partners (Rosenfeld & Thomas, 2012; Sironi & Kashyap, 2022). Even though obstacles experienced by TGD people are present in both offline and online dating, online dating can make it easier to find dating partners and to block or ignore people who behave in a hostile manner (Sharabi et al., 2023). Some of the issues related to online dating, such as the possibility to disclose an identity or feeling safe, are arguably less present in apps specifically designed for dating among LGBTQ* people (Fernandez & Birnholtz, 2019; Sharabi et al., 2023).

One of the questions that arises from these observations is the extent to which TGD people experience obstacles within LGBTQ* dating apps. To our knowledge, there are no quantitative studies that have aimed to quantify how app use and the number of matches

received differ between TGD and binary cisgender people (both in general, nor specifically within LGBTQ* dating apps). To fill this gap in the literature, we use data from the app Zoe which is designed for use by primarily LGBTQ* women. We aim to answer the following questions: Do transgender, non-binary and other gender diverse people show higher levels of engagement in LGBTQ* apps as compared to cisgender binary women? And, do TGD people receive higher or lower “returns” from engagement in the form of matches compared to cisgender binary women?

On the one hand, the opportunities that LGBTQ* dating apps provide can increase the engagement of TGD people in such apps, as alternative ways of meeting people can be less available or unsafe (Griffiths & Armstrong, 2024; Webster et al., 2025). On the other hand, TGD people also report unpleasant and hostile experiences within LGBTQ* dating apps (Fernandez & Birnholtz, 2019; Sharabi et al., 2023), and even though more LGBTQ* people are open towards dating transgender people, large shares also are not (Blair & Hoskin, 2019). In addition, LGBTQ* dating apps can limit the available options of potential dating partners. This can discourage TGD people from engaging with LGBTQ* dating apps, or lead to lower “success rates” in terms of matches they receive. An important question is also to what extent these processes differ between transgender, non-binary and other gender diverse groups. An issue about which there is very little research beyond a few studies on the challenges that transgender women experience compared to transgender men when dating (Blair & Hoskin, 2019; Taylor, 2022).

To look into these questions and issues, we use data from Zoe, a dating app for queer womxn, collected between January 2023 and June 2025. The dataset includes detailed user-level information on gender identity, sexual orientation, age, location, and profile characteristics (such as photo count, bio completion, and verification status), as well as behavioral indicators capturing user engagement (number of likes given) and outcomes (number of matches received). These variables allow us to analyze both activity levels and returns to engagement across gender groups. We employ count data models, specifically

Negative Binomial regression, to examine engagement patterns, and Ordinary Least Squares (OLS) models to assess the like-to-match conversion rate, controlling for demographic and profile characteristics to isolate the effects of gender diversity. One of the advantages of using data from dating apps, is that most research has relied on stated preferences rather than actual behavior within dating (Griffin & Fingerman, 2018), which arguably reveals more clearly people's preferences and experienced obstacles in dating (Potârca et al., 2015).

Theoretical Background

Gender Diversity and Dating

There is little research on the dating life and relationships of TGD people. Survey data shows that transgender women, transgender men, and gender non-conforming individuals are less likely to be in a relationship than cisgender men and cisgender women in the US (Badgett et al., 2024). Given the challenges that TGD people encounter once dating (Blair & Hoskin, 2019; Webster et al., 2025), these lower rates of partnering are likely to result from obstacles rather than preferences.

In this article, we focus on dating experiences, which is a topic of importance in itself, but also a starting point for understanding differences in relationship outcomes between binary cisgender and TGD people. Our two outcomes of interest are engagement with dating apps and the "returns" people get from engagement in dating apps, i.e. the number of matches people make relative to the likes they give. In the following two sections, we discuss the determinants of engagement and returns, consecutively.

Engagement with Dating Apps

Engagement with dating apps, which we later operationalize as the number of likes people give in dating apps, is shaped by its attractiveness compared to other ways of meeting people, such as meeting in bars, through friends, or in other social settings. The relative

attractiveness of dating apps depends on the relative availability of dating partners and how experiences during the dating process compare to those of other ways of dating. Dating apps provide opportunities and challenges in both regards for TGD people.

Online dating provides the possibilities to meet people beyond “traditional” pathways such as friends, family, work, bars, or other places. The large pool of potential dating partners that dating apps offer make it easier to find a partner that has specific characteristics that might be harder to find or observe in offline settings. These features have made online dating instrumental for many marginalized groups to meet people (Potarca & Neberich, 2015; Sironi & Kashyap, 2022). Given widespread discrimination against TGD people, such as the low openness towards dating a transgender person (Blair and Hoskin, 2019), having a large pool of potential dating partners could be more important for TGD people as compared to cisgender people, increasing the use of and engagement with dating apps.

Marginalization can also affect the various uses that people give to dating apps. Byron and colleagues (2021) showed that online dating apps are also used as ways to make friends or meet people without romantic intentions. Previous research has shown that people who seek same-sex relationships are more likely to state looking for shared experiences rather than romance in areas where attitudes towards LGBTQ* rights are unfavorable (Griffin & Fingerman, 2018). If marginalization leads people to use dating apps not only for romance but also for meeting people more generally, TGD people might show higher levels of engagement with dating apps than cisgender people. Qualitative research indeed indicates that dating apps are an important tool for TGD people to connect with other people (Griffiths & Armstrong, 2024).

The engagement of TGD people with dating apps is likely to also depend on experiences on those platforms. Here we discuss how dating apps relate to two major challenges when dating: safety and disclosing transgender status. Important shares of TGD people report experiences of discrimination, fetishization, violence and abuse once dating (Perez & Pepping, 2024). In this regard, the physical separation and anonymity of the online

environment can be a safety advantage (Fernandez & Birnholtz, 2019). However, TGD people also report unsafety in online dating (Griffiths & Armstrong, 2024; Perez & Pepping, 2024). Experiences of safety depend on the features that apps offer such as the possibility to report or block people. Some users have reported that geo-localization can decrease safety as it increases the possibility of users' physical location to be tracked down (Griffiths & Armstrong, 2024).

Besides physical safety, many transgender people, in particular women, express anxiety about dating partner's responses to their identity (Riggs et al., 2015). Online dating can reduce the barriers towards disclosing TGD status (Sharabi et al., 2023), as people generally report that anonymous meetings allow people to disclose more of their inner self compared to face-to-face meetings (Sironi & Kashyap, 2022). Transgender daters indeed report physical separation and the anonymity of online environments as motivations to disclose transgender status on online platforms (Fernandez and Birnholtz, 2019).

In our empirical analysis, we look at engagement within a dating app aimed at LGBTQ* women which can further affect the attractiveness for TGD people to use it. First of all, many dating apps have excluded TGD identities from their design, including options and filters, and LGBTQ* apps might be more inclusive in that regard (Griffiths & Armstrong, 2024). Secondly, TGD people have reported to feel more safe interacting with other people from the LGBTQ* community and that LGBTQ* dating apps are experienced as providing safer spaces (Sharabi et al., 2023). Hence, TGD people might be particularly active on LGBTQ* dating apps. However, some TGD people have also reported to not use LGBTQ* dating apps because they restrict the dating pool by focusing on certain genders or identities, or because they do not feel included in LGBTQ* environments (Sharabi et al., 2023).

In short, if online dating is relatively safer than other dating routes, and if online environments provide more authentic dating experiences, TGD people might engage more with dating apps than cisgender people. This could particularly be the case once studying engagement with LGBTQ* apps, as is the case for this paper. We therefore expect that:

H1a: Users who indicate a trans, non-binary, or gender-diverse identity show higher levels of engagement within LGBTQ* dating apps than cisgender people.

However, the presence of discrimination and harassment also within online dating apps, and the limited dating options that LGBTQ* dating apps sometimes provide, could also reduce engagement among TGD people. This would then lead to:

H1b: Users who indicate a trans, non-binary, or gender-diverse identity show lower levels of engagement within LGBTQ* dating apps than cisgender people.

Returns to Engagement in Dating Apps

Engagement with dating apps is only one side of the connection process. Even more important is the extent to which engagement “pays off” in the form of mutual connections. We conceptualize this through the like-to-match conversion rate: how many matches are obtained relative to the number of likes given. For trans, non-binary, and gender-diverse (TGD) users, returns to engagement are shaped by both structural and platform-specific mechanisms.

Widespread discrimination in the dating market reduces opportunities for TGD people to form romantic or sexual relationships. Surveys show that the majority (87%) of cisgender individuals explicitly exclude transgender people from their dating pool, with particularly high levels of exclusion for trans women (Blair & Hoskin, 2019). This exclusion suggests that, even when TGD users actively engage with dating apps, they may receive fewer matches than cisgender users. Online transphobia and harassment remain widespread, and experiences of fetishization (e.g., “trans chasers” seeking out transgender users in exploitative ways) complicate whether matches reflect genuine interest or objectifying dynamics (Perez & Pepping, 2024).

At the same time, some features of LGBTQ* dating apps may create more favorable conditions for TGD people. Compared to mainstream apps, LGBTQ* platforms may provide

safer and more inclusive environments, with greater openness toward gender diversity and more tools to manage disclosure. Within these apps, T4T connections, where trans people seek to match with other trans people, may represent a positive mechanism of community-building and affirmation, potentially resulting in higher conversion rates (Griffiths & Armstrong, 2023).

Platform design and algorithmic practices also play an important role in who is favored within these dating spaces. Dating apps often privilege images and profile formats that align with hegemonic gender norms (MacLeod et al., 2019). Recent research and legal cases show how algorithmic systems can reproduce and even legitimize discrimination. For example, the Breeze case in the Netherlands revealed that a dating app's matching algorithm likely discriminated against dark-skinned users, leading the Dutch Institute for Human Rights to mandate corrective action (de Jonge & Zuiderveen Borgesius, 2025). Similarly, analyses of Bumble's recommendation system indicate that its algorithms inherit and reinforce the biases embedded in the data they are trained on, perpetuating patterns of exclusion toward users with non-normative gender identities (Kalra et al., 2023). From a data feminism perspective (D'Ignazio & Klein, 2020), these examples show that data and algorithms are not neutral, rather, they reflect and even amplify existing inequalities. The design of matching algorithms, and what counts as "desirable," "visible," or "normal", plays a central role in reproducing inequalities within online dating spaces. These biases could impact the visibility of TGD individuals in these apps, potentially leading to less matches.

In short, the returns to engagement for TGD users are shaped by contradictory forces: structural exclusion and algorithmic bias may reduce conversion rates, while LGBTQ* spaces and intra-community dynamics may enhance them. This leads us to two competing hypotheses:

H2a: Users who indicate a trans, non-binary, or gender-diverse identity have a higher like-to-match conversion rate.

H2b: Users who indicate a trans, non-binary, or gender-diverse identity have a lower like-to-match conversion rate.

Research Design

Data

This project uses data from Zoe, a dating app for queer womxn, collected between January 2023 and June 2025. The data were obtained through a data-sharing agreement between the app developers and the University of Oxford. Zoe is available on both the App Store and Google Play, where it has received over 5 million downloads and maintains high user ratings (4.3 stars on Google Play based on more than 104,000 reviews, and 4.5 stars on the App Store with 3,400 ratings). The platform reports over 7.2 million users worldwide, indicating broad adoption and stable engagement within the LGBTQ+ community. Upon registration, users provide information on their gender identity, age, sexual orientation, photos, and bio. The anonymized dataset includes user-level statistics on demographic and profile characteristics (such as photo count, bio completion, and verification status), as well as behavioral indicators of activity and interaction within the app, including the number of likes given and matches received. The data were provided in CSV format, with each observation representing an individual user.

We focus on two primary metrics: the number of likes given and the number of matches. Likes capture how often a user expresses interest in other profiles, while matches indicate mutual interest between users. To account for variation in the length of time users have been active on the platform, we include the variable *exposure months*, measuring the number of months between account creation and June 2025.

Users self-identify their gender as *Female* (n=12,384), *Non-Binary* (n=619), *Trans Female* (n=397), *Other Gender (fluid, bigender, androgynous, agender, pangender)* (n=379), or opt not to disclose, in which case the entry is recorded as *Not Available (NA, n=20,360)*. They

are also asked to select one sexual orientation from the following options: *asexual*, *bisexual*, *gay*, *lesbian*, *pansexual*, or *queer*. Missing responses are recorded as NA. These variables allow us to analyze user's gender and sexual identification across the Zoe database.

Additional variables capture aspects of user profiles and demographic characteristics. User profile characteristics include the number of profile photos, the "about" section length, and whether the user has verified their account. Related to demographic characteristics, age and location are used. Age is grouped into four categories: *18–30*, *31–45*, *46–60*, and *60+*. As the database provided information about the geolocation of the user at the moment of profile creation, we also coded a binary indicator for whether the user is located in an urban area based on NUTS3 and their urbanity.

The initial dataset includes over 4 million accounts created between January 2023 and June 2025. We restrict the analysis to users located in the United Kingdom ($n = 85,941$), who gave at least one like on the platform. After applying these filters, the final analytic sample includes 34,139 users.

Methods

To analyze the engagement, three different variables are considered. Picture count and bio length provide an indicator of profile completion and are evaluated through a descriptive analysis of means. To study the engagement in terms of the number of likes users give on the platform, we employed count data models due to the discrete and non-negative nature of the outcome variable. We compared three approaches: Ordinary Least Squares (OLS), Poisson regression, and Negative Binomial regression. Model comparison was based on Akaike Information Criterion (AIC) and log-likelihood values.

The Poisson model, while appropriate for count data, assumes equidispersion—that the mean and variance of the dependent variable are equal. This assumption was violated in our case, as the variance of likes substantially exceeded the mean. As a result, the Negative

Binomial regression model was preferred, as it accounts for overdispersion and provided a better fit to the data based on both AIC and log-likelihood comparisons.

In addition to modeling the count of likes, we examined the likes-to-matches ratio as a continuous outcome variable. For this, we applied OLS regression and evaluated model performance using the R-squared statistic. However, users in different gender identity groups may systematically differ across other characteristics that also predict matching success (e.g., age, profile completeness, liking patterns, or sexual orientation). These differences could confound the direct relationship between gender identity and matching returns.

To address this and ensure our comparisons are more robust, we supplemented our OLS models by implementing Coarsened Exact Matching (CEM). CEM is a preprocessing method designed to match individuals with similar characteristics between the groups being compared. By matching users across gender categories on key observable characteristics (such as age group, liking patterns, and profile characteristics), CEM generates a set of weights for each observation. Running our OLS models on this matched sample allows us to better isolate the net association of gender identity on the likes-to-matches ratio, reducing the bias that may arise from simply comparing dissimilar groups of users.

All models were conducted in a stepwise manner, adding the full set of covariates described in the data section sequentially, including gender identity, sexual orientation, age group, urban status, verification status, profile completeness, and exposure time on the app.

Results

The results section is organized into three parts. First, we present descriptive findings on demographic characteristics and profile completion, broken down by gender identity. Second, we report the results of Negative Binomial regression models predicting the number of likes given, with a particular focus on differences across gender groups. Finally, we

analyze the match-to-like ratio using OLS regression models to examine patterns of “returns” to engagement. This analysis is conducted in two steps: first using the full unweighted sample, and then applying a Coarsened Exact Matching approach to account for engagement differences across groups.

Descriptives

To contextualize the analyses that follow, we first describe the demographic and identity composition of the sample. Sexual orientation and age are two key variables shaping users’ experiences and behaviors on dating apps, and they are therefore included as controls in the regression models. In the case of the Coarsened Exact Matching (CEM) models, age is also used as one of the matching criteria to ensure comparability across gender groups. The distributions of sexual orientation and age by gender identity are presented in Table 1.

Table 1. Age and sexual orientation distributions by gender identity

	Female	Non Binary	Trans Female	Other Gender	NA
Obs. (n)	20360	12384	619	397	379
<u>Age group (share per group)</u>					
18-30	0.64	0.86	0.74	0.70	0.61
31-45	0.31	0.13	0.18	0.25	0.34
46-60	0.04	0.01	0.06	0.04	0.05
60+	0.00	0.00	0.01	0.01	0.00
<u>Sexual Orientation</u>					
asexual	0.00	0.03	0.01	0.03	0.00
bisexual	0.38	0.18	0.26	0.26	0.03
gay	0.02	0.04	0.01	0.04	0.00
lesbian	0.43	0.36	0.41	0.25	0.03
pansexual	0.04	0.17	0.15	0.17	0.00
queer	0.03	0.18	0.07	0.12	0.00
NA	0.09	0.06	0.08	0.12	0.92

In terms of age distribution, the majority of users across all gender groups are between 18 and 30 years old, especially among non-binary users (86%). Users aged 31–45 make up the

second largest share, with highest representation among NA users (34%). Older users (46+) constitute a small fraction across all groups.

Regarding sexual orientation, the most common identification among female users is lesbian (43%), followed by bisexual (38%). Trans female users also primarily identify as lesbian (41%) or bisexual (26%). Among non-binary and other gender-diverse users, identities are more varied, with higher shares of queer, pansexual, and bisexual identification when compared to their cis counterparts. Notably, a relatively high proportion of users in the NA group did not report a sexual orientation (92%).

Table 2. Profile completion descriptives by gender identity

	NA	Female	Non binary	Trans female	Other gender
Obs. (n)	20,360	12,384	619	397	379
About filled (Share)	0.49	0.83	0.90	0.94	0.84
About size (Mean characters)	76.31	133.51	156.20	172.82	157.45
About size (Mean words)	14.47	25.07	28.48	31.72	28.78
Photo count (mean)	2.93	4.11	4.34	4.07	3.99
Verified (Share)	0.19	0.47	0.58	0.50	0.50

Table 2 reports descriptive statistics on profile completion by gender identity, offering a better understanding in terms of how individuals construct and present their profiles within the app. Users who reported their gender are generally more likely to have filled out the “About” section of their profile (ranging from 0.83 to 0.94), with the highest completion among trans female users (0.94). In contrast, only about half of those who did not state a gender provided an “About” section (0.49). These patterns are also similar for the length of the “About” section. Trans female users write the longest bios on average (173 characters; 32 words), followed by non-binary users and those identifying with another gender. Females filled, in average, shorter bios, while users who did not state their gender write the briefest ones overall.

Verification and photo count patterns follow the same direction: users who self-identify their gender show higher verification rates (0.47–0.58) and upload more photos (around 4 in

average for all groups) than users with missing gender information (0.19 verification rate; 2.93 photos). Among all groups, non-binary users stand out with the highest average number of photos (4.34) and the highest verification rate (0.58).

Likes given

This section presents results from a series of Negative Binomial regression models predicting the number of likes given by dating app users. Model 1 includes only gender identity; Model 2 adds sexual orientation; Model 3 incorporates age group; and Model 4 includes the full set of controls (photo count, urban/rural location, account verification, bio presence, and time since registration). Across all models, Female serves as the reference category for gender, Lesbian for sexual orientation, and 18–30 for age group. The complete set of effects is reported in Table 3.

Table 3. Negative Binomial models predicting number of likes given: Incidence Rate Ratios (IRR) with 95% CIs

Block	Term	Model 1	Model 2	Model 3	Model 4
Intercept	Intercept	167.40*** [162.67, 172.31]	182.50*** [175.32, 190.07]	164.25*** [157.39, 171.50]	37.23*** [34.25, 40.48]
Gender	Trans Female	2.99*** [2.55, 3.53]	3.07*** [2.62, 3.64]	3.23*** [2.75, 3.82]	2.82*** [2.41, 3.33]
Gender	Non Binary	1.27*** [1.11, 1.45]	1.39*** [1.21, 1.60]	1.45*** [1.26, 1.66]	1.35*** [1.19, 1.55]
Gender	Other	1.15 [0.98, 1.37]	1.33*** [1.13, 1.59]	1.36*** [1.15, 1.61]	1.30** [1.11, 1.53]
Gender	Not reported	0.72*** [0.69, 0.75]	0.96 [0.90, 1.02]	0.95 [0.90, 1.02]	1.09** [1.02, 1.16]
Sexual orientation	Asexual	—	0.61** [0.44, 0.87]	0.61** [0.44, 0.87]	0.51*** [0.37, 0.72]
Sexual orientation	Bisexual	—	0.92** [0.87, 0.98]	0.96 [0.91, 1.02]	0.92** [0.87, 0.98]
Sexual orientation	Gay	—	0.60*** [0.50, 0.74]	0.61*** [0.50, 0.74]	0.65*** [0.54, 0.79]
Sexual orientation	Not reported	—	0.66*** [0.62, 0.71]	0.68*** [0.63, 0.73]	0.77*** [0.72, 0.82]
Sexual orientation	Pansexual	—	0.92 [0.82, 1.04]	0.94 [0.84, 1.06]	0.83*** [0.74, 0.93]

Sexual orientation	Queer	—	0.54*** [0.47, 0.62]	0.56*** [0.49, 0.64]	0.53*** [0.46, 0.60]

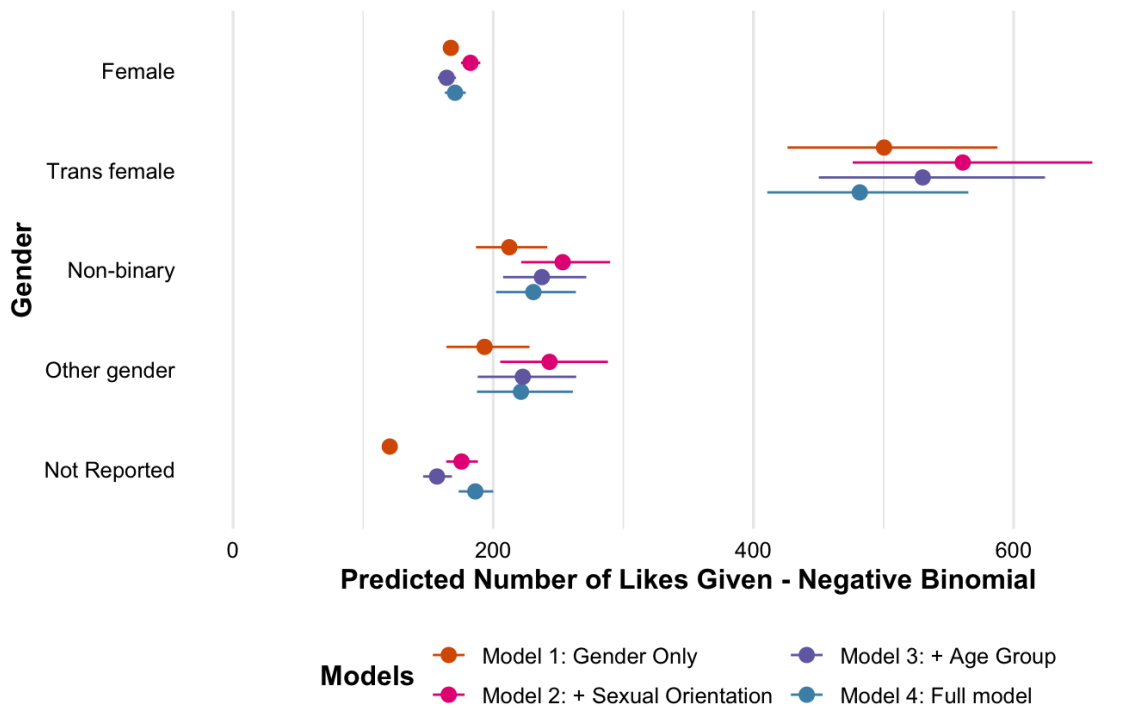
Age group	31-45	—	—	1.34*** [1.29, 1.40]	1.56*** [1.51, 1.62]
Age group	46-60	—	—	0.72*** [0.66, 0.78]	0.73*** [0.67, 0.79]
Age group	60+	—	—	0.40*** [0.30, 0.54]	0.41*** [0.31, 0.55]

Profile & context	About filled	—	—	—	2.12*** [2.04, 2.20]
Profile & context	Exposure months	—	—	—	1.03*** [1.02, 1.04]
Profile & context	Exposure months ²	—	—	—	1.00*** [1.00, 1.00]
Profile & context	Photo count (per photo)	—	—	—	1.05*** [1.04, 1.06]
Profile & context	Rural (vs Urban)	—	—	—	0.90*** [0.86, 0.93]
Profile & context	Verified account	—	—	—	0.88*** [0.85, 0.92]

Notes: IRR = exp(coef.), 95% confidence intervals in brackets. IRR predictors indicate multiplicative change per one-unit increase. Across all models, Female is the reference category for gender, Lesbian for sexual orientation, and 18–30 for age group. Significance levels: $p < .05$ (*), $p < .01$ (**), $p < .001$ (***).

Negative Binomial models reveal clear differences in engagement by gender identity. Relative to women, trans women give roughly three times as many likes (IRR 2.82–3.23 across models; 2.82 [2.41, 3.33] in the full model). Non-binary users also show higher activity (IRR 1.35 [1.19, 1.55]), as do users identifying with other genders (IRR 1.30 [1.11, 1.53]). In the initial model, users who did not report a gender are less active (IRR 0.72 [0.69, 0.75]), but this difference reverses after adjusting for sexual orientation, age, and profile features (IRR 1.09 [1.02, 1.16]). Overall, these findings confirm higher engagement among TGD users. Figure 1 presents a summary of the predicted number of likes given by gender for each model specification.

Figure 1. Predicted Number of Likes Given by Gender Identification (Female, Trans Female, Non-Binary, Other Gender, and Not Reported) based on Negative Binomial Models. The reference categories are “Female,” “Lesbian,” and “18–30.”



We also estimated Ordinary Least Squares (OLS) models as a sensitivity check. These results are presented in Appendix A and are consistent with the main findings reported here. Given that the number of likes given is a count variable characterized by overdispersion, Negative Binomial models provide a more robust and appropriate specification than OLS as this approach accounts for the high variability in user activity levels and provides clearer estimates of group differences, particularly among highly active users.

Like-to-match ratio

To examine how engagement translates into successful connections, we estimate a series of Ordinary Least Squares (OLS) models predicting the ratio of matches to likes. This indicator provides a measure of “returns” to engagement on the app. The analysis focuses again on differences across stated gender identities. We begin with a null model and sequentially add controls: sexual orientation (Model 1), age group (Model 2), and finally all profile and contextual characteristics (Model 4).

Table 4. OLS regression models predicting the ratio of likes-to-matches

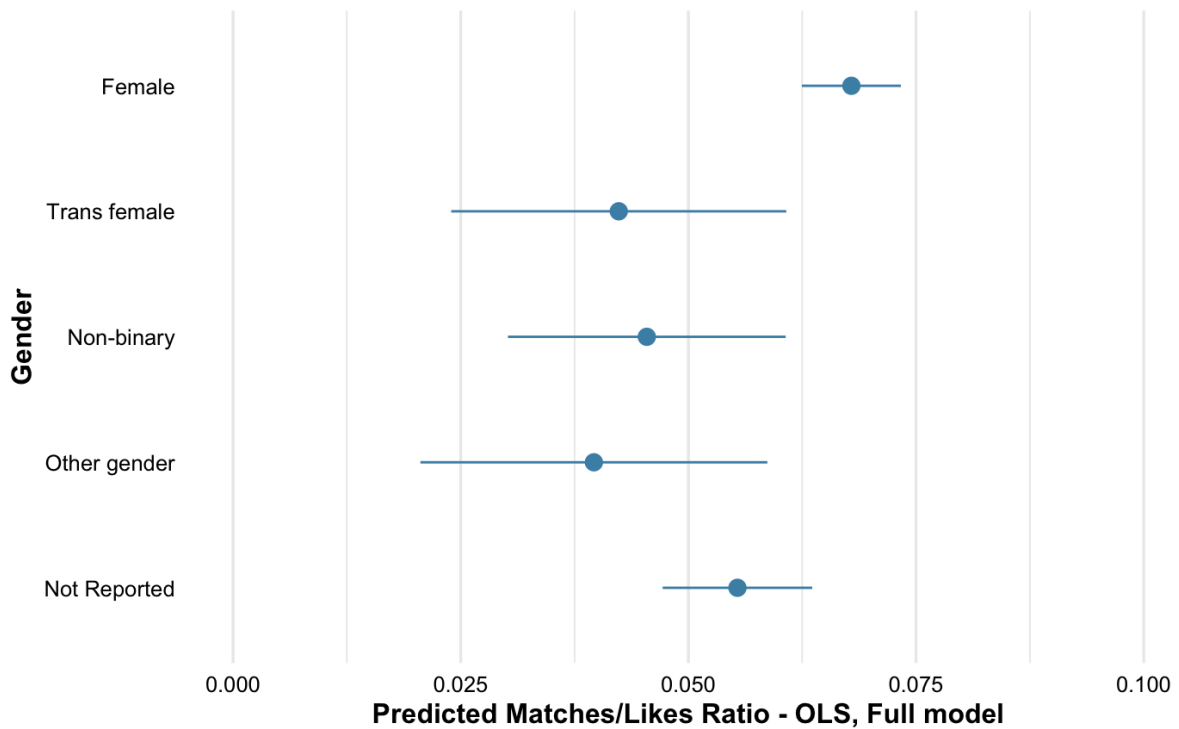
	Model 1	Model 2	Model 3	Model 4
(Intercept)	0.08*** (0.00)	0.08*** (0.00)	0.08*** (0.00)	0.02** (0.00)

	non_binary	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)
Gender	trans_female	-0.03** (0.01)	-0.02* (0.01)	-0.02* (0.01)	-0.03** (0.01)
	other	-0.03** (0.01)	-0.03** (0.01)	-0.03** (0.01)	-0.03** (0.01)
	NA	-0.03*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)
Sexual Orientation	asexual		-0.04* (0.02)	-0.04* (0.02)	-0.05* (0.02)
	bisexual		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
	gay		0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
	pansexual		0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)
	queer		0.01 (0.01)	0.01 (0.01)	0.00 (0.01)
	NA		-0.01** (0.00)	-0.01** (0.00)	0.00 (0.00)
Age Group	31-45			0.01* (0.00)	0.01* (0.00)
	46-60			0.02*** (0.00)	0.02*** (0.00)
	60+			-0.02 (0.02)	-0.01 (0.02)
	Photo count				0.01*** (0.00)
	Rural				-0.01*** (0.00)
	Verified account				0.02*** (0.00)
	About filled				0.00 (0.00)
	exposure months				0.00*** (0.00)
	exposure months sqr				0.00*** (0.00)

Notes: Across all models, Female is the reference category for gender, Lesbian for sexual orientation, and 18–30 for age group. Standard errors are reported in parentheses. Significance levels: $p < .05$ (*), $p < .01$ (**), $p < .001$ (***).

As can be noted in Table 4, regression models consistently show that users who identify as trans, non-binary, or gender-diverse experience lower returns to engagement compared to cisgender women. Across specifications, non-binary, trans female, and “other gender” users display significantly lower like-to-match conversion rates, even after controlling for sexual orientation, age group, profile completeness, and app exposure. The negative coefficients remain robust in Models 1–4, indicating that these groups need to give more likes to achieve the same number of matches as cisgender women. The strongest disadvantage is observed among trans female users, who systematically exhibit reduced conversion rates, highlighting the structural barriers and forms of exclusion they face in the online dating environment. Figure 2 provides a visual summary of the effects for the full model.

Figure 2. Predicted Number of Match/Likes ratio, by Gender Identification, OLS models



Like-to-match ratio - Coarsened Exact Matching

We implement Coarsened Exact Matching (CEM) to probe whether the lower returns to engagement observed for TGD users reflect genuine differences in how interest is reciprocated, rather than compositional differences across groups. Descriptives and negative binomial models show sizeable variation in liking intensity and profile completeness by gender. CEM mitigates this by restricting comparisons to users with similar characteristics, improving the robustness of the comparisons.

Concretely, we match users on age, liking behavior (likes given), and key profile features (photo count, “About” section filled, and verification). After matching on these covariates, we test whether differences in the match-to-like conversion rate persist when comparing users with similar engagement and visibility. We run separate matched comparisons for each gender-diverse group (trans female, non-binary, other) against (a) females and (b) users who did not report a gender.

Table 6. CEM results comparing TGD users to females

	n	Matched	Unmatched	Treatment Coef.	Std. Error
Trans Female	397	394	3	-0.019**	0.0070
Non-binary	619	618	1	-0.012	0.0065
Other genders	379	378	1	-0.022**	0.0081

*Notes: Each model run separately for each comparison, matching on likes count, age group, picture count, about completeness, and verification status. Significance levels: $p < .05$ (), $p < .01$ (**), $p < .001$ (***)*.

Table 7. CEM results comparing TGD users to those who did not report their gender

	n	Matched	Unmatched	Coef.	Std. Error
Trans Female	397	394	3	-0.019**	0.0070
Non-binary	619	618	1	-0.025***	0.0069
Other genders	379	378	1	-0.031***	0.0079

*Notes: Each model run separately for each comparison, matching on likes count, age group, picture count, about completeness, and verification status. Significance levels: $p < .05$ (), $p < .01$ (**), $p < .001$ (***)*.

Results from the Coarsened Exact Matching (CEM) models confirm that differences in returns to engagement persist even when comparing users with similar profile completion, age, and levels of activity. After matching on age group, number of likes given, photo count, profile completeness, and verification status, trans, non-binary, and other gender-diverse users continue to show significantly lower match-to-like ratios than their comparison groups. When compared to women (Table 6), users identifying with other genders display the largest disadvantage, followed by trans women. The gap remains when comparing TGD users to those who did not report a gender (Table 7), with consistently negative and statistically significant effects for all gender-diverse groups. These results indicate that, even among users with equivalent age profiles and similar engagement or profile visibility, gender-diverse users still experience lower chances of having their likes reciprocated, suggesting enduring inequalities in how interest is returned on the platform.

Taken together, these results reveal a consistent pattern of inequality in dating outcomes. While users who state their gender as trans women, non-binary, or other gender-diverse identities tend to engage more actively by giving a higher number of likes, this effort does not

translate into equivalent matches. Even after matching users with comparable profiles, age, and liking patterns, these groups receive fewer matches relative to the likes they give. This suggests that, beyond behavioral or profile presentation differences, there are differentials in how expressions of interest are reciprocated on the platform, representing the unequal dynamics faced by gender-diverse users in online dating environments.

Conclusions

This study provides new quantitative evidence on the dating experiences of trans, non-binary, and gender-diverse (TGD) people within an LGBTQ* dating app. Our results show that TGD users engage more actively with the platform, particularly trans women who give substantially more likes than cisgender women. However, this higher engagement does not translate into proportional benefits: when considering the like-to-match conversion rate, TGD users consistently experience lower returns to engagement. These findings highlight the persistent barriers that gender-diverse individuals face in digital dating spaces, even in those that are explicitly designed for LGBTQ* communities.

Our finding that TGD users engage more actively on the Zoe app, with trans women giving approximately three times as many likes as other women, aligns with theoretical expectations about how TGD groups navigate dating markets. This heightened engagement can be understood through three different, but interconnected, mechanisms. First, the larger pool of potential partners that dating apps provide becomes particularly valuable for TGD individuals who face widespread exclusion in offline dating contexts (Potarca & Neberich, 2015; Sironi & Kashyap, 2022). Second, online environments may offer relative safety advantages compared to traditional meeting venues such as bars or social gatherings, where TGD people report experiencing higher rates of discrimination and violence (Webster et al., 2025). The physical separation inherent to app-based dating allows users greater control over disclosure timing and the ability to block hostile interactions (Fernandez & Birnholtz, 2019; Sharabi et al., 2023). Third, dating apps also operate as spaces for

friendship formation and community connection, going beyond romantic partnering. These purposes may be particularly important for TGD individuals who face social isolation (Griffiths & Armstrong, 2024). The elevated engagement we observe may therefore reflect not only romantic seeking behaviour, but also the use of LGBTQ* dating platforms as crucial sites of social connection and community participation.

Despite their higher engagement, TGD users consistently experience lower like-to-match conversion rates, a pattern that persists even after accounting for age, profile completeness, verification status, and liking intensity through Coarsened Exact Matching. This finding provides quantitative confirmation of the structural exclusion in dating that qualitative research has documented (Blair & Hoskin, 2019; Griffiths & Armstrong, 2024; Perez & Pepping, 2024). The fact that 87% of cisgender individuals explicitly exclude transgender people from their dating pool (Blair & Hoskin, 2019), with particularly high rates of exclusion for trans women, manifests in our data as systematically lower returns to engagement. Even within an LGBTQ* dating app designed for queer womxn, gender-diverse users face reduced reciprocity of interest, suggesting that transphobia and cisnormative preferences operate across both mainstream and community-specific dating platforms. This is particularly striking given that LGBTQ* spaces are often theorized as more inclusive and affirming environments (Sharabi et al., 2023). Our results indicate that whilst these platforms may provide safer spaces for disclosure and community connection, they do not fully insulate TGD users from discrimination in partner selection.

The persistent disparities in match outcomes raise important questions about the role of algorithmic systems and platform design in reproducing inequalities. Recent research demonstrates that dating app algorithms are not neutral arbiters of connection, but rather encode and amplify existing biases present in user behaviour and training data (D'Ignazio & Klein, 2020; Kalra et al., 2023). The Breeze case in the Netherlands, where a dating app's algorithm was found to discriminate against dark-skinned users (de Jonge & Zuiderveen Borgesius, 2025), illustrates how matching systems can institutionalize exclusion under the

guise of technical optimization. Similarly, MacLeod and McArthur's (2019) analysis reveals how interface design privileges hegemonic gender presentations, potentially reducing the visibility of users with non-normative gender identities. Whilst our data cannot directly measure algorithmic effects, the fact that conversion rate disparities persist after matching users on observable profile characteristics suggests that factors such as differential visibility in recommendation systems or lower prioritization in matching queues may contribute to the disadvantages TGD users experience. From a data feminism perspective, this underscores the need for dating platforms to critically examine how their algorithmic systems may reproduce structural inequalities.

Several limitations should be considered when interpreting our findings. First, our data come from a single LGBTQ* dating app designed specifically for queer womxn, which limits generalizability to other platforms and dating contexts. The user base of Zoe may differ systematically from users of mainstream apps such as Tinder or Bumble, or other LGBTQ* platforms such as Her or Lex. Future research should examine whether the patterns we observe—higher engagement but lower conversion rates—hold across different platform types, particularly in mainstream apps where TGD users may face additional barriers. Second, our sample is restricted to users in the United Kingdom, and dating norms, LGBTQ* community structures, and levels of transphobia vary substantially across national contexts. Cross-national comparative work would help identify which aspects of our findings reflect universal dynamics of digital dating and which are specific to particular socio-cultural environments.

There are specificities in terms of behavior that would be important to study further. First, we cannot observe who is liking whom and which specific combinations of gender identities are more or less likely to result in matches. Understanding whether TGD users primarily direct their likes toward women, other TGD individuals, or a mix would illuminate whether lower conversion rates reflect general exclusion or patterns of T4T (trans-for-trans) seeking that may have different dynamics (Griffiths & Armstrong, 2023). Second, we are measuring

engagement solely through likes given, but other indicators such as messaging frequency, time spent on the app, or profile updating behaviour might reveal additional dimensions of platform use. Third, and perhaps most importantly, we cannot trace what happens after matches occur. Do matches translate into conversations, dates, relationships, or community connections? Or do they sometimes lead to negative experiences such as harassment, discrimination, or disappointment? Understanding post-match outcomes is crucial for understanding whether dating apps ultimately serve the relationship and community needs of TGD users, or primarily expose them to additional discrimination within ostensibly safe spaces. Finally, there is a substantial number of users (n=20,360) who did not report their gender identity. Are these users TGD individuals who choose not to disclose, cisgender women seeking privacy, or those uncertain about identity categories offered by the platform? Understanding patterns of non-disclosure could reveal additional information related to dating apps' uses and behaviour.

The patterns documented in this study carry significant implications for understanding social stratification and well-being among gender-diverse populations. Lower conversion rates in dating apps may contribute to the documented disparities in relationship formation, with TGD individuals being substantially less likely to be partnered than their cisgender counterparts (Badgett et al., 2024). Given the well-established links between romantic relationships and multiple dimensions of well-being, including mental health, economic security, and social support (Reczek, 2020; Rodríguez Sánchez & Boertien, 2025), systematic disadvantages in dating markets represent more than mere romantic disappointment. They constitute a mechanism through which structural discrimination translates into tangible inequalities in life chances and quality of life. Reduced access to partnerships may have cascading effects on access to parenthood, even considering multiple pathways such as co-parenting arrangements, assisted reproduction, or adoption, many of which presume or favor partnered individuals. The fact that these disparities persist even within LGBTQ* dating spaces/platforms explicitly designed to provide safer and more inclusive environments

suggests that addressing them will require more than simply creating community-specific platforms. It demands a deeper examination of how prejudices, algorithmic systems, and platform design choices shape who gets to connect with whom in digital spaces that increasingly mediate intimate life.

This study reveals a paradox at the heart of digital dating for transgender, non-binary, and gender-diverse individuals: heightened engagement that does not translate into proportionate connection. TGD users invest considerably more effort into seeking partners on LGBTQ* dating platforms yet receive systematically lower returns in the form of matches. Our findings point to enduring structural inequalities in how expressions of interest are reciprocated, reflecting both individual-level prejudices and potentially algorithmic mechanisms that disadvantage gender-diverse users. These disparities matter not only for understanding the dating experiences of TGD individuals, but also for illuminating broader processes of social stratification and digital inequality. The implications extend beyond individual happiness to fundamental questions of algorithmic justice, platform governance, and whether digital spaces can ever truly serve as sites of liberation for those who challenge gender norms—or whether they inevitably replicate the exclusions of the offline world in new ways.

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Appendix

Appendix A. Ordinary Least Squares (OLS) regression results predicting number of likes given

This appendix presents the full OLS regression models predicting the number of likes given. Models include progressively added controls for sexual orientation, age group, and profile characteristics. Table A1 shows the complete set of effects, while Figure A1 presents the predicted number of likes given by gender identification.

Significant differences emerge across gender identities. In Model 1, trans women give substantially more likes than women, a pattern that remains remarkably stable even after controlling for sexual orientation, age, and other variables. Similarly, non-binary users consistently give more likes than women across all models. The category “Other gender” does not significantly differ from the reference group, while users who did not report a gender do not show significant differences once covariates are included. These findings suggest that trans women engage more actively in liking behavior, even when accounting for multiple user characteristics.

Figure A1. Predicted Number of Likes Given by Gender Identification (Female, Trans Female, Non-Binary, Other Gender, and Not Reported) based on Ordinary Least Squares (OLS) Models. The reference categories are “Female,” “Lesbian,” and “18–30.”

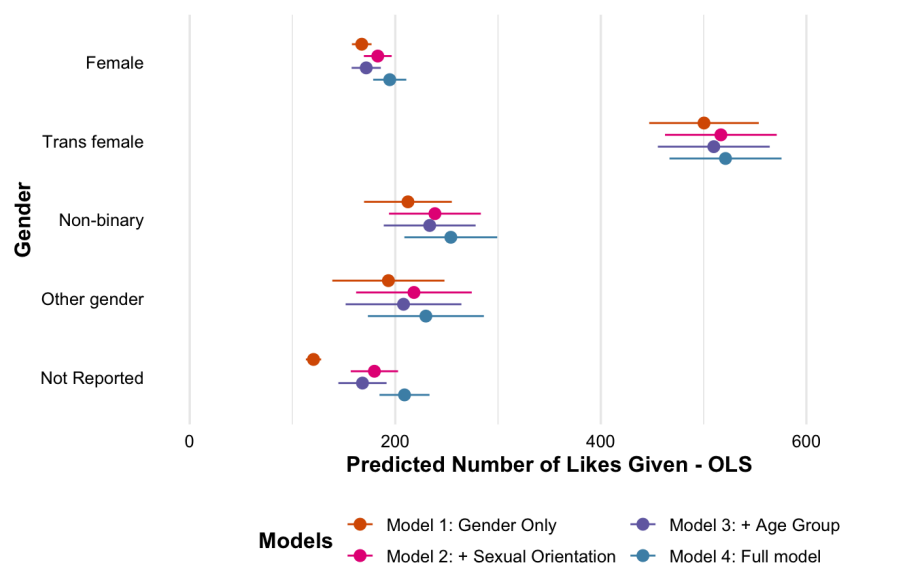


Table A1. Ordinary Least Squares (OLS) regression models predicting number of likes given

	Model 1	Model 2	Model 3	Model 4
(Intercept)	167.40*** (4.87)	183.00*** (6.90)	171.75*** (7.25)	-4.44 (14.64)
Gender				
Non-binary	44.96* (22.32)	55.60* (22.70)	61.75** (22.71)	59.42** (22.55)
Trans woman	332.99*** (27.63)	333.80*** (27.75)	338.15*** (27.73)	326.65*** (27.53)
Other gender	25.94 (28.26)	35.20 (28.48)	36.29 (28.46)	35.15 (28.24)
Not reported	-46.93*** (6.18)	-3.28 (10.97)	-3.64 (10.96)	14.36 (10.99)
Sexual Orientation				
Asexual		-93.41 (57.70)	-95.04 (57.64)	-104.31 (57.21)
Bisexual		-16.05 (9.74)	-15.57 (9.75)	-16.96 (9.68)
Gay		-73.95* (32.84)	-74.08* (32.81)	-72.05* (32.56)
Pansexual		3.29 (19.65)	2.24 (19.63)	-0.98 (19.50)
Queer		-86.27*** (21.89)	-85.58*** (21.88)	-93.82*** (21.73)
Not reported		-63.38*** (11.90)	-64.37*** (11.89)	-38.80** (11.94)
Age Group				
31-45			45.41*** (6.46)	50.93*** (6.45)
46-60			-39.26** (14.49)	-32.77* (14.41)
60+			-77.95 (50.39)	-71.63 (50.01)
Photo count				3.21 (1.82)
Rural				-3.51 (7.09)
Verified account				-29.52*** (7.00)
About filled				107.41*** (6.90)
Exposure months				2.70* (1.37)
Exposure months sq				0.13** (0.05)

Notes: Across all models, Female is the reference category for gender, Lesbian for sexual orientation, and 18–30 for age group. Standard errors are reported in parentheses. Significance levels: $p < .05$ (\ast), $p < .01$ ($\ast\ast$), $p < .001$ ($\ast\ast\ast$).