Bridging the Gender Gap

A Report on Indian Language Wikimedia Communities

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By **Bhuvana Meenakshi Koteeswaran**

Edited by **Puthiya Purayil Sneha**

Additional inputs/edits by **Ambika Tandon** and **Sumandro Chattapadhyay**

The Centre for Internet and Society, India

Introduction

This study presents documentation and analysis of gender bias in Indian language Wikimedia communities. Wikimedia defines 'gender bias' on its platforms as the fact "that Wikipedia contributors are mostly male, the fact that relatively few biographies on Wikipedia are about women and the concept that topics of interest to women are less well-covered." [1] Previous research has shown that this gender gap does not only result in fewer women participants in Wikimedia events or number of edits by women, but also extends to disparities in the active participation of men and women, and content about women on various Wikimedia platforms. The Wikipedia page on gender bias further notes that "In a 2018 survey covering 12 language versions of Wikipedia and some other Wikimedia Foundation projects, 90% of contributors reported their gender as male, 8.8% as female, and 1% as non-binary gender. Other studies since 2011, mostly focused on the English Wikipedia, have estimated the percentage of female editors at up to 20%." [2]

A previous study by Ting-Yi Chang on "Bridging the Hidden Gap", supported by the Access to Knowledge programme at the Centre for Internet and Society (CIS-A2K),[3] illustrated how the phenomenon of gender gap and bias exists in global and regional Wikimedia communities.[4] The study was based on interviews with prominent women contributors from Indian language Wikimedia communities,[5] which helped us understand the current discourse around 'gender gap and bias'. This study reiterated that the gender bias continues to exist among Indian language Wikimedia communities and indicated the need for further research to understand its persistence.

The study addresses, broadly, three thematic areas:

- Online participation, including content created by women, content about women, and their online engagement with communities.

- Offline participation by women across various Indian language communities.

- Strategies to remove barriers to sustained participation of women contributors g(including challenges with retention and infrastructural issues), and mapping the

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[1] "Gender Bias on Wikipedia", Wikipedia, accessed November 29, 2020.
https://en.wikipedia.org/w/index.php?title=Gender_bias_on_Wikipedia&oldid=991093125
[2] "Gender Bias on Wikipedia", Wikipedia, accessed December 01, 2020.
https://en.wikipedia.org/w/index.php?title=Gender_bias_on_Wikipedia&oldid=991093125
[3] "CIS-A2K", Wikimedia Meta-Wiki, accessed November 27, 2020.
https://meta.wikimedia.org/w/index.php?title=CIS-A2K&oldid=20712756
[4] Ting-Yi Chang, "Bridging the Hidden Gap: Examining Female Editors' Identity and Agency Negotiation Process within Indian Wikimedia Projects and Communities",(Bachelor's thesis., University of Toronto Scarborough, 2019)
https://cis-india.org/Bridging-the-Hidden-Gap-T-Chang
[5] "Wiki Project India - India Statistics", Wikidata, accessed July 10, 2020.
https://wikidata.org/w/index.php?title=Wikidata:WikiProject_India/India_statistics&oldid=1225297329

diversity of Wikimedia projects women are involved with, with the aim to encourage participation across more projects.

15 interviewees who are part of 13 different Indian language Wikimedia communities (including English) shared their experiences and insights on each of these themes as part of this study. Globally, there have been several initiatives of different scales by women Wikipedians, as individuals and as part of a community, to counter the gender gap through active intervention. This includes Women In Red,[6] Art+Feminism,[7] Wiki Loves Women,[8] Wiki Women for Women Wellbeing,[9] Gender Gap Task Force (a WikiProject which addresses bias in content on women and documents problems faced by women in Wikipedia),[10] Wikimedia projects and initiatives to improve content on several topics such as women artists,[11] feminism,[12] women's history,[13] women in technology,[14] women scientists among others.[15] Women Wikimedians from India have also been part of organising committees for global events such as Wiki Loves Folklore[16] and Wiki Loves Love 2019.[17] These efforts, undertaken between 2011 to the present, have collectively produced more content on women and scaled up women's participation in Wikimedia projects.

Background

The gender gap in representation is a systemic issue globally, extending to fields such as education, health, employment, and public and political participation. A 2020 report by the World Economic Forum (WEF) points to a "31.4% average gender gap that remains to be closed globally" across key dimensions such as economic participation and opportunity,

[6] "Wikipedia: Wikiproject Women in Red", Wikipedia, accessed September 05, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Women_in_Red&oldid=974821153

[7] "Art + Feminism", Wikipedia, accessed September 15, 2020.
https://en.wikipedia.org/w/index.php?title=Art%2BFeminism&oldid=972372729

[8] "Wikipedia:Wikiproject Wiki Loves Women", Wikipedia, accessed December 01, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Wiki_Loves_Women&oldid=917451350

[9] "Wiki Women for Women Wellbeing 2018",Wikimedia Meta-Wiki, accessed November 24, 2020.
https://meta.wikimedia.org/w/index.php?title=Wiki_Women_for_Women_Wellbeing_2018&oldid=18644149

[10] "Wikipedia:Wikiproject Countering systemic bias/ Gender gap task force", Wikipedia, accessed October 15, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Countering_systemic_bias/Gender_gap_task_force&oldid=976429782

[11] "Wikipedia:Wikiproject Women artists", Wikipedia, accessed November 20, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Women_artists&oldid=988753761

[12] "Wikipedia: WikiProject Feminism", Wikipedia, accessed October 21, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Feminism&oldid=984745837

[13] "Wikipedia: WikiProject Women's History", Wikipedia, accessed February 02, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Women%27s_History&oldid=971659605

[14] "Wikipedia:Wikiproject Women in Technology.", Wikipedia, accessed December 02, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Women_in_Technology&oldid=693454093

[15] "Wikipedia:WikiProject Women scientists", Wikipedia, accessed November 16, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Women_scientists&oldid=987243054

[16] "Commons: Wiki Loves Folklore", Wikimedia Commons, accessed November 15, 2020.
https://commons.wikimedia.org/w/index.php?title=Commons:Wiki_Loves_Folklore&oldid=512743547

[17] "Wiki Loves Love 2019", Wikimedia Meta-Wiki, accessed March 04, 2020
https://meta.wikimedia.org/w/index.php?title=Wiki_Loves_Love_2019&oldid=19865865

educational attainment, health and survival, and political empowerment.[18] The report, which has surveyed 153 countries in its current edition, highlights that political empowerment, economic participation and opportunity remain the dimensions with most disparity. Under the educational attainment index, investment in capacity building of women's skills and talents is highlighted as one of the gaps, apart from "some occupations where women are under-utilized even if they have the needed skills''. In terms of country specific data, the report finds that "India ranks 112th on the overall Global Gender Gap Index and the country has closed two-thirds of its overall gender gap (score of 66.8%). However, the condition of women in large fringes of India's society is precarious. It has lost four positions since the last edition of the WEF report published in 2018 despite a small score improvement, as some countries previously ranked lower than India have improved more rapidly. The economic gender gap runs particularly deep in India. The report also features data on gender disparity in skill-sets and training of women across diverse fields, with the widest gaps in STEM, AI, and technology-driven areas. The report concludes with the prediction that gender gaps could potentially be closed in 71 and a half years in South Asia.

The objective of prefacing this literature review with data about the global gender gap is to reiterate that this is a systemic and evolving problem, with several intersectional variables such as race, class, caste, and geographical location among others. On collaborative, largely volunteer-driven platforms such as Wikipedia, it is difficult to accurately map the extent of gender gap and bias given these intersectional variables. Even so, the body of research in this area in over a decade continues to indicate that even with progressive strides, the online encyclopedia remains inaccessible or difficult to engage with for large sections of women. The problem of gender gap and gender bias represents a lack of gender-diversity among editors and their editing practices which leads to an imbalance in collation and representation of information on the online encyclopedia. At present, women constitute "15-20% of total contributors on Wikipedia", based on a working assumption by Katherine Maher (2019) and her team at the Wikimedia Foundation.[19] It is important to note that, a large part of the work on gender gap has focused on participation and content by and of *women* on Wikimedia platforms; this does not offer an insight into the participation of individuals across the spectrum of gender and sexual identities, including non-binary and LGBTQIA+ individuals[20] and the understanding of how the gender gap affects their access and engagement with Wikimedia projects.[21]

[18] "Mind the 100 Year Gap", World Economic Forum, accessed November 26, 2020, https://www.weforum.org/reports/gender-gap-2020-report-100-years-pay-equality

[19] Oliver Balch, "Making the edit: why we need more women in Wikipedia", *The Guardian*, November 28, 2019. https://www.theguardian.com/careers/2019/nov/28/making-the-edit-why-we-need-more-women-in-wikipedia

[20] LGBT+ Wikimedians have a separate User Group which has a global engagement to initiate/participate in activities but more outreach to fit the regional audience is in process. See: "Wikimedia LGBT+/Portal", Wikimedia Meta-Wiki, accessed September 11, 2020. https://w.wiki/noG

[21] Gina Bastone, Elle Covington, "70 Pages of Change: Improving Queer Representation Online through Strategic Representations", University of Texas at Austin: 19. https://repositories.lib.utexas.edu/bitstream/handle/2152/78707/70%20Pages%20of%20Change%20Poster.pdf?sequence=3&isAllowed=y

Research over the years has pointed out several (and often recurring) obstacles to contributing to the online encyclopedia. As M. Zandpour (2020) notes, these include "low proportions of female editors; self-perception and confidence as a major cause for the gender gap; the influence of conflicts on female contributions; article rejection due to the notability criteria and content differences between articles about men and women".[22] As the much controversial Wikipedia page on Donna Strickland (2018)[23] indicates, women's contributions across different professional sectors and on the encyclopedia itself require extra efforts to gain visibility.

M.H. Schellekens et al.(2019) in their analysis of women's contributions and public recognition, find that "women in Physics, Economics and Philosophy are considerably less likely than men to be recognised on Wikipedia across all levels of achievement."[24] They further discuss this as a result of a broader inequity and barriers in professional participation of women across various sectors, as well as discrimination and sexism in school and the workplace. This factor of women being historically underrepresented in different areas is reiterated by Rosie-Stephenson Goodknight (2020), who "co-founded the Women in Red[25] WikiProject with a mission to improve the encyclopedia's coverage of women's biographies, works by women, and women's issues." As she notes in an interview in 2019, this is also related to the matter of historical record and coverage, where women have been missing from professions and leadership positions, and where in addition, male counterparts have received more coverage which further affects visibility for women.[26]

Conflicts and safety on the encyclopedia is another persistent obstacle, for women and LGBTQIA+ editors in particular. A. Menking et al.(2019) in their study on how women editors navigate and negotiate safety on Wikipedia, highlight how the encyclopedia is a "multi-dimensional space existing along a spectrum of safety, and many contributors therefore feel unsafe in various ways and look to constructing their safety in different strategic ways." Many of the people interviewed by the authors, all experienced Wikipedians, have reported feeling unsafe or their work being contested as a result of their gender identities. The authors therefore offer several provocations and strategies based on this and

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[22] M.Zandpour (2020) refers here to another study by S.K Lam and A. Uduwage et al (2011) who observe that articles "where female editors dominated on the amount of contributions,had significantly more disagreements in discussions around edits than other articles". They further note that repeated critical feedback and conflict on contributions could be demotivating to new editors identifying as female, and therefore impact their overall participation and contributions. Zandpour further cites studies by Wagner et al.(2015) and Klein et.al (2016) which discuss how the notability criteria may be subjectively interpreted depending on community practices and societal conditions, and as a result may be unfavorable towards certain categories or topics, such as women.See: Mohammad Zandpour, "The Gender Gap on Wikipedia: Exploring the status quo in research around gender bias related issues", Free and Open Technologies at TU. Wien, winter term 2019/2020 (February 9):1-8

[23] Ed Erhart, "Why didn't Wikipedia have an article on Donna Strickland, winner of a Nobel Prize?", *Wikimedia Foundation*, October 04, 2018. https://wikimediafoundation.org/news/2018/10/04/donna-strickland-wikipedia/

[24] Menno H. Schellekens, Floris Holstege, Taha Yasseri. 2019. "Female scholars need to achieve more for equal public recognition". Cornell University (April). https://arxiv.org/abs/1904.06310v2

[25] "Wikipedia: Wikiproject Women in Red", Wikipedia, accessed August 27, 2020. https://en.wikipedia.org/w/index.php?title=Wikipedia:WikiProject_Women_in_Red&oldid=974821153

[26] Stephen Harrison, "Closing Wikipedia's Gender Gap- an interview with Wikipedia editor Rosie-Stephenson Goodknight". *OneZero(blog),* March 27, 2020. https://onezero.medium.com/meet-the-woman-pushing-for-more-gender-diversity-on-wikipedia-3aea131484f6

previous research, looking at how inclusivity, the existence of porous safe spaces and design thinking may be ways to address concerns of safety on the online encyclopedia.[27]

In response to these concerns, the Wikimedia Foundation in 2019 has laid out new rules to combat such 'toxic behaviour' in the form of a Universal Code of Conduct,[28] and other existing measures[29] to tackle harassment[30] and strive to keep the encyclopedia friendly and conducive to good work practices.[31] A lot of these obstacles to editing Wikipedia, particularly for women, were highlighted in a report by Sue Gardner as early as 2011; these have included everything from lack of time and self-confidence due to edits being reverted, to unavailability of resources, difficulty in accessing/editing the pages, an unwelcoming community, misogynist atmosphere, and the article or edit being subject to reverts or deletions.[32]

The Wikimedia Foundation has invested in several efforts to understand, acknowledge and address the issue of gender gap. A prominent initiative among these is the initiative on 'Advancing Gender Equity' which began in 2017, with 65 Wikimedians from across 29 countries and 26 languages who were leading gender equity projects[33]. The project was led by Rosie Stephenson Good-knight, and a report on the findings was published in 2018 and presented at Wikimania Cape Town. The report observes that issues around the gender gap are not only about content and participation, but extend to building the community for and by women. It is also necessary to create safe spaces, change perceptions, build allies, improve community health, and much more. The community needs to discover better ways to understand the impact of the works done by women and share their stories. The Gender Equity initiative highlights barriers, but also offers several best practices to support more Wikimedians to "work actively to advance gender equity in their own communities and connect them with the means to do so." Several efforts have therefore been undertaken as part of this initiative across diverse language communities and with other organisations and individuals.[34]

While there is research available globally on the gender gap and bias on Wikipedia, there is still a need to study this within the context of Indian language communities to better address specific challenges they face. In Indian language Wikimedia communities, on an average

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[27] Amanda Menking, Ingrid Erickson, and Wanda Pratt, "People Who Can Take It: How Women Wikipedians Negotiate and Navigate Safety", in Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19). Association for Computing Machinery, New York, NY, USA, Paper 472, 1–14.. https://doi.org/10.1145/3290605.3300702

[28] "Universal Code of Conduct", Wikimedia Meta-Wiki, accessed November 20, 2020. https://meta.wikimedia.org/w/index.php?title=Universal_Code_of_Conduct&oldid=20542738

[29] "Trust and Safety/Tools and processes", Wikimedia Meta-Wiki, accessed March 30, 2020. https://meta.wikimedia.org/w/index.php?title=Trust_and_Safety/Tools_and_processes&oldid=19938920

[30] "Office actions", Wikimedia Meta-Wiki, accessed October 23, 2020, https://meta.wikimedia.org/w/index.php?title=Office_actions&oldid=20568742

[31] " Community Engagement Insights 2018 Report: Support & Safety", Wikimedia Meta-Wiki, accessed April 24, 2020. https://meta.wikimedia.org/w/index.php?title=Community_Insights/2018_Report&oldid=20012487

[32] Sue Gardener, "Nine Reasons Women Don't Edit on Wikipedia(in their own words)", Sue Garderner's (blog), February 19, 2011. https://suegardner.org/2011/02/19/nine-reasons-why-women-dont-edit-wikipedia-in-their-own-words/

[33] "Gender equity report 2018", Wikimedia Meta-Wiki, accessed September 10, 2019. https://meta.wikimedia.org/w/index.php?title=Gender_equity_report_2018&oldid=19364436

[34] Wikimedia Meta-Wiki, "Gender equity report 2018: Inspiring change".

there are more than 10, 000 active editors (according to the Wikimedia Stats metrics, Active editors is defined as the count of editors with five or more edits, including on redirect pages) from various regions who contribute to 23 Indian languages on Wikimedia projects (more specifically on Wikipedia, Wiktionary, Wikibooks, Wikiquote and Wikisource) on a monthly basis as of January 2021.[35] The research on studying the gender gap and bias in these communities is scant. Some studies undertaken in India over the last few years offer some insights into the factors associated with the gender gap, lived experiences of women in comparison with men, and recommendations to address this gap.

An early study by Eva Jadine Lannon (2014) highlights the hurdles faced by women contributors in Indian language communities, and offers a comparative analysis with the experiences of women contributors in the general editor community (predominantly Western women on the English-language Wikimedia). She highlights though that "overall, relying on conceptualizations of the gender gap in Wikipedia that is largely based in the lived realities and experiences of Western, middle-class female-identified individuals to inform outreach strategies and initiatives in non-Western contexts may, eventually, attract more female editors to Wikipedia, but these efforts will be unlikely to bridge the class (and gender-class) gap, which means that Wikipedia's content will likely continue to be unrepresentative of the full spectrum of human knowledge and experience, and particularly that knowledge that is associated with interests, histories, stories and perspective, regardless of the resulting increase in female participation". Noting that challenges faced by Indian women contributors are unique given the socio-cultural context, Lannon has also suggested strategies that can be of help to bridge the gender gap. These include actively welcoming and supporting new editors; creating spaces on Wikipedia for social interactions to build rapport and familiarity, including more offline meets; and combating a 'deletionist culture' which often deters new editors, especially women from continuing to work on Wikipedia.[36]

Sohnee Harshey (2014) in her research on gender bias on the online encyclopedia attempts to locate "the systemic bias on Wikipedia in two locations- the composition of the editor community and the manifestation of this bias in terms of the nature of content." In locating her research around three thematic areas of Violence against Women, Women and the Law and Women and Performance (Women in the Public Sphere), Harshey looks at the discourse that is created by the content on these themes available on Wikipedia, and how they ultimately contribute to the knowledge building process. Principles such as *Neutral Point of View* can often be difficult to negotiate for editors, especially where they conflict with gender sensitivity, or address content that may contain a systemic gender bias or sexism. In general the lack of a feminist lens in adding content has also been discussed in the paper, apart from challenges editors face with editing due to technical issues and a lack of alliance or

[35] "Metrics: Editors Wikimedia Statistics", Wikimedia, accessed January 2021 : https://stats.wikimedia.org/#/all-projects/contributing/editors/normal|line|2020-01-10~2021-01-22|~total|monthly. The monthly figures are based on a simple average calculation of statistics available upto January 2021.

[36] Eva Jadine Lannon, "Same Gap, Different Experiences: An Exploration of the Similarities and Differences Between the Gender Gap in the Indian Wikipedia Editor Community and the Gap in the General Editor Community". Scarborough: TSpace- IDS Senior Students Theses, University of Toronto (September 2014): 5-123 http://hdl.handle.net/1807/65775

consensus building. While the paper also discusses several attempts to address these issues, such as the Tea House, [37] and mechanisms to address conflict resolution etc., it also raises the critical question of how Wikipedia is located within a larger ecosystem of knowledge production, questions of authority and agency, and points at which systemic issues like gender gap affect the same. [38]

Netha Hussain (2020) in her research on English Wikipedia discusses gender bias in the context of articles on differences between men and women. She categorises the bias in terms of structure, visibility, lexical and coverage. She describes the overrepresentation of men even in articles focusing on women, and how they are structured in a manner that furthers inequality in description, notability and significance. [39] Anwesha Chakraborty and Netha Hussain (2018) in their ethnographic study of gender gap issues in Indian Wikimedia communities, drawing heavily from the gender diversity mapping exercise that Wikimedia Foundation began in 2017, highlight some of the key motivations of Indian women in participating in the Wikipedia movement. They also draw attention to some "unique Indian problems which create barriers for women's participation, and what is being done (and can be done) to bridge these gaps." Common challenges included lack of leisure time, monitoring of social media use by parents or older men in the family, and restrictions on travelling to events. Importantly, another common challenge was the lack of confidence and skills among women, especially due to lack of role models and women in leadership positions. Harassment and a culture of misogyny deterring women from continuing to edit Wikipedia also emerged as a concern. Technical barriers (faced by men and women) were also flagged, such as lack of technical support for Indian language tools and fonts etc. and a steeper learning curve for these languages which also act as barriers to sustaining women's participation. Despite this, the authors mention several motivations: learning new skills, sharing information in their own languages, advancing women's rights by sharing more women-related content, or honing writing, management and administration skills etc. The authors also suggest several strategies to address gaps such as more editing workshops and meet-ups led by women, sensitization to address misogyny and lack of diversity in these spaces, support groups to address harassment, and tapping into the un-channeled potential groups such as mothers who edit Wikipedia. The authors note that "traditional gender roles are still strong in the Indian society and these need to be constantly overcome by women who participate in online spaces." [40]

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[37] "Wikipedia:Teahouse/About", Wikipedia, accessed December 06, 2020.
https://en.wikipedia.org/w/index.php?title=Wikipedia:Teahouse/About&oldid=897280309
[38] Sohnee Harshey, "'Creating Knowledge': Mapping the nature of content and processes on the English Wikipedia", Advanced Centre for Women's Studies, Tata Institute of Social Sciences (April 2014): 12
http://cscs.res.in/dataarchive/textfiles/creating-knowledge2019-mapping-the-nature-of-content-and-processes-on-the-english-wikipedia-sohnee-harshey-tiss
[39] "Research:Gender gap in Wikipedia's content", Wikimedia Meta-Wiki, accessed May 10, 2020
https://meta.wikimedia.org/w/index.php?title=Research:Gender_gap_in_Wikipedia%27s_content&oldid=20066588
[40] Anwesha Chakraborty, Netha Hussain, "Mapping and bridging the gender gap: an ethnographic study of Indian Wikipedians and their motivations to contribute". WikiWorkshop '18, Lyon, France (April 2018): 1-5
http://wikiworkshop.org/2018/papers/wikiworkshop2018_paper_5.pdf?fbclid=IwAR2r1XjmyucWMEP37gtihvQ0TDUeoObPRP6h2h_-10U80Pla0-VCaQ8HZIk

Ting-Yi (Elisa) Chang (2019) worked with CIS-A2K to study issues related to gender gap among the Indian language Wikimedia communities; her research observations illustrate how women Wikimedians negotiate their identity and agency within the male-dominant Indian language communities, and how the learnings from here resonate with the larger Information and Communication Technologies for Development (ICT4D) discourse. She suggests that better training and exposure to technology can help in engaging more women, and creating women leaders in the Indian language communities. During her research, many women who faced domestic and technical restrictions in accessing Wikimedia platforms were introduced to editing on Wikipedia, and this interested the women in gaining access to new skills and information from wherever they could participate. This curiosity to acquire knowledge on various subjects of interest and share it on a public space like Wikipedia pages encouraged the women participants to contribute more towards the movement. The author suggests three major recommendations to address the hidden gap which exists in these communities, a) "Reconstructing space and participation mechanisms to minimize conflicts between one's offline identity and online participation; b) Ensuring untokenized support and agency and freedom; c) Providing adequate and nondiscriminatory recognition and appreciation on one's capability, achievements, as well as inputs."[41]

Padmini Ray-Murray and Ayona Dutta (2020) share their research on Wikipedia as a form of 'platform urbanism' and their experiences of hosting a physical editathon to produce a Wikipedia page in dual languages (English and Hindi) on the Madanpur Khadar JJ Colony in New Delhi. A group of young women who resided in a slum resettlement of Delhi have contributed in this event, where they were introduced to search engines and Wikipedia. The authors recount the challenges faced by participants in understanding the platforms, precipitated in many ways by the lack of suitable infrastructure, and additional difficulties with establishing authenticity and citation on Wikipedia. The authors reiterate how Wikipedia as an open platform helps to gather knowledge about the local vicinity from the women participants who were the young millennials, whose parents settled in this city sometime in the 1960s. The information provided by these residents was more precise than geolocated data provided by Google, which they term 'narrowed data'. The further note that, "We positioned Wikipedia as a platform of 'urban' knowledge that could enable a descriptive narrative and push against what we imagine as a 'map' based platform for understanding the city. As a textual platform it enabled an active archive, a palimpsest of historical and social narrative that could emerge from the ground. Yet as a digital platform it too enabled algorithmic funnelling of information in the way that it was structured and organised across categories."[42]

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[41] Chang, 2019 " Bridging the Hidden Gap".

[42] Padmini Ray Murray, Ayona Datta, "Wiki-urbanism: Curating a slum resettlement colony with open knowledge platforms", in *Urban Platforms and the Future City Transformations in Infrastructure, Governance, Knowledge and Everyday Life,* ed. Mike Hodson, Julia Kasmire, Andrew McMeekin, John G. Stehlin, Kevin Ward (New York: Routledge, 2020). 177-190 https://www.routledge.com/Urban-Platforms-and-the-Future-City-Transformations-in-Infrastructure/Hodson-Kasmire-McMeekin-Stehlin-Ward/p/book/9780367334192

Previous research therefore has brought together a range of challenges and solutions around offline and online participation of women, content on women and strategies to sustain their participation in diverse environments. This report on 'Bridging the Gender Gap' draws upon and continues the work in this space, a brief review of which has been presented above.The findings from previous research illustrate that there are specific obstacles related to access and sustained participation by women and other marginalised groups on Wikimedia platforms that remain persistent, due to socio-economic and infrastructural inequities, which are further exacerbated by gendered notions of skill and labour. In addition to the need for creating safe and healthy online working environments, there is also a need therefore to develop strategies for better engaging people of diverse gender identities as contributors on these platforms. While some of these problems of gender gap are replicated in the Indian context, there are issues specific to the context of Indian language Wikimedia platforms and projects, which would need careful and detailed study, from an intersectional lens. This report therefore begins with the understanding and acknowledgement of the problem of gender gap and bias as systemic one, and will offer some insights into how the issue has evolved over the last couple of years in the context of Indian language Wikimedia platforms, and possible strategies to address the same.

Methodology

The data for the research was collected through semi-structured interviews and two focused group discussions (FGDs). Interviews were conducted via in-person conversations and audio/video calls with contributors across 13 Indian language communities (including English) contributing to Wikimedia projects and initiatives like Wikisource,[43] Wikidata,[44] Wikipedia,[45] Wikispecies,[46] Wiktionary,[47] Wikimedia Commons,[48] Wikiquote,[49] Wiki Loves

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[43] "Wikisource", Wikisource, accessed December 04, 2020. https://wikisource.org/w/index.php?title=Main_Page&oldid=763045

[44] "Wikidata", Wikidata, accessed December 04, 2020
https://www.wikidata.org/w/index.php?title=Wikidata:Main_Page&oldid=1086709037

[45] "Wikipedia", Wikipedia, accessed December 12, 2020 https://en.wikipedia.org/w/index.php?title=Main_Page&oldid=987965326

[46] "Wikispecies", Wikispecies, accessed December 04, 2020
https://species.wikimedia.org/w/index.php?title=Main_Page&oldid=7189877

[47] "Wiktionary", Wiktionary, accessed December 04, 2020 https://www.wiktionary.org/

[48] "Wikimedia Commons", Wikimedia Commons, accessed September 09, 2020
https://commons.wikimedia.org/w/index.php?title=Main_Page&oldid=453255730

[49] "Wikiquote", Wikiquote, accessed December 04, 2020 https://www.wikiquote.org/

Monuments,[50] Wiki Loves Women India,[51] Wiki Loves Women South Asia,[52] Wikipedia Asian Month,[53] and Project Tiger.[54]

These interviewees were selected primarily based on their active participation in their language communities towards empowering women to contribute proactively to Wikipedia. In addition to this, a few were respondents whom Ting Yi Chang had previously selected for her study on bridging the gender gap on Wikipedia (conducted as part of CIS-A2K), but was unable to interview due to time constraints.

All interviews were done only after receiving due consent from interviewees through a consent form. Interviews were conducted in English, Hindi, and Tamil. The questionnaire consisted of 12 questions (refer to Annexure I), which were modified for each interviewee based on language, project and local contexts. The interviewees were given the option to use their discretion in answering questions.

There were two extensive FGDs conducted with the students of two different arts and science colleges in Tamil Nadu. The students of the institutions were introduced to Tamil Wikipedia and other Wikimedia projects through activities like contributing content and editing, conducted with the support of experienced local Wikimedians. This was followed by group discussions on this research study with the support of A2K, and broadly on gender gap initiatives and projects in the global context.[55] The students shared challenges such as facing gender bias at home and how this forbids them from exposure to technology. They also discussed institutional challenges in providing the required infrastructure to continue their contributions to Wikimedia.[56]

An objective of the study was to highlight previously unheard voices. However, there were several challenges in identifying and reaching out to respondents across the communities. To begin with, the process of identifying respondents was time consuming. In addition, most communities had men as points of contact, which could create barriers. There were instances in which the men's contact information was given even when we sought to speak to women, particularly in cases where the women were introduced to the particular language community by men (as friends or relatives).

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[50] "Wiki Loves Monuments", Wikipedia, accessed November 14, 2020
https://en.wikipedia.org/w/index.php?title=Wiki_Loves_Monuments&oldid=988389320
[51] "Wikipedia:Wiki Loves Women India", Wikipedia, accessed August 23,, 2019.
https://en.wikipedia.org/w/index.php?title=Wikipedia:Wiki_Loves_Women_India&oldid=884718248
[52] "Wiki Loves Women South Asia 2020", Wikimedia Meta-Wiki, accessed September 21, 2020
https://meta.wikimedia.org/w/index.php?title=Wiki_Loves_Women_South_Asia_2020&oldid=20467494
[53] "Wikipedia: Asian Month", Wikipedia, accessed October 23, 2020
https://en.wikipedia.org/w/index.php?title=Wikipedia:Asian_Month&oldid=985063499
[54] "Wikipedia: Project Tiger Writing Contest", Wikipedia, accessed June 26, 2019
https://en.wikipedia.org/w/index.php?title=Wikipedia:Project_Tiger_Writing_Contest&oldid=903611765
[55] Bhuvana Meenakshi, "Wiki Orientation at Dr, GR Damodaran College of Science". The Centre for Internet and Society(blog), December 2019. https://cis-india.org/a2k/blogs/wikiorientation-at-dr-gr-damodaran-college-of-science-1
[56] "Wiki Loves Women Tamil Editathons", Wikimedia, accessed March 29, 2020.
https://meta.wikimedia.org/w/index.php?title=CIS-A2K/Events/Wiki_Loves_Women_Tamil_Editathons&oldid=19935809

My own experience as a new entrant in the Wikimedia community also impacted the research process. It took me time to understand the communities well, and also for community members to engage with me and share details of their work with trust and confidence. I learnt that engaging with communities only as a researcher would not build trust, so I also learnt simultaneously to edit on Wikipedia and gain familiarity with other Wiki projects. Slowly, I also became familiar with common jargon used by communities when describing their work, as well as with the communities themselves.

Observations and Analysis

Online Participation and Challenges

This report aims to build on existing work on the gender gap and bias within Indian Wikimedia communities in order to understand specific challenges in online and offline spaces, and methods to foster sustainable participation of women in the movement. This section focuses on the nature of womens' engagement with online spaces, while discussing Wikimedia projects but also other platforms such as social media and messaging applications. Out of 15 interviewees there were 6 who had participated in online events hosted by their regional Wikimedia communities, either as an attendee or as part of the organising team. The most common platforms used in these online engagements are Wikipedia Village Pump,[57] Google Hangouts[58]/Meet,[59] WhatsApp,[60] and Facebook Messenger,[61] apart from emails and calls. These are used for discussions such as community updates, resolving doubts, providing technical support, and also for hosting online events such as editathons. Apart from editing online many interviewees upload pictures on Wikimedia Commons, and add data or generate queries using Wikidata, especially for projects like Wiki Species[62] or photowalks[63] where once the offline fieldwork is complete the rest of the work is done online. Also training for most of these projects are conducted online as often the trainer and trainee(s) are located in different cities, or if there is no physical venue available or if there are time or travel constraints.

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[57] "Wikipedia:Village pump", Wikipedia, accessed September 03, 2020
https://en.wikipedia.org/w/index.php?title=Wikipedia:Village_pump&oldid=976507145
[58] "Google Hangouts", Google Hangouts, accessed December 04, 2020 https://hangouts.google.com/
[59] "Google Meet", Google Meet, accessed December 04, 2020 https://meet.google.com/
[60] "WhatsApp", WhatsApp, accessed December 04, 2020 https://www.whatsapp.com/?lang=en
[61] "Facebook Messenger", Facebook accessed December 04, 2020 https://www.facebook.com/messenger/
[62] "Wikispecies", Wikispecies, accessed January 04, 2020
https://species.wikimedia.org/w/index.php?title=Main_Page&oldid=7189877
[63] "Photowalking", Wikipedia, accessed December 01, 2020
https://en.wikipedia.org/w/index.php?title=Photowalking&oldid=987269813

"Women in the Santali Wikimedia community are learning how to contribute from home, but those who are engaged in household chores find it difficult to give more time to volunteer. As it has been just 2 years since the language on Wikimedia has come into existence a lot of time is required in training newcomers and also technical support is also required to contribute in a streamlined manner. As we are a growing community not many are well equipped to teach others so many hesitate to ask each other for help, yet we try to teach and learn together to build Santali language on Wikimedia." - *Maina Tudu,* **Santali Wikimedia contributor (translation by author)**

An interesting side of online involvement is the usage of social media as a medium for outreach or to showcase activities, apart from the Wikimedia platforms. This not only helps in reaching out to people from across the world but also to stay updated on what is happening in the language communities. Their communities operate Facebook groups for discussing various topics; similarly Twitter handles for each community is also an effective way of online engagement. An important example of such engagement is an initiative by an Odia community volunteer, **Username:** *Chinmayee_Mishra*, where she coordinated with women in Wikimedia amidst the ongoing pandemic and made a collage about awareness around COVID-19.[64]

"A woman from Gujarat was interested in Vedanta[65] and wanted to contribute to Wikisource under this category, but I live in a different state, so I helped her through phone calls and emails. She was very cooperative and I wish to help more people interested in the Sanskrit language and those who want to develop their skills on Wikimedia projects." - *Username:* **Shubha, Sanskrit Wikimedia contributor**

The most frequently reported challenge that many women mentioned is the hesitation they experience when speaking with other volunteers and asking queries, even within their own communities. Many women therefore do not bring up even infrastructural issues, such as limited or bad internet network connections, in conversations with their Wikimedia colleagues. Access to personal electronic devices such as computers and mobile phones is also restricted for many women. The disparity in access and use of basic information infrastructure makes it harder for women contributors to contribute to various Wikimedia projects.

The problem of access to the internet is a larger one, extending beyond Wikipedia and related to a persistent digital divide. India has the second largest number of users accessing the internet in the world as of 2019.[66] According to a report by Internet and Mobile

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[64] The Centre for Internet and Society - Access To Knowledge, "Wiki women request you all to #staysafe and #stayhome!" Facebook, April 22, 2020.
https://www.facebook.com/cisa2k/photos/a.172482309625464/1353230694883947/

[65] "Vedanta" , Wikipedia, accessed November 20, 2020. https://en.wikipedia.org/w/index.php?title=Vedanta&oldid=987368758

[66] Digbijay Mishra, Madhav Chanchani, "For the first time, India has more rural net users than urban". *Times of India*, May 6, 2020
https://timesofindia.indiatimes.com/business/india-business/for-the-first-time-india-has-more-rural-net-users-than-urban/articleshow/75566025.cms

Association of India new female internet users are emerging while the overall user population is dominated by men (gender distribution across India is 65% of male users and the rest of 35% are female users). A majority of users across urban (male- 60%; female- 40%) and rural (male-69%; female- 31%) geographies access the internet through mobile devices.[67] This is due to the availability of affordable schemes by the Wireless Internet Service Providers (WISPs) across mobile devices, which makes them affordable for many users across the country.

Where online spaces are very helpful in connecting with communities, they are also a platform for trolling, abusive comments, and mansplaining. This creates more fear in women to engage with online platforms using their real identities. During the interviews, I observed that many women do not want to reveal their identity on the internet because they are afraid that their efforts would not be recognized or they would be discouraged on the basis of their gender. An interviewee said that there are 'administrators' (moderators) on Wikipedia who revert or delete the works by or on women without stating a valid reason. The interviewee felt that this would not happen if there are more women who are 'administrators' on Wikimedia projects; although many women possess the skills of potentially taking up this role, there is still a dearth of women moderators. It would help editors, especially new ones, if moderators followed the practice of giving a necessary and reasonable justification before reverting/deleting articles and edits. In particular, this would help them understand how to improve the articles and the justifications may offer constructive feedback for the efforts invested.

> "When there are events focussed on women-related content development then anyone interested comes forward…. I would insist on using 'Talk page' as a transparent medium of communication or to raise any sort of questions be it for men/women and if there are justifications made in public then any issues on editing or creating articles on Wikipedia can be resolved (even if it is anything related to admins)."- *Ananya Mondal,* **Bengali Wikimedia contributor**

On the other hand, there are also communities which have people with technical expertise (mostly men) in the community, who initiate productive conference calls and guide women as it is more cost and time effective when compared to physical events. For instance, the Odia community has a free Android-based conference call app which they use for all Wiki discussions.

> "We conduct regular virtual calls on *'Free Conference Call'*.[68] It can be downloaded from Google's play store, iOS store or can be used in its web form too. After registering yourself you can share the meeting ID and access code with the people you want to communicate with. Calls can be connected over the phone network or via

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[67] The Internet and Mobile Association of India and Nielsen Holdings plc (NYSE: NLSN), "DIGITAL IN INDIA 2019 – ROUND 2 REPORT", accessed May 2020. https://cms.iamai.in/Content/ResearchPapers/2286f4d7-424f-4bde-be88-6415fe5021d5.pdf
[68] Free Conference Call. Google Play. https://play.google.com/store/apps/details?id=com.freeconferencecall.fccmeetingclient

the internet. The setup is easy and won't take more than a minute or two for the host." - **Username: *Chinmayee_Mishra*, Odia Wikimedia contributor**

Such virtual meet-ups are very helpful in connecting with the rest of the community especially at points when physical mobility is restricted, such as during the COVID-19 pandemic.

There have been several online events conducted by many Indian language Wikimedia communities to improve articles that are focused on women. One such project is *Lilavati's Daughters*, a book published by the Indian Academy of Science which is a commendable compilation about women scientists from India.[69] The Telugu community has held various events to translate women scientists' biographies into their native language.[70] The Bengali community has been active in contributing to and hosting online events such as annual online Wikimedia editathons since 2015 on "International Women's Day"(Wikipedia Online editathon 2015 - International Women's Day)[71] to create and improve content about women on Wikimedia (Women's health articles Campaign 2018),[72] Wiki Loves Women 2019,[73] and Wikipedia online editathon 2018.[74] Similarly Kannada and Tulu communities have contributed to articles on women's wellness during Women's History month.[75]

To summarise, the scope for online engagement with Indian language Wikimedia projects is very wide. Most of the Wikimedia projects involve editing or contributions using the internet. Apart from editing itself, training and discussions about the projects also take place in virtual modes. However, access to the internet, and training to use platforms effectively are basic infrastructural needs that still need to be met. Particularly for women contributors, working productively on a virtual setup and seeking help needs better channelisation of communication, along with streamlined protocols as used in a physical setup. When circumstances prevail like a pandemic where only virtual programs/contributions are the possible ways of engaging with communities, then required training sessions and other infrastructural needs are imperative for participants to stay connected. Further, it is important to ensure online working environments are also safe and friendly, with appropriate reporting and redressal mechanisms to ensure healthier and sustainable participation by women and other vulnerable/marginalised groups.

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[69] "Lilavati's Daughters", Wikipedia, accessed September 15, 2020.https://en.wikipedia.org/w/index.php?title=Lilavati%27s_Daughters&oldid=978514549

[70] "Wikipedia: WikiProject / Lilavati daughters", Wikipedia, accessed October 02, 2020. https://w.wiki/ngG

[71] "Wikipedia: Online Editathon / 2015 / International Women's Day", Wikipedia. 2020, accessed January 18, 2020. https://w.wiki/ngL

[72] "Wikipedia: Women's Health Articles Campaign 2018", Wikipedia, accessed December 30, 2019. https://w.wiki/ngZ

[73] "Wikipedia: Wiki Loves Women 2019", Wikipedia, accessed June 05, 2020. https://w.wiki/ngb

[74] "Wikipedia: Online Editathon / 2018 / International Women's Day", Wikipedia, accessed January 18, 2020. https://w.wiki/ngc

[75] "Wikipedia: Planning / Women's Day and Women's Month Article Project", Wikipedia, accessed April 11, 2020 . https://w.wiki/nia

Offline Participation and Challenges

Offline participation is welcomed by many women contributors for various reasons. Interviewees were asked if they had participated in offline events, and if they had faced any challenges in either organisation or participation in the same. A majority of women who were part of this study have been part of offline events either at regional or international levels, or both.

> "When community events are hosted, the key roles for organising and training for the events are mainly dominated by men. Community must make efforts for hosting women-only events in order to encourage activities with more women participation. Other than workshops or technical training there must be an exclusive event to motivate women contributors and make them understand the value of their contributions." - ***Durgaprassana,*** **Kannada and Tulu Wikimedia contributor**

Offline events are organized with various purposes such as gathering everyone in a physical space for discussion on the communities' recent activities, training on Wikimedia projects, hosting events by inviting participants, data collection, outreach, photowalks to museums or other physical spaces, and organising/attending conferences related to Wikimedia.

In India, offline events have focussed on different facets of women's contributions to various fields, a large number of which are organized during Women's History Month.[76] There have been extensive workshops on training on Wikipedia in Indian languages with a majority of women participants. The Marathi community with the support of CIS-A2K has hosted several workshops to train women to edit on Marathi Wikipedia on various topics such as women's biographies, laws related to women and broader topics such as climate change. Lek Ladaki Abhiyan, an organisation based in Maharashtra, India which works on empowering women has contributed to Wikimedia projects by uploading the books on women related content under free licenses, and has been working on creating content consistently for the last three years.[77] Many women like to attend offline events because they feel that they are doing productive work as events are focussed on a particular agenda. It is also a space for face-to-face discussions with fellow members of the community concerned. Wiki Women for Women Wellbeing was held in 2018 to bring together women from Indian language communities and the Maithili community from Nepal. The event had around 32 participants (men and women) and the organisers were all women from each of the local communities. In

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[76] "Women's History Month", Wikipedia, accessed November 27, 2020.
https://en.wikipedia.org/w/index.php?title=Women%27s_History_Month&oldid=990957645
[77] "CIS-A2K/Events/Women's History Month events in Maharashtra (March 2020)", Wikimedia Meta-Wiki, accessed May 21, 2020.
https://meta.wikimedia.org/w/index.php?title=CIS-A2K/Events/Women%27s_History_Month_events_in_Maharashtra_(March_2020)&oldid=20105036

this offline event more than 200 articles were improved on subjects like women's health issues and women in leadership.[78]

> " There were 18 participants in the Wikidata Training Session [held at VVIT Guntur][79] in which 10 participants were female. The training session had both offline and two online sessions. The women participants were more engaged in the session compared to the men participants. The women participants who took part in this session were fine with participating in both the modes of the sessions but their preference was for offline participation."- ***Navya,*** **a Telugu Wikipedia contributor from VVIT college, Guntur**

From most of the conversations it was evident that the majority of the women in the Indian language Wikimedia communities prefer to connect with fellow Wikimedians in physical/ offline spaces as they find it more comfortable in terms of making friends in-person and also to dedicate their time and focus on the activities of the event. The structure of these offline events are also important in terms of understanding the quality of access[80] and participation by women contributors, especially in terms of the presence of a significant number of women at events.

> "In some of the cases it is a male member who is a friend or from family circles who welcome women (into the communities)… The access barrier to enter the community is removed in this case, but in terms of participation it is (still) men who are more than women. A group, where … 90% of [members are] men, cannot equalise the gender ratio." - **Username: *Rohini***

There are many women who are introduced to Wikimedia communities by men who have been working on these projects for a while. This, at times, can lead to a situation where women contributors may be hesitant or unable to independently engage with projects without the mediation of the men who introduced them. Further, there are instances, as narrated by an interviewee, where men who are allies and supportive in terms of organising events etc. have shared that sometimes they also find it difficult to stay in regular contact with women editors to invite them to events or training, as the latter are often not comfortable sharing contact details. During events such as the Women TTT,[81] participants have noted that they felt comfortable sharing their concerns in a space where there were no men, as that space is more empathetic, and they do not want supportive male members to

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[78] "Wiki Women for Women Wellbeing 2018", Wikimedia Meta-Wiki, accessed November 30, 2020.
https://meta.wikimedia.org/w/index.php?title=Wiki_Women_for_Women_Wellbeing_2018&oldid=18644149

[79] "VVIT WikiConnect/Activities/Wikidata Training Program/2019", Wikimedia Meta-Wiki, accessed March 20, 2020.
https://meta.wikimedia.org/w/index.php?title=VVIT_WikiConnect/Activities/Wikidata_Training_Program/2019&oldid=19912173

[80] 'Quality of access' here refers to kinds of access that women participants have to various Wikimedia projects and platforms, beyond just representational parity (having an equal number of men and women for example). The emphasis is on making the work environment more accessible by making it friendly and welcoming, such as through the presence of more women and availability of mechanisms to address conflict etc.

[81] "CIS-A2K/Events/Women TTT 2019", Wikimedia Meta-Wiki, accessed December 09, 2019.
https://meta.wikimedia.org/w/index.php?title=CIS-A2K/Events/Women_TTT_2019&oldid=19623990

feel disappointed because of their experiences. Also, for concerns related to women, the conversations should be coordinated, planned, and conducted by women. The women who are introduced to the Wiki movement by male members often feel hesitant to share any women-centric concerns. Therefore there are both socio-cultural factors related to women's access to public spaces that need to be acknowledged, as well as the need to create a supportive environment where women editors feel confident in sharing concerns and engaging with Wikimedia projects on their own.

As observed by many interviewees, generally, in Wikimedia events, participation of women is higher when there are women leading the event, or the events are women-only because it offers a more supportive environment for them to accompany others or to seek assistance. Offline events dominated by men are often unwelcoming spaces for women and are not conducive to openly participating in discussions. More training, confidence-building, and exposure to public events are required to empower women to participate and organise events, as well as openly voice their opinions.

Wikimedia events focus on welcoming people from diverse groups, including people across the spectrum of gender and sexual identities. Community members have sometimes raised doubts about the value of women-centric events, often due to lack of awareness about the prevalence of a gender gap and bias in Wikimedia communities.[82] This often makes it difficult for women in the community to encourage the participation of more women. It is therefore important to create more awareness and foster support for women-led events, through collaborative work in communities.

Another barrier is that often, women cannot spare time to attend events due to overlap with their professional and domestic responsibilities. As many Wikimedia events take place during weekends, a high caregiving burden often makes it difficult for women to attend them. Travel time and distance to event venues is also challenging for many, especially with regard to safety when travelling alone. These factors often prevent women from attending events even when they have been awarded a sponsorship to do so. This is especially the case with women who have children, given the absence of childcare facilities in workplaces and lack of support from families.

> "There are women who are employed in a day job who contribute in Wikimedia but they do not have much time to do the voluntary work so women who can engage more time must be made aware of these works. Additionally, I observed that in certain families the accessibility and permissions are very much restricted for women, the exposure to social media and blog writing is considered to be of least priority for women." - *Username:Parvathisri,* **Tamil Wikimedia contributor (translated by author)**

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[82] "Grants talk:Conference/WikiWomenCamp 2020", Wikimedia Meta-Wiki, accessed February 25, 2020.https://meta.wikimedia.org/w/index.php?title=Grants_talk:Conference/WikiWomenCamp_2020&oldid=19843134

Some interviewees also observed that the friendly space policies are violated, despite awareness of the existence of these policies. The violation of friendly space policies observed in this context is that there is often the perception within some communities that women gain visibility and access to community spaces on the basis of their gender identities ('using their gender card' so to speak), including through reservation of spaces in community events etc. These types of conversations have led to insecurity among women and reduced active participation in events and contributions to content because they end up having to spend a lot of time in the process of creating safety mechanisms to resolve issues. Discussions on whether there are enough opportunities available for women and other marginalized groups, and if they are being utilized well are essential. However, where women feel targeted on the basis of their gender identity, this may only perpetuate an unhealthy working environment without productive outcomes.

> "Although friendly space policies exist, we still need to equip our communities with training and exercises about gender sensitization in online and offline Wiki culture. Training on Trust and Safety in the local context is important for significant improvement in community health." - *Rupika,* **Wikimedia Commons contributor**

In brief, most of the interviewees of this study have engaged with and hosted offline events in local and global Wikimedia communities. Good participation by women in offline events is dependent on factors like sponsorships for travels, childcare support and also time synchronisations so that they are able to manage jobs, domestic responsibilities and Wikimedia commitments together. Offline meetups are the most preferred forms of engagement for women contributors. Mostly these events are effective due to opportunities for in-person discussions and training, Also these spaces implement the friendly space policies to incorporate a more inclusive and safer environment for women to participate without hassle. There was also better awareness of friendly space policies, reporting and redressal mechanisms as they pertained to offline events. There remains however a need to encourage more women-led events, and better visibility for the work done by women on Wikimedia platforms and remove barriers to their access to the communities in order to enable their sustainable participation.

Achieving Sustainable Participation

As illustrated by the examples above, it is imperative to make the participation of women in Wikimedia projects more sustainable. In order to achieve this it is necessary to understand factors that may impede such participation. In this context, this report highlights various parameters that are used to measure the contribution of women in the community and also what could be some of the general reasons for women leaving and/or reducing participation in a community.

Metrics on Gender Diversity

An important aspect of assessing women's contributions on Wikipedia is through evaluation of metrics on gender parity and diversity. However, this is a challenging and evolving process, in terms of design, data collection and analysis. On Wikimedia platforms one cannot identify the gender of a person through their username, but rather through self-identification i.e., use of gender templates on Wikimedia User page accounts.[83] To understand the gender metrics in Wikimedia events (offline/online) this data is captured on registration and feedback forms of the events, with the consent of the individuals. Importantly, this data only provides information on representational parity (the number of men and women at an event for instance), and not necessarily the quality of their participation and challenges with the same. However, events like editathons can be assessed for quality through the edit history made by the participant which is the conventional method of evaluating gender metrics on most of the Wikimedia projects. It is important therefore to arrive at better ways of measuring the participation of women on Wikimedia, through both qualitative and quantitative indices, and developing more nuanced forms of gender and diversity related metrics.

Building Awareness, Skills and Motivation

Events like 100Wikidays,[84] a Wikipedia article writing marathon where volunteers write new articles for 100 days continuously (if they miss a single day then they fail in the challenge), have also helped in content creation, through adding content on women while also helping women volunteers achieve their long-term goals. As noted by several interviewees, it is important to keep contributors motivated through their engagement in these kinds of events.

> "Wikimedia projects are more about knowledge-gathering so only dedicated and interested people can retain more women in the community for a long time. Individuals along with the community must have proper targets and one must keep on hunting for new subjects to write more articles on different aspects."- **Username: *T.sujatha*, Telugu Wikimedia contributor (translation by the author)**

Awareness building among women was identified as a key recommendation to bring more women into the community, despite the constraints on leisure time for most women.

> "Our focus is to educate and make women employable so we train more women students on Wikimedia projects.We have framed a curriculum and students come to

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[83] "Template:Him or her", Wikipedia, accessed March 11, 2020.
https://en.wikipedia.org/w/index.php?title=Template:Him_or_her&oldid=599150077
[84] "100wikidays", Wikimedia Meta-Wiki, accessed November 27, 2020.
https://meta.wikimedia.org/w/index.php?title=100wikidays&oldid=20710462

Vigyan Ashram[85] to contribute in the evening when the college ends. After moving out of college I am not sure if these students continue to contribute; few of them got married so they are not continuing. But when a new batch of students join the college they replace the number of previous contributors. I hosted Wiki Women for Women Wellbeing for Marathi community, participated in Wiki50 days challenge and wrote 50 articles related to women and also conducted three workshops on content around women. We motivate and inspire more women to come to contribute on Wikimedia projects and make them aware of the importance of contributing towards this." - **Username: *Pooja_Jadhav,* Marathi Wikimedia contributor (translation by author)**

Contributing to Wiki projects needs significant time and effort, which is not possible for many women, due to regular paid work engagements and/or caregiving responsibilities. Although community gatherings and meetups are arranged after accounting for everyone's availability, participation in such polls is limited to members who are active in public fora. This can be exclusionary towards women, as they tend to interact more openly in groups they are already familiar with. Interviewees emphasized that voluntary contributions require support and encouragement from the community to which they contribute, as well as from the family. In such a context, rewards or acknowledgements can encourage women to continue participating. Given women participants' assessment of how much time they themselves or their peers are spending to contribute to Wikimedia projects, the lack of recognition can act as a key deterrent to continued participation.

> "I was active in community participation 6 years ago but until the time I was contributing not many women were present in the community and it wasn't easy for us to bring new women contributors to the team. We did a lot of outreach back then, but I'm unsure how many are active in the current community."- ***Ditty Mathew,* Malayalam Wikimedia contributor**

As stated above, one of the interviewees was part of her community and engaged in active contributions six years ago but she couldn't continue further because most of her time was engaged in higher studies.There can be varied reasons for women and other participants leaving communities, apart from other engagements. The interviewee continued to engage with Wikimedia through research-based projects, but reduced her engagement with the community. There are no standards or parameters to categorise members as active or inactive within the community. It would therefore be useful to form some kind of a collective, or an alumni association for women who are no longer as active to mentor new contributors. This will also help in archiving their own work, apart from bringing a historical perspective to the community's work. Also interaction with these contributors helps researchers to

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[85] For more on this see: "Savitrichya Online Leki (Savitri's Online Daughters).webm", Wikimedia Commons, accessed October 23, 2020.https://commons.wikimedia.org/w/index.php?title=File:Savitrichya_Online_Leki_(Savitri%27s_Online_Daughters).webm&oldid=498401187

understand what was happening in the community in earlier years and also compare it with the present situation of the community.

> "Approximately only 30% of women participation can be found in the community. If I take initiatives the community members (men) do not take a stand and new women in the community are less invited. So I have started to work with a multilingual group as part of the Delhi Wiki club and I contribute in a space that is more supportive of women participation." - *Username: Sush_0809,* **Hindi Wikimedia contributor**

As noted by **username: Sush_0809**, she joined the Delhi Wiki club which not only works on Hindi language based projects but engages with multilingual groups, as she has previously faced some challenges in terms of communicating her ideas on projects and receiving support in executing the same. She has therefore preferred to work with a team that trusts and supports her project initiatives, and where she and other women in the community would be able to create platforms to develop new ideas. She now feels that being part of the Delhi Wiki club team has made her feel more included, and helped her engage better through contributions on Wikimedia to advocate for more women participation and to host women centric events.

> "Our community has people from different ages although we are less in number and we are yet to think about the measures to be taken on gender gap because we have to frame something that fits for all. More than the concern around gender gap there is another challenge in our community; not many teenagers/youngsters participate in editing on Assamese Wikipedia (despite it being their native/first language) as they prefer to learn Hindi or English." - *Taznin Hussain*, **Assamese Wikimedia contributor (translation by author)**

As noted by an Assamese Wikimedian above, one of the reasons behind lesser engagement by the youth in the community could be reduced interest and proficiency in Assamese, due to better employment opportunities available to people proficient in English. This indicates a larger challenge with increasing motivation and interest in learning and using regional languages, and its connections to social mobility and cultural capital. These are also factors that affect engagement with and contribution on Indian language Wikimedia platforms, which would need more careful and detailed study and long-term strategies for resolution.

Community Health

Some women were able to sustain their participation despite conflicts in the community by focusing on their interest in the language. However, it is critical to enable active reporting of conflicts and work towards resolving them in a timely manner. Codes of conduct, friendly

space and other policies regulating behaviour and indicating procedures to be followed in case of violations must be enforced in every community.

> "Mandatory CoC in all Wikimedia Foundation funded events was enforced 5 years ago with the preliminary implementation at the Wikimedia India conference in 2016. We further insisted on having child care and quiet rooms to help ease of participation."- **Username: *Rohini***

Community health[86] is an initiative by Wikimedia Foundation to deal with issues of harassment and other disruptive behaviors (which includes content vandalism, stalking, name-calling, trolling, doxxing, discrimination - anything that targets individuals for unfair and harmful attention) faced by volunteers or contributors who are engaged with Wikimedia communities and projects. The initiative includes various levels of projects, reporting tools, goals and community engagement in order to assess community health. This initiative majorly focuses on providing necessary training on safety and implementation of friendly space policies in online and offline Wikimedia events. When some interviewees were questioned about community health practices in their respective language communities, they said that discussions around the need for these policies has not begun yet, presumably because of low levels of participation by women in their communities, and a lack of awareness about community health. There were a few who recommended that policies or Code of Conduct (CoC) which are available in global communities must be adapted to match the local community practices. Another reason for the need for localised CoCs is that the participation of women is dependent on cultural background and practices of a particular community so a universal and uniform set of protocols may not be able to address specific challenges and needs of community members. The interviewees who thought Community Health is an important factor to be considered as part of their communities said that it is necessary to foster individual interest, build a support system and motivate participants to create a healthy community.

I tried to identify protocols that could help in addressing these types of problems. The Trust and Safety policies of the WMFlargely discuss systems that address Wikimedia contributors and users with respect to major safety issues (online harassment, violence and child pornography for example) and offers some forms of direct community support (including support with tools and arbitration committees etc.). The team does not directly handle community disputes, or matters that may be resolved through existing community processes, in order to respect the autonomy of communities.[87] As a result, it is imperative for communities to work together on developing such policies and best practices that are specific to their own context, especially in areas such as creating friendly working

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[86] "Community Health Initiative",Wikimedia Meta-Wiki, accessed March 30, 2020.
https://meta.wikimedia.org/w/index.php?title=Community_health_initiative&oldid=19940668
[87] "Trust and safety", Wikimedia Meta-Wiki, accessed August 17, 2020.
https://meta.wikimedia.org/w/index.php?title=Trust_and_Safety&oldid=20366244#Direct_community_support

environments, attribution, agency and ownership of projects and ideas etc. Some efforts on community health for instance have been undertaken by certain language communities, and individual contributors.[88] Importantly, it is essential for such practices to focus on ways to encourage more collective work on areas such as gender and diversity, with due visibility and recognition to the efforts of underrepresented groups.

I also tried to understand how women in the community are coping with the COVID-19 pandemic and to know whether this time is favorable for contribution on Wikimedia. One interviewee noted that in this pandemic everyone's workload has decreased and stress has increased. But for women everything has increased manifold and they are barely getting any rest serving all the family members. The gendered impact of the COVID-19 pandemic has therefore been widely discussed, including the exponential rise in women's caregiving burden.[89] This was also reflected in the interviews. Some women contributors wrote extensively about the pandemic, such as Netha Hussain who wrote over 25 articles on coronavirus,[90] some of which were also widely accessed, such as the one titled "COVID-19 pandemic in Kerala"[91] and "List of unproven methods against COVID-19".[92] As is evident from these examples, this content was also useful in combating misinformation about the disease.

Conclusion and Final Reflections

In this study, I tried to speak at least with one woman Wikimedian from all (24) official languages in India (including English) , however I was able to interview the contributors from 13 Indian language Wikimedia communities only. The following recommendations are proposed on the basis of the experiences gathered from the 15 interviewees' inputs. These observations and recommendations, thus, may not be applicable for all Indian language Wikimedia communities or all women contributing to them.

The three focus areas of the study were :1) online participation of women Wikimedians, 2) offline participation of women Wikimedians and 3) strategies and efforts to encourage sustainable participation. Previous researchers had also focused on these areas, which helped me to understand dominant concerns in communities a few years ago as compared to today. The interviews extended much beyond the prepared questionnaire, and enabled me to

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[88] 'Community toolkit for Greater Diversity,' Wikimedia Meta-Wiki, accessed October 21, 2020.
https://meta.wikimedia.org/w/index.php?title=Grants:Project/Chinmayisk/Community_toolkit_for_Greater_Diversity&oldid=205 57253

[89] "Gendered impact of COVID-19 pandemic", Wikipedia, accessed October 29, 2020.
https://en.wikipedia.org/w/index.php?title=Gendered_impact_of_the_COVID-19_pandemic&oldid=985781669

[90] Netha Hussain, "Writing about COVID-19 on Wikipedia". Blossoming Soul (blog), April 12, 2020.
https://nethahussain.com/2020/04/12/writing-about-covid-19-on-wikipedia/

[91] "COVID-19 pandemic in Kerala", Wikipedia, accessed November 05, 2020.
https://en.wikipedia.org/w/index.php?title=COVID-19_pandemic_in_Kerala&oldid=987236257

[92] "List of unproven methods against COVID-19", Wikipedia, accessed November 07, 2020.
https://en.wikipedia.org/w/index.php?title=List_of_unproven_methods_against_COVID-19&oldid=987254811

learn from the respondents and their deep knowledge of Wikimedia projects, and the structure and dynamics of communities. We also had discussions about community health and challenges in relation to technical infrastructure of Wikimedia projects.

The study by TingYi Chang categorises the negotiation among women Wikimedians in terms of identity and agency.[93] These themes remain consistent in this study as well, although we interviewed different sets of women. This leads to two conclusions:

1. The people who were part of TingYi's project and this project might belong to the same communities or have had similar experiences as they were all from the Indian cultural context; or

2. It may be the case that there is a continuing need to reform and enforce policies within communities. Most findings from TingYi's research continue to be true today, albeit in different shapes and forms. Women's participation is lesser in both online and offline spaces when there aren't other women participants who can be approached for mentorship or guidance, particularly in leadership roles. Women's influence and their promotion to senior roles on platforms is in turn dependent on how inclusive communities are and to what extent they recognise women's participation.

The following are the findings of this study, focusing on Indian Wikimedia communities. These findings from this study resonate closely with the observations of the Global Gender Equity Report by Wikimedia, published in 2018[94].

1. **Sustainable participation:** Sustainability is an important dimension of the problem of gender gap on Wikimedia, and the importance of retaining women's participation by identifying and addressing the gaps in access, awareness and visibility of contributions needs to be foregrounded in community initiatives.

2. **Accessibility and technical knowledge gaps:** Apart from the accessibility, the technical knowledge gap that exists in the community hinders participation of women, and there needs to be sustained efforts towards addressing the same.

3. **Power Structures:** Power asymmetry in male dominated groups has now taken a new shape, in that the outreach is too output oriented and that it brings a selection bias on who could be taught about Wikimedia projects. In the previous study it was found that the leadership is dominated by men and opportunities to involve more women was found as a necessity to balance the gap in gender identities. In the current study, however, the understanding of power structures within the women's groups was very challenging per se. There is a need for understanding what category of user

[93] Chang, " Bridging the Hidden Gap", 65-67

[94] Johnson, Marti and Alex Wang.2018. "Wikimedia Foundation releases gender equity report". Wikimedia Foundation, September 21, 2018. https://wikimediafoundation.org/news/2018/09/21/advancing-gender-equity-conversations-with-movement-leaders/

base/contributors' groups which the existing women Wikimedians address during campaigns, and the patterns they follow. This pattern involves educating the groups of women who have better accessibility to the internet and their time availability to engage in volunteerships.

This study proposes the following set of recommendations with respect to women's online and offline participation, and sustainability of engagements:

1. **Localised Policies for Indian Language Communities:** Online and offline participation need their own formulation of localised policies. The existing policies apply exclusively for an event and have been witnessed to be strictly enforced in offline events but online sessions need equivalent thought, strategy and implementation. Above these, individual language communities need an understanding of the global policies and support to customise it according to their needs.

2. **Friendly space policies:** Training sessions on how to set up virtual spaces and basic best practices to be followed must be provided while hosting events online. For example, friendly space policies can be devised for conversations on Wikipedia, and on using platforms like Village Pump, Facebook or any other public discussion forums. Systems to report instances of inappropriate behaviour and harassment for online events must be made clear to everyone who engage in these spaces.

3. **Power shifts and training newcomers:** The shifting of power within the women in the community needs more proper planning. The women who lead a community must look ahead in terms of how the community can help in increasing the participation of more women. In the absence of expert/potential/active women contributors, it is important to strategize on how projects and initiatives can still run with less-experienced and new contributors. Efforts such as training more newcomers and engaging them with responsibilities of their interests from the initial days of contribution would help in sustaining the participation of women in the communities.

4. **Recognising contributions:** More and better visibility and recognition for the work done by women contributors is a significant need. Women contributors don't seek attention or feel the need to compete, but recognition of outputs would make them feel that their existence and contribution adds value to the community.

5. **Advance training:** Necessary training on acquiring skills on Wikimedia projects and also awareness about the same is an important factor. Most women contributors have the basic skills needed on Wikimedia projects such as editing, formatting or uploading resources but the technical or advanced side of these projects require more outreach and training.

6. **Self Help Groups:** Proper self-help groups need to be established to address the concerns related to community health in a timely manner, and a transparent

redressal process must be instituted to deal with cases of violations of codes of conduct and/or inappropriate behaviour, which must be made accessible to all members in the community. Although there is a Support and Safety team[95] by WMF to help communities, a few interviewees raised the concern that complaints often yield nothing but enquiries and investigations, with no concrete results. Self Help Groups and training in conflict resolution can help in addressing problems that can be resolved within smaller groups of communities, with only unresolved ones being brought to the notice of the WMF. This will also involve categorising problems by levels of severity.

7. **Outreach and Community Health:** Training on 'Community Health' is essential to make community members understand what is essential for their communities. This understanding among the community members is necessary for introducing and implementing techniques which can help towards sustainability of participation of women volunteers.

8. **Wikimedia Research projects:** There is also a need for bridging the Wikimedia world and researchers more strongly. Often for research purposes there are some interactions between researchers and community members, but it is difficult to reach out to everyone in the community and gain a better perspective on topics and issues. There are programmes like Wikimedia Research[96] that involves scientists, engineers and researchers who commonly interact but such platforms must be increased, and their scope widened enough to connect with all Wikimedians and others who would be interested to learn or take up research or other forms of creative engagements with Wikimedia projects on their own.

This research study is an effort to document and analyse specific, contextual aspects of the gender gap on Wikimedia, with a focus on the work and engagement of women contributors on Indian language Wikimedia projects. In mapping the experiences and insights of the people interviewed, the report aims to offer an insight into some of the factors that affect and perpetuate the gender gap on Wikimedia, and possible strategies to address the same. Based on these observations, the report also offers a set of recommendations which may inform existing and emerging efforts to address the problem of gender bias and gender gap in Wikimedia. As a woman who contributes to other Free and Open Source Software (FOSS) projects apart from being a Wikimedia volunteer, working on this study has helped me in understanding how objectives of diversity and inclusion are framed in open source/free knowledge communities, and encouraged me to continue learning and engaging with them.

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[95] "Support and Safety", Wikimedia Meta-Wiki, accessed August 02, 2020.
https://meta.wikimedia.org/w/index.php?title=Support_and_Safety&oldid=20332128
[96] "Wikimedia Research", MediaWiki, accessed October 20, 2020.
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Annexure I: Questionnaire

1. How long have you been engaged with Wikimedia projects? What are your main areas of interest and contribution to Wikimedia?

2. Are you aware of a gender gap and gender bias on Wikipedia? Do you feel it exists in your language community? If so can you identify in what ways it is seen?

3. If there is a gender gap, has it changed/evolved or reduced in the time that you have been contributing to Wikimedia? If yes, please describe how.

4. Who's story as a woman contributor in the Indian language Wikipedia is very interesting and has inspired you?

5. Have you been part of making the community a safe space for women and increasing women contributors?

6. Do you think the women in your community are showing sustainable involvement and growth in their work on Wikipedia? If yes or no, the reason for the same.

7. What are the Wikipedia projects/articles chosen to work on by most of the women contributors in the community?

8. What are the different ways to measure the active participation of women in a community?

9. Are the offline events/meetups successful? Mention a few if you had been part of or hosted and your experience on the same. Can you reflect on why these have been successful?

10. Are the online events/meetups successful? Mention a few if you had been part of or hosted and your experience on the same. Can you talk about some of the challenges in organising/participating in these meetups, and why they may have been unsuccessful.

11. What are measures that can be taken to increase the participation of women in community events? [Events focussed on women; Child support etc]. Are you aware of any such measures being implemented within your community.

12. How do you understand community health? Are you aware of measures being undertaken to address issues with community health. [One example is CoC's and Support and Safety] What are your thoughts on these? What specific measures need to be taken here?

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