MOBILE PERSONAS FOR INDIA

REPORT

HUREO

USER RESEARCH COMPANY

Who Are The Wikipedia Android Mobile Phone Users In India?

India is a country with a lot of diverse mobile phones users. At one end there is a power user, who lives in a metropolitan city, with access to technology and is proficient in English to be able to access information and leverage technology. At the other end of the spectrum we have users who are technologically less privileged and who use only regional languages for technology.

This study was conducted to understand all these users who are using Wikipedia, their motivations, usage and challenges.

Who is a Wikipedia user?
A Wikipedia user is a student, a mother, a volunteer, a working professional, who is searching for information on an Android mobile device. They use Wikipedia to search for information for various purposes such university assignments, their children's homework, to find specific information to support their arguments, for work related research, and for general knowledge. Users learned about Wikipedia from various sources - in college through their friends or professor, through their children's school, at work, or from Google searches. Most of the users access Wikipedia through a Google search on their mobile browser and go directly to the browser and very few go to the Wikipedia app.

On Wikipedia, users read articles, follow the hyperlinks to get more in-depth knowledge about topics, and sometimes share articles via WhatsApp. Users appreciate that Wikipedia has a vast amount of information and that each article is systematically categorized, making it easy to read and find specific content.

1. **What is the users understanding of consumption vs contribution?**
   Wikipedia has both kind of users who are consuming content without contribution, and who have low awareness of contribution and Wikipedia's policies. They are not aware of how Wikipedia content is created or who is creating it. There is also another group who understand how Wikipedia creates content but does not find motivation or time to contribute.

Wikipedia contributors are students, volunteers, and working professionals who learned about contribution through their friends or peers, volunteering activities, college professors, and the community. They are motivated to contribute to Wikipedia to update incorrect or missing content, both in English and regional language Wikipedia. Novice editors have some understanding of Wikipedia's policies whereas power editors have a deep understanding and conduct sessions to enable other contributors learn about policies and contribution. Power contributors work on the ground level, building a team of editors and holding workshops to enable people to become contributors.

2. **Do the users trust Wikipedia?**
Among Wikipedia users, the trust in Wikipedia varies. One group trusts Wikipedia and finds it reliable due to Wikipedia's strong policies and community-driven moderation. The other group reads Wikipedia but is unaware of Wikipedia's contribution policies and finds the content to be unreliable due to missing citations and incomplete or inaccurate content.

3. **What are the challenges in consuming Wikipedia?**
Wikipedia users are unable to use Wikipedia for academic assignments due to missing citation and the lack of trust from the university authorities in the content. Regional Wikipedia consumers struggle with a lack of regional content for education, general knowledge, entertainment, etc.

4. **What are the challenges in contributing to Wikipedia?**
There is a lack of awareness about contributing to Wikipedia and the contribution policies. Contributors struggle with the mobile UI - contributors use the mobile only to make small edits and prefer to use a larger screen of laptop to make bigger edits.

Hureo, a user research firm in India studied around 50 participants across multiple cities and semi-urban areas. This report discusses in detail the findings from the study, defining user personas, their challenges, wishlists and recommendations.

Table of Contents

Image provided by Pixabay

ABOUT THE STUDY

The Wikimedia Foundation was interested in learning how mobile phone users speaking single and multiple languages across India use Wikipedia. Hureo was engaged to talk to a diverse set of participants, understand their usage, needs, and challenges. Over the course of a month, Hureo interviewed participants from different geographical regions of India. These were participants who had varying levels of comfort with technology and were communicating in multiple languages.

This report discusses the findings from the study, and includes the methodologies used, participants interviewed, personas, Wikipedia usage, challenges, and wish lists.

METHODOLOGY & PARTICIPANTS

Prior to starting the study, Hureo conducted a short series of stakeholder interviews with designers, community ambassadors, product and engineering managers from the Wikimedia Foundation in order to set the research goals for the study. This was followed by in-depth interviews with participants and data analysis to develop new context-specific personas.

RESEARCH GOALS

The Readers Team from the Wikimedia Foundation had the following research goals for the study.

- Get an up-to-date understanding of who Wikipedia users are and what motivates them to use Wikipedia on their phones
- Identify audience segments relevant to users of Wikipedia on mobile devices.
- Understand the significance of various dimensions of a user (e.g. differences by life stage, cultural factors), usage (e.g. motivations, patterns and/or critical features), entry point (e.g. native apps, mobile web, channel apps) and conceptual understanding (e.g. consuming vs. contributing, content confidence flags)
- Identify challenges and wish lists of these users

METHODOLOGY

Hureo identified participants for the study in 5 cities across different geographical regions in India, covering various cities from Tiers 1, 2, 3 and rural areas.

In each location, Hureo conducted one-on-one, in-depth, and in-person sessions. The duration of each session was about 45 to 60 minutes. In the first 30-45 minutes, participants were interviewed about their phone usage, internet usage, content requirements, Wikipedia usage, challenges and wish list. After this interview, the participants were asked to show their Wikipedia usage on their devices through a series of tasks.

PARTICIPANT PROFILES

Hureo interviewed forty-nine participants from across India. Their profiles are as listed:

- **Age & Gender:** All participants were within the age group of 18 to 55 and included both men and women.
- **Education:** The participants came from varying educational backgrounds from a high school dropout to PhD in Literature.
- **Profession:** The participants were from different professions and included students, engineers, homemakers, entrepreneurs, journalists and NGO workers.
- **Location and languages:** Most of the participants spoke multiple languages including regional languages, while a few spoke only English or only a regional language. Cities and languages covered in the study were:

  - East:
    - State: Odisha
      - City: Bhubaneswar (Tier 2) and semi-urban areas nearby
    - State official language: Odia
    - Languages covered in the study: Odia, English, Hindi
  - West:
    - State: Maharashtra
      - City: Pune (Tier 1), Chinchwad, other as well as semi-urban and rural areas nearby
    - State official language: Marathi
    - Languages covered in the study: Marathi, English
  - North:
    - State: Punjab & Union Territory
      - City: Chandigarh (Tier 1) & Patiala (Tier 3)
    - State official language: Punjabi
    - Languages covered in the study: English, Punjabi, Hindi
  - South:
    - State: Karnataka
      - City: Bangalore (Tier 1) and semi-urban areas nearby
    - State official language: Kannada
    - Languages covered in the study: English, Kannada, Hindi, Urdu

- **Devices Used:** All participants were Android mobile users who search for information on their mobile phones in multiple languages. They were existing Wikipedia users who used Wikipedia through the mobile app or the mobile web browser. The study also included new Wikipedia users and users unfamiliar with Wikipedia.

WHO IS A WIKIPEDIA USER?

Through this study, Hureo identified 6 personas of Wikipedia users based on their use of technology, consumption content, knowledge of languages and their role as a consumer or a contributor. These personas have been provided as a separate deliverable.

A student and a contributor, Satpaal poses at the Punjabi Pedia center at Punjabi University's department. Wikipedia community meetings are hosted at this center.

FINDINGS

In this section we have covered our findings on the attributes of Wikipedia users, their language and keyboard usage, their internet and data usage, and how they consume content offline and their sharing patterns.

WIKIPEDIA USERS: GETTING TO KNOW THEM

Wikipedia user are spread across India and access Wikipedia from various kinds of devices. For this study, we focused on adults who have access to the internet on their Android mobile phones and search, and read content on their mobile phones.

The identified users from the study had the following attributes:

- PROFESSION

  Wikipedia users came from various backgrounds. Some Wikipedia users were students while some users were working professionals, homemakers, mothers, and teachers.

- EDUCATION

  Wikipedia users had different educational background, from users who had completed high school to users who had PhDs.

- PHONE USAGE

  Users access Wikipedia on a variety of devices. For this study Hureo focused on Android users. User's use their phones for communication and to search for information.

- WHAT KIND OF PHONES WERE WIKIPEDIA USERS USING?

  - **Type of device:** Hureo observed the users Wikipedia usage on a wide variety of devices. All the users used Android phones from basic phones to high-end phones such as such as Google's Pixel and the OnePlus series.
  - **Family's use of phones:** Some users also had multiple phones including iOS and feature phones. Most of their family members owned Android smartphones, although some of the parents and grandparents were using basic feature phones.
  - **Reasons for using Android devices:** The users had various factors for choosing Android mobile devices such as access to the internet, apps like WhatsApp or Facebook, storage, camera quality, etc. To meet all the above points, Android was their most budget-friendly option.
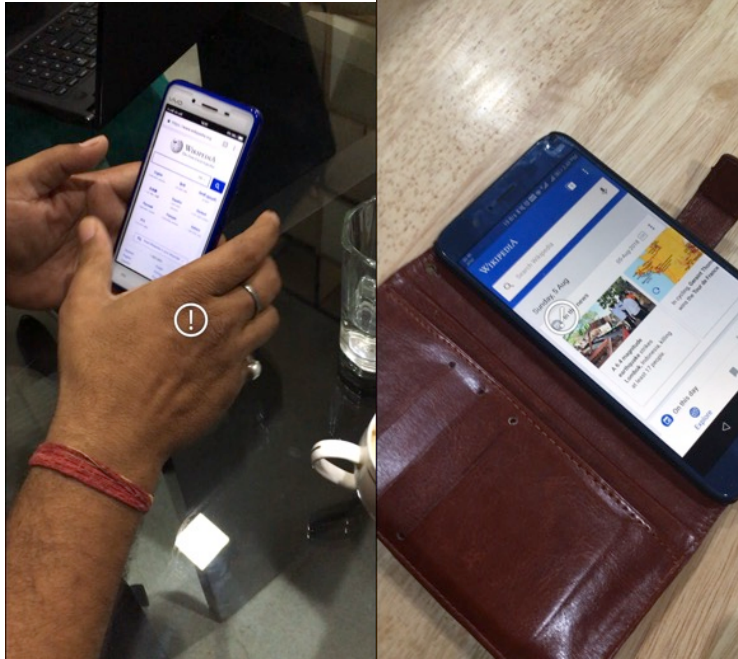
Participants with their phones

- HOW WERE THEY USING THEIR PHONES?

  - o **For communication**: Wikipedia users were using their phones primarily for communication, to make calls, check messages and few others were using their phones for emails. Users used apps like WhatsApp for messaging and sharing photos and videos, and Facebook for social media posts.
  - o **To search for information:** Users used their phones to search for information online - on Google or on specific websites. They read articles on Wikipedia, blogs, social media sites, and the news.
  - o **For entertainment:** Users also used their phones for entertainment such as listening to music, and watching YouTube videos for music, entertainment, cooking, arts and crafts, and tutorials.
  - o **To shop & pay bills:** Wikipedia users shopped online to buy clothes, school supplies, and groceries by using their phones. They also made online bill payments using apps and the mobile browser.

- WHAT OTHER DEVICES WERE THEY USING?
    - Wikipedia users also used laptops, desktops and Kindles. They used printers as well - either at home or at work. Some users were also comfortable using devices like Alexa and Google Home.

LANGUAGE AND KEYBOARD USAGE

Most users from the study speak and read in multiple languages although they had a strong preference towards one language for reading.

Schools play a large role as the education system in India has multiple languages. Among most of the urban users, their education was in English and in state's official language; some also studied a third language, which might include Hindi. In semi-urban users, their education was mostly in the state's official language and although English was also a part of their education, they continue to struggle in reading and speaking the language.

Hureo categorized Wikipedia users into four groups based on their language usage:

- **English:** These Wikipedia users speak, read and write in English as well as a regional language but use only English for reading and writing. They use their regional language socially for speaking along with English both at work and socially.

    Keyboard usage: On their phones, they search for information and browse in English and use an English keyboard.

- **English & Regional:** These are Wikipedia users who speak, read and write in English as well as in a regional language and use both languages for reading as well as writing. They use their regional language along with English both at work and socially. Primarily, their mobile phone usage is in English, but for specific content requirements such as local history, current affairs, arts & culture, which are widely available in their regional language, they use their
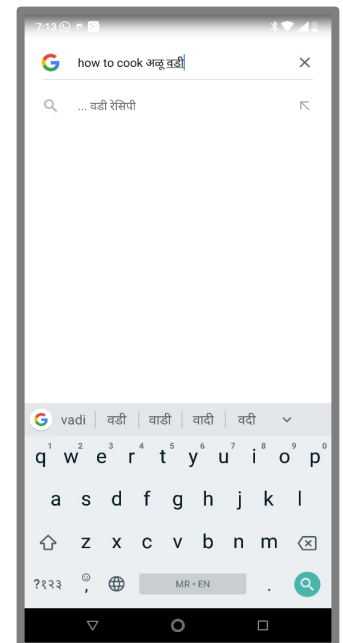
User's transliteration keyboard for converting English text to Marathi

13

mobile phone in regional languages. Users use Google search to access regional content including regional Wikipedia.

Keyboard usage: Most users in this category use only an English keyboard on their mobile devices. While searching for regional content, they use the English keyboard to type in their regional language. Some users have installed transliteration keyboards on their devices that convert the text typed in English to the regional language.

- **Regional & English:** Some users communicate in regional languages but are able to speak and read basic English. This group primarily prefers to read and speak in regional languages. The lack of content in their native languages pushes the users to adopt English.

  Keyboard usage: These users use their phones to search for information in regional languages by using apps such as the Google Indic keyboard that enables them to type in their native language.

- **Regional**: Very few users are purely regional speakers who use Wikipedia. These users mostly also have low awareness about technology. Due to this low awareness and lack of proficiency in English, users are unable to use their phones beyond basic functions like using the camera, conducting a basic search and communicating on WhatsApp.

  Keyboard usage: Since they are unable to type in English, either someone has installed a Google Indic keyboard on their device or the users use Google's voice assistant to search for images or send voice messages in regional languages on WhatsApp.

INTERNET AND DATA USAGE

All the existing Wikipedia users have access to the internet on their mobile phones - mostly through mobile data and some also have access to WiFi at their homes, work, university campus or cafe. Active internet usage ranged from 15 - 80 hours a week, depending on the user.

India is going through an internet revolution.
The users were using popular telecom service providers that provide large amounts (as much as 1Gb/day) of high-speed data at affordable prices. This is a big transition that has taken place in the

Indian telecom industry and rates have dropped steeply from their earlier charges. However, while mobile data has become affordable, mobile network connections are not stable, with connections being dropped and low access to mobile network in rural areas.

OFFLINE CONTENT

Wikipedia users consume offline content such as PDFs, music, books on a Kindle both on the device and on mobile, when they are travelling or commuting.

- **What offline content do users consume?**
  Wikipedia users read books and newspapers offline. Users use various apps that they use to read books and newspapers in multiple languages. Some users use a Kindle both on their mobile phone and device. A few users download movies or save YouTube videos offline to watch while commuting.
- **Why do users use offline content?**
  Users consume offline content while travelling, especially to areas where there is low network coverage. Users also use offline content while commuting when there is no guarantee of uninterrupted network.
- **How do they access it?**
  As most of the content saved offline is text-based, users typically use a PDFf reader on their phone or laptop to read it. If the content is saved on the app itself or bookmarked, they read it on their phone.
- **How frequently do they read it?**
  For most of the users, usage of offline content is not very frequent since offline content is mostly used during travel. There are a few users who use it while commuting.

SHARING CONTENT

Users share content that is relevant to their interests, work, education, or if they have authored it. They share news articles, blogs, Wikipedia articles, multimedia content like images and videos. Majority of the users use WhatsApp to share screenshots and links. In some cases, if the Wikipedia article is too long, users shares screenshots of the relevant content from the complete article.

- o **What information do they share online?**
  Users share information online based on the following categories:
  - ▪ **Interests** - Users typically share information about their interests - technology, humanity & arts, literature, entertainment, current affairs. Information is often shared as PDFs, articles, YouTube videos, images, any sort of multimedia that is relevant to their interests.
  - ▪ **Work**- Users share articles, PDFs, videos related to their job or industry
  - ▪ **Education** - Users share research papers, PDFs, other content related to their education or for assignments.
  - ▪ **Self-authored** - Users who write online - blogs, poetry, videos, articles - are proud of their content and share it on social media sites.
- o **With whom do they share?**
  Users share content with friends, family, co-workers, on social media platforms; it also depends on the kind of content.
- o **How do they share?**
  Users typically share via WhatsApp, copy pasting the link to a single conversation or a group chat. Some users take a screenshot of a relevant section of the article and then share to WhatsApp.
  In some cases, users use other media like Facebook, LinkedIn or Twitter to share the content they found on those respective sites.
- o **How frequently do they share?**
  This varies, some users share content daily to some rarely sharing anything. On an average, links and images are shared every 2-3 days.

A mother uses a laptop to teach her children and help them with their homework.

INSIGHTS

Our insights explore the Wikipedia usage of the users, and their conceptual understanding of consuming Wikipedia versus contributing to Wikipedia.

WIKIPEDIA USAGE

In this section we have covered how users learned about Wikipedia, their motivations to use Wikipedia, and what is their Wikipedia usage.

DISCOVERY: HOW USERS LEARNED ABOUT WIKIPEDIA

Users learned about Wikipedia through various sources as listed:

- **Learned in school or university:** Users discovered Wikipedia on their own or learned about Wikipedia through their peers or professors. In some cases, the schools of the user's children referred Wikipedia.
- **Learned through Google Search:** While searching for information, users would come across links to Wikipedia articles.
- **Learned while working:** Some users were aware about Wikipedia but got to know more about it while volunteering or started consuming it because of their job.
- **Suggestion in Play Store:** Some users were given Wikipedia app as a suggestion on the Play Store when they searched for other information apps.

There are a few users who have never heard of Wikipedia; these are regional users who are not very technologically enabled. Once they learned about Wikipedia and its availability in their regional language, they were thrilled, as it would enable them to find and read information.

USER QUOTE

" I learned about Wikipedia after my 12th standard because I didn't have access to the Internet before that. When I started engineering college, that was the point I came to know about many online tools like Google Maps, Wikipedia."

MOTIVATION: WHY USERS USE WIKIPEDIA

Users have various motivating factors for consuming and contributing to Wikipedia. Consumption of Wikipedia was to conduct research for assignments and search for information either for work or for general knowledge. The motivation of most contributors was to add certain content, or to update incorrect or missing content in regional Wikipedia because either they have been ardent Wikipedia readers or want to contribute to the community at large through volunteering, promoting content in their language, etc.

- **Consuming**:

    - **Research aid**: Students use Wikipedia to research their assignment and projects and teachers use it to explain concepts to their students. And mothers use Wikipedia as a reference tool to search for information for their children's assignments, in both English and regional languages.
    - **Search for information**: Professionals use Wikipedia to search for information related to their jobs. For example, to get some background information for a report, to understand a concept, to get facts or get best sources from Wikipedia references. Also, teachers use Wikipedia to get more information on subjects and help their students understand concepts.
    - **Boost general knowledge:** Most of the users, including working professionals, use Wikipedia in a more general context, looking up any new information they came across or using it to prove a point during discussions.

- **Contributing**:
    - **Add regional information:** Many contributors had struggled to find regional content online. Due to these experiences they felt the need to have regional content available on Wikipedia, which would be beneficial to others like them.
    - **Update missing or incorrect content:** Many users have found content missing or incorrect in various regional Wikipedia, therefore they decided to contribute by updating it. For the same goal to create a richer regional Wikipedia, some users specifically seek out non-English Wikipedia articles and compare them to the English article and then update the missing content.
    - **Build a community of editors:** Power contributors are more involved in building a community of Wikipedia editors. They work with the editor community in their location, helping novice editors, conduct workshops, and work on larger issues like templates and structures of the articles.

USAGE: HOW USERS USE WIKIPEDIA

- *HOW USERS ACCESS WIKIPEDIA*

Most users access Wikipedia on their mobile browsers through a Google search. Very few Wikipedia users have installed the app on their phones, because most of the users are unaware about the app or unaware about the additional value of the app over a Google search.

Some of these app users do not use the app all the time but toggle between using the app and using the mobile browser to search for content. This behavior depends on whether they believe that there would be multiple choices for content or they need something specific from Wikipedia.

Wikipedia readers do not show any preference between using a mobile browser and a laptop or desktop. However, editors prefer to use their laptops to edit and use their phone (both app and browser) only to make minor small edits.

Wikipedia users also do not make any distinction between using Wikipedia on their mobile data over WiFi since Wikipedia is a "light site".
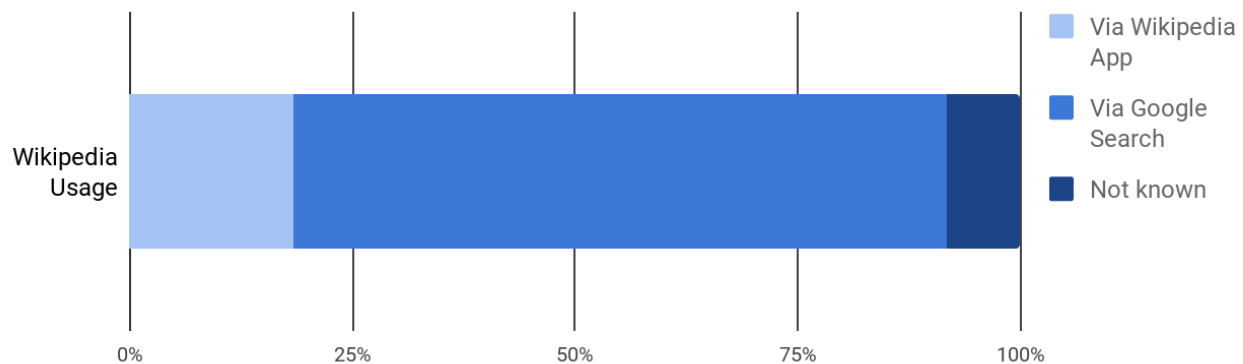
- o **App vs mobile browser:** Within a few app users, some users have clear preferences for using the app vs searching on a browser. For example, such a user will use the app if searching for something in particular that the user knows will be available on the app. To

conduct a more general search or if the search keyword is not very specific, the user will use Google.

- **Desktop vs mobile:** Wikipedia readers do not have any preference between reading on the mobile (both app and browser) or the laptop/desktop. Wikipedia editors, both novice and power, have a clear preference for using their laptops to edit. Most editors make only minor edits, such as typos, on their phones - either through the mobile browser or the app, while there are many novice editors who do not have laptops and work only on mobile for contribution.

- **WiFi vs mobile data:** All the users do not make any distinction between using Wikipedia on a WiFi network vs mobile network. Due to almost unlimited access to mobile data and because users are of the opinion that Wikipedia is a relatively light website (not image heavy), accessing Wikipedia on mobile data is not a concern.

<div align="center">

USER QUOTE

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"No there are no restrictions I think, Wikipedia pages are not consuming heavy data. So fairly simple and I don't think before using Wikipedia on mobile data."

- HOW USERS USE WIKIPEDIA

Users are doing different tasks on Wikipedia depending on their goals, and context as listed below:

- **Searching for content:** Users search on Wikipedia or within articles for specific content. If the users require more information, they move to Google to search for a video or an infographic. In some cases, users find the articles to be too long. In this case, they skim the sections before moving to Google to find a video or infographic that is less intensive to consume.
- **Using Wikipedia References:** Users who are researching for an academic paper or writing rely on Wikipedia article's reference lists.

- o **Reading on Wikipedia:** Users read information on Wikipedia by reading the introduction in detail and then moving to the section that had the information they required.
- o **Following hyperlinks:** Some users follow hyperlinks to related pages on Wikipedia and like the feature of hyperlinks while some find them distracting.
- o **Reporting incorrect content:** Some users report any incorrect information by emailing Wikipedia, informing their community leaders, friends, especially if it is on a topic of personal relevance to them such as religion or history.
- o **Taking printouts:** Users take printouts of Wiki articles for their personal consumption or to give to others such as their children or their students.
- o **Sharing Wikipedia content:** Users share the information they read on Wikipedia by copying the link and sending it to their friends, family, or colleagues via social media or verbally.
- o **Taking screenshots:** Some users take screenshots of specific content they want to share and send the image instead of the article link or PDF.

- HOW OFTEN USERS USE WIKIPEDIA

Frequency of usage depends on the user's occupation and whether they are only a reader or a contributor as well. Users spend anywhere upto 12 hours a week on Wikipedia - both reading and contributing.

- o **Daily**: Most of the novice editors use Wikipedia daily, especially while learning about editing policies and tools. Power editors also use Wikipedia daily in order to edit and also to read a lot of content on Wikipedia.
- o **Few times a week:** Professionals, mothers and students use Wikipedia several times a week to conduct research for school assignments. A student's usage increases during assignments and exams.
- o **Few times a month:** Other users use Wikipedia approximately 5-6 times a month while searching for information on movies, celebrities, general knowledge, current affairs, historical and geographical regions.
- o **Once in a while:** These users have more general requirements and use Wikipedia as and when needed. For example, if a user is travelling, then the user searches for information on sightseeing, local history, culture, geography, etc.

- HOW USERS SHARE WIKIPEDIA CONTENT

Wikipedia users share articles with their friends, family, colleagues, and students who find that article relevant to their interests. They share these articles via WhatsApp, taking screenshots or sharing printouts or by copy-pasting the link to the chat window. Typically, in education articles are shared more often between students, teachers and parents than casual readers.

- **What did they share?**
  Users would share certain Wikipedia articles that were relevant to their interests such as technology, poetry, humanities, and science. There is a group of users who share the content for reference, while another group shares content to inform, to report for inaccuracy.
- **With whom did they share?**
  Users shared articles with friends, family, co-workers, students, peers and also social media.
- **How did they share?**
  Wikipedia users sometimes share by copy-pasting the link to WhatsApp chats - either with single users or on group chats. Most often, when users only wanted to reference a part of the Wikipedia article, they would take a screenshot and share the image to WhatsApp. Some users would share printouts of Wiki articles when it was not possible to share links (e.g., a mother would share printouts with her children). PDFs were not downloaded and shared by users.
- **How frequently did they share?**
  Users shared Wikipedia articles often, the frequency depends on the occupation of the user. Teachers and students shared very frequently, giving printouts or sending links to students and peers. Working professionals, who used Wikipedia in a more general context such as to look up information, used Wikipedia as and when required.

- HOW USERS USE OFFLINE WIKIPEDIA

Most Wikipedia users do not save Wikipedia articles to read later or offline. Most of the users also do not download PDFs but some of them were using Kindle to read offline. Some users who need to refer Wikipedia articles in an offline situation take screenshots of the section of the Wikipedia article that is relevant to them for later reference.

- WHAT LANGUAGE USERS USE FOR WIKIPEDIA

Wikipedia usage varies between users depending on their language **capabilities**. English language users read everything only in English. Some users who read in both English and a regional language search for very specific regional content on regional Wikipedia. Users who are more proficient in regional languages than in English read Wikipedia in that regional language, using it to understand certain concepts or terms they came across. Purely regional languages users have very low awareness of Wikipedia and did not use Wikipedia.

User's screens showing content in English and Punjabi

   o **English**: Being single language readers, these users use Wikipedia only in English. They search for information for education, work, entertainment, or for general knowledge. These users also browse Wikipedia to learn something new based on what they are reading or watching at that time.

   o **English & Regional**: These users are proficient in English but use regional language Wikipedia to search for certain content related to their children's school assignments, as a research aid, to know more about local history or geography or famous personalities from that region. These users do not browse but search for specific content in the regional Wikipedia. If they are unable to find regional content they search for the same on English Wikipedia and then translate it on their own with the help of Google Translate. Alternatively, users use Google search and add "regional language name + Wiki" to their search term. In rare cases, these users use the language icon on Wikipedia to switch between languages.

   o **Regional + English**: These users are more proficient in their regional language but know basic English. On Wikipedia, these users search for specific local content that will be available in that language such as local history, regional personalities or regional geographical information. Students in smaller universities in semi-urban cities use Wikipedia in regional languages for research or to know more about a concept. While the language of instruction could be English or regional, students use regional Wikipedia to get a more in-depth understanding because of their comfort in that language.

   o **Regional**: Due to a low awareness of technology and lack of proficiency in English, these users rarely use their phones beyond a basic search or limited communication on WhatsApp. Since their phone usage is so limited, these users have very low awareness of
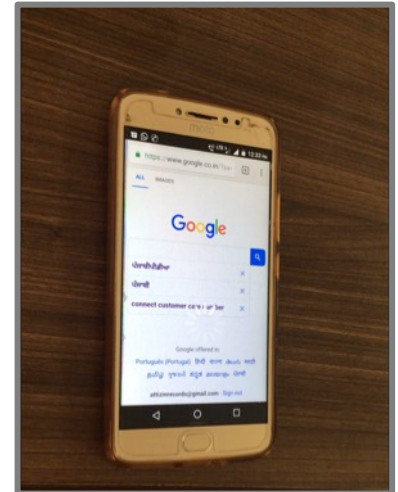
Wikipedia that is limited to seeing Wikipedia links in their Google search, or do not have any awareness at all about Wikipedia.

"If I want to read on Mark Zuckerberg I wouldn't read it on Marathi Wikipedia. And if I had to read about letters say Shivaji Maharaj probably I would prefer reading Marathi Wikipedia just because it related to these people more strongly"

CONSUMING VS. CONTRIBUTING

In this section we have covered the conceptual understanding of users in consuming Wikipedia content vs. contributing to Wikipedia and the users understanding of Wikipedia policies.

CONSUMING VS. CONTRIBUTION

Most of the users are unaware of contribution in Wikipedia and they are not aware of how the content is created. There are many flawed assumptions around Wikipedia content, like various agencies have been hired around the world to write the content, or the Wikipedia employees have written the content. Some of the users had attempted to contribute in the past but did not continue for multiple reasons such as low awareness of editing policies and loss of interest due to rejected edits.

- DO USERS KNOW ABOUT CONTRIBUTION

Most users are not aware of contribution to Wikipedia. A few users were aware of contribution but have not contributed or have stopped contributing due to various challenges they faced in editing or lost motivation due to rejected edits.
There is another small group of users who have been contributing to Wikipedia for years. They have been also motivating and nurturing new contributors to join and add to the community of contributors.

CONTRIBUTION

Most Wikipedia contributors are students, or volunteers who are already involved in various volunteering activities. They learned about contribution through their college professors, friends, community or at their workplace. And a few have attempted contribution by looking at the UI edit option.

Their motivations to contribute to Wikipedia ranged from wanting to update missing content to wanting to create a team of editors who would tackle the challenges of creating content for Wikipedia.

- HOW DID USERS START CONTRIBUTING

Contributors started their journey of contributing to Wikipedia in various ways. Some had attended a Wiki workshop on regional content in their university or at a local NGO and got inspired to contribute to a larger cause. Some were self-taught; they saw content on Wikipedia that was incorrect or missing and decided to teach themselves to edit to improve the content.

- WHAT DO THEY CONTRIBUTE

Most of the Wikipedia regional contributors contribute on subjects like arts, history, geography, languages, festival, local personalities or any content that they find is missing or requires updating.

- HOW DO THEY EDIT

Most of the Wikipedia contributors prefer to use their laptop over their phone to make edits. They attribute this to the small screen size of the phone which makes it difficult to edit. Some use their phones to fix small typos and later switch to a laptop for larger edits such as templates.

USER QUOTE

"When I was in 11th standard, it was difficult for me to understand [textbooks] as most things were in English and I was not even speaking English. So, I thought if I do something in this area and if I get all the articles and information in Wikipedia [regional] one can read and download. So, if we get information in our first language which might be Kannada, then they [students] will understand, and it will help them."

CREATION OF CONTENT

Most users are not aware of who is creating the content on Wikipedia or how it is created. Most users believe that content is created by the following possibilities:
- Wikipedia employees are writing the content
- Wikipedia employed agencies around the world are writing the content
- AI-driven agents are creating the content

"I don't know. Like encyclopedia is hard copy and soft copy is Wikipedia. The researchers have written the encyclopedia. Common people cannot write in Wikipedia."

POLICY

The level of policy awareness varies between users. Most Wikipedia readers are not aware of policies for contribution. The frequency and usage of Wikipedia reading does not improve their understanding of contribution processes and policies.

As novice editors are new to contribution, they aren't fully aware of all editing policies. However, power editors have a deep understanding of the policies and are often instrumental in helping the novice editors understand Wikipedia policies.

USER QUOTE

"I heard from a friend about his experience on editing in Wikipedia. He was trying to write and submit but Wikipedia was not accepting it. There was a problem, so he tried two-three times and his IP got blocked. I'm not sure what happens if the IP gets blocked."

Image provided by Hureo

This is a Wikipedia editor's laptop. Earlier the editor was using a phone and later a donation from the Foundation enabled him to use laptop for contribution.

TRUST

This section covers the users relationship with trusting Wikipedia content – do users trust Wikipedia, why or why not.

DO USERS TRUST WIKIPEDIA

Amongst the Wikipedia users, trust in the information varies. There are two kinds of users for Wikipedia, a group that trusts and strongly vouches for the content. Another group, that reads Wikipedia but questioned its accuracy and reliability.

<div style="text-align:center">

USER QUOTE

</div>

"I read the information, it is very much in the flow, in term of, I would say it is more reliable than other piece of information."

WHY USERS TRUST WIKIPEDIA

There are many users who trusted Wikipedia and consider it the first place to go for getting reliable information. This trust in Wikipedia exists because of these factors:

- **Community generated content**: Many users who understand how Wikipedia content is generated, trust the system because it is created, edited and approved by many readers and volunteers. The goal of the community is to provide relevant information rather than endorsing ideas, people or product, companies, etc. like in a for-profit organization.

<div style="text-align:center">

USER QUOTE

</div>

"I would only read that document from Wikipedia itself as the content is given in Wikipedia. I think I like it because it has been approved by someone and the information given in Wikipedia is correct that's what I believe and of course it is editable but unless you don't know anything about that particular subject you would not trust it."

"… kind of moderation happens that has been a reliable source, so I have been using it. Whenever I search I go through these pages [Wikipedia pages] and I read the information, it is very much in the flow [information layout and content], I would say it more reliable than other piece of information."

- **Strong policies**: Users believe in the strong Wikipedia policies that keep content reliable and trustworthy. The policies keep their content neutral and free from any bias for acceptance.

- **Belief in the editors**: There is a common perception that editors are scholars and have respect among the readers. It is believed that editors have in-depth knowledge on subjects that they are writing or editing. However, this also limits other readers while editing the content as they assume it requires a certain level of expertise to be a qualified editor or a contributor.

- **Came first on Google search**: Most of the users find Wikipedia information to be genuine and trustworthy because it ranks amongst the top Google search results.

- **Consistent content with other references**: Consistency of content with other sources further strengthens the trust in the system.

<div align="center">

USER QUOTE

</div>

"Because it's kind of an information which is community generated. I mean people are moderators, and to see you are passing the right information regarding a particular topic. And then if you are trying to endorse it or do something [incorrect as per policy] then that is not accepted. I mean that is not included in the article, so that kind of moderation happens and that has been a reliable source so I have been using it, whenever I search I get through these pages." [Strong policies]

*"I feel that Wikipedia is a genuine source of information because the editors are experience people. "
[Belief in the editors]*

"Yes, If I go Wikipedia content, I read that content tallying to other YouTube videos, websites both are the same." [Consistent content with other references]"

WHY USERS LACK TRUST IN WIKIPEDIA

Despite using Wikipedia for various purposes, a group of users still hesitate to trust the content. The lack of trust in Wikipedia exists because of various factors as listed below:

- **Contribution process/Authors are not known**: Readers are unaware how the content is created and who the authors are. There are many assumptions made by the users including, whether the Foundation has written the complete content years ago and now it is outdated, or some agency has been hired to write the content.

<div align="center">

USER QUOTE

"But what I find is there is the name written who has edited at the bottom of the page but it was not mentioned"

</div>

- **Editable by anyone**: There is a fear that the edit option on the pages gives any reader the ability to modify the content. This brings a lack of trust in the content, as users assume anyone can edit any content without any policies or approvals in place.

User assumes anyone can edit.

USER QUOTE

"What is wrong in Wikipedia is it can be edited by everyone. So we are not sure if it is correct. The real aspects and there are limitation."

- **Inaccurate Content**: Users find certain information to be incomplete or even incorrect. Therefore, they find using Wikipedia could compromise their credibility for using it for reference.

"… Marathi actors and personalities do not have much information on Wikipedia as much as the user sees in the newspapers. [Regional Content]."

"If I have lot of time I can compare lot of website. If I don't have time I will refer it. If the content is not right in Wikipedia I will be caught by the person who is judging me. That why I have a negative mind set for 10-20% chance." [English]

- **Missing citations:** Sometimes the citations and resources are missing in the article, it makes the article less reliable for readers.
- **Colleges & publishers do not approve of them:** Users rely on Wikipedia for many college assignments and projects, but authorities do not approve Wikipedia as a source for reference in their assignments.

"That why my college faculty says don't use Wikipedia frequently it can be edited [unaware of policies]. Use other websites. Other links are there Wikipedia everybody knows so it is gaining attention but the content of different websites are matching but Wikipedia sometimes is not correct."

"Wikipedia was part of everybody's life for long time. But people started talking that Wikipedia contents are not authentic. So people started looking for research papers and all. Even today if we search something first suggestion is of Wikipedia. But mostly the mentality changed that these citations are not accepted."

Image provided by Hureo

This is the library at Patiala University. One round of the study was conducted with the students who are getting their education here, mostly in Punjabi language.

LIKES & CHALLENGES

This section contains what worked and what didn't work for the users in using Wikipedia. It includes the challenges faced by the users with content, editing, using the Wikipedia browser, the information layout and design elements.

WHAT USERS LIKE ABOUT WIKIPEDIA

Users liked many facts about Wikipedia from the availability of vast content, to it being a trusted source of information as listed below:

- VAST AMOUNT OF INFORMATION:

Users like that Wikipedia has information on a vast variety of subjects. Users also like that each article in Wikipedia gives in-depth information, so users can get deeper details through hyperlinks.

- TRUSTED SOURCE OF INFORMATION:

Users feel that Wikipedia is a trusted source of information that users can easily refer to it when they need to verify certain information.

- INFORMATION IN A SYSTEMATIC FORMAT:

Users like that they get information in a systematic format on the Wikipedia app and on the mobile browser- from a brief summary to more detailed tabs.

- REFERENCE TO UNDERSTAND REGIONAL CONTENT:

Users, whose native language is not English, find regional Wikipedia's to be a valuable reference to better understand concepts or terms they come across in English.

USER QUOTE

"Though my education happened in English as a first language so there are certain references I don't get sometimes, and I use Marathi Wikipedia to understand what it actually means. Or if I want to say something in Marathi how well I can out that in words. Basically, vocabulary research you can say."

CHALLENGES

The challenges that users faced include content, challenges in editing, challenges in using the Wikipedia app, and design challenges as listed below.

CHALLENGES IN CONTENT

- CONTENT IN ENGLISH

Users face multiple challenges with the content in English, mostly with the content being incomplete or incorrect.
  - **Incorrect content:** Users found that some content on Wikipedia was incorrect. It is challenging for users to use this Wikipedia content as references for assignments and articles as sometimes it was inauthentic.
  - **Missing citations:** Users struggle to use Wikipedia for their articles and assignments as some citations and references would be missing.

- CONTENT IN REGIONAL LANGUAGES

Users struggle to find updated, good quality content in regional languages on Wikipedia. Users also found the translation quality of most regional articles to be poor.
  - **Lack of information in regional languages:** There is a lack of content in regional Wikipedia. Users are unable to find complete, good-quality content in regional languages for education, general knowledge, entertainment, etc. Some Wikis such as Marathi, Punjabi and Odia had more content than other languages such as Urdu.
  - **Lack of original content:** Since most articles are translations of English articles, users also struggle to find original content on regional Wikis.

USER QUOTE

"There are no original articles on Aristotle, Karl Marx in Punjabi."

- o **Inaccurately written regional content:** Users struggle to understand some of the regional content and found it inaccurate. Users feel the content is translated from English Wikipedia into regional without understanding the nuances of the languages.

<p align="center" style="color:red">USER QUOTE</p>

"For the things which we are already used to English that have been translated in Odia, it is very difficult for an Odia person to understand and conceptualize. I am Odia, I understand the language but still it becomes difficult for me."

CHALLENGES IN EDITING

Users mostly are unaware about contribution and the policies on contribution. Those who are already editing faced challenges in editing on a smaller screen and finding sources for regional content.

- **Lack of awareness about contribution:** Most Wikipedia users are either not aware about contribution on Wikipedia or have misconceptions about who could contribute. A recurring point that came up was that only experts in the field could contribute to Wikipedia.
- **Lack of awareness about policy:** Users are not aware about contribution policies, or how contributions work. Hence users had queries about why certain edits are not approved or reservations about making edits that would change articles read by millions.
- **Difficulty in editing on a mobile phone**: Contributors find it difficult to edit Wikipedia on their mobile phones due to the complex UI and unstable internet connections. They find it difficult to type especially when they had to enter a lot of content in an Info Box.
- **Lack of sources for regional content:** Wikipedia editors working on updating regional Wikipedia struggle to find sources for regional content. Often, they have to use English articles as sources for a regional Wikipedia page. This brings about a lot of frustration among the readers.

H

"Editing on the phone is mostly for small things like fixing a typo or changing some link but not intensive editing. For that I'll go back to the laptop or desktop."

CHALLENGES IN USING THE WIKIPEDIA APP

Users prefer to use a Google search to using the Wikipedia app and do not understand the need to download an app, if a Google search also leads to Wikipedia. Some users do not want to download an app due to mobile storage constraints and they use their browsers to access Wikipedia.

- **Users preferred Google search over the app:** Users find it redundant to use the Wikipedia app, as Google search directs the users to the same result. Therefore, they did not want to install any additional app to get the same results. Secondly, they couldn't discover any other benefits of the app other than using it for search.
- **Mobile storage:** Storage constraints on the phone are a significant deterrent to downloading the app. Wikipedia users also do not find much value in downloading the app, not just due to storage constraints on their phones, but also since a Google search also provide links to Wikipedia articles. Some advanced Wikipedia users, including editors, hold back from using the Wikipedia app due to storage constraints and the fear of "clutter" on their phones.

CHALLENGES IN WIKIPEDIA USAGE

Another factor that impacts usage (on both app and browser) is low awareness of Wikipedia in semi-urban and rural areas.

- **Awareness**: Awareness of Wikipedia is high in technologically enabled population but it is low amongst non-English speaking and technically challenged groups, especially coming from semi-urban and rural areas. These users are also not very technologically advanced, using basic Android phones and not proficient in English. However, they are using WhatsApp, Facebook and YouTube on regular basis. They consume a lot of videos which are available in their languages and often use them for entertainment.

"Yes. I was having Wikipedia app, but was getting issues in phone, so I only keep important apps. Phone hangs and I have many other apps like banking, so memory was less. You will get same information from browser as well as app."

CHALLENGES IN DESIGN

- INFORMATION LAYOUT

Users feel that the longer articles in Wikipedia do not have enough structure. They also find it difficult to use tabs which deviate them from the original article.

- o **Structure of content:** Users find overall sections insufficient to categorize these longer articles. Users struggle with reading the longer Wikipedia articles and found they had "too much information".
- o **Hyperlinks:** Users find it challenging to dig deeper into Wikipedia articles and use multiple tabs to open hyperlinks and avoid losing track of the original article.

USER QUOTE

"It often happens that I am reading about something like 'Humayun's Maqbara' which I have left God knows where and I have gone so far ahead that I forget what I was reading."

- **DESIGN ELEMENTS**

Most users are not aware of the language switching icon and do not use it to change languages. Those who are able to identify it, feel that they had to scroll too far to find the Indian regional languages.

Figure 1: Wikipedia Android Mobile App

- **Icons**: Users are unable to identify the language switching icon. From those users that identified it, very few use it. Most users are able to identify the other icons such as for editing, downloading and bookmarking Wikipedia articles.

- **Using the language icon:** Users are frustrated with scrolling to the bottom of the list of languages to get to Indian languages. They expected that since they were using Wikipedia in India, the Indian languages would be at the top of the list.

Image provided by Hureo

The editor was contributing photographs from his surroundings to add to Wikipedia pages.

WISHLIST

In this section, we discuss the wishlist of features that were either explicitly mentioned by users or inferred based on the information they were mentioning:

AUDIO CONTENT

Users are spending a lot of time traveling and commuting to work and they are used to listening to music, podcasts during these hours. They wish to have an option to listen to Wikipedia and later reading it.

VIDEO CONTENT

Users are used to watching a lot of video on YouTube from education to entertainment. It is easier for them to watch and learn than read content. They are also requesting similar audio and video content in Wikipedia.

USER QUOTE

"If you give information in video formats I will read it. Sometimes I have read about any person, consider Atal Bihari Vajpayee. I don't know that person I Google it, so the first result will be Wikipedia. But even if it is 3rd or 4th there is some thumbnail of YouTube. I will go to the video rather than reading in Wikipedia article."

USER INTERFACE

- **Languages should come in suggestion:** Currently to change the language there is a long list of languages for the users. Therefore, users recommended that Wikipedia give suggestions based on their locations for languages like Hindi, Marathi on top versus Espanol or Deutsch.
- **Icons in regional Wikis to have English text:** Regional wikis have the icons for search, home, and go back in that regional language. Users requested that these icons have English in brackets to help users understand since everyone is used to the English site.

OFFLINE READING FEATURE

Users would like to have an offline feature for mobile version. Most of them are not using the app and are unaware of current offline features.

"Right now, most of the maps are static. They were drawn at some point of time where some of the special some of the states in India. some years ago, where Telangana and Andhra Pradesh (states) were one. Now if I have to change it, I'll have to change it every file."

"There should be a way for the user to get the languages related to India in an easy way so that the user does not have to scroll through a long list."

"I wish Wikipedia had that kind of offline reading facility. It is available for PC but it is not available for phones." [Offline reading]

MORE REGIONAL CONTENT

Users wish to have more regional content in regional Wikipedia. Depending on the users they are looking for different kind of information in the regional content, as listed:

- **Academic Information:** Students would like to have information related to their studies in their native language. Often these articles are abstracts than a complete article, unlike what is available in English.
- **Regional information:** Users would like to read more information on regional topics including celebrities, geography, history etc.

VISUALS OF THE UI OF THE WIKIPEDIA MOBILE APP

Users want a more attractive looking UI for mobile version as they are used to colorful apps with a lot of pictures.

OPTIONS FOR DISCUSSION AND COMMENTS

Users want to see an option to add comments to discuss about the content. It will help them to understand if they content is good, reliable and what other readers think about it.

USER QUOTE

"Odia Wikipedia does not have as much content as the English Wikipedia Example - Suppose Orissa has 147 MLAs, so you will get information about them in English Wikipedia but not in Odia wiki."

[on More Regional Content]

"Wikipedia on a phone has to look much more interesting because attention span of people who use mobile phone is very less as compared to people who get into immersive reading on computer. You have to keep that in mind that Wikipedia app or Wikipedia mobile version has to look much more interesting."

[Visuals of the UI of the Wikipedia Mobile app]

"There should be reviews at the bottom. Since there is no way to know if the information is authentic, there should be reviews or some system where people can add comments about missing information."

[Wikipedia Search Engine:]

Image provided by Pixabay

RECOMMENDATIONS

Our suggestions based on the research findings from the study.

Audio Wikipedia

Users spend lot of time commuting and reading is difficult during that time. Having an option to hear the Wikipedia article will help the user to listen to the information during those hours.
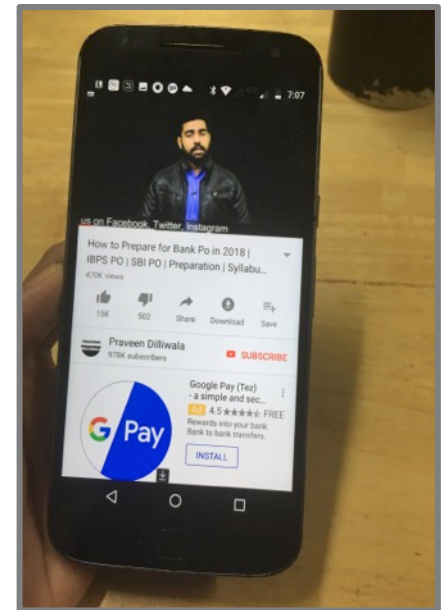
"Yes, in Wikipedia there is content reading only if someone wants to [listen] to audio that time that option should be available. So, anybody don't want to read he will sit and will listen audio."

Voice User Interface

Users are getting introduced to voice-based interaction with voice-based Google searches, WhatsApp audio messages and they have started talking to their devices. It is common behavior in both power and novice

User listening the content in their regional language

users. VUI is useful in many ways - it takes away the challenges of typing using keyboards and users are quickly learning to use specific keywords for searches. In Wikipedia, voice-based searches can help users to search content in regional languages overcoming their struggle with keyboards.

"I think Wikipedia should have kind of a search functionality search in the sense, like we have Google search, voice integrated to it. If we have Wikipedia having some voice integrated, maybe I say "hey, Wikipedia tell me about Thomas Edison "and it can give me a glimpse about that particular person or certain topic."

ACADEMICALLY APPROVABLE WIKIPEDIA

There are lot of students and researchers using Wikipedia for their education and work. Most institutes do not approve of Wikipedia as an authorized resource for citations. There is a requirement in this group to find academically approvable Wikipedia articles as other journals and publications are only accessible by paying for the content unlike Wikipedia.

VISIBILITY OF THE WIKIPEDIA EDITING PROCESS

There is a lack of trust and a limited number of contributors because they do not understand how Wikipedia works. It will be very beneficial for readers to understand more about Wikipedia by providing small introduction videos about these topics.

INCREASE CONTRIBUTORS BY ENABLING THEM THROUGH ASSISTANCE AND SUPPORT

- **Contributor Getting Started Guide:** Promoting videos to show how a reader can become a contributor and showing a step-by-step process to getting started in their journey.
- **Encourage frequent readers to become contributors**: If a user visits Wikipedia quite often, then they should be prompted to become a contributor or should be informed about contribution, like "Learn how to become Wikipedia Contributor".
- **Visible communities for editors:** There are many novice editors, who abandoned contribution after their edits were not accepted by Wikipedia. Often, they don't understand the policies and the UI to contribute using their phones. If there are communities accessible and visible to anyone attempting editing, then they will be able to remain motivated.

REGIONAL WIKIPEDIA SHOULD COME IN SUGGESTIONS

If a user is reading on a regional topic and has a history of reading regional content, then there should be a suggestion to read the content in regional languages, especially if the same article is available in the regional language.

PROGRAMS IN SCHOOLS AND COLLEGES

Schools and colleges where education is specially focused on regional languages can be a good place to introduce Wikipedia and grow active communities to generate content and create leaders. Patiala University is a good example, where professors are leading the community and enabling students to be become contributors.

ACKNOWLEDGEMENTS

ABOUT HUREO

Hureo is a user experience research firm based out of India. Hureo works with a wide range of organizations across the world to enable them to create and improve their products and services. Hureo uses various UX research methodologies to provide their clients with user insights that help identify user needs, challenges and opportunities. They have worked in various companies from startups to MNCs in both India and abroad giving them a range of knowledge and experience.

Our team comes from diverse backgrounds such as HCI, Advertising and Media, Cognitive Sciences and Education.

The team that worked on this Wikipedia project consisted of:
Anjeli Singh, Founder and UX Researcher, Hureo
Jahnavi Mirashi, UX Researcher, Hureo
Arunima Ved, UX Researcher, Hureo

To know more about Hureo:
Please visit their website www.hureo.com
Follow them on Twitter
Write to them at talk@hureo.com

APPENDIX