Catch, Corroborate and Communicate: The Contours of Professional fact-Checking In India

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The work of professional fact-checking involves three broad processes - selection of the issues that need to be fact-checked, verifying a story that is flagged as being a falsehood, and finally disseminating a fact-checked version of a story, each of which have unique challenges. We conducted in-depth interviews on their professional practice with fact-checkers of five major organizations that work in debunking stories daily, alongside conducted a large-scale analysis of the archives of fact-checked articles and studied the social media footprint of fact-checkers from these organizations. Our findings show that the outcomes of work with each of the three processes influence what stories get debunked by organizations, how much public impact they have, and the depth of debunking in each story, all of which in turn play a role in the scope and breadth of individual organizations' impact. Our findings have implications from both the supply side of how organizations can place themselves within the fact-checking ecosystem, and from the demand side of how consumers can consider the work and positioning of their preferred fact-checkers.

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1 INTRODUCTION

Fact-checkers have risen to the fore as a key part of the global information environment as the democratization of information creation and viral dissemination has given rise to a massive increase in unverified and often explicitly malicious information. They are also by the necessary scope of their work the set of professionals most likely to offend someone with every single story they do, since their work is essentially combative in nature, taking down stories that someone has chosen to push.

Professional fact-checking is a multi-step process. First stories need to be selected for fact-checking. This involves stories being reported to a factchecker. There are a range of specialized tools that allow for this, in addition to the flagging of stories through social media. This process can thus be intense and overwhelming, which leads to the related challenge of selection – prioritizing. A fact-checking organization must decide which stories it would like to focus on, which it can competently debunk if needed, and which are not within its priority domains.

The second step in professional fact-checking is around verification. Once a story has been selected for fact-checking, it needs to be checked through various technical and non-technical means. One part of this is the format of the story, and whether this allows for easy digital verification – such as if there are images, audio or videos that can be reverse-searched, purported facts that can be confirmed through an online search process through string matches. An important element of the verification process is the expertise involved in the verification process. In some cases, the core fact-checking team has specific skills or past expertise that make it easier to factcheck a certain story, especially if it has particular

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technical content that require careful examination. Related to this is the issue of context, fact-checking a story may need access to a region or specific type of professional, which may not be easily available.

The last step is that of publication. fact-checkers are mindful of the audiences they write for, and frame their stories accordingly. This can have implications around political preferences of the audiences or the stories they rely on a specific factchecker for. The second key aspect related to publication is that of dissemination, in which the factchecker needs to think about what are the specific strengths of their organization in terms of online reach. While certain fact-checkers are part of large organizations with significant mainstream media following, others rely on the reach of individual fact-checkers or their handles' social media footprint. This matters for what kinds of stories get covered, and what stay in the minds of the audiences they reach. This also means that when a fact-checking organization takes a certain position against a particular kind of misinformation, say right-wing misinformation, or anti-scence misinformation, its dedicated audience expects more of the same, influencing what gets debunked and how.

fact-checking as a profession is here to stay. While its contours may change over time, the steady spread of misinformation suggests that there will be a space for professionals to systematically examine the veracity of stories that have a potential for wide impact. The fact-checking ecosystem exists within several these include the decline of trust in the news in India, with corresponding increase in access to the news through non-mainstream sources [9]. This follows similar patterns worldwide, where professional journalists report a drop in public trust in the mainstream news worldwide[82].

While fact-checking is growing, it is both expensive, and risky work. This has meant that the audience is a major driver of who gets into this work. Professional fact-checking tends to be a largely urban activity, and driven by the stories and interests of its audiences. This impacts the pipeline of not only what gets reported to fact-checkers, but furthermore what they pick to debunk, what their staffers are best equipped to debunk, and what, of their debunked stories, once put out in the general public, gets the most affective appeal. In a nutshell, this covers the spread of selection, verification, and dissemination in the professional fact-checking ecosystem.

In this work, we frame fact-checking within these constraints of how fact-checking is organized. We aim to address three questions in this work.

(**RQ1**) What are the challenges in the life cycle of fact-checked articles in the Indian context?

(**RQ2**) What are the challenges faced by the fact-checkers in the process?

(**RQ3**) How do these challenges affect the coverage, reportage and dissemination of these fact-checks?

The fact-checking process and the impact it has on the society has been of great interest to the CSCW community. Recent papers have done in depth study on fact-checking infrastructures [45], the work practices of fact-checkers [59] and the overall role they play in combating misinformation in the context of the Global South [36].

Our work focuses on the challenges in the fact-checking pipeline on each step, in the Indian context. India has one of the largest number of IFCN certified fact-checkers, with many independent fact-checkers helming the movement of fact-checking. While falls weak [47] in the face of the viral spread achieved by closed-group platforms [76] and forwarding enabled messaging platforms Coupled with this, Indian misinformation landscape is laced with affective elements, aiming at the political, religious, financial sentiments of people, which makes fact-checking a far more nuanced.

An important part of the ecosystem is the bad actors who explicitly engage in attempts to muddy the information environment, alongside their followers, who may or may not have explicit malintent, but trust the channels through which this information flows. This is particularly true for India, where a polarized political environment has impacted the supply- and demand-sides of misinformation.

Our contribution in this work thus are as follows:

- We present a systematic study of the fact-checking pipeline in professional organizations in India, arguably the largest open market for broadcast media consumption.
- We present a mixed methods study, using both in-depth interviews with fact-checkers and evidence from large scale data analysis from the fact-checking archives to map which organizations engage in how much activity, on what domains.
- We examine the second order effects of social media outreach on fact-checking by studying the role of social media and mainstream media in the work of fact-checkers.

In summary, the key contribution of this work is a rich description of both what the fact-checkers are dealing with in their daily practice, and the caveats with which we need to understand their work. The specificities of the Indian context in which this work takes place also underlines the importance of the quality of the media environment and polarization in society, all elements that frame both the believability of information and the acceptance for fact-checking.

2 RELATED WORK

2.1 Social Media and News Consumption

Social media platforms revolutionized the pre-existing models of information and news consumption [25]. Firstly, by taking over the role of distribution of news [61] and secondly, giving active control of this distribution to large technology companies. And thirdly, providing a model where the users of these platforms have a high-choice media environment with free participatory access to various forms of media [62]. This has given rise to the double-edged sword of media pluralism [77]. On one end, the increasingly digital media environment has provided the users opportunities of diverse sources and perspectives, but on the other end, the dominance of very few large players in the environment pose a concern for diversity in news production. The concentration of power allows influence over the content of public discourses, with their owners' private interests frequently determining the topics they cover .

From Arab springs [83] to the suicide of a popular film star[2], the world has witnessed the influence of power concentrations. Additionally, these temporal events bought to light the nature of technological infrastructures in promoting and impeding invested interests [10]. While literature on pluralism argues that the technological infrastructures are neutral [75], the systems that allow functioning of these platforms are owned by companies with personal agendas and ideological preferences.

Problems that social media platforms pose for news consumption [26] and dissemination. Several limitations of social media like the presence of filter bubbles [71], having algorithm driven engagement [50] through influencer networks and the need for content moderation [29] make it a breeding ground for contrived theories and amplification of blatant lies.

For citizens, the move towards an increasingly digital, mobile, and social media environment represent the development of a more high-choice environment in most respects—though there is less diversity in terms of original, professionally produced news on some issues and areas, especially locally. [40]. With increasing concerns on pluralism and the declining credibility and trust in the media sources [20], there are several challenges with the trust in media. As a consequence, this leads to problems of media manipulation, disinformation [53], and propaganda. The consequences for informational diversity and media pluralism [15], key to freedom of expression [43], understood as the ability to impart and receive information are mixed.

The presence of news consumers on social media is ubiquitous [74]. The key feature that makes social media stand out is the direct communication to users [65]. The baton of influence on content of public discussions has been passed to the 'digital influencers' [13]. by attracting politicians, media houses, businesses, governmental institutions and other knowledge institutions onto the platform [6]. All this allowed removal of one layer checks and balances [3]. The development is continuing with the rise of "distributed content", where news is not only found via, but consumed on, platforms controlled by third–parties that do not produce their own content[46].

With shift of political communication and news consumption onto SM platforms, the affordances of social media platforms [12] (features, policy etc) has changed quite a bit. Verification of information has become a problem, crippled epistemology [54], citizen journalism [4], declining trust in institutional actor, echo chambers increasing polarization [69], all of these aspects are creating a vortex, which constantly is asking for verification of information. With these convolutions in place, the question of authenticity becomes pressing, leading to the emergence of fact-checkers for addressing the problems with verification of information. But who are the verifiers? the 'elites' or the influencers because policy of social media platforms fall short in contextuality and disproportionately towards a favoured few. Our findings are also suggesting same: that even though IFCN certified fact-check organizations exist, the influencers of those organizations receive more engagement. This consistent ambiguity has put fact-checking organizations on a pedestal. Our work critically analyses their process of verification.

There is policy intervention required for media an disinformation literacy [42] did not move as quickly as increasingly digital, mobile, and social media environment which perpetuates fake news [52]. The biggest platforms are increasingly important for the distribution of news [67], but invest little or nothing in news production.

2.2 Rise and Role of fact-Checking

The role of fact-checking as an institution and fact-checkers as individuals have seen multiple revisions in the past century. The turn of the 20th century paved the way for fact-based media among the prevalent culture of yellow journalism in the 1980s [23]. The subsequent professionalisation of the media led to a concerted attempt to codify ethics and a greater focus on ideals of accuracy and unbiased reporting - the setting up of the Bureacracy of Accuracy and Fairplay by Ralph Pulitzer being an illustrative example [21]. fact-checking in journalism emerged as a pre-publication process to scrutinise facts in articles before they were published. This is around the time when the term *fact-checking* was introduced in an advertisement for a newly set up research department at the Time magazine. From an objective scrutiny of every word to be published, fact-checking gradually emerged as a larger exercise to ensure an aggregate truth emerging out of objective facts. This broader responsibility on the fact-checking process led to a blurring of roles between the factchecker and the journalist, marked by a noted decline in the fact-checking jobs.

The resurgence of fact-checking was driven primarily by American politics and led to the rise of independent, external fact-checking organisations, as opposed to the ante-hoc verification of facts in the past [34]. US Presidential campaigns focused on misinformation such as that of Reagan's is often considered to be a major impetus of the boom of post-hoc factcheking in American journalism [22][36] as were checks on political advertisements (*Adwatch*) [28]. The early 21st century saw the emergence of Pulitzer-winning fact-checking organisations such as *PolitiFact* an *FactCheck.org*, which played a major role in popularising fact-checking well beyond American shores. This evolution of fact-checking from research departments of American media houses to external stand-alone institutions has been well studied in a series of prior works [31, 33, 35]. At the time of writing, Duke Reporters' Lab [51] records the global number of fact-checking organisations at 391 - all of which have surfaced within a brief span of 18 years.

Investigations into fact-checking processes, assistive and interventional infrastructures and the invisibility of human infrastructures has been of particular interest to the CSCW community. In particular, prior work [45] has outlined the role of human and technological infrastructures within organisations as well as its adaptation and perception in the global south [36]. While academic interest around fact-checking remains to be centered around the global west, there are numerous studies [24, 60, 81] that highlight various nuances of fact-checking in resource-constraint environments. On the issue of publication and dissemination, recent CSCW studies have addressed most on-ground dissemination via informal networks and public dialogue [48, 73] as well as spread in online platform-driven spaces [27, 41]. Only few studies [78] have presented analyses of historical fact-checked articles as a window into the outcomes of fact-checking processes and we aren't aware of any such work positioned in the Global South.

3 BACKGROUND

3.1 Misinformation Landscape in India

3.1.1 ICT as an enabler of misinformation. Misinformation as a global challenge has been the focus of many recent studies within the CSCW (Computer-Supported Cooperative Work) community [5, 7, 37, 44]. One may attribute a rising interest in misinformation studies to recent events in the global west including notably, the Russian interference in 2016 US Presidential elections [7] and the Russian Internet Research Agency (IRA)-led efforts to undermine social BLM protests by cultivated radicalised communities on Twitter to interfere with the movement [72]. Across the Atlantic, studies [37] have often focused on targeted bot activity around Brexit conversations online.

The Global South has a democracy distinct from the Global North. Consequently the nature of misinformation in these communities often take advantage of religious sentiments and limited truth-verification infrastructures of low-income communities. Many recent studies [8, 19, 38, 63, 68] within the ICTD and CSCW communities have underlined the said religious undertone in misinformation prevalent in the Global South. We reemphasise that such misinformation in the Global South can often lead to serious consequences including lynchings [79] and infodemic-caused deaths [39].

3.2 Mitigation of Misinformation

Efforts to mitigate misinformation have gained importance at scale from initiatives to stop misinformation right at the source using content and platform moderation [30] practices. There are several initiatives by platforms to implement policies that exacerbate content moderation and flag problematic content. For instance, Twitter takes a proactive stance on purging suspicious accounts with a high probability of exhibiting social bot-like behaviour. Media literacy is a proactive and preventative approach to deal with the constant influx of claims that float on the digital media. However, this is a poor strategy for low literate users [1]. Citizen journalism [80] is another approach that is a key pillar to practical addressal of misinformation, especially in close knit communities and low resource settings. Other stakeholders like Investigative journalists also take charge of debunking false claims online [55]. Among these approaches, fact-checking emerges as a regulated, organised approach to systematically take an active approach towards mitigating misinformation.

4 METHODOLOGY

We use both qualitative and quantitative research elements in the study to map and unpack the process of fact-checking and the environment it inhabits. We use expert interviews of fact-checkers in India as our primary source of data. The qualitative data collected provides us insights into methodology of fact-checking process, relationship with social media

Table 1. **List of Interviewed fact-Checkers**

P#	Role within Organisation	Gender	IFCN Certification
P1	Lead, Factcheck Team	Male	Yes
P2	Founder and Journalist	Male	Yes
P3	Founder	Male	Yes
P4	Subject Expert	Female	Yes
P5	Senior Editor	Female	Yes
P6	Co-Founder	Male	Yes
P7	Factchecker	Female	Yes
P8	Co-Founder	Male	Yes
P9	Managing Editor	Male	Yes

platforms, impact and consequences of misinformation and probable solutions to combating misinformation. We then use quantitative data, to corroborate of primary findings through data visualization. The quantitative data used in the study comes from an archive of fact-checked articles and the twitter interactions of fact-checking organizations in India. The exploratory nature of the study provides an in-depth understanding of real-life contexts and issues and how they unfold in practice, that can better inform the future of work in the field of social computing. The sections below elaborate on our data sources, including the sampling of data, questionnaire design and analysis.

4.1 Expert Interviews

We conduct expert interviews (N=9) with leading fact-checkers in India. We sampled a list of active fact-checking organizations in India from the Duke Reporter's Lab [51]. As there is no single definition of fact-checking organizations summarizing their basic features, we adopt the folowing definition by International fact-Checking Networks's (IFCN), 'organizations that regularly publish nonpartisan reports on the accuracy of statements by public figures, major institutions, and other widely circulated claims of interest to society', for the purposes of this study [66]. The association also has a code of principles to certify fact-checkers [70]. At the time of the data collection there were 11 IFCN certified fact-checkers in India. We contacted the individual heads of every major fact-checking organisation in India via their official email and used convenience sampling [84] to curate the final list of participants for the interview. The email contained a brief description of the project and the participant was given an option to take the interview either in-person or over any video-calling platform of their choice. Our last author has established connections and networks within major fact-checking organisations in India and we leveraged their reach to solicit as many participants as possible. If the personal email of any individual wasn't available, we tried contacting the organisation seeking interview with the said individuals. Our assumption in contacting heads of organisation was an inherent hierarchy in the organisation and to seek information about the approach of the organisation as a whole, as opposed to the perspective of individual fact-checkers in composing factchecks. The study received ethical approval from xx, India (hidden for blind-review).

The questionnaire for the interviews was designed with an exploratory study in mind. The nature of the questions are open-ended, to gather details and encourage elaborate and deeper evaluation of fact-checking as a process. Based on recommendations of studies related to social media communication and misinformation [11, 32, 49, 58**?**], we include questions under the broad theme of methodology of fact-checking process, relationship with social media platforms, impact and consequences of misinformation and probable solutions to combating misinformation. Our questionnaire provides us insights into the nature and dynamics of false information, practices of fact-checking, everyday interactions

with technological aid, perceptions on targeted audiences, views on technological and legal methods of combating misinformation and experiences of factchecker in the volatile sociopolitical environment in India. We piloted the questionnaire with two experts on fact-checking and based on that feedback we revised the questionnaire for language and included questions on fact-checkers' relationship with mainstream media. The questionnaire was then sent for approval to Institutional Review Board (IRB) of the authors' institutions.

The expert interviews were conducted by the first and second authors of the paper either in-person or over zoom. In either case, the interviews required a written consent of participants, in accordance to an approved ethics committee. The interviews lasted from 25 minutes to 90 minutes in length, with an average length of around 45 minutes. Each interview began with a brief discussion about the intent of the project and introduction of the interviewer. This was followed by an enquiry into their motivations and objectives for being in the fact-checking space in India. We follow this up with a sample set of questions and an associated script. Whenever possible, the interviewer nudged the participant to elaborate on details of the fact-checking process, including factors behind prioritisation of stories to check, available technological aid, vulnerabilities of fake news and the overal effect of resource constraints on fact-checking.

These interviews were then open coded by the authors using automated speech-to-text translation software, followed by a manual verification of the translation output. The transcripts were then open-coded deductively by multiple authors independently of each other. The codes were then compared and revised till the authors could arrive at a cohesive set of codes grouped by precise themes to structure the knowledge gained from the interviews, which are presented in subsequent sections as responses to the research questions introduced in this study.

4.2 Archive of fact-checked Articles and Twitter Data

Table 2. **Archive of Published fact-Checks**

Parent Organisation	Domain	Count
News Mobile	newsmobile.in	2266
BOOM	boomlive.in	1082
Factly	factly.in	762
India Today	indiatoday.in/factcheck	590
AltNews	altnews.in	457

4.2.1 Data. While the interviews form our primary data source, we also make generous use of two other data sources - a historical archive of published factchecks (N=6027) by Tattle Civic Technologies under an Open Database License (ODbL), and the tweeting history of the main fact-checking organisations in the study extracted from Twitter's v2 API. The archive of factchecks were pre-processed to retain checks only in the English language. We also focus on published checks and tweets from 5 fact-checking organisations (AltNews, NewsMobile, Factly, BOOMlive and IndiaToday), each of which have published at least 300 factchecks over the period of study (March 1, 2020 to December 31, 2020). In addition to the tweets, we also collect the followers of the organisations on Twitter as a proxy for the social-media audience for their published factchecks.

4.2.2 Analysis. Prior to analysing the archive of published factchecks, we run certain preliminary filters on the data to remove all non-english language stories. The final archive has a total of 6027 fact-checked stories from the 5 organisations in our study. Each of these are stories where the claims are based primarily out of India. We perform

basic frequentist and statistical analyses to report general publishing volumes across organisations over the period of study. We also present wordclouds of the headlines of these articles in our study. These clouds were generated by calculating frequency of terms contained within headlines. We iteratively remove the most common terms (such as *fact, check, claim, shared, viral, truth, covid* etc) so as to highlight nuanced differences among reporting styles of these organisations. We also present certain bag-of-words (BoW)-based analyses of headline and body to distinguish between media artefact-based debunking from those involving on-ground reportage. Keywords used to detect use of media artefacts include *old video, old image, photo, reverse image search, yandex* and those for signs of on-ground investigation include *on-ground, (organisation_name) visited, went to, first hand* and so on

5 FINDINGS

5.1 News Monitoring and Prioritisation

Given the rapid penetration of internet in India and dissemination of News online, the Indian audience is exposed to a very high volume of information on a daily basis. This is a severe hurdle in the fact-checking process as it in infeasible to keep up with all information that gets put out there. Thus the process of fact-checking relies on a robust crowd-assisted monitoring and sourcing pipeline to keep an eye out of suspicious stories that require a check. This is currently done in two primary ways - (a) algorithmic nudging and (b) crowd-sourcing.

(a) *Algorithmic Nudging*: Most major fact-checking organisations have access to proprietary tools such as CrowdTangle and Facebook's algorithmic detection queue (informally referred to as the *Facebook queue* in the interviews) to flag potentially suspicious news. The drawback of such black-boxed approaches involve a lack a explainability as well as a potential propagation of biases in algorithmic recommendations. Unfortunately due to NDAs with Facebook, the participants were unable to divulge exact details about *the queue*.

(b) *Crowd-sourcing*: Data and interviews reveal that a major chunk of monitoring news is crowd-sourced to the audience of factchecks. Most organisations have dedicated WhatsApp hotlines to solicit requests for factchecks. Organisations are also known to frequent certain social media pages on Facebook and Twitter who are more likely to perpetuate suspicious content onto their audiences. This mode of monitor also allows the organisation to adhere to their advocacy objectives of preventing maximum harm by proactively seeking to debunk suspicious information their audience is subject to. In Fig 1, we attempt to study the source of published factchecks across organisations to uncover potential disparities in reliance over certain platforms over others. Fig 1 shows the distribution of articles containing mentions of certain social media platforms in the body of the articles. Our assumption that these platform mentions reflect their monitoring systems relies on the IFCN guidelines that require an organisation to explain the process of fact-checking in their published stories. We followed this up by a ground truth analysis to ensure that these mentions were indeed true reflections of the source of these factchecks. We critically observe that while most organisations rely on Facebook and Twitter for stories to check, NewsMobile has an over-reliance on WhatsApp for sourcing stories to check. We argue that due to inherent platform differences, this subjects NewsMobile to an entirely different distribution of stories to monitor and verify. From Fig 3 we also observe that NewsMobile consistently publishes the the largest volume of factchecks among all other organisations.

After monitoring comes the issue of *prioritisation*. The decision of an organisation to prioritise articles to check is based on multiple factors ranging from advocacy to resource-limitations. We present the following quote from one of the participants as an illustration:

> *"One basic criteria that we apply is the* impact*, if this wrong news keeps circulating what impact will it have on society's general. If we have 5 requests on the table, we select 2 on the basis of which of these will be more relevant and will have more impact."* - P1

In addition to potential to cause harm and the impact of suspected falsehood, we argue that resource constraints pose a serious hurdle in the prioritisation decision. We illustrate several facets of this in subsequent sections.

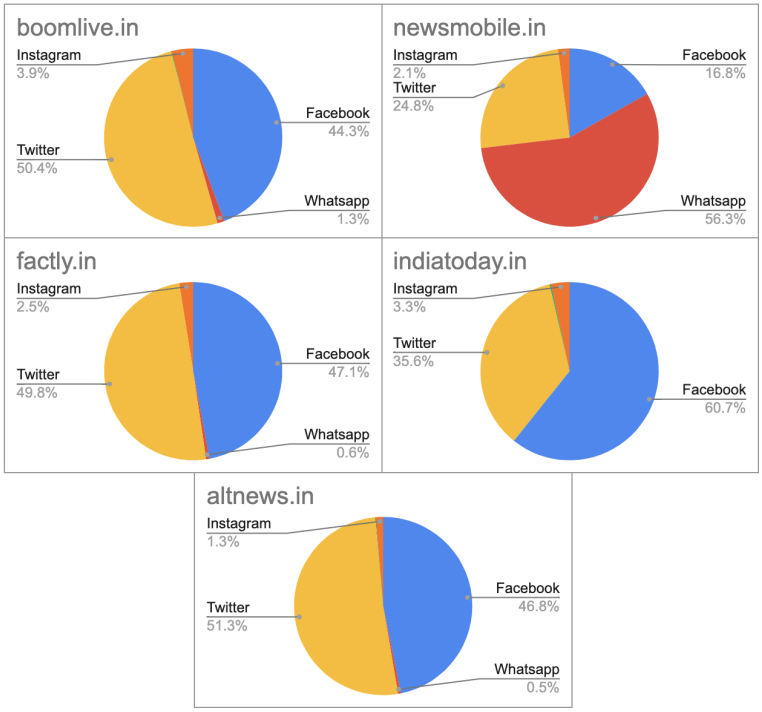


Fig. 1. **Distribution of Mentions of Social Media Platforms in Published fact-Checks** (Data source: Tattle archive)

5.1.1 *Non-overlap of published checks.*

> *"Plan usually is to do it before others. The newsroom is usually built to ensure that we are the first to report on a particular topic. Every morning, we make a list of all the stories that are covered by organisations and mark the ones that we are working on. We have stringent systems and do ensure that we speak to local officials and not depend on online verification."* - P9

As illustrated above, certain organisations maintain a list of what other organisations are fact-checking and refer to that before deciding which articles to fact-check. There is also a tool that links fake stories to fact-checked stories, and that gives a push notification to the fact-checkers if other organisations have already done it. This highlights a lack of clear incentive in attempting to check claims that have already been covered by other organisations and the prevalence of a general newsroom competitiveness. This, in addition to findings from Fig 1 hint towards a potentially significant disparity in general coverage of articles for checking.

The interview participants share that they use similar tenets for prioritisation of stories, especially that involving the notion of impact or harm as described in the sections above. However, the archives of fact-checked articles which list the stories debunked by organisations shows a large amount of disjoint. To illustrate this disparity, we show word clouds of headlines in Figure 2 for articles in a 2 week sample from 1st July 2020 to 15th July 2020. The sampling is done on the basis of the highest volume of fact-checking observed overall during the period of study, so that each of the fact-checkers would have a high number of stories.

We observe from the word clouds that there are stark differences in the most prominent words in the headlines, indicating that the selection of stories have high variation and there is a non overlap in the coverage. While all stories have presence of "Vikas Dubey" and "Kerala", the rest of the words hardly have any intersection. A closer inspection reveals an inclination towards stories with a religious undertone among certain organisations which is absent in some.

5.2 Constraints in the Verification Process

5.2.1 Chasing the context. Decades of history has bore witness to fact-checking evolving from objective verification to advocacy-driven curbing of general misinformation. As fake news becomes more nuanced, the straightforward verification processes fail to address and debunk false stories appropriately as captured by the following anecdote:

> *"Hyperlocal content type of news is an emerging trend. The traceability of these kind of news is not possible, it requires eye witnesses. For example, a woman was screaming at a child for asking another serving during mid day meals in Andhra Pradesh."* - P3

Our interviews present an abundance of examples of stories that require significant contextual information to debunk. Any checking done in the absence of primary investigation in such cases is often incomplete and vulnerable to inconsistency. At the same time, timely debunking of such stories also becomes imperative to preserve context. This creates a dilemma wherein organisations need to decide between allocating resources to a primary investigation at the cost of a longer turnaround time, or run at the risk of losing context while optimising for the timeliness of their intervention. The following quote illustrates the dilemma:

> *"A lot of real time information will not be available in the public domain so you end up either filing an RTI but that takes its own sweet time."* - P3

Ability to track down the context of a story is one among many resource-intensive operations organisations have to undertake in order to publish well-investigated factchecks. We also expect to observe expression of inequitable distribution of infrastructures across fact-checking organisations in the volume of published factchecks across organisations, as is supported by Fig 3. The publishing volumes of organisations remain largely consistent through every month over the period of study. Clearly, organisations with sustained lower volumes of publications have had to prioritise more than those with greater volumes. Unequal coverage of stories across organisations is therefore, an inevitable consequence of such disparity in publishing volumes as was suggested by the previous section.

5.2.2 Online vs Offline verification. Resource and infrastructure constraints also dictate the kinds of verification and investigation strategies an organisation has at its disposal. Firstly, the presence of journalistic experience in the organisation is an important determiner of whether it is able to perform primary on-ground investigation to ratify a version of events. Secondly, financial resources of an organisation dictate the volume of stories and the amount of investigative resources it can allocate at any given time period. Finally we argue that these constraints directly effect the coverage of stories across organisations, as illustrated in an evocative anecdote form P9 as follows:

(a) AltNews

(b) BOOMLive

(c) Factly

(d) IndiaToday

(e) NewsMobile

Fig. 2. **Wordclouds from the Headlines of Published fact-Checks in July 2020**

"There are 2 types of stories – one, doing the reverse image search etc is more than enough. [There are many] stories where that isn't enough and we 99% times end up calling local authorities and take their word on record. There are also cases involving communal riots... There was this story on the Delhi riots where some right-wing groups had ... We sent out reporters on the ground and asked them to stand there, show me the time on his watch and show that exactly at that moment on that day and show me what he saw. Our reporter drove down and recorded the video on ground. Wherever resources permit us, if it is a place that involves taking a flight, we end up taking a call. There's nothing better or worse, there's just a healthy dose of skepticism." - P9

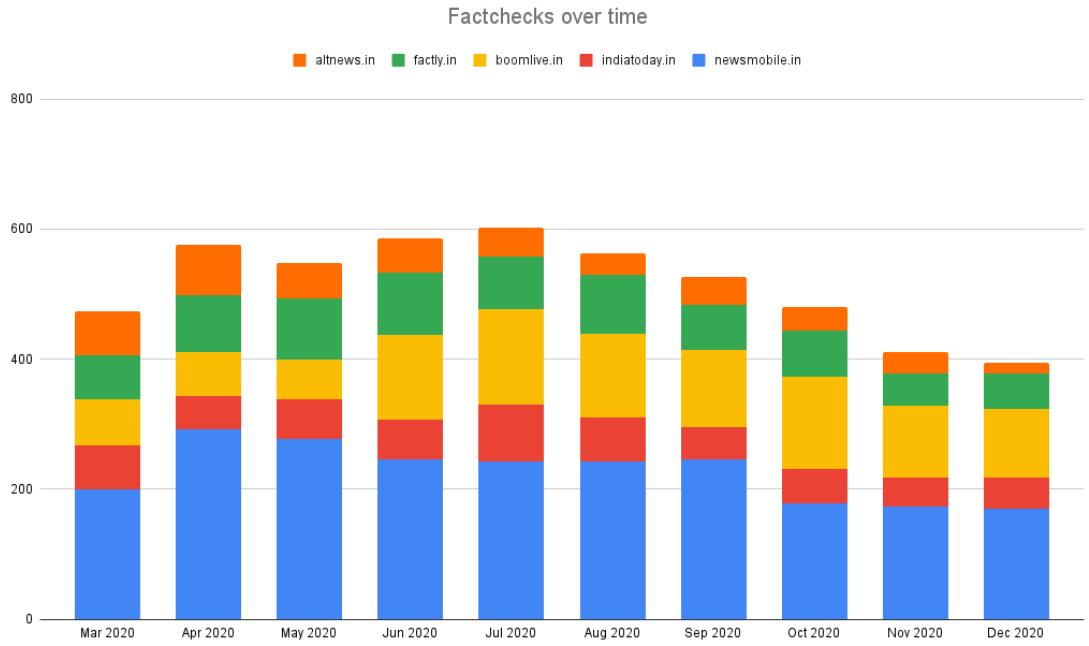


Fig. 3. **Distribution of Published fact-Checks Across Organisations** (Data source: Tattle archive)

This adds a certain systemic element to unequal coverage that was previously established through Fig 3. P9's anecdote suggests that unavailability of investigating resources affect coverage of stories in a way that isn't non-random introducing a systemic bias in the kinds of stories organisations are able to verify within their infrastructure constraints. The importance of the human infrastructure as a journalist or investigator is highlighted in the following quote:

> *"Contrary to popular belief, fact-checking is not just about tools and techniques – the basic part still remains the same which is conventional journalism. It is not a tech kind of thing, tech certainly has a role in it, but conventional journalism like something is being said about you – so we approached you, asked you – is this correct, is there any evidence about it – concerns about any other persons, reach out to them and speak to them, speak to the people around them and ask them to provide evidence about either way.We have physical presence, who know people around and the local authorities, so we can fact-check stories from remote places which is something that many fact-checkers do not have. We ask on ground reporters to send us videos/ photos from the site and ask our reporters to send evidence that we went there. That is something we leverage occasionally"* - P1

On the complete extreme is organisations like *AltNews* which has a total absence of on ground journalists.

> *"One which actually needs people on the ground, we don't have people on the ground. Lets say if there is something that is happening in the present. We do a lot of these stories and those become challenging and sometimes we have to drop the story simply because don't have anybody on the ground to confirm."* - P5

Due to these factors, we see an over-reliance on tools like reverse image search using tools like Yandex an Google Images. The distribution of stories focusing on media related stories is also skewed. Although there are a large number of opinion-based or claim-based stories that need to be fact-checked, these are harder to verify, involve a greater latency in fact-checking and hence get de-prioritised amongst an influx of a large number of stories. From our archive of published fact-checks, we report trends supporting the knowledge built out of the interviews. In Fig 4a, we present counts of headlines containing clear evidence of the fact-check being based out of media artefacts. We search for words like *video, image, photo* in the headlines to infer the substance of the fact-check. We also inspect the body in Fig 4a of the published factchecks to find evidence of on-ground reporting involved by using keywords such as *visited, on-ground, spoke to/with.* These keywords were expanded using an n-gram model to create an exhausting bag-of-words to detect traces (or absence) of on-ground reporting in the article. Fig 4b clearly shows that certain organisations have a higher frequency of factchecks involving media-based debunking. These also happen to be organisations limited in terms of human infrastructures of journalists and on-ground reporters. On the other hand, organisations such as IndiaToday and NewsMobile either have journalistic experience in their team or are known to outsource fact-checking to experts with journalistic experience to allow higher counts of offline first-hand verification. NewsMobile operates largely through a network of on-the-ground verifiers, which makes both their profile significantly different from the other factcheckers (we also see this in Figure 5, in the high number of stories they tweet about).

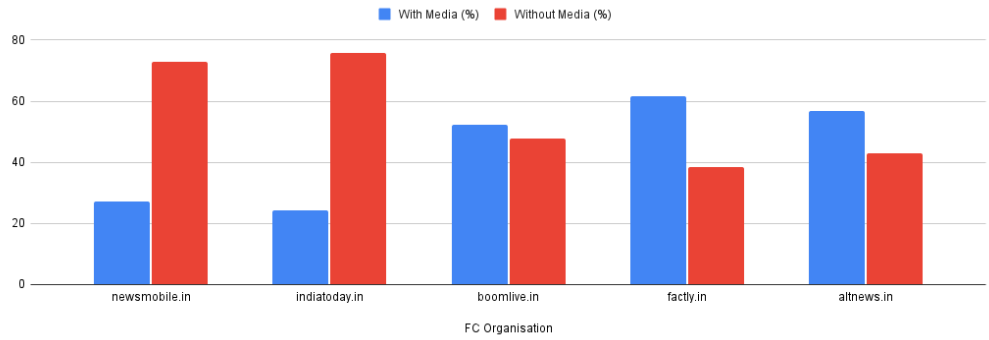
In Fig 4a we observe that almost all organisations rely heavily on media-based debunking. However, organisations with journalistic experience often seem to back up media-based verification with additional first-hand accounts and offline verification. We therefore uncover yet another systemic factor that limits the nature of stories an organisation is able to investigate upon. Certain stories that cannot be adequately verified by exclusively online verification are therefore often out of the scope of what certain resource-constraint organisations can possibly cover.

5.2.3 Lack of Subject Matter Expertise and Languages. English is not the most spoken language in India, yet most fact-checkers have English as their primary language of fact-checking.

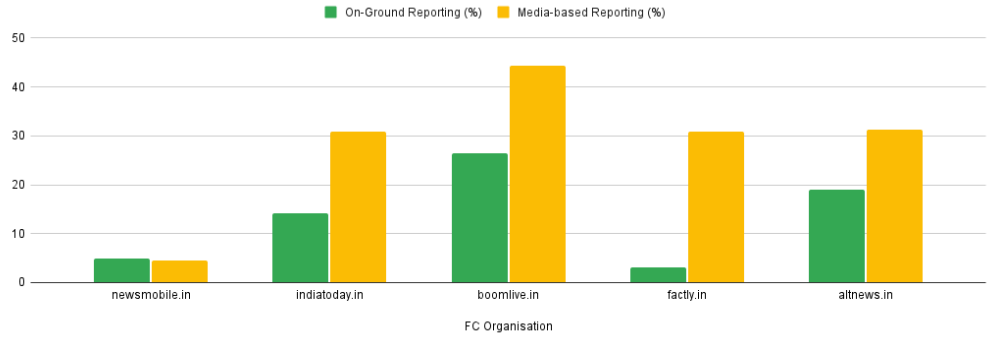
> *"We want to do it in seven or eight languages because I feel that sometimes is important to get the right messaging. Obviously you're constrained by funds and also that you cannot do all the languages over time. But my plan is that I want to take it to the hinterland. Impact is greater."* - P2

In the global context, misinformation stories are often recirculated and sourced from different parts of the world. When primitive online verification measures (such as reverse image search) fail, the fact-checking of stories may require collaboration with fact-checkers in other parts of the countries. The IFCN networks help in this process. For example, there have been instances where fact-checkers reached to fact-checkers in East Asia with misinformation stories that contain number plates or road signs from their countries. It is also common for malicious stories to be circulated and translated in various languages rendering the fact-checkers handicapped in terms of resources to verify and/or disseminate content in non-native languages. They are also unable to write in multiple languages and automated translation tools aren't in a position to enable rapid reliable translation of English language factchecks to other languages. This therefore subjects the non-English audience to only a limited subset of available factchecks furthering the inconsistent coverage across multi-lingual borders.

> *"I'm a scientist...This is not what I do during the day. That's why I can invest very little time, as apposed to someone who is a full time fact-checker like [name redacted] is. Can other people have the skills to go*



(a) Media-based reportage from headlines



(b) On-ground verification in factchecks

Fig. 4. **Share of Media (Video/Photo) debunking based fact-Checks Among all Published Checks** (Data source: Tattle archive)

> *the stuff that I am doing and do these kinds (referring to checks involving debunking of medicine-related falsities) of fact-checks? The difference in the fact-checks that we do, or I do in particular."* - P4

P4's quote is a commentary on the role of subject-experts in the fact-checking ecosystem. P4's expertise in the domain of health allows her and her organisation to cover critical health-related misinformation – arguably among the most harmful kind of stories. For instance, misinformation related to alternate medicines (AYUSH Ministry) invariably requires a fact-checkers to investigate the reports submitted with the AYUSH medication. In some cases even clinical trials may need to be conducted to independently verify such claims. Thus organisations lacking the subject-matter expertise in a certain domain essentially restricts itself further with the domains it is able to monitor and investigate upon.

5.3 Publication of fact-Checks

5.3.1 Identifying the Audience of Factchecks. The general nature of audience who actually seek to read fact-checks are either apriori enthusiastic or have some sort of political leaning. One of our interview participants shared:

> *"I would say anyone who is looking for discerning reader of information or consumer information, who first of all knows that there is misinformation and now therefore trying to find the original or the corrected piece of information is and therefore is searching."* - P7

Fake news spreads faster than fact-checked news and thus the appropriate dissemination of fact-checked news is imperative to combat misinformation. When asked about how they share the fact-checked stories with the audience, one of the fact-checkers said:

> *"In terms of audience it all depends ones who are active, I wouldn't say it is one set of audience, we have a WhatsApp broadcast list and people subscribe to that broadcast list. On Facebook also it works in such a way that all those who might have shared or interacted with that content earlier will get a notification so that is how the distribution also works. Because the content we rate on Facebook is automatically, notified to the people who might have shared the false content earlier. that is one way of reaching new audiences. Otherwise also we do, we run a special video series in Telegu and English. We choose most important misinformation of the week and do short 2 minute videos on each of them. So that is one way on YouTube."* - P2

5.3.2 Dissemination of fact-Checks. Twitter Presence of Organisations In this section, we analyse the outreach of the various fact-checking organizations on Twitter. We first manually curate a list of 42 Twitter handles which include fact-checkers and their organizations. We only include accounts that self identify as fact-checkers from a given organization. It should be noted that several of these accounts are either not fact-checkers currently, or fact-checkers for different organizations. However, in the time frame of this study, they were fact-checkers affiliated to the organization. We collect over 142k tweets from these accounts, from which we filter out retweets, further reducing the total tweets to 93k. We then analyse the social media presence of these organizations, using tweeting and retweeting patterns. Moreover, we further derive insights using tweet content, followers etc. into the complex ecosystem of individual fact-checkers and their affiliated organizations in India.

The distribution of the number of tweets and median retweets for each fact-checking organization is visualised in Figure 5. We find that AltNews has a significant twitter presence, not only in terms of volume of tweets but also in terms of engagement from their audience. Conversely, NewsMobile has the highest volume of tweets but low traction in terms of retweets on Twitter.

We also find in Figure 6a and Figure 6b that AltNews has a high following and high number of verified fact-checker accounts, as compared to other organizations. Furthermore, a one-way ANOVA test reveals significant differences in distribution of followers (F-statistic = 6.01, p-value < 0.001 and verified accounts (F-statistic = 3.46, p-value < 0.005) across all organizations. Overall, we find that AltNews has an overwhelming representation of fact-checking as well as audience engagement on Twitter.

Individual Vs Organization In order to further understand AltNews's formidable social media presence as compared to other fact-checking organizations, we dive deeper into individual fact-checkers' accounts. In Figure 7, we find that 7 out of the top 10 retweeted accounts are from AltNews. Moreover, we find that Mohammed Zubair and Pratik Sinha, co-founders of AltNews, are significantly retweeted as compared to others.

Moreover, in Figure 8, we attempt to understand whether increased audience engagement with AltNews and their fact-checkers is due to the organization's focus on narrow topics. We use Google's Universal Sentence Encoder (USE) [14] to obtain high dimensional vector representations of the tweets by a user for a given event, and average out all the tweet embeddings to represent a single user. The user embeddings are projected to a two dimensional space using

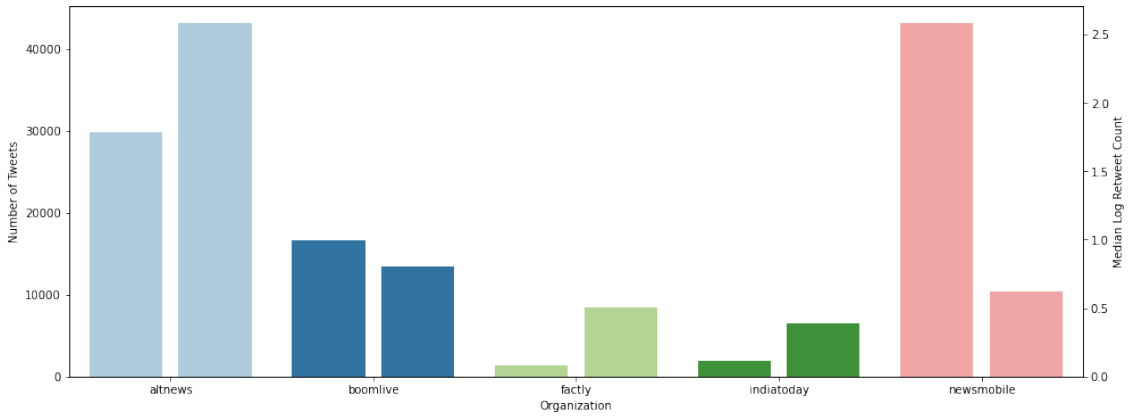


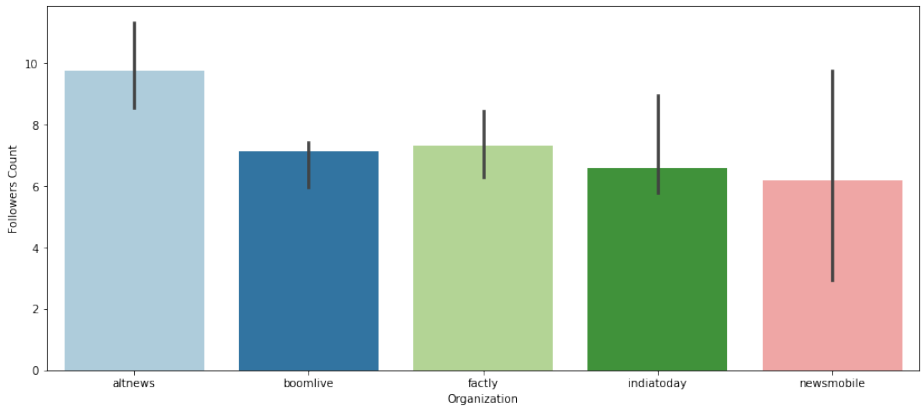
Fig. 5. **Distribution of Tweeting and Retweeting Patterns Across Organizations.**

UMAP [57] and clustered using hierarchical density based clustering (HDB-SCAN) [56]. We find that there is a lack of clustering of users based on their organization, implying diversity in the tweets of individual fact-checkers. Overall, we find that individual fact-checkers play a significant role in driving the success of an organization's presence on Twitter.

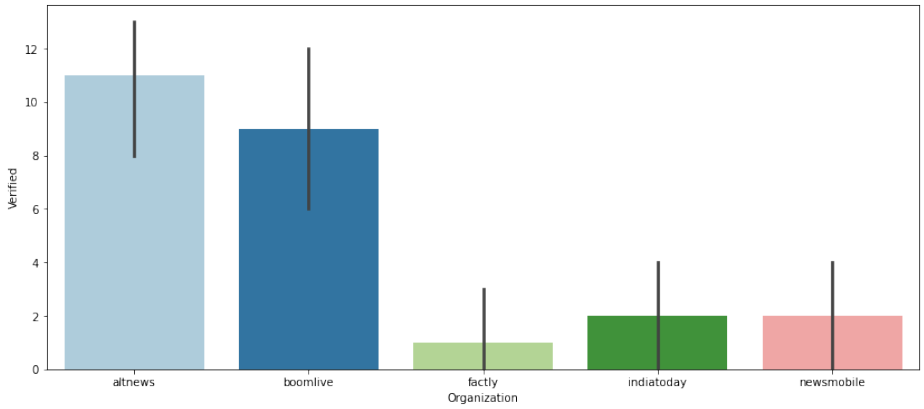
A Deeply Fragmented Audience on Twitter We establish the divisiveness among the followership of the fact-checking organisations in India by visualising the followership network. We collate exhaustive lists of followers from the 5 fact-checking organisations on Twitter as a proxy estimate for their audience and readership, as each of these followers receive tweets from the organisation they follow on their Twitter feed. In Fig 9, using Gephi - an open-source software, we visualise the network of all the followers by connecting all followers of a particular organisation to a single point representing the organisation they follow. In doing so, we draw two important conclusions. Firstly, as hinted from earlier Figures 6b we see let another evidence of the clear dominance of AltNews on Twitter even in terms of followership. Secondly, and perhaps more critically, we see a clearly divisive and fragmented audience, most of whom are loyal to a single source of factchecks on Twitter. Infact, we note that most of the pairs of fact-checking organisations in our study have less than 10% overlap in their audience with respect to the one with the larger number of followers.

6 DISCUSSION

One of the most important findings of this work is seen in Figure **??**, where the true fragmentation of the consumers of fact-checked material in India is seen. While on paper, the fact-checkers do not espouse explicit ideology, they are distinct in the lack of overlap between audiences. Given that each of the three key functions of catching, corroborating, and communicating the fact-checked articles is handled differently by the three organizations, it means the average viewer may not only be excluded from a whole subset of stories that their preferred organization chooses not to engage, but also that the language and form of stories that they access form the editorializing of one fact-checker. This has the very real threat of moving consumers of fact-checked material into new polarized pockets rather have it play the key role of verification.



(a) Followers Count by Organization



(b) Verified Accounts by Organization

Fig. 6. **Popularity of fact-Checking Organizations in India.** Error bar represents the 95% confidence interval for each distribution. Followers count is log-scaled.

6.1 Catching

Fact-checkers report that use "virality" of the stories and potential harm as factors to prioritise the fact-checks. This model is saddled with its own problems, especially in an information environment that has come to be known for its astroturfing and manipulation of audiences. This lean towards stories that have greater affective appeal may benefit the bottom line of fact-checking organizations, but it can then highlight polarized stories more than ones that have factual problems that have potential for damage.

The virality effect also works in the opposite direction. To an extent, stories that are more viral get more eyeballs, and consequently, have greater possibility of getting debunked organically. Localized falsehoods. on the other hand, one may not even be able to effectively estimate the real impacts of.

That the "catching" process is driven by individual organizations' internal networks or mechanisms of reporting such as apps also means that they lean towards a smaller and self-reinforcing set of topics, as we see in Figure 8.

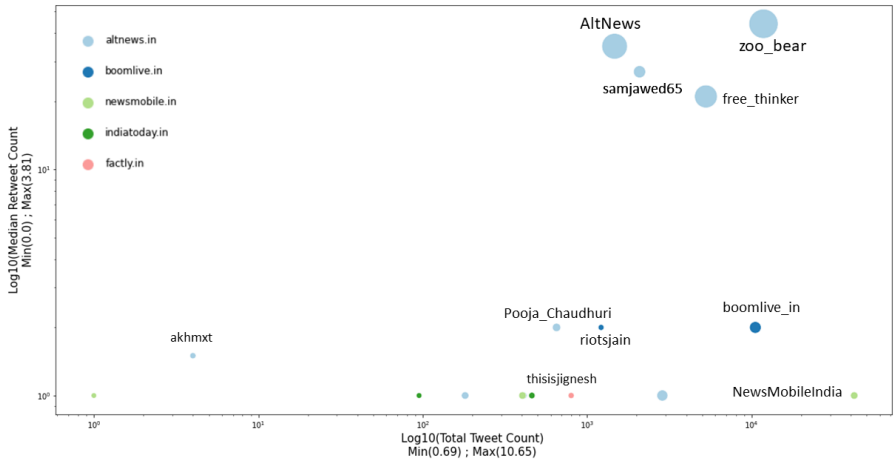


Fig. 7. **Top Retweeted Individual fact-Checkers by Organization**. The size of the bubble represents the number of followers.

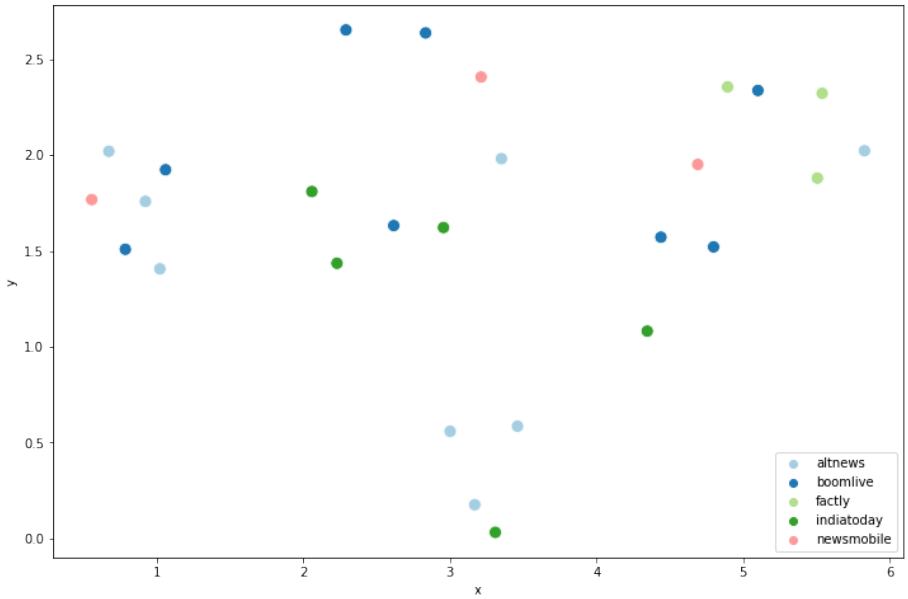


Fig. 8. **Topic Overlap Across fact-Checkers and Organizations.** The x and y axes represent the 2 dimensions of the UMAP projections of the tweet embeddings.

Over time, fact-checkers get a sense of what appear to be consistent patterns around stories. The vilification of minorities, the discussion of vaccines in a certain light, each of these have patterns that factcheckers come to recognize over time in their "catching" process, but this in and of itself does not reduce the frequency of these stories, as we see in the data. In other words, the affective value of these stories continue unabated, irrespective of their repeated catching and debunking.

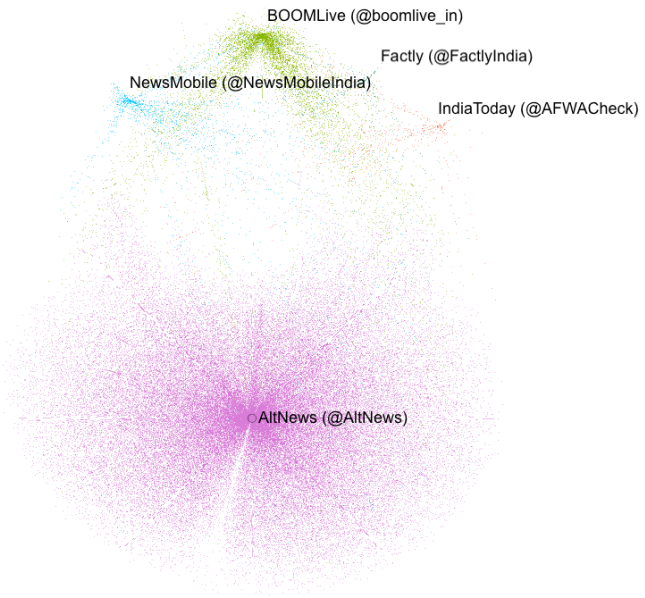


Fig. 9. **Fragmented and Highly Exclusive Followership of fact-Checking Organisations on Twitter**

A propagandist message will be spread without making direct comments but the message is conveyed. fact-checkers find their hands tied when it comes to holding repeated offenders accountable. When asked about their stance on disinformation, they admit that they cannot state "intent" of the misinformation, even when doing so would significantly improve the context and impact of the fact-checked article. A dry, run of the mill debunking which just follows the guidelines does not cut through the damage done by a highly sensitive or violent false story, which seethes through the sentiments of a community, in the very least.

This is complicated by the fact that fact-checkers repeatedly note that their challenge is not explicit lies, but innuendo, and that this innuendo is increasingly well-written, often hateful, and clearly affective enough to get viral attention. The problem then is, the "catch" has taken place in that the story is brought to the dubunker's attention, but their job then is to toe a thin line between corroboration and counter-polemic.

6.2 Corroborating

While such stories show a clear ideological bias and intend to denigrate a community or an ideology, fact-checkers report that their work is increasingly driven by sticking to a formula of dry reporting. When a fact-checker corroborates a story, their point of departure needs to be whether or not they can stick a binary on the story as true or false. Furthermore, the lines laid down by organizations like the IFCN, and often the fact-checking organization's own editorial expectations is to check mainly the "facts" that need debunking rather than the intent.

As we see, there is a range of organization, each with its own style of work, with no clear attempt to talk to each other or homogenize efforts, mainly driven by the fact that "scooping" a story is clearly important given that it repeatedly

comes up in interviews. Indeed, some of the organizations that have long been reported for engaging in misinformation have themselves come up with their own fact-checking ecologies, making clear that the battle-lines are clearly drawn, and the real challenge may not be corroboration, but reach.

The active work of corroboration falls to fact-checkers on a spectrum from those who have good skills at online checking, implicit knowledge and recall of issues to be able to quickly sift facts from unverifiable claims, and then turn to the work of making calls. This is the major wildcard – of whether there is the need for, and consequently ability for a presence on the ground. While the IFCN strives for homogeneity across its fact-checking organizations, this too is a fundamentally difficult activity, since the access to resources for corroboration may vary dramatically, and the revenue models for fact-checkers are simply not the same as those for mainstream journalism-centric organizations. No place is this more obvious than in the minimization of hyper-local stories, and glaringly, in regional-language stories in India, which in fact reach a far higher share of Indian readership. Some of the smaller fact-checking organizations we came across in our work, which work on the smaller and more rural stories, struggle with funding and visibility, and may also lack the ability to fulfill what is needed for certification.

6.3 Communicating

Finally, the dissemination of fact-checks remains an underrated challenge in the fact-checking process. We establish from our findings in Section 5.3.2, that individuals wield influence when it comes to effectively getting the audience to engage with the fact-checks on Twitter. In conjunction with Figure 9, which gives insights into the organisations' fragmented followership, we observe that individual fact-checkers who have significant outreach on Twitter in terms of followers and retweets, drive the discourse and influence which debunked stories go viral. As shown in previous works, such ecosystems, where individual accounts have disproportionate influence over the network, are susceptible to polarization, dangerous speech and manipulation [16–18].

The worrying aspect of this is that fact-checking organizations broadly, and some fact-checkers themselves may be expected to become institutions in and of themselves to run the specifics of an effective outreach program. As we see here, the dominance of two fact-checkers - Mohammed Zubair and Pratik Sinha of AltNews on Twitter underlines the centrality of having a solid soapbox through which to highlight a body of misinformation. But this in turn has also meant that AltNews is increasingly seen as a dissident organization, rather than one that is purely fact-checking.

The recent detention of Mohammed Zubair under multiple charges of causing offense [64] also highlights how the lines between fact-checking and being a public voice can conflate to a heady mess for the individuals concerned. While a small number of fact-checkers may be willing to have their profiles be both very public, and subject to brutal attack from those that disagree with them, the broader question is whether the average young professional considering a fact-checking career may see this as reasonable professional endgame.

While the focus of fact-checking organizations as well as the collectives that monitor this work are increasingly on issues of technical precision in the process of the work, it is clear from this work that the fact-checking itself is deeply dangerous work. There is need for conventional journalism to supplement debunking use of tools and technologies, but it is also needed that we rethink the role and value of strong information ecologies in our collective media environments. In particular, there is a need to consider how these matter in political and social environments that are polarized and difficult for the functioning of a free press. This indeed is also why fact-checking may be a unique blind spot of the social computing community which has obsessed over paradigms of truth that obsess over Trumpism or Brexit, whereas the functioning of media is largely free in those countries. The future of serious consideration of fact-checking must derive from work in the Global South.

7 CONCLUSION

Gaps in the fact-checking process are also scopes for improving the fact-checking ecosystem in India. As mainstream media organisations have wide and strong networks of on-ground journalists, a greater involvement of such organisations would result in quality fact-checking for a larger volume of fake stories, and reduce the over dependence of online tools. Further, there is a need for socio-politically aware IFCN guidelines for India. IFCN lays out uniform, well generalisable guidelines to templatise the fact-checking of all stories. However, given the socio-political environment in India, the epistemology and reporting of fact-checking needs to be far more nuanced to create ripples against the fires caused by false claims. Finally, there is a pressing need for immunity and protection of fact-checkers in a politically volatile landscape. There have been several attacks against free speech of fact-checkers on social media, to the extent of their safety and integrity, when they have been involved in the process of calling out or debunking highly problematic false claims by powerful and sensitive groups. Due to this, fact-checkers need vehement protection when carrying out the crucial task of truth establishment and outreach.

8 ETHICS STATEMENT

This paper is a step towards documenting the contours of misinformation and propaganda on social media platforms, by presenting a systematic approach to identifying influential accounts in such communities. The team of researchers is comprised of urban Indians with a high degree of discerning news access and awareness, which can be a biasing factor in how the work of fact-checking is understood normatively and functionally. We identified organizations that were fact-checkers in accordance with the approval of the interviewees and the IRB process itself, but we anatomised individual interviewees. We pinpoint Twitter accounts as part of our analyses, particularly those that are highly impactful influencer accounts. However, all of these accounts are publicly available and our aggregate reporting of these accounts does not violate any Twitter regulations of privacy and consent.

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