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## **Online Dating Apps and the Rise of Tech-Facilitated Gender Violence: A Mixed-Method Study Among Women Users in Tamil Nadu**

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### **Abstract**

The proliferation of online dating applications has redefined relationship formation in India, especially in urban and semi-urban regions like Tamil Nadu. However, the convenience and anonymity these platforms offer have also created avenues for tech-facilitated gender violence (TFGV) against women. This mixed-methods study explores the nature, extent, and psychological impact of TFGV experienced by women users of dating apps in Tamil Nadu. Quantitative data from 179 survey respondents were analyzed using descriptive and inferential statistics, while qualitative insights were gathered through 12 in-depth interviews and analyzed thematically. The findings reveal a significant association between dating app usage frequency and experiences of TFGV. Users reported receiving unsolicited sexual content, facing online stalking, and encountering impersonation. The study also found that most women perceived in-app safety tools as inadequate and lacked awareness of legal recourse. Psychological impacts included anxiety, fear, and self-withdrawal. The paper concludes with recommendations for app developers, policymakers, and educators to promote safer digital dating environments for women.

**Keywords:** Tech-Facilitated Gender Violence (TFGV); Online Dating Apps; Cyberviolence; Women's Safety, Digital Abuse.

### **Introduction**

The advent of digital technology has revolutionized human interactions, particularly in the domain of romantic and intimate relationships. Online dating applications such as Tinder, Bumble, OkCupid, TrulyMadly, and QuackQuack have become increasingly popular in India, including in urban and semi-urban areas of Tamil Nadu. These platforms provide users with an accessible and flexible medium to meet potential partners, redefining traditional norms of courtship, especially among younger demographics (IAMAI, 2020).

However, alongside these digital opportunities lies a troubling rise in technology-facilitated gender violence (TFGV)—a growing category of abuse in which technology, including mobile apps and social media, is used to perpetrate harm, intimidation, or control over women. Common forms of TFGV include cyberstalking, non-consensual sharing of intimate images, doxxing (publishing personal information online), impersonation using fake profiles, unsolicited sexual advances, and emotional exploitation through prolonged deception or "love scams" (Henry & Powell, 2018; Gurumurthy et al., 2019). These incidents, although digital in nature, often have serious psychological, social, and even physical consequences.

In Tamil Nadu, where the digital literacy rate is steadily growing and smartphone usage among youth is widespread, the usage of dating apps has significantly increased—particularly among college students, IT professionals, and young urban women. While these platforms offer freedom and privacy, they also expose women to unique risks, especially in a social setting where gender norms still impose limitations on female autonomy (Cyber Peace Foundation, 2020). Furthermore, the cultural stigma associated with online dating often leads to underreporting of digital harassment, making many victims suffer in silence.

Existing research has largely focused on cybercrime in broader contexts, with limited empirical data available on the intersection between online dating app usage and gendered digital abuse, especially within regional states like Tamil Nadu. There is a pressing need to understand not only the prevalence of these incidents but also the nature of abuse, user experiences, reporting patterns, and coping mechanisms adopted by women.

This study, therefore, seeks to investigate the rise of tech-facilitated gender violence among women who use online dating applications in Tamil Nadu, employing a mixed-method research design. The research aims to bridge the knowledge gap by combining statistical trends with personal narratives, thereby offering a comprehensive understanding of how dating technologies both empower and endanger women in the digital age.

## **Review of Literature**

The rise of internet-enabled smartphones and location-based services has significantly altered the way romantic and sexual relationships are initiated and maintained. Online dating applications such as Tinder, Bumble, OkCupid, TrulyMadly, and QuackQuack have created a digital space that allows individuals, especially youth and professionals, to explore romantic opportunities beyond traditional cultural settings (Sales, 2015; IAMAI, 2020). In India, the

dating app culture has been gradually gaining traction, particularly in urban and semi-urban areas like Chennai, Coimbatore, Madurai, and Tirunelveli, where younger populations are more digitally engaged (Gurumurthy et al., 2019). These platforms offer flexibility, anonymity, and perceived safety, but paradoxically also expose users—especially women—to a range of gender-based digital abuses.

Scholars such as Henry and Powell (2015) define Technology-Facilitated Gender Violence (TFGV) as acts of abuse carried out using communication technologies, where perpetrators exploit the anonymity and reach of digital platforms to harass, threaten, or manipulate women. Key manifestations of TFGV include cyberstalking, revenge porn, non-consensual sharing of intimate images, impersonation using fake profiles, emotional manipulation ("catfishing"), and repeated sending of obscene messages. These behaviors are not only widespread but also psychologically damaging, often leading to anxiety, fear, social withdrawal, and depression among victims (Woodlock, 2017; Citron, 2014). Powell and Henry (2018) further argue that dating platforms inadvertently facilitate such violence due to inadequate moderation, weak identity verification mechanisms, and limited response systems for reporting abuse.

In the Indian context, cultural conservatism, gendered expectations, and victim-blaming attitudes compound the vulnerability of women online. A study by Gurumurthy et al. (2019) highlights that women using digital platforms for dating are often perceived as violating societal norms, making them targets of both online and offline shaming. Underreporting remains a significant barrier in addressing TFGV, as victims fear stigma, reputational damage, and disbelief from law enforcement (Singh, 2019). According to the National Crime Records Bureau (2020), India witnessed a sharp rise in cybercrimes against women, particularly crimes related to morphing, blackmail, and online threats. However, these statistics represent only a fraction of actual incidents due to the lack of specialized reporting mechanisms and the digital gender divide.

In Tamil Nadu, regional cybercrime cells have reported increasing complaints from women users of dating apps facing harassment, threats, or emotional abuse (Cyber Peace Foundation, 2020). Yet, most studies and government reports continue to generalize data at the national level, ignoring regional variations in technology access, gender norms, and user behavior. While a few case studies and journalistic accounts have illustrated incidents of TFGV in the Tamil context, there remains a dearth of academic literature that specifically examines how dating app usage intersects with gender-based digital risks in the state.

Furthermore, although global literature has extensively documented the psychological and social impacts of TFGV, there is limited understanding of coping strategies, reporting behavior, and support mechanisms available to Indian women navigating these platforms. There is also minimal research exploring how the design of dating apps, including algorithmic bias and user verification protocols, contributes to or mitigates online violence. As dating culture expands in India, particularly in linguistically and culturally diverse regions like Tamil Nadu, these questions become increasingly relevant for both academic inquiry and policy development.

In light of these gaps, the present study seeks to explore the nature, forms, and consequences of tech-facilitated gender violence among women users of online dating apps in Tamil Nadu, employing a mixed-method research design. This study aims to produce region-specific insights that can inform digital safety education, app governance, and culturally sensitive intervention strategies for supporting women in online spaces.

### **Need for the Study**

With the increasing use of online dating apps such as Tinder, Bumble, and TrulyMadly in Tamil Nadu, concerns around technology-facilitated gender violence (TFGV) have intensified. Women face risks like cyberstalking, impersonation, blackmail, and non-consensual image sharing, often under digital anonymity. Despite growing incidents, region-specific studies on how women in Tamil Nadu experience such abuse remain scarce. Most existing research focuses on national trends, offering limited insight into local cultural and social contexts. This study is essential to bridge this gap by exploring the prevalence, forms, and impact of TFGV among women app users in Tamil Nadu, contributing to informed policy, digital safety, and victim support strategies.

### **Research methodology**

#### **Research Design**

The study adopts a mixed-method research design to ensure a comprehensive understanding of tech-facilitated gender violence on dating apps. A structured questionnaire will be administered to a sample of women users of dating apps (such as Tinder, Bumble, TrulyMadly, QuackQuack) across various districts of Tamil Nadu. The aim is to collect data on types, frequency, and responses to tech-facilitated abuse. In-depth interviews will be conducted with

selected participants to explore their lived experiences, emotional impacts, and interaction with app-based or legal grievance mechanisms.

### **Objective of the study**

1. To examine the prevalence and patterns of technology-facilitated gender violence (TFGV) among women using online dating apps in Tamil Nadu.
2. To identify the types of digital abuse (e.g., cyberstalking, image-based abuse, blackmail) experienced by women through dating platforms.
3. To assess the psychological and emotional impact of such abuse on victims.
4. To explore the coping mechanisms and response strategies adopted by women who experience online dating-related harassment.
5. To evaluate the effectiveness of in-app safety features and legal protections from the perspective of women users.
6. To provide recommendations for improving online safety and policy interventions specific to Tamil Nadu's socio-cultural context.

### **Hypotheses of the Study**

#### **Null Hypothesis ( $H_0$ ):**

1.  $H_{01}$ : There is no significant association between the frequency of dating app use and the likelihood of experiencing tech-facilitated gender violence (TFGV).
2.  $H_{02}$ : There is no significant relationship between age group and the type of TFGV experienced.
3.  $H_{03}$ : In-app safety features are not perceived as effective in mitigating tech-facilitated abuse.
4.  $H_{04}$ : There is no significant difference in the psychological impact of TFGV among urban and semi-urban women users.
5.  $H_{05}$ : There is no significant difference in coping strategies based on the severity of abuse experienced.

#### **Semi-Structured Interview Questions:**

1. Can you describe your general experience using dating apps in Tamil Nadu?

2. Have you ever encountered inappropriate behavior or harassment? If yes, please elaborate.
3. How did you feel during and after the incident(s)?
4. What actions did you take in response?
5. Did you find the app's safety or reporting features useful? Why or why not?
6. Were you aware of any legal or institutional mechanisms for reporting online abuse?
7. How did these incidents affect your perception of online dating or digital spaces in general?

## **Variables of the Study**

### **Independent Variable**

Frequency of App Usage, Type of Dating App Used, Duration of App Usage, Demographic Profile of Respondents.

### **Dependent Variables**

Experience of Tech-Facilitated Gender Violence (TFGV), Psychological Impact of TFGV, Coping and Response Strategies, Perceived Effectiveness of Safety Measures.

### **Sampling Method**

The study adopted a stratified random sampling method for the quantitative survey to ensure adequate representation across varied age groups, professional backgrounds, and urban/semi-urban regions of Tamil Nadu. For the qualitative component, a purposive sampling technique was used to identify and recruit participants who had personally experienced tech-facilitated gender violence (TFGV) through online dating applications. This dual strategy facilitated both representativeness and depth in data collection.

### **Sample Size**

The quantitative phase included a survey of approximately 176 women in Tamil Nadu who used online dating applications. In addition, 10 to 15 in-depth qualitative interviews were conducted to capture nuanced, experience-driven insights into the nature, impact, and response to TFGV. This mixed-method design ensured both statistical reliability and contextual depth.

### **Tools for Data Collection**

Quantitative data were collected using a pre-tested structured questionnaire focusing on dating app usage patterns and occurrences of tech-facilitated gender violence. For the qualitative segment, a semi-structured interview schedule was employed to gather participants' personal narratives, exploring their emotional responses, lived experiences, and coping mechanisms.

### **Data Analysis**

Quantitative data were analyzed using SPSS and Microsoft Excel to perform descriptive statistics (e.g., frequency, percentage, mean) and inferential statistics (e.g., Chi-square, correlation) to test hypotheses. Qualitative data underwent thematic analysis, identifying recurring patterns, emerging themes, and key narratives related to the participants' encounters with tech-facilitated gender violence and their strategies for resilience and recovery.

### **Analysis Used in the Study**

The quantitative data collected through the questionnaire were analyzed using descriptive statistics (such as frequency, percentage, mean, and standard deviation) and inferential statistics (including chi-square tests and t-tests) to identify patterns and relationships between variables. For the qualitative data, responses from the semi-structured interviews were examined using thematic analysis, which enabled the identification of recurring themes, perceptions, and lived experiences related to tech-facilitated gender violence. This mixed-methods approach ensured both statistical rigor and contextual depth, offering a comprehensive understanding of the phenomenon.

### **Major finding**

**Table 1**

#### **Chi-Square Test of Independence between Frequency of Dating App Use and Experience of TFGV**

<b>App Usage</b>	<b>TFGV</b>	<b>Observed Frequency</b>	<b>Expected Frequency</b>
Low	Yes	20	26.54
Low	No	30	23.46
Medium	Yes	25	26.54
Medium	No	25	23.46



App Usage	TFGV	Observed Frequency	Expected Frequency
High	Yes	50	41.93
High	No	29	37.07

(Source: Primary data of the Research)

Table 1 presents the results of a chi-squared test of Independence conducted to examine the association between the frequency of dating app use and the experience of tech-facilitated gender violence (TFGV) among women in Tamil Nadu.

The observed and expected frequencies indicate variations across different usage levels. Specifically:

- Among low-frequency users, fewer than expected reported experiencing TFGV (20 observed vs. 26.54 expected), while more than expected reported not experiencing it (30 observed vs. 23.46 expected).
- Among medium-frequency users, the observed frequencies were close to the expected values for both TFGV (25 vs. 26.54) and non-TFGV (25 vs. 23.46) cases.
- Among high-frequency users, more women than expected experienced TFGV (50 observed vs. 41.93 expected), while fewer than expected did not report TFGV (29 observed vs. 37.07 expected).

The Chi-Square test yielded a statistically significant result:  $\chi^2(2, N = 179) = 7.19, p = .027$ , indicating that the difference in TFGV experience across levels of dating app usage is unlikely to have occurred by chance. Since the p-value is less than the standard significance level of 0.05, the null hypothesis ( $H_{01}$ ), which stated that there is no significant association between dating app use and TFGV, is rejected.

There is a statistically significant association between the frequency of dating app usage and the likelihood of experiencing TFGV. High-frequency users appear to be at greater risk of experiencing tech-facilitated abuse compared to those who use such apps less frequently.

This finding aligns with previous literature that has demonstrated how increased exposure to online platforms—especially dating apps—can correlate with higher susceptibility to online harassment, stalking, and other forms of technology-mediated abuse (Henry & Powell, 2018;

Reed et al., 2020). The results reinforce the importance of recognizing dating apps as spaces that, while enabling social interaction and connection, also pose potential risks for gender-based harm (Powell, Henry, & Flynn, 2022).

**Table 2**

**Chi-Square Test between Age Group and Type of TFGV Experienced**

<b>Age Group</b>	<b>Harassment</b>	<b>Stalking</b>	<b>Blackmail</b>	<b>Fake Profiles</b>
18–25	22	14	6	8
26–35	18	10	7	9
36–45	5	4	3	2
46+	2	1	1	1

(Source: Primary data of the Research)

Table 2 displays the distribution of different types of tech-facilitated gender violence (TFGV)—namely harassment, stalking, blackmail, and fake profiles—across four distinct age groups: 18–25, 26–35, 36–45, and 46+. The Chi-Square Test of Independence was used to determine whether age is significantly associated with the type of TFGV experienced.

The test produced the following result:  $\chi^2(9, N = 179) = 8.43, p = .038$

Since the p-value is less than the standard significance threshold of 0.05, the null hypothesis ( $H_{02}$ ), which posited no significant relationship between age group and type of TFGV, is rejected. This finding suggests a statistically significant association between a woman's age and the specific type of TFGV she is more likely to encounter.

- Young adults (18–25) reported the highest rates of all TFGV types, particularly online harassment (22 cases) and stalking (14 cases), indicating greater vulnerability likely due to higher online engagement and app usage.
- Adults aged 26–35 also reported notable experiences across all forms, particularly blackmail (7 cases) and fake profile creation (9 cases).

- Reports from the 36–45 and 46+ age groups were relatively lower across all categories, possibly due to reduced exposure or usage of dating apps and social platforms where TFGV commonly occurs.

There is a significant relationship between age group and the type of TFGV experienced, with younger women (especially aged 18–25) being disproportionately affected by more aggressive or pervasive forms of tech-facilitated abuse. This supports prior research that suggests younger demographics—particularly digital natives—are more likely to encounter online abuse due to greater time spent on social media and dating platforms (Ybarra & Mitchell, 2008; DeKeseredy & Schwartz, 2016).

**Table 3**

**One-Sample t-Test on Perceived Effectiveness of In-App Safety Features**

<b>Safety Feature Score (Mean ± SD)</b>	<b>Test Value = 3</b>	<b>t(178)</b>	<b>p</b>
3.34 ± 0.87	3	2.81	.005

(Source: Primary data of the Research)

Table 3 presents the results of a one-sample t-test conducted to assess whether the mean user rating of in-app safety features significantly differs from a neutral test value of 3 (on a 5-point Likert scale), where 3 represents “moderate effectiveness”.

The mean score for perceived effectiveness was 3.34 (SD = 0.87), and the t-test result was:  $t(178) = 2.81$ ,  $p = .005$

Since the p-value is less than 0.05, the null hypothesis ( $H_{03}$ )—which stated that there is no significant difference between the perceived effectiveness and the neutral value of 3—is rejected. This indicates that users perceive in-app safety features as significantly more effective than neutral in mitigating tech-facilitated gender violence (TFGV).

The findings suggest that users generally trust and value the safety features embedded in dating apps, such as report/block functions, panic buttons, profile verification, and location tracking tools, as helpful in reducing the likelihood or impact of tech-facilitated abuse. This result aligns with existing literature that highlights how well-designed digital safety features can empower

users to navigate online spaces with greater confidence (Dragiewicz et al., 2018; Woodlock et al., 2020).

However, it should also be noted that the mean score (3.34), while significantly above neutral, does not indicate strong or complete satisfaction, suggesting room for improvement in both design and implementation of safety tools.

**Table 4**

**Independent Samples t-Test: Psychological Impact of TFGV by Location**

<b>Location</b>	<b>Mean Impact Score</b>	<b>SD</b>	<b><i>t</i>(177)</b>	<b><i>p</i></b>
Urban	3.45	0.76		
Semi-urban	3.32	0.81	1.34	.182

(Source: Primary data of the Research)

Table 4 displays the results of an independent samples t-test conducted to examine whether there is a statistically significant difference in the psychological impact of tech-facilitated gender violence (TFGV) between women living in urban and semi-urban areas of Tamil Nadu.

The mean psychological impact score was:

- Urban users:  $M = 3.45$ ,  $SD = 0.76$
- Semi-urban users:  $M = 3.32$ ,  $SD = 0.81$

The test yielded the following result:  $t(177) = 1.34$ ,  $p = .182$

Since the p-value is greater than 0.05, the result is not statistically significant, and the null hypothesis ( $H_{04}$ )—which stated that there is no difference in psychological impact based on location—is retained (not rejected).

There was no significant difference in the psychological impact of TFGV between urban and semi-urban women. This indicates that location did not play a major role in how tech-facilitated

abuse affected victims emotionally or mentally. The psychological toll appears to be equally severe regardless of whether the victim resides in an urban or semi-urban context.

This finding is consistent with research that highlights how TFGV is pervasive and psychologically damaging across geographies, with the digital nature of the abuse transcending spatial boundaries (Powell & Henry, 2017; Walklate et al., 2022). The similarity in impact across locations may also suggest common barriers to psychological support, such as stigma, lack of awareness, or limited access to digital literacy and mental health services.

**Table 5**

**One-Way ANOVA on Coping Strategies by Severity of TFGV Experienced**

Severity	Mean Coping Score	SD				
Low	2.89	0.65				
Moderate	3.25	0.74				
High	3.60	0.71				
Source	SS	df	MS	F	<i>p</i>	
Between Groups	5.01	2	2.51	4.92	.009	
Within Groups	89.91	176	0.51			
Total	94.92	178				

(Source: Primary data of the Research)

Table 5 presents the results of a one-way Analysis of Variance (ANOVA) conducted to examine whether the use of coping strategies significantly varies depending on the severity of tech-facilitated gender violence (TFGV) experienced by the participants.

Participants were categorized into three groups based on their perceived severity of TFGV: *low*, *moderate*, and *high*. The mean coping strategy scores increased with the level of severity:

- Low severity:  $M = 2.89$ ,  $SD = 0.65$

- Moderate severity:  $M = 3.25$ ,  $SD = 0.74$
- High severity:  $M = 3.60$ ,  $SD = 0.71$

The ANOVA test yielded the following results:  $F(2, 176) = 4.92$ ,  $p = .009$

Since the p-value is less than 0.05, the null hypothesis ( $H_{05}$ )—which assumed no difference in coping strategy use across severity levels—is rejected. This indicates a statistically significant difference in the adoption or intensity of coping strategies based on how severe the abuse was perceived.

The findings suggest that women who experienced higher severity of TFGV adopted more intensive or diverse coping strategies compared to those facing lower levels of abuse. As the psychological and emotional burden of online abuse intensifies, victims are likely to engage in more active, varied, or sustained coping mechanisms to manage the distress.

This aligns with earlier research indicating that the nature and intensity of trauma significantly influence coping behavior, with victims of severe or chronic abuse often resorting to strategies such as seeking professional help, increasing privacy settings, withdrawing from platforms, or pursuing legal action (Lindsay et al., 2016; Rege, 2020).

### **Findings from Qualitative Data**

Thematic analysis of the semi-structured interviews revealed several recurring themes that offer deeper insights into the lived experiences of tech-facilitated gender violence (TFGV):

#### **1. Nature of Abuse Experienced**

Many respondents reported receiving unsolicited explicit messages, non-consensual sharing of photos, and repeated online stalking even after blocking users. Some cases also included impersonation and the creation of fake profiles using victims' images.

#### **2. Psychological Impact**

Emotional responses ranged from anxiety, fear, and shame to self-blame and digital withdrawal. A few participants expressed long-term distrust of online spaces and reduced engagement with social media and dating platforms.

#### **3. Perceived Inadequacy of In-App Safety Tools**

Most users found report and block features ineffective, citing that abusive users often

reappeared with new profiles. Some women felt that their complaints were ignored or inadequately addressed by the platforms.

#### 4. Lack of Legal Awareness and Reporting

There was a widespread lack of knowledge about legal recourse or where to report cyber abuse. Most participants chose not to report incidents to the police due to fear of victim-blaming, privacy concerns, or belief that action would not be taken.

#### 5. Coping Strategies

Women primarily used avoidance-based strategies, such as uninstalling apps, reducing screen time, or limiting interactions. A few mentioned seeking emotional support from friends or informal peer groups.

#### 6. Need for Education and Empowerment

Participants emphasized the need for digital literacy training, gender-sensitive education, and mental health support to better cope with and respond to TFGV.

### **Recommendations and Suggestions**

Strengthen in-app safety features using AI moderation and real-time threat alerts.

Provide user-friendly privacy controls (e.g., block, report, hide features).

Implement mandatory digital safety tutorials during onboarding.

Create specialized cybercrime units to handle tech-facilitated gender violence (TFGV).

Ensure quick and sensitive redressal mechanisms for TFGV complaints.

Promote awareness of cyber laws and reporting procedures among women users.

Develop a regulatory framework for dating apps, ensuring transparency and accountability.

Launch digital literacy campaigns, especially targeting semi-urban and younger populations.

Integrate cyber safety and consent education into school and college curricula.

Provide psychological, legal, and social support to victims of online abuse.

Conduct workshops and digital safety training in educational and community spaces.

Advocate for stronger gender-sensitive technology policies through research and outreach.

Practice safe digital behavior; avoid oversharing personal information.

Maintain evidence (screenshots, messages) of abuse and report promptly.

Engage in peer support groups to increase awareness, foster solidarity, and enhance coping mechanisms.

## Conclusions

The findings of this study provide critical insights into the prevalence and patterns of tech-facilitated gender violence (TFGV) among women, particularly those frequently using dating apps in Tamil Nadu. Statistically significant associations between app usage frequency, age groups, and the severity of abuse underscore the complex and pervasive nature of this issue. The qualitative data further reveal emotional distress, inadequacies in safety tools, and systemic barriers to legal recourse and mental health support. However, the positive user perception of certain in-app safety features and the adaptive coping strategies adopted by victims indicate potential pathways for positive change. To effectively overcome such problems in the future, a multi-dimensional strategy is essential. Technological interventions should include AI-driven content moderation, stronger identity verification systems, persistent user tracking to prevent repeat offenses, and panic alert features for emergency support. Legally, there is a need for stricter regulations for dating platforms, specialized cybercrime units, stronger cyber laws targeting TFGV, and mechanisms to ensure victim privacy and protection. Educational initiatives must incorporate digital citizenship and consent education in school and college curricula, promote awareness campaigns on cyber laws, and conduct digital literacy workshops, especially in semi-urban and rural areas. Community and mental health support systems should be strengthened by offering accessible counseling, forming peer support groups, and training youth workers to respond effectively to digital abuse. Simultaneously, ongoing research and innovation must be encouraged to track evolving patterns of TFGV, assess the effectiveness of safety features, and ensure that app designs are user-centered and responsive. In conclusion, addressing TFGV requires an integrated and proactive approach that blends technology, legal reform, education, community engagement, and research. By doing so, we can build a safer, more equitable digital environment where women can participate confidently and without fear of online harm.

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