International Journal of Psychology Sciences 2024; 6(1): 08-12

International Journal of Psychology Sciences :

ISSN Print: 2664-8377 ISSN Online: 2664-8385 Impact Factor: RJIF 5.26 IJPS 2024; 6(1): 08-12 www.psychologyjournal.net Received: 13-12-2023 Accepted: 26-01-2024

Pratyusha Pal

M.Sc., Student, Department of Applied Psychology, Swami Vivekananda University, Kolkata, West Bengal, India

Dr. Nilanjana Mitra Assistant Professor & Head, Department of Psychology, Swami Vivekananda University, Kolkata, West Bengal, India

Emergence of online dating apps & its psychological impact

Pratyusha Pal and Dr. Nilanjana Mitra

DOI: https://doi.org/10.33545/26648377.2024.v6.i1a.35

Abstract

In today's era, the surge in the usage of online dating apps have largely replaced the conventional mode of dating. Studies have highlighted the following reasons that make people attracted to such dating apps i.e. easier accessibility, huge exposure, availability of different modes of communication and convenience of getting partners according to their preferred sexual orientation. With the emergence of these apps, problems like social anxiety, depression, loneliness are also increasing rapidly. Hence, this article is a comprehensive study of the accumulated knowledge and research works that has already been done on this topic. The most relevant points extracted from the studies can be categorised into four major groups: a) what causes the excessive usage of dating apps; b) how online dating differs from conventional dating; c) whether they positively impact the love-lives of people with different sexual orientation; d) how they create problems like social anxiety, depression, stress and loneliness.

Keywords: Dating apps, social anxiety, depression, loneliness, stress

Introduction

New millennium has witnessed that online dating helps people connect with more new people than the conventional methods. The majority of our waking hours are typically spent looking through our phones. It is preferable to most working individuals, if they discover their connection while using their phone or computer. But the rapid expansion of these apps cannot be entirely attributed to our hectic work schedules or hurried way of life. Additional significant crucial components are likewise readily available for their emergence. The design of these dating applications is an essential component. People become fixated on them because of the way they are made. The vast majority of individuals use only two types of dating apps:

- **Type 1:** It features a grid or list of various categories of people, and users can message whomever they find intriguing (Example: Grindr).
- **b) Type 2:** It uses the well-known swipe approach, where users can only communicate if they both find each other interesting (Example: Tinder).

Another significant point is that there are several apps available for those who prefer the onenight stand lifestyle as well as those who are looking for long-term relationships. In addition,
apps like Grindr are attempting to give queer people a community-based platform where they
can locate mates in accordance with their sexual orientation without being criticized. The
process of finding a spouse may seem convenient, exciting, attractive, and much simpler just
by looking at the surface layer. However, if we look a little closer, we can see that even if
there are advantages, there are disadvantages as well. With the rising popularity of these
apps, serious mental health concerns including despair, anxiety, and loneliness are growing
more frequently. Crimes including cyberbullying, sexual harassment through the
transmission of inappropriate genital images, and the dissemination of nude images on
pornographic websites are also being recorded. We'll examine the most in-depth aspects of
the study materials for this topic in this piece before coming to our own conclusion based on
the information at hand.

Corresponding Author: Pratyusha Pal

M.Sc., Student, Department of Applied Psychology, Swami Vivekananda University, Kolkata, West Bengal, India

Methodology

To write this literature review, we used the databases available on Google scholar and Google webpage. As the usage of dating apps has tremendously increased in recent years, we limited our research for the last five years. After removing the duplicate articles, articles created by bots and the ones which do not meet our specific research criteria, we selected themost recent articles to write this review. While doing the searching procedure, we used very specific terms such as, 'dating apps', 'apps for gay people', 'tinder', 'hook up apps', 'dating apps and mental health 'for most relevant articles.

A brief history of dating apps

Dating apps have fundamentally altered how people meet and form bonds. We can gradually make transition from conventional dating to online dating if we delve a little deeper and look at how various dating applications were developed. One of the first websites for online dating was Match.com (1995), which allowed users to build profiles and look for suitable companions using filters. Then, around 2000, eHarmony was introduced, which is renowned for its compatibility matching technology. The goal of eHarmony is to assist individuals in finding committed relationships based on personality characteristics. OkCupid was introduced in 2004. By using algorithms and quizzes to match individuals based on compatibility, this platform presented a more data-driven methodology. Grindr (2009) was the first dating app targeted at the LGBTQ + community, and it pioneered the usage of a location-based matching mechanism. The popularity of the "swipe right" and "swipe left" concepts made popular by Tinder (2012) led to an increase in the use of dating apps, which are now visually appealing and informal. Long-term relationships were highlighted in Hinge (2012). By connecting users with friends of friends, Hinge was found to foster meaningful relationships. A restricted number of daily matches are offered to users by Coffee Meets Bagel (2012), thus discouraging endless swipes and promoting more considerate conversations. Her (2013) was the first software made particularly for lesbian and bisexual women. It provides a platform for LGBTQ+ women to interact and form relationships. A more discerning audience is the target market for The League (2015). Professionals with advanced degrees are who the League targets. Only women can start a discussion following a match on Bumble (2014), which was developed by a former executive of Tinder. However, dating apps are not just restricted to these choices; they have established a very solid foundation for online dating on which new dating apps with a variety of intriguing features have lately started to appear. According to data from 2021, Tinder was one of the dating apps with the highest percentage of users who were actively using it. With a vast user base and widespread appeal, Tinder is the most wellliked dating app available.

Literature Review

The literature searches have been divided into four important areas

- 1. Reasons behind excessive usage of dating apps.
- 2. How it is different from online dating.
- 3. Effects on queer & trans individuals.
- 4. Its effect on mental health.

1. Reasons behind excessive usage of dating apps

The tinder app allows users to upload a large number of photos to their profiles, from which they can choose the best filtered images. In addition, unlike face-to-face meetings where the 'real you' is shown, everyone who views their profile will be wowed and there would not be any room for rejection. To find your online love, all you need is a smartphone, a functioning mobile network, and a dating application that you have signed up for. It is simple and comfortable because a mobile phone is adaptable, allowing a user to move around with it at their own pace and continue to have uninterrupted communication with an online partner (Chisom, 2021) [5] People frequently utilize online dating services in order to find love, relationships, and to experience the rush of excitement when conversing with an online partner. According to a survey of college students by Bryant & Sheldon (2017) [3], the main motivations for utilizing online dating services are "fun," "relationship," and "hook up." Those who had used cyber dating services and those who had not had different perspectives toward them. The motivation to use online dating for hook ups was also lower in people with strong self-esteem. Match.com, a wellknown international online dating site, was first made available to the general public in 1995. With an annual income of \$1.9 billion, internet dating rose to the secondmost popular market for paid online content within a decade (Matthews, 2018) [12]. Location-based smartphone dating apps initially became available in 2007, enabling users to access online dating from any location at any time. According to one theory, people with high rejection sensitivity find it easier to express themselves online, and those who find it easier to express themselves online are found to utilize online dating more frequently. This increased use was associated with the "thrill of excitement," or the thrill of engaging in novel activities (Sumter & Vandenbosch, 2019) [29]. For those who desire sensation, the thrill of excitement serves as another motivator to use online dating services. It was discovered that being social when utilizing online dating sites is related to openness to experience. Disagreeable people were discovered to use online dating services for socializing and looking for friends. In contrast, it was discovered that people with low disagreeableness scores used online dating services under peer pressure (i.e. status). Zorita et al., (2020) [2] found a correlation between being diligent and finding a love partner.(N = 541; 60.1% females; mean age = 23.71 years) Sumter & Vandenbosch (2019) [28] obtained data from 171 University of Amsterdam students and 370 from a research agency using the Dating App Motivation Scale, based on the Tinder Motivation Scale (Sumter et al. 2017) [27], Dating Anxiety Scale (Peter & Valkenburg, 2007) [18], Brief Sensation Seeking Scale (Hoyle et al. 2002) [8] and Sexual Permissiveness Scale (Peter & Valkenburg, 2007) [18]. They discovered a link between using dating apps for impromptu sex-dates and sexual openness. The odds ratio for the likelihood of being an active user increased by 1.25, according to the authors, for people who have high levels of sexual permissiveness. This increased use was associated with the "thrill of excitement," which Sumter & Vandenbosch (2019) [28] refer to as the thrill of engaging in novel activities. For those who desire sensation, the thrill of excitement serves as another motivator to use online dating services. Chin et al., (2019) [4] examined 183 American single participants about their attachment types, and 60% of

them were guys (mean age = 29.97 years). Data from the Attachment Style Questionnaire (Simpson *et al.*, 1992) [24] was used in a multivariate regression analysis, along with several items addressing the usage of dating apps. The findings indicated that there were disparities in use depending on the kind of attachment, with individuals with anxious attachment patterns using online dating more frequently than avoidant types (Zorita *et al.*, 2020) [2]. In spite of the fact that there are many different reasons why people use social media and online dating, qualitative research suggests that users who use dating apps because of physical gratification more frequently meet Dating app partners offline to have casual sex as compared to users who are not motivated to use the app for physical gratification (Ligtenberg *et al.*, 2016) [11].

2. How it is different from online dating

Online dating & offline dating differ fundamentally from one another. In the case of online dating, we essentially get to see the best pictures of the users and have the opportunity to speak with them if there is a fit. Basically, we are drawn to people based mostly on their physical traits and via conversation, we may gain a sense of who they are as people. Contrarily, with traditional dating, we have far more opportunity to watch how they behave and learn more about their personalities, allowing us to make decisions about our spouse that go beyond simple physical appearance. In contrast to more conventional online dating services that use the original data entered into user profiles to generate matches, dating apps run on Wi-Fi or data and employ realtime geo-social information to update user profiles (Orchard, 2019) [15]. A fresh list of justifications for using Tinder was developed by Sumter et al., (2017) [27] and further honed by Sumter & Vandenbosch (2019) [28]. They put up six justifications for usage, including intrapersonal (easier communication, self-worth validation), relational (love, casual sex), and entertainment (the thrill of excitement, trendiness). The authors came to the conclusion that people use Tinder for four reasons: (1) to find love and/or sex; (2) because it is simple to communicate; (3) to feel better about themselves; and (4) because it is fun and exciting (Sumter et al., 2017) [27]. The motivation that participants expressed the most frequently was that of love. The dating environment has seen a significant upheaval since the introduction of dating websites and applications like Tinder. People are not as constrained by time, social, and geographic restrictions when they date online as they are when they date offline. Online dating thus expands the pool of possible potential sexual and romantic partners (Regan, 2016) [20]. Nowadays, an increasing number of people believe that using dating apps is a good approach to meet possible spouses (Smith & Anderson, 2016) [25]. Location-based, in-app dating services, like Tinder, are thought of as more informal and simple to use than conventional online dating sites. Additionally, these apps facilitate in-person meetings by ensuring physical closeness through the location filter feature (Orosz et al., 2016) [16]; Ranzini & Lutz, 2017) [19]. According to Riley (2015) [23] Sales (2015), LeFebvre (2018) [10], Ranzini & Lutz (2017) [19], the accessibility of Tinder and the emphasis placed on photographs in self-presentations via the app have contributed to the perception that Tinder is mostly used for finding hookups and casual sex. However, empirical research has revealed that there are many different reasons why people use Tinder, and these reasons much outweigh those for casual sex (Hobbs *et al.*, 2017; Sumter *et al.*, 2017; Timmermans & De Caluwé, 2017) [7, 27, 30]. These reasons include pursuing long-term relationships and passing the time or amusement. In both Western and Asian countries, the rates of singleness and childlessness are rising (Nargund, 2009; Adamczyk, 2017) [14, 9]. On a personal and cultural level, it is crucial to identify characteristics that might improve someone's likelihood of finding a mate (and, consequently, potentially also children). Online dating applications have grown in popularity over the past few years as a platform for people looking for romantic relationships (Smith & Anderson, 2016) [25].

3. Effects on queer & trans individuals

People who identify as sex- or gender-queer report feeling lonely in many different ways. Queer people have been forced to experience additional isolation throughout the COVID-19 epidemic, both from other people and from sources of acceptance for sexual orientations and genders that are desperately required (Powell & Powell 2022) [17]. In their study they have looked at a sample of 1500 Lex personal advertisements from the summer of 2020 that were placed by users in the US and included direct or indirect mention to the COVID-19 epidemic. The necessary SMS messages were saved and recorded by the researchers. The text-based personal posts were afterwards examined to learn more about the isolation that queer people who are not cismen suffer as well as the efforts made by the app to lessen that isolation. The "modern-day gay bar" has been likened to Grindr, a well-known app made for men of sexual minorities (Miller, 2015) [13]. The app stresses geolocation and immediacy with its renowned "zero feet away" paradigm, enabling users to connect in person within minutes (Roth, 2016) [21]. The creation of HER, formerly known as "Dattch," which was founded by Robyn Exton and was discussed and analyzed by different studies that perhaps the most well-known app for queer women. Dattch moved away from Grindr's focus on immediate gratification, appealing to the notion that women want a more gradual story of desire. However, Exton ran into the general misconception that lesbians are a specialized and challenging consumer audience when pitching the app to the male-dominated start-up business. In order to assess the impact of dating apps on young gay, bisexual, trans, and queer men (YGBQTM), Gaudette et al., (2023) [6] performed a study in which they spoke with 28 health professionals who work with YGBQTM. They have discovered three categories of impacts that had both positive and bad aspects by analysing the data they have gathered.

- 1. The accessibility of sexual activity on gay dating apps as either transactional or pleasurable.
- 2. The development of community and increased safety, which occasionally coincides with increased exposure to rejection and discrimination.
- 3. A perceived increase in sexual and drug-related risk-taking in conjunction with the opportunity for education, prevention, and intervention (Gaudette *et al.*, 2023) ^[6].

4. Effects on mental health

The swipe approach is the distinctive element that accounts for the popularity of the dating app craze. Swiping and scrolling both have the potential to become addicting. We swipe right on the profiles of those we find fascinating, and we swipe left on those whose profiles don't fit our liking-criteria. Even if we can reject someone's profile with a left swipe, there is also a dread of being rejected; being rejected by someone diminishes our self-esteem. Swiping continues until we are pleased, which results in excessive mobile phone consumption.

It may have an impact on our daily activities and lower our productivity. In these apps, we are constantly shown the perfect versions of the partners of our choices, which can cause us to have negative self-images and body-image problems. People who want to maintain a perfect socially stereotypical body often struggle with eating disorders. Swiping in assessment (i.e., assessing profiles critically) and locomotion (i.e., making judgments based on intuition) modes was studied by Thomas et al., (2023) [29] whereby 464 users of dating apps who are in the transitional age group (16-25) were polled as part of their survey. The usage of dating apps was linked to excessive swiping, which in turn was connected to a) upward social comparison, b) dread of being alone, and c) partner choice overload, according to moderated mediation studies. In conclusion, using dating apps frequently was only associated with undesirable effects when it involved excessive swiping. Therefore, excessive swiping is harmful for young dating app users' wellbeing, regardless of how they swipe (Thomas *et al.*, 2023) [29]. Neither assessment nor locomotion mode mitigated these correlations. The emphasis on physical beauty in dating app contexts may represent an appearance-related pressure that makes it more likely for people to experience disordered eating and body dissatisfaction, which worsens the link between features that predict DE and DE itself (Blake et al., 2022) [1]. An online survey measuring dating app use and UWCBs (unhealthy weight control behaviours) in the previous year was completed by 1769 people who made up the study's sample. According to the findings of multivariate logistic regression models, users of dating apps had significantly higher odds of UWCBs than non-users (odds ratios [OR] range = 2.7–16.2). Results of additional gender-stratified multivariate logistic regression analyses among women and men validated these conclusions (Tran et al., 2019) [31]. In a study by Tyson et al., (2016) [32] it was found that 50 percent of matches typically don't respond, which might cause loneliness and the sense of being ignored. Another study conducted by Strubel (2017) [26] stated that Tinder users, regardless of gender, reported significantly lower levels of satisfaction with face and body higher levels of internalization, comparisons, and body shame and surveillance than nonusers. For self-esteem, male Tinder users scored significantly lower than either male or female non-users. Our results suggest that Tinder represents a contemporary medium for appearance pressures and its use is associated with a variety of negative perceptions about body and self and with increases in individuals' likelihood to internalize appearance ideals and make comparisons to others (Strubel, 2017) [26]. It only takes a mobile phone, a working mobile network and a signed in dating application to get to your online love. It is easy and comfortable, this is because a mobile phone is flexible in nature, so one gets to carry it around with them at their own pace, and still get to communicate uninterrupted with their own When a Tinder user discovers that they get new admires and matches by the minute, it gives them a high level of self-esteem and worth.

This is because it makes them feel wanted, feel cute and feel loved especially if the person had just gotten off a depressing relationship (Chisom, 2021) ^[5].

Conclusion

The consequences of these dating apps are multifaceted, encompassing both, and they differ from person to person, so we cannot state with certainty whether they are positive or detrimental. People who lead busy lives can find possible companions more easily thanks to dating applications. Finding appropriate companions is more likely thanks to their wider selection of potential matches. The stigma attached to the LGBTQ+ community has diminished as a result of the widespread acceptance of online dating. In these settings, queer and trans people can freely express their identities without worrying about being judged and meet potential partners. On the other hand, despite the fact that dating apps use a matching algorithm technique, they put more emphasis on physical beauty than personality, which results in weak connections. Some people still experience emotional pain after finding a mate because they were ghosted. Swiping excessively can result in addiction and have a bad effect on mental health, resulting in anxiety or sadness. By providing false information, users may trick people, leaving them disappointed or in danger. Private information might be disclosed without permission. Although it is clear that the rise of these dating apps has resulted in a drop in conventional dating. However, determining whether internet dating is superior to conventional methods of courtship can be challenging.

Acknowledgement

I would like to express my special thanks to my mentor and co-author.

Conflicts of interest

No conflict of interest.

References

- 1. Blake K, Portingale J, Giles S, Griffiths S, Krug I. Dating app usage and motivations for dating app usage are associated with increased disordered eating. Journal of Eating Disorders. 2022;10(1):1-10. Available from: https://doi.org/10.1186/s40337-022-00693-9
- Bonilla-Zorita G, Griffiths MD, Kuss DJ. Online Dating and Problematic Use: A Systematic Review. Int. J Ment. Health Addiction. 2021;19:2245–2278. Available from: https://doi.org/10.1007/s11469-020-00318-9
- 3. Bryant K, Sheldon P. Cyber dating in the age of mobile apps: Understanding motives, attitudes, and characteristics of users. American Communication Journal. 2017;19:1-15.
- Chin K, Edelstein RS, Vernon PA. Attached to dating apps: Attachment orientations and preferences for dating apps. Mobile Media & Communication. 2019;7(1):41-59. Available from: https://doi.org/10.1177/2050157918770696
- 5. Chisom OB. Effects of modern dating applications on healthy offline intimate relationships during the COVID-19 pandemic: A review of the Tinder dating application. Advances in Journalism and Communication. 2021;9(01):12. Available from: https://doi.org/10.4236/ajc.2021.91002

- Gaudette M, Hesse CL, Kia H, Chanady T, Carson A, Knight R, et al. A Double-Edged Sword: Health Professionals' Perspectives on the Health and Social Impacts of Gay Dating Apps on Young Gay, Bisexual, Trans and Queer Men. The Journal of Sex Research. 2023;60(5):656-667. Available from: https://doi.org/10.1080/00224499.2022.2153786
- 7. Hobbs M, Owen S, Gerber L. Liquid love? Dating apps, sex, relationships and the digital transformation of intimacy. Journal of Sociology. 2017;53(2):271-284. Available from: https://doi.org/10.1177/1440783316662718
- 8. Hoyle RH, Stephenson MT, Palmgreen P, Lorch EP, Donohew RL. Reliability and validity of a brief measure of sensation seeking. Personality and Individual Differences. 2002;32(3):401-414. Available from: https://doi.org/10.1016/S0191-8869(01)00032-0
- 9. Jung G. Cross-National Public Opinion about Homosexuality: Examining Attitudes across the Globe by AmyAdamczyk. 2017. Sociological Inquiry. 2018;88(4):752–754. Available from: https://doi.org/10.1111/soin.12251
- LeFebvre LE. Swiping me off my feet: Explicating relationship initiation on Tinder. Journal of Social and Personal Relationships. 2018;35(9):1205-1229. Available from: https://doi.org/10.1177/0265407517706419
- 11. Ligtenberg L. Tinder, the App That is Setting the Dating Scene on Fire: A Uses and Gratifications Perspective. [Internet]. Available from: http://scriptiesonline.uba.uva.nl/document/605982
- 12. Matthews H. 27 Online Dating Statistics & What They Mean for the Future of Dating. DatingNews.com. 2018 Jun 7. Available from: https://www.datingnews.com/industry-trends/online-dating-statistics-what-they-mean-for-future/
- 13. Miller B. They're the modern-day gay bar: Exploring the uses and gratifications of social networks for men who have sex with men. Computers in Human Behavior. 2015;51:476-482. Available from: https://doi.org/10.1016/j.chb.2015.05.023.
- 14. Nargund G. Declining birth rate in Developed Countries: A radical policy re-think is required. PubMed Central (PMC); c2009. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC42555 10/
- 15. Orchard T. Online dating sites. Encyclopaedia of Sexuality and Gender; c2019.
- 16. Orosz G, Tóth-Király I, Bőthe B, Melher D. Too many swipes for today: The development of the Problematic Tinder Use Scale (PTUS). Journal of Behavioral Addictions. 2016;5(3):518-523. Available from: https://doi.org/10.1556/2006.5.2016.016
- 17. Powell L, Powell V. Queer dating during social distancing using a text-based app. SN Social Sciences. 2022;2(6):78. Available from: https://doi.org/10.1007/s43545-022-00345-4
- 18. Peter J, Valkenburg PM. Who looks for casual dates on the internet? A test of the compensation and the recreation hypotheses. New Media & Society. 2007;9(3):455-474. Available from: https://doi.org/10.1177/1461444807076975
- 19. Ranzini G, Lutz C. Love at first swipe? Explaining Tinder self-presentation and motives. Mobile Media &

- Communication. 2017;5(1):80-101. Available from: https://doi.org/10.1177/2050157916664559
- 20. Regan H. Fields, features, and filters: how dating applications construct sexual fields and romantic and erotic capital. Sexualities. 2021. Available from: https://doi.org/10.1177/13634607211056878
- 21. Roth Y. Zero Feet Away: The Digital Geography of gay Social Media. Journal of Homosexuality. 2015;63(3):437-442. DOI:10.1080/00918369.2016.1124707
- 22. Sales NJ. Tinder is the night | Vanity Fair. Vanity Fair | the Complete Archive. [Internet]. [Cited 2024 Feb 1]. Available from: https://archive.vanityfair.com/article/2015/9/tinder-is-the-night
- 23. Schaefer Riley N. Tinder is tearing society apart. New York Post. 2015 Aug 16. [Cited 2024 Feb 1]. Available from: https://nypost.com/2015/08/16/tinder-is-tearing-apart-society. DOI:10.1037/0022-3514.62.3.434
- 24. Simpson JA, Rholes WS, Nelligan JS. Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. Journal of Personality and Social Psychology. 1992;62(3):434-446.
- 25. Smith A, Anderson M. Online Reviews and Ratings. Pew Research Center. [Cited date unknown]. Available from: References Scientific Research Publishing.
- Strubel J, Petrie TA. Love me Tinder: Body image and psychosocial functioning among men and women. Body image. 2017;21:34-38.
 DOI:10.1016/j.bodyim.2017.02.006
- Sumter SR, Vandenbosch L, Ligtenberg L. Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder. Telematics and Informatics. 2017;34(1):67-78.
 DOI:10.1016/j.tele.2016.04.009
- 28. Sumter SR, Vandenbosch L. Dating gone mobile: Demographic and personality-based correlates of using smartphone-based dating applications among emerging adults. New Media & Society. 2019;21(3):655-673. DOI:10.1177/1461444818804773
- 29. Thomas MF, Binder A, Stevic A, Matthes J. 99+ matches but a spark Ain't one: Adverse psychological effects of excessive swiping on dating apps. Telematics and Informatics. 2023;78:101949. DOI:10.1016/j.tele.2023.101949
- 30. Timmermans E, Courtois C. From swiping to casual sex and/or committed relationships: Exploring the experiences of Tinder users. The Information Society. 2018;34(2):59-70. DOI:10.1080/01972243.2017.1414093
- 31. Tran A, Suharlim C, Mattie H, *et al.* Dating app use and unhealthy weight control behaviors among a sample of U.S. adults: A cross-sectional study. J Eat Disord. 2019;7:16. DOI:10.1186/s40337-019-0244-4
- 32. Tyson G, Perta VC, Haddadi H, Seto MC. A first look at user activity on tinder. In: 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). IEEE; c2016. p. 461-466. DOI:10.48550/arXiv.1607.01952.