

Popular dating apps in Indonesia and the United States

Ramadhani Akbar Ilmiawan^{a,1,*}, Riza Maqfiratun Nafisah^{a,2}, Rizki Khoirun Nisa^{a,3}, Yaritza Haq Indra Hart^{a,4}, Roni Herdianto^{b,5}

^a Department of Electrical Engineering, Universitas Negeri Malang, Malang, Indonesia

^b Graduate School, Universitas Negeri Malang, Malang, Indonesia

¹ ilmuwan10@gmail.com*; ² rizamaqfiratun@gmail.com; ³ rizkinisa004@gmail.com, ⁴ yaritzahaq@gmail.com, ⁵ roni.herdianto@um.ac.id

* corresponding author

ARTICLE INFO

ABSTRACT

Article history

Received June 14, 2021

Revised July 3, 2021

Accepted July 28, 2021

Keywords

Dating applications

Privacy policy

Data security

Romance scams

The use of smartphones and the internet has changed the way people have partners. Location-based dating apps are also designed to maximize people's experience of finding partners. Apart from the various benefits, there are also risks such as adultery, fraud, and sexual crimes. In this research, we want to study the research and negative impacts of the three most popular dating apps in Indonesia and the United States. This research is a descriptive study with a qualitative narrative approach. The purpose of this study is to compare the use of dating apps in Indonesia and the United States and the negative impacts of these dating apps. This research finds that Tinder is the dating app with the most number of users and has the best privacy and security policy system in Indonesia and the United States. However, due to cultural and environmental differences in the two countries, internet crime is more prone to occur in the United States. Even so, the legal protection in the United States in resolving cases caused by dating apps is more robust than in Indonesia.

This is an open access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



1. Introduction

Current technological developments can take over conventional employment, information, communication, and education [1]. With social media, people can easily communicate and share information with other people [2]. Thus, smartphones and internet have become very important today.

Over the past 20 years, smartphones and the internet have changed how people get partners from other countries. Location-based dating applications with real-time maximize people's experience finding their partner based on geographic location [3]. People can also easily connect with potential partners who have the same sexual orientation and religious views [4]. Now, finding the right partner is no longer a big problem.

Apart from the benefits, portability, availability, opportunity, and multimodality offered by various dating apps [5], there are also risks such as infidelity, fraud, and sexual crimes [3]. Especially in dating applications that use the geolocation feature, which makes it easier for couples to find someone nearby [6]. Some applications are also unable to verify data, allowing catfishing to occur. If the photo uploaded on the application is different from the natural person, this can also result in cyberbullying. An even bigger impact is body shaming and avoidant personality disorders that can affect mental health. Avoidant Personality Disorder is an individual who has extreme anxiety about criticism from others, so they tend to avoid social interactions that have the potential to raise criticism on that individual [7]. Thus, people must be able to use dating applications wisely to avoid these risks.

Not everyone has the same goals and reasons for using dating apps. The majority use it just for fun and making friends. Some want to find someone and seek a more meaningful relationship. However, crimes are still common in dating applications, such as fraud, data theft, and threats of computer

viruses [8]. In this study, three online dating applications that are most popular in Indonesia and the United States will be compared in terms of the privacy policy and data security, also criminal cases that occur, and legal protection of the two countries. So, it is hoped that this research can be a reference for couples who use dating applications and the government in resolving the negative impact of dating applications.

2. Method

This research employed a qualitative research design and used a descriptive approach. The method used in this research is document study or document analysis. Document analysis is a systematic procedure helpful in reviewing documents, both printed and electronic material (computer-based and internet). The data used comes from documents related to research [9]. This research is a comparative study between Indonesia and the USA. Here is a comparison chart of popular dating apps in Indonesia and the United States.

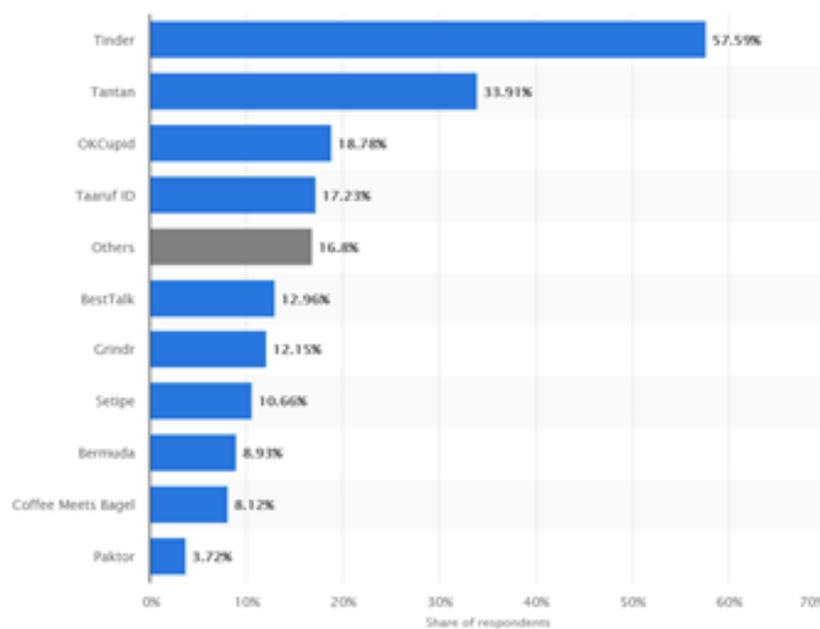


Fig. 1. Leading Mobile Dating Apps in Indonesia as of September 2020 [source: statista.com]

Fig 1. shows some of the dating apps used in Indonesia. Based on the results of a survey conducted by Rakuten Insight in October 2020 through the publication of statista.com, out of a total of 1,613 respondents with an age range over 16 years, the survey results show that the Tinder application ranks first as dating. The application most used by Indonesians with a proportion of 57.59% and the application least used by Indonesians is Paktor with a proportion of 3.72%

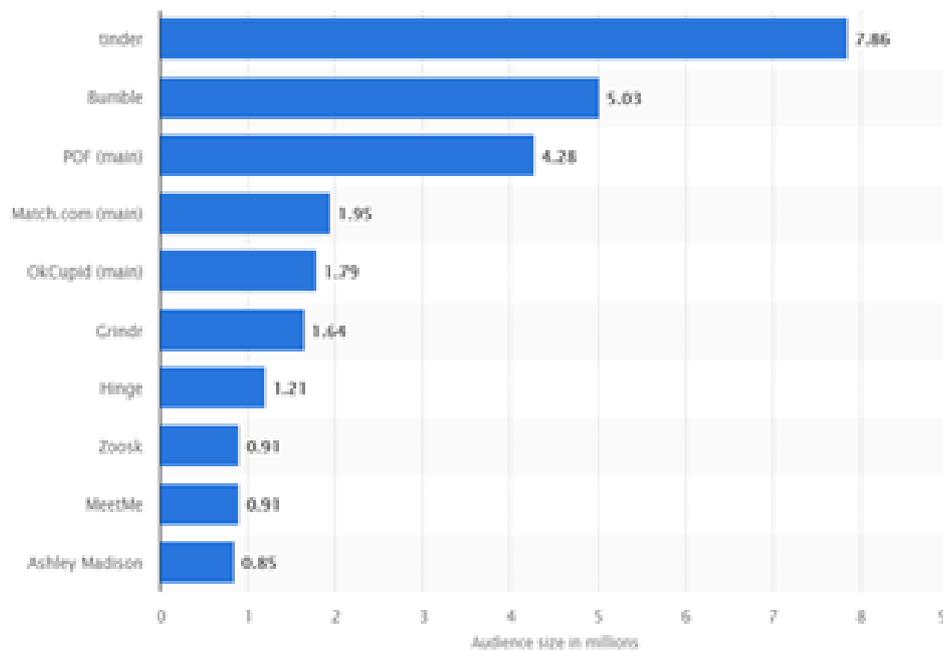


Fig. 2. Most Popular Online Dating Apps in the United States as of September 2019 [Source: statista.com]

Fig. 2. shows some of the dating apps used in the United States. Based on a survey conducted by Verto in November 2019 through the publication of statista.com, the survey stated that Tinder is the favorite application used by Americans with 7.86 million users and the least desirable application for use by Americans is Ashley Madison with 0.85 million users.

Each of the three popular dating applications in Indonesia and the United States was selected from the data. Popular dating apps are selected based on their ranking. Tinder, Tantan, and OkCupid were selected as popular dating apps in Indonesia. Tinder, Bumble, and POF (Plenty of Fish) were voted popular dating apps in the United States. These applications are compared based on privacy policy and data security. There is also an explanation regarding the case due to the dating app and its legal protection.

3. Results and Discussion

The most popular dating apps in a country are not necessarily apps created and released by that country. The marketing strategy has made dating apps known and used by people in various countries. Apart from that, some dating apps sometimes have similar features because they were developed in the same parent company. Here is brief information about the three most popular dating applications in Indonesia and the United States.

Tinder is a dating application that originated in the United States and was launched on September 12, 2012. Tinder was created by Sean Red, then developed by Match Group, an internet, and technology company based in Dallas, Texas [10]. Tinder performs and performs searches based on the profile photo, hobbies, and location using the GPS on the phone. Tinder is the first dating application to implement the swipe feature to select potential partners. Swipe left for "no", swipe right for "like" and swipe up for "really like" [11]. The swipe feature is expected to be able to help users make selections more easily and quickly.

Tantan is a dating application developed by the PICN company from China and released in 2014. Since it was first released, Tantan has attracted the attention of many people, according to its official website, now there are more than four billion Tantan users worldwide. The features of the Tantan app are similar to other dating apps, namely using geolocation and photos to find a partner and selecting them using the swipe feature.

OkCupid is a dating app developed by Match Group, the company that also houses Tinder. OkCupid was created by Chris Coyne, Christian Rudder, Sam Yagan, and Max Krohn and was launched on January 19, 2004 [10]. Initially, OkCupid was a social networking site called the spark,

which provided quizzes and personality tests to connect with other users with similar personalities. After its popularity, TheSpark changed its name to OKCupid and focused on developing dating apps. In 2011 OkCupid was acquired by IAC (InterActiveCorp), the parent company of Match Group. The working system of the OkCupid application is different from other dating applications, searches are determined based on answers to questions and personality tests. In addition, users can immediately send messages to potential partners even though they haven't matched yet.

Bumble is a dating application originating from the United States which launched in December 2014. The Bumble application was developed by Match Group, an American company that also houses several other dating applications [10]. The Bumble app has a working system and features similar to the Tinder app. The system searches based on geolocation data then the user will select it using the swipe feature. Female users can send messages to other matched users to have deeper interactions. The system can delete match notifications automatically if within 24 hours the user does not send a message to their partner. This policy applies to free users of the Bumble application.

POF (Plenty of Fish) is an online dating application that originated in Canada, was created by Markus Frind, and was released in 2003. In July 2015, POF (Plenty of Fish) was acquired by Match Group, a company that also houses Tinder, Bumble, and Match [10]. POF (Plenty of Fish) has a similar way of working with other dating applications. POF (Plenty of Fish) will recommend a partner based on photos and geolocation data then the user selects them using the swipe feature. Paid users can specifically search for partners by using a feature on the search engine to find a partner according to their wishes.

3.1. Comparison of Privacy Policy Dating Apps

Various popular dating applications provide the best services so that users can feel comfortable when using the application. Each application certainly has a privacy policy that may differ depending on the applicable law and the company to support the best service. Based on data from the most popular dating applications in Indonesia and the United States, each of the three dating applications is taken and compared to each application's privacy policies. Reporting from the official website of each application, here is the comparison in Table 1.

Based on the comparison of data taken from the official website of each application, it can be seen that there are differences in the policies of each popular application. There are several significant differences, including the first time there is a safety retention window before the account is permanently deleted, the OkCupid application has the most extended timeframe compared to other applications, which is one year. Tantan and POF applications do not provide a safety retention window so that when the account is deleted, existing data will also be permanently deleted. The second difference is the age limit. Only the Tantan application allows children under the age of 18 to have an account with the condition of parental consent. The third significant difference is the privacy policies between Tinder, which operates in Indonesia, and the United States. Tinder users in the United States can request notification of what personal data is shared with third parties, such as name, age, or address needed to support the services provided. However, Tinder users in Indonesia cannot request this information, so users do not know what personal information is being shared with third parties. This can reduce the level of comfort and confidence in the dating app itself.

The privacy policy in dating applications will affect user comfort—the more complete the existing privacy policy, the higher level of user confidence in using the application. For dating application users, privacy is an important thing needed to interact [12]. Based on the comparison of privacy policies, Tinder is the most popular application both in Indonesia and in the United States, which has a high level of privacy policy, followed by Bumble and OkCupid, can be seen from the number of data security supporting elements available on Tinder (marked with a checkmark).

Table.1 Comparison of the three most popular dating apps in Indonesia and in the United States

Differences	Indonesia			United States		
	Tinder	Tantan	OkCupid	Tinder	Bumble	PoF
The period of the safety retention window before the account is permanently deleted	3months	-	1 year	3months	28days	-
Minimum age 18 years	✓	-	✓	✓	✓	✓
Collect the personal information of users according to consent	✓	✓	✓	✓	✓	✓
Automatic review to reduce negative risk	✓	✓	✓	✓	✓	✓
Automatically block suspicious accounts	✓	-	-	✓	✓	-
Bridging users with the authorities	✓	✓	-	✓	-	-
Provide anti-fraud team	✓	-	-	✓	-	-
Data encryption	✓	✓	-	✓	-	-
Use basic contract clauses for cross-border data transfers	✓	-	✓	✓	✓	-
Use cookies to recommend user activity	✓	✓	✓	✓	✓	✓
User rights to manage the information to be shared	-	✓	✓	-	✓	✓
Share user data with third parties to help provide the best service.	✓	✓	✓	✓	✓	✓
Receive data from other social media such as Facebook	✓	-	-	✓	✓	✓
Implemented a bug bounty program to secure information	-	-	✓	-	-	-
May request notification of what personal data is shared with third parties	-	-	-	✓	✓	-

3.2. Comparison of Data Security Dating Applications

System security is an important aspect to be included in the application, especially in some dating applications, where the data entered is personal data that is private and sensitive. Systems with tight data security can attract user confidence in protecting their data from cyber-attacks.

Dating apps have different levels of data security with established technology and privacy policies. Referring to Table 1, three popular dating applications in Indonesia and America have differences in several aspects of their privacy policies that can affect the security of user data. The first difference is that only the Tinder and Bumble Apps will depend on unusual activity patterns. The second difference is that the Tinder and Tantan Applications use data encryption technology to protect user privacy. The third difference is that the Tinder, OkCupid, and Bumble applications will transfer to countries outside the EEA (European Economic Area) based on standard contractual clauses to ensure the security of user data. The fifth difference is that only the Tinder and OkCupid applications implement a bug bounty program to help the team find security holes to prevent cyber attacks. Based on the data above, it can be ignored that Tinder has the highest level of data security compared to other dating applications. Tinder has a more complete data security policy.

Although all dating applications have made efforts to maintain and ensure the security of user data, there is no system with a 100% data security level, proven by several cybersecurity cases. Based on

research conducted by Cybersecurity White Ops and informed via cybersecurity-insiders.com, as many as 70,000 photos of women using Tinder have been stolen and shared on cybercrime forums [13]. In addition, in 2020, based on information from security brief.co.nz, a cyber organization, namely checkpoint research, also found gaps in the security of OkCupid websites and applications, which allow hackers to access and measure user data. Based on these facts, even though every system has guaranteed data security, we still need to select the information to be uploaded on the internet.

3.3. Comparison of Number of Dating Application Cases

In Indonesia, the Directorate of Cyber Crime (Dittipidsiber) Bareskrim Polri received 2,259 reports of cybercrime cases from January to September 2020. Reports about the distribution of provocative content were the most reported, with 1,048 cases. Fig.3. is about crime cases related to dating apps [14].

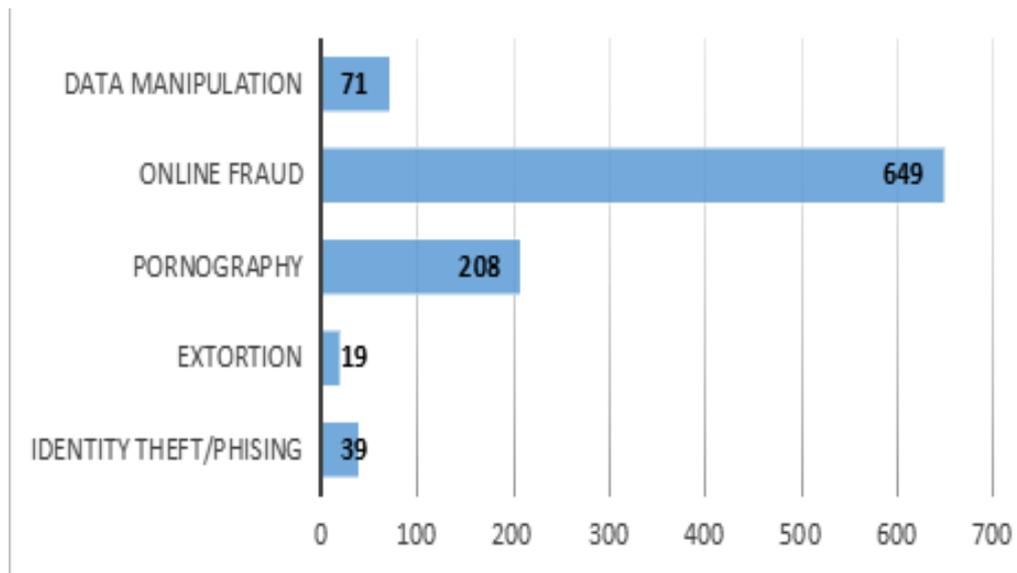


Fig. 3. Criminal case data originating from an online dating application in Indonesia

Fig. 3 shows that online application-based crime in Indonesia is dominated by online fraud. For example, a woman from Jakarta suffered a loss of Rp15.8 billion after being subjected to a criminal act of fraud using online dating. According to the Head of the Public Relations Division of Polda Metro Jaya, Kombes Pol Yusri Yunus, this case is not just fraud but also a criminal act of money laundering. "The fraud and money laundering offenses which occurred in April from a report by someone (a woman from Jakarta), the loss is more than Rp15 billion," said Head of Public Relations of Polda Metro Jaya, Kombes Pol Yusri Yunus at Polda Metro Jaya, Friday, November 27, 2020 [15].

After that in the United States from the recent data provided by Facebook, many users' data was stolen. such as name, ID, telephone number, and email. According to an FBI 2019 report on internet crime, 241,342 Americans fell victim to phishing attacks last year, making it the most common type of cybercrime. Identity theft and spoofing also high on the list of common offenses. Protecting personal data from getting into the wrong hands is crucial for the fight against online crime. Fig. 4. is about crime cases related to dating apps.

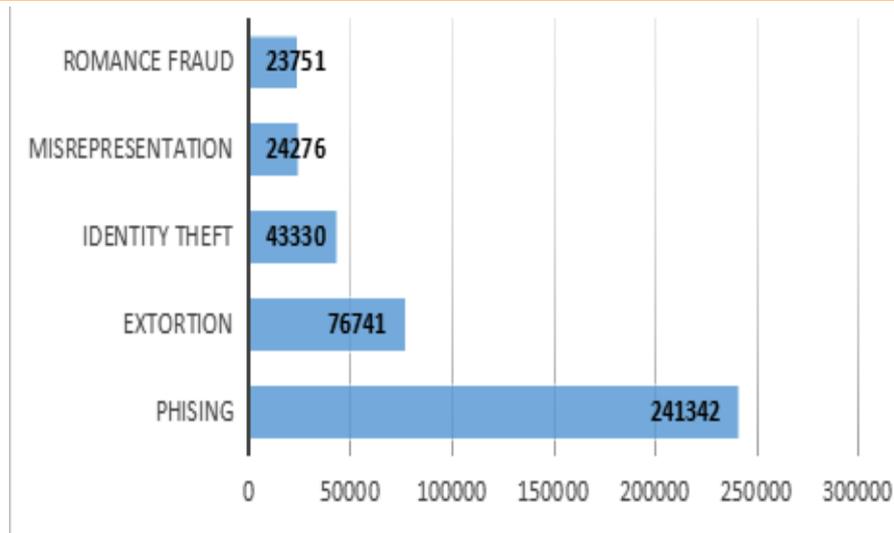


Fig. 4.Criminal case data originating from an online dating application in the USA

The graph above shows that the United States also has many cases regarding online dating. In the United States alone, there are many cases of phishing. Phishing itself means an attempt to get someone's data information with phishing techniques. The data that is subject to phishing is personal data (name, age, address), account data (username and password), and financial data (credit card information, account). According to data from Lloyds Bank, people aged 55 to 64 are particularly at risk. Like Anna (not her real name), who is in her 50s and a widow: she became prey to her scammer, who called himself Tim, after meeting him on a dating website, initially using its chat facility before switching to WhatsApp. After a few weeks, Tim told Anna he was traveling to Romania to work on a transport project and asked her to send money. First, he asked for small amounts, and then larger ones, eventually defrauding her £320,000. Romance fraud often starts on online dating websites but quickly switches to social media or old-fashioned texting, so there is no evidence of the scam. Sometimes the scammer is more subtle than just asking for money, seeking to garner personal information, which can later be used to commit identity fraud [16].

3.4. Comparison of Legal Protection

The increasing annual number of crimes also offsets the increasing number of dating app users., must be supported by solid legal protection from the local government. Legal protection is an effort made by government and private institutions that are intended to control, secure, fulfill and live a welfare life under existing human rights. Therefore, the government is obliged to provide legal protection because this is a natural form of government in providing a sense of security to its citizens. A comparison of legal protection provided by Indonesia and the United States in handling cases caused by online dating applications is presented in Table 2.

Table.2 Comparison of Legal Protection in Indonesia and the United States

Difference	Indonesia	United States
The law that regulates cases through dating apps	Article 35 in conjunction with Article 51 paragraph 1 of the ITE Law	The Computer Fraud and Abuse Act (CFAA), 18 U.S.C. 1030
A specialized agency that handles cases through dating apps	-	Federal Trade Commission (FTC)
The threat of punishment for the perpetrator of the case through a dating application	Prison for up to 12 years or a fine of up to IDR 12,000,000,000.00	Imprisonment of less than 5 years or a fine of less than \$ 250,000
Providing public education to prevent cases through dating applications	Still rare	Active through the FTC website and YouTube channel

In Indonesia, the rights of victims of fraud cases are in the Criminal Procedure Code (KUHAP) that deals with victims of the crime romance scam where the fraud is carried out via the internet. In addition to providing legal protection, the Indonesian government also applies policies to perpetrators regulated in the Criminal Code (KUHP) and Law No. 19 of 2016 concerning Electronic Information and Transactions.

In the Criminal Code, a specific article regulates criminal acts of fraud, namely Article 378 of the Criminal Code. Whereas in the ITE Law, the article that regulates identity fraud via the internet is Article 35 in conjunction with Article 51 paragraph 1 of the ITE Law issued by the government through the Ministry of Communication and Information Technology. These rules are not yet strong and sufficient to prevent the perpetrator from canceling his actions. It can be concluded that Indonesia does not yet have a strong and binding legal policy.

Whereas in the United States, the legal protection obtained by victims of the crime of romance scam is stronger than in Indonesia. This is evidenced by an independent agency called the Federal Trade Commission (FTC) which the United States government established. The FTC is tasked with preventing fraud and providing information to assist users in finding, stopping, and avoiding things that are suspected of being fraudulent [17]. Its primary mission is to enforce USA civil antitrust (non-criminal) laws and promote consumer protection. The main purpose of establishing the FTC is to provide education about identity fraud on dating apps. This educational provision can be seen in articles and graphic info published on the FTC website. In addition, the FTC's YouTube channel also uploads educational videos about fraudulent schemes in dating apps. The United States government strongly encourages its citizens to report all acts related to fraud experienced through the FTC website. With the result, it can be concluded that the United States government is more responsive in providing legal protection to victims of the romance scam than the Indonesian government.

4. Conclusion

The use of smartphones and the internet has also changed the way people find partners through dating apps. With benefits, portability, numbers, opportunities, and multimodality, dating app users are increasing every year. However, the increase in users was offset by the increase in criminal cases. Based on the data found, the three most popular dating apps in Indonesia are Tinder, Tantan, and OkCupid, while those in the United States are Tinder, Bumble, and PoF (Plenty of Fish). Each of these dating apps has a different privacy and security policy. Tinder is the most widely used dating app and has the best privacy and data security policy system in Indonesia and the United States.

Nonetheless, criminal cases are still vulnerable in both countries, such as sexual crimes, fraud, and cybercrimes. The number of cases that occur in the United States is higher than in Indonesia because of its culture and environment. The legal protection applied in the two countries is still not strong enough to prevent these crimes. However, the United States has better legal protection for victims, as evidenced by the existence of an independent agency called the Federal Trade Commission (FTC).

References

- [1] D. Acemoglu and P. Restrepo, "The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment," *Am. Econ. Rev.*, vol. 108, no. 6, pp. 1488–1542, Jun. 2018, doi: 10.1257/aer.20160696.
- [2] M. Li, J. Zhang, Z. Liu, and G. I. Johnson, "An Experimental Study of Chinese Shopping Related Sharing Behaviors," in *Human-Computer Interaction – INTERACT 2013*, P. Kotzé, G. Marsden, G. Lindgaard, J. Wesson, and M. Winckler, Eds. Berlin, Heidelberg: Springer, 2013, pp. 608–615.
- [3] Á. Castro, J. R. Barrada, P. J. Ramos-Villagrasa, and E. Fernández-del-Río, "Profiling Dating Apps Users: Sociodemographic and Personality Characteristics," *Int. J. Environ. Res. Public Health*, vol. 17, no. 10, p. 3653, May 2020, doi: 10.3390/ijerph17103653.
- [4] C. Clemens, D. Atkin, and A. Krishnan, "The influence of biological and personality traits on gratifications obtained through online dating websites," *Comput. Human Behav.*, vol. 49, pp. 120–129, Aug. 2015, doi: 10.1016/j.chb.2014.12.058.
- [5] G. Ranzini and C. Lutz, "Love at first swipe? Explaining Tinder self-presentation and motives," *Mob. Media Commun.*, vol. 5, no. 1, pp. 80–101, Jan. 2017, doi: 10.1177/2050157916664559.

-
- [6] C. Van De Wiele and S. T. Tong, "Breaking boundaries," in *Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing*, Sep. 2014, pp. 619–630, doi: 10.1145/2632048.2636070.
- [7] A. Weinbrecht, L. Schulze, J. Boettcher, and B. Renneberg, "Avoidant Personality Disorder: a Current Review," *Curr. Psychiatry Rep.*, vol. 18, no. 3, p. 29, Mar. 2016, doi: 10.1007/s11920-016-0665-6.
- [8] A. Murphy, "Dating dangerously: risks lurking within mobile dating apps," *Cath. UJL Tech*, vol. 26, p. 100, 2017.
- [9] G. A. Bowen, "Document Analysis as a Qualitative Research Method," *Qual. Res. J.*, vol. 9, no. 2, pp. 27–40, Aug. 2009, doi: 10.3316/QRJ0902027.
- [10] R. Wilken, J. Burgess, and K. Albury, "Dating apps and data markets: A political economy of communication approach," *Comput. Cult.*, vol. 7, pp. 1–26, 2019.
- [11] G. David and C. Cambre, "Screened Intimacies: Tinder and the Swipe Logic," *Soc. Media + Soc.*, vol. 2, no. 2, p. 205630511664197, Apr. 2016, doi: 10.1177/2056305116641976.
- [12] J. Farnden, B. Martini, and K.-K. R. Choo, "Privacy Risks in Mobile Dating Apps," *arXiv Prepr. arXiv1505.02906*, 2015.
- [13] N. Goud, "Tinder Cyber Attack exposes 70K female photos for Catfishing," 2019. <https://www.cybersecurity-insiders.com/tinder-cyber-attack-exposes-70k-female-photos-for-catfishing/> (accessed May 18, 2021).
- [14] C. M. Annur, "Daftar Kejahatan Siber yang Paling Banyak Dilaporkan ke Polisi," 2020. <https://databoks.katadata.co.id/datapublish/2020/09/08/daftar-kejahatan-siber-yang-paling-banyak-dilaporkan-ke-polisi> (accessed May 17, 2021).
- [15] I. Walhadi, "Kena Modus Penipuan Kencan Online, Wanita asal Jakarta Ini Alami Kerugian Rp15,8 Miliar," 2020. <https://isubogor.pikiran-rakyat.com/warta/pr-451024547/kena-modus-penipuan-kencan-online-wanita-asal-jakarta-ini-alami-kerugian-rp158-miliar> (accessed May 27, 2021).
- [16] J. Wakefield, "Romance fraud on rise in coronavirus lockdown," 2021. <https://www.bbc.com/news/technology-55997611> (accessed May 28, 2021).
- [17] N. S. P. S. Dewi and I. Irwansyah, "Regulasi terhadap Penipuan Identitas: Studi Fenomena 'Catfish' pada Social Networking Sites (SNS)," *J. Stud. Komun. (Indonesian J. Commun. Stud.)*, vol. 5, no. 1, p. 267, Feb. 2021, doi: 10.25139/jsk.v5i1.2612.