



## Lady Bosses Under Siege: How Cyber Attacks Threaten Women Entrepreneurs & Digital Businesses

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### Introduction

The swift proliferation of digital technologies is generating novel prospects for growth and advancement, particularly in developing nations. However, the advantages of digitalization are not universal, and women worldwide continue to encounter numerous barriers to thriving in the digital economy, including gender bias, diminished involvement in decision-making, insufficient digital competencies, lack of confidence, and inequitable access to funding, among others.<sup>1</sup> Women constitute 28% of engineering graduates and 22% of professionals in artificial intelligence worldwide.<sup>2</sup> Societal standards, accessibility to education, and the absence of role models perpetuate the disparity between women and men in these domains. The focus of this article is to highlight those disparities faced by women entrepreneurs in the digital era, such that they are brought to the forefront of public discourse, in order to catalyse meaningful efforts in fostering inclusion and effective solutions.

### Sextortion & Doxxing of Women Entrepreneurs

In USA in 2014, the Gamergate began as an online movement, because a man wanted to punish his ex-girlfriend. He posted about her, initiating a sequence of abhorrent events, which ultimately led to harassing a

large number of progressive figures, mostly women, to the point where they felt unsafe or considered leaving the gaming industry.<sup>3</sup> Game developer Zoe Quinn was the original target. There were death threats, rape threats, and the public leaking of personal information. Barely a few game development houses took a stand against the online harassment, and it still highlighted issues of heteronormativity<sup>4</sup> present in the online space. Last year, Julie Grant, Australia's internet regulator, experienced an "avalanche of online abuse"<sup>5</sup> while attempting to fulfill her professional responsibilities. She received "death threats" and that her children were doxxed following targeted harassment by Elon Musk in response to her efforts to regulate his social media site, 'X'.<sup>6</sup>

The term "doxxing"<sup>7</sup> denotes the act of locating and then disseminating private or identifiable information about an individual on the internet, usually via social media platforms. Some countries have enacted legislation to penalize doxxing and other types of online harassment.

### Laws for Doxxing and Sextortion

The 2018 German Facebook Act [NetzDG]<sup>8</sup> imposes penalties on social media platforms that fail to eliminate hate speech, fake news, and unlawful content within 24 hours of its publication. Furthermore, beginning May 2018, the EU has enacted the General

<sup>1</sup> Shamika N. Sirimanne, FOSTERING WOMEN ENTREPRENEURSHIP IN THE DIGITAL ECONOMY, <https://unctad.org/publication/fostering-women-entrepreneurship-digital-economy> (Visited on April 5, 2025).

<sup>2</sup> Yasmin Ali Gedi, WOMEN ARE STARTING DIGITAL BUSINESSES BUT DESERVE MORE HELP, <https://blogs.worldbank.org/en/youth-transforming-africa/women-are-starting-digital-businesses-deserve-more-help> (Visited on April 5, 2025).

<sup>3</sup> Matt Lees, WHAT GAMERGATE SHOULD HAVE TAUGHT US ABOUT THE 'ALT-RIGHT', <https://www.theguardian.com/technology/2016/dec/01/gamergate-alt-right-hate-trump> (Visited on April 5, 2025).

<sup>4</sup> Oscar Pérez De La Fuente, ONLINE MISOGYNY AND THE LAW: ARE HUMAN RIGHTS PROTECTED ON THE NET?, <https://revistaselectronicas.ujae.es/index.php/TAHRJ/article/view/8270/8128> (Visited on April 5, 2025).

<sup>5</sup> Hannah Ritchie, 'THESE AREN'T JUST WORDS': THE WOMAN THREATENED FOR TAKING X TO COURT,

<https://www.bbc.com/news/articles/cx2ymd32g2e0> (Visited on April 5, 2025).

<sup>6</sup> Josh Taylor, AUSTRALIA'S ONLINE SAFETY REGULATOR HAS DRAWN A LINE IN THE SAND FOR X. WILL SHE PREVAIL?, <https://www.theguardian.com/australia-news/2024/may/02/australias-online-safety-regulator-has-drawn-a-line-in-the-sand-for-x-will-she-prevail> (Visited on April 5, 2025).

<sup>7</sup> Emre Basaran, DOXXING DISPROPORTIONATELY IMPACTS WOMEN, EXISTING LAWS FALLING FLAT: EXPERT, <https://www.aa.com.tr/en/science-technology/doxxing-disproportionately-impacts-women-existing-laws-falling-flat-expert/3171670> (Visited on April 5, 2025).

<sup>8</sup> Library of CONGRESS, GERMANY: NETWORK ENFORCEMENT ACT AMENDED TO BETTER FIGHT ONLINE HATE SPEECH, <https://www.loc.gov/item/global-legal-monitor/2021-07-06/germany-network-enforcement-act-amended-to-better-fight-online-hate-speech/> (Visited on April 5, 2025).

Data Protection Regulation<sup>9</sup> to enhance user control over personal data online, including the “right to be forgotten.” In the US, a bill to the Online Safety Modernization Act<sup>10</sup> was introduced by the Congress in the House of Representatives in 2017 to address the increase in online crimes that disproportionately affect women and girls, including doxxing and swatting. However, the Gamergate and Julie Grant cases make one thing clear; the laws at present need stronger enforcement. For instance, under Section 230 of the Communications Decency Act<sup>11</sup> (US), platforms are not held accountable for the content hosted on their sites, unless they have been reasonably notified, or if the content pertains to terrorism, child sexual abuse material, or sex trafficking.

### Cyberstalking & Online Harassment of Women Entrepreneurs

For many women in India, entrepreneurship comes out of circumstance rather than choice.<sup>12</sup> According to the World Bank, the aggregate financing disparity for women in micro, small, and medium enterprises is \$1.7 trillion.<sup>13</sup>

Let us expand our lens to the world figures. Approximately 47 percent of women entrepreneurs in developing nations reported encountering gender-based violence<sup>14</sup> manifested as online abuse, threats, and stalking. Twenty percent of women entrepreneurs in Europe have encountered online harassment, predominantly on social media sites. Moreso, about 38 percent of female entrepreneurs who encountered online harassment<sup>15</sup> indicated that it adversely affected their business operations.

Now there isn't just one, but varied forms of challenges that women entrepreneurs encounter in the digital sphere. Take the example of Bangladeshi women entrepreneurs, who have taken up social media platforms to grow their small businesses. Figure 1 shows several hindrances that impact women already in the sector, and those aspiring to start businesses.

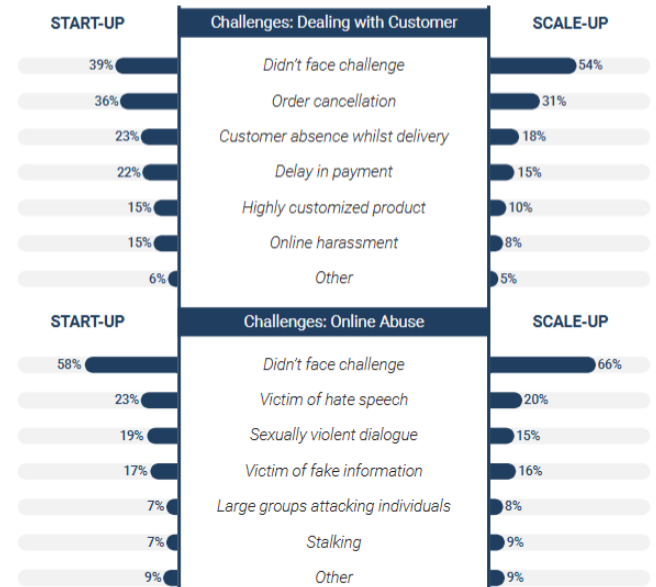


Figure 1 – Challenges faced by women entrepreneurs at start and scale of social media-based businesses (Source: UNESCAP)

The UNDP's program in Pakistan<sup>16</sup> came as a result of the significant tech-facilitated gender-based violence (TFGBV) in the country, which impacted women's participation in digital spaces.

The research conducted by Profess facilitated gender- or Maura McAdam underscores the fact that a significant number of entrepreneurs, particularly women, believed that online harassment was an inevitable part of the business. Women perceive it as an unfortunate consequence of maintaining an online presence and frequently accepted the notion that they had no grounds for complaint. This raises the crucial question, are we prepared to provide women entrepreneurs with safe spaces online?

### IP Awareness and Other Legal Protections Paving the Way

Women are contributing at an unprecedented pace to the formation of entrepreneurial mindsets worldwide. They are the fastest-growing group<sup>17</sup> of entrepreneurs. But the IP protection that follows is still unequal. There persists a major gender gap<sup>18</sup> vis-a-vis the availability

<sup>9</sup> The General Data Protection Regulation, Regulation (EU) 2016/679.

<sup>10</sup> Child Online Safety Modernization Act of 2023, H.R.5182.

<sup>11</sup> The Communications Decency Act of 1996 (47 USC §230).

<sup>12</sup> Poulami Bhattacharyya, DIGITAL SKILLING: OPENING UP NEW WORLD OF OPPORTUNITIES FOR RURAL WOMEN ENTREPRENEURS, <https://www.nasscomfoundation.org/blog/women-empowerment/digital-skilling-opening-up-new-world-of-opportunities-for-rural-women-entrepreneurs/> (Visited on April 5, 2025).

<sup>13</sup> Ibid.

<sup>14</sup> Priyal Keni, ONLINE BUSINESS BRINGS OLD PROBLEMS ALONG WITH NEW OPPORTUNITIES FOR WOMEN ENTREPRENEURS, <https://asiapacific.unwomen.org/en/stories/feature-story/2023/03/online-business-brings-old-problems-along-with-new->

opportunities#:~:text=Online%20GBV%20can%20lead%20to,harassment%2C%20threats%2C%20and%20stalking. (Visited on April 5, 2025).

<sup>15</sup> Ibid.

<sup>16</sup> United Nations Development Programme, WOMEN AND DIGITAL PATHWAYS, <https://www.undp.org/asia-pacific/stories/women-and-digital-pathways> (Visited on April 5, 2025).

<sup>17</sup> Victoria Masterson, HERE'S WHAT WOMEN'S ENTREPRENEURSHIP LOOKS LIKE AROUND THE WORLD, <https://www.weforum.org/stories/2022/07/women-entrepreneurs-gusto-gender/> (Visited on April 5, 2025).

<sup>18</sup> National Women's Business Council, INTELLECTUAL PROPERTY AND WOMEN ENTREPRENEURS, [https://www.govinfo.gov/content/pkg/GOVPUB-Y3\\_W84\\_4-PURL-gp036076/pdf/GOVPUB-Y3\\_W84\\_4-PURL-gp036076.pdf](https://www.govinfo.gov/content/pkg/GOVPUB-Y3_W84_4-PURL-gp036076/pdf/GOVPUB-Y3_W84_4-PURL-gp036076.pdf) (Visited on April 5, 2025).

and granting of IP protection. Not only this, but they are also subjected to various kinds of IP thefts online. But they find themselves unequipped to deal with such menaces. A 2021 study from the University of North Carolina School of Law,<sup>19</sup> which dealt with gender-race disparities in this regard, found women considerably underrepresented in terms of their trademark applications to USPTO.<sup>20</sup> In the USA itself, women trademark applicants are around 32% as compared to 51% of their population share.<sup>21</sup> Now the lack of representation in applications online to various IP offices opens a Pandora's box of cyberattacks. This could be manifested in any form.

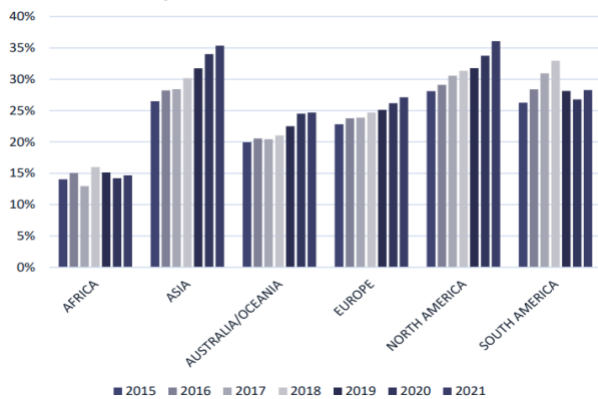


Figure 2 (Source: WIPO)

The figure indicates that the situation is consistent across continents worldwide<sup>22</sup>: fewer women than males apply for patents. This discrepancy indicates a latent potential in the realm of women's socio-economic well-being. Intellectual property acts as a facilitator for women-led businesses to safeguard their rights and promote their innovations. Their success is testament to the fact that women-owned businesses with patents pending have average revenues more than 16 times higher than those without IP protection.<sup>23</sup>

Many women entrepreneurs have advocated for IP protection to address the despicable manifestations of cyberattacks. Entrepreneurs such as Roya Aghighi, CEO of Lite-1, a bio designer reshaping the dye industry, have

remarked that “we sought advice from an IP agent to strategically navigate the complexities of IP law and maximize the value of our innovations.”<sup>24</sup>

Another renowned entrepreneur, Rashmi Prakash of Aruna Revolution, with her sustainable menstrual products, categorically stated, “For new women entrepreneurs, my advice would be to start IP protection early on. Understand the different types of IP such as patents, trademarks, industrial designs, copyrights and trade secrets and determine what fits your innovation. Consult an IP agent to align your strategy with your business goals.”<sup>25</sup>

But this brings us to the range and coverage of laws providing a safe space on the internet:

### **Information Technology Act, 2000 (Amended in 2008)**

Women entrepreneurs are disproportionately affected by phishing and malware like banking trojans.<sup>26</sup> Their identities are compromised, stolen, and even utilized in unnecessarily dragging that person into illegal business operations. To curtail this, Section 66C of IT Act, 2000,<sup>27</sup> punishes anyone who “fraudulently or dishonestly makes use of the electronic signature, password, or any other unique identification feature of any other person.”

Furthermore, another relevant section that protects their personality rights vis-à-vis online operations in their name is Section 66D of the IT Act, 2000,<sup>28</sup> which specifically punishes the use of “any communication device or computer resource for cheating by personation.”

The case of **Tamil Nadu v. Suhas Katti**<sup>29</sup> dealt with a complaint by a woman to the Cyber Crime Cell of Chennai about getting obscene and defamatory communications from the accused Suhas Katti via a Yahoo messaging group. The case drew attention for handling the cybercrime under Section 67 and resulting in the first conviction under the Information Technology Act, 2000. This case solidified a realistic

<sup>19</sup> William Michael Schuster et. al, “An Empirical Study of Gender and Race in Trademark Prosecution”, 94 SOUTHERN CALIFORNIA LAW REVIEW (2021), pp. 1407-1466.

<sup>20</sup> Your Legal Era, WOMEN ARE LESS LIKELY TO PROTECT THEIR INTELLECTUAL PROPERTY, <https://www.yourlegalera.com/blog/women-are-less-likely-to-protect-their-intellectual-property> (Visited on April 5, 2025).

<sup>21</sup> Ibid.

<sup>22</sup> Laetitia Pettinotti et. al, INTELLECTUAL PROPERTY AND WOMEN'S ECONOMIC MOVEMENT, [https://odi.org/documents/8578/IP\\_WEEP\\_policy\\_brief\\_final\\_PSo7kDU.pdf](https://odi.org/documents/8578/IP_WEEP_policy_brief_final_PSo7kDU.pdf) (Visited on April 5, 2025).

<sup>23</sup> World Trade Organisation, BRIDGING THE GENDER GAP: WIPO AND WTO EXPLORE EMPOWERING WOMEN-LED MSMES THROUGH IP, [https://www.wto.org/english/news\\_e/news24\\_e/trip\\_18no\\_v24\\_e.htm#:~:text=Intellectual%20property%20\(IP\)%20can%20help,IP%20protection%2CE2%80%9D%20he%20said.](https://www.wto.org/english/news_e/news24_e/trip_18no_v24_e.htm#:~:text=Intellectual%20property%20(IP)%20can%20help,IP%20protection%2CE2%80%9D%20he%20said.) (Visited on April 5, 2025).

<sup>24</sup> Government of Canada, THE STORY OF ROYA AGHIGHI AND LITE-I, <https://ised-isde.canada.ca/site/canadian-intellectual-property-office/en/corporate-information/canadian-ip-voices-podcast-case-studies-and-blog/story-roya-aghighi-and-lite-1> (Visited on April 5, 2025).

<sup>25</sup> Government of Canada, THE STORY OF RASHMI PRAKASH AND ARUNA REVOLUTION, <https://ised-isde.canada.ca/site/canadian-intellectual-property-office/en/corporate-information/canadian-ip-voices-podcast-case-studies-and-blog/story-rashmi-prakash-and-aruna-revolution> (Visited on April 5, 2025).

<sup>26</sup> Spiceworks, 3 WAYS WOMEN ARE UNIQUELY IMPACTED BY CYBER THREATS, <https://www.spiceworks.com/it-security/cyber-risk-management/guest-article/4-ways-women-are-uniquely-impacted-by-cyber-threats/> (Visited on April 5, 2025).

<sup>27</sup> The Information Technology Act, 2000 (Act no. 21 of 2000), §66C.

<sup>28</sup> The Information Technology Act, 2000 (Act no. 21 of 2000), §66D.

<sup>29</sup> *Tamil Nadu v. Suhas Katti* (C No. 4680 of 2004).

expectation of convictions under IT act and acts as a relief for many women entrepreneurs.

### ***Bhartiya Nyaya Sanhita, 2023***

The new substantive criminal code addresses the offense of cyberstalking. **Section 78(ii) of Sanhita**<sup>30</sup> fixes a criminal liability of any man who “*monitors the use by a woman of the internet, e-mail, or any other form of electronic communication.*” This provision enables a safe and protected cyberspace for women entrepreneurs in conducting their business operations seamlessly.

Another legal defense to such cyberattacks is **Section 356 of Sanhita**,<sup>31</sup> which deals with any forms of defamation. Many women-manufactured and woman-led products are subjected to different kinds of abuse on the internet with false reviews and stereotypical comments. This section comes to their rescue, whereby anything published or spoken intended to tarnish the reputation shall be penalized.

### **Conclusion**

Digital platforms have gradually transformed into predating grounds. Women entrepreneurs are subjected to different kinds of cyberattacks, such as doxxing, sextortion, cyberstalking, and IP thefts. Further, their social image is branded accordingly. The laws might be well-equipped, but there is a dire need to create IP awareness alongside accessible legal frameworks to create an inclusive digital economy.

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<sup>30</sup> The Bharatiya Nyaya Sanhita, 2023 (Act no. 45 of 2023), §78(ii).

<sup>31</sup> The Bharatiya Nyaya Sanhita, 2023 (Act no. 45 of 2023), §356.