

Dynamics of Fake News Dissemination: A Case Study in the Indian context

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The potential to reach out to large mass of people in considerably shorter periods of time, though resulted in acceleration of news production, it also paved way to a sudden boom in circulation of fake news. The attempt made here is to understand the various factors that influence the propagation of fake news. With the assistance of an online quantitative survey, the demographic factors, social media habits, news consumption habits and fake news exposure of 163 people are closely observed to identify any sort of patterns across it. Further, the thematic aspects of the fake news items that are come across by maximum number of respondents are put into discussion, to identify the elements that determine popularity. It concludes with stressing the need to have a more nuanced understanding of online-communities for a comprehensive understanding of 'fake news dynamics'.

Keywords: Fake news, hoax, social media, viral, online news, WhatsApp, Facebook, Twitter

The trajectory of the development of communication technologies could be traced in congruence with that of human civilizations. The unprecedented capability endowed to an increasingly large population to produce and mass disseminate messages, generally characterizes the central argument in most contemporary discourses surrounding media and communications. In the Indian context, as the internet penetration shows a growth rate that is consistently accelerating, there are thousands of new users landing upon the webworld every passing day. Reports show that, from 389 million mobile internet users in December 2016, it got escalated to 420 million users in June 2017 (Agarwal, 2017), which indicate roughly 8% increase in a matter of 6 months. Another development which must be read alongside with this is the steady growth rate of social networking sites. WhatsApp has recently crossed the landmark of one billion active daily users globally (WhatsApp has 1 billion active users daily, 2017). As per the official statement, India stands among the three countries where WhatsApp attained the most growth rate. A natural outcome of scenarios such as these is the explosion of 'fake news', which denotes lies or semi-truths propagated as authentic news items. In this juncture, researching into the dynamics of fake news that are produced and widely circulated within online platforms, may provide valuable insights into India's evolving culture around social-media platforms.

Though the term, 'fake news', had been in usage since a century at least, it attained a renewed interest among media scholars and journalists in recent times, mainly owing to the sudden rise of hoaxes propagated via the internet. Information dissemination via the internet, according to scholarly works, could possibly create two major impacts in the

society; which are “Universal access to information” and “Selective exposure” (Brundidge, Rice, 2009). As the terms themselves indicate, the former refers to a situation where all get exposed to the information irrespective of ideological and social divisions, whereas the latter refers to a situation where all selectively expose themselves exclusively to their respective social circles. It could be said that while the former sets the condition for widespread dissemination of fake news within the society, the latter aspect brings in further complexities to the issue by adding in newer dimensions, such as the role played by social circles, that predicts one's exposure to various fake news items.

Literature Review

The history of fake news, though could be traced back to a century at least, its presence was never before as intense as it is of now. The popular rhetoric often parallels the rise in fake news propagation with that of the social media and apparent rise in user generated contents. Many of the early literatures produced in connection with fake news were descriptive in nature. However, it is particularly post the 2016 US presidential elections that the matter attained significant academic and journalistic attention, mainly owing to its potential to have an impact even up on the supposedly major events of the world. Most of the works produced in the immediate aftermath of US elections attempted to draw lines between the rate of exposure to fake news, its credulity, and voting patterns. The endeavours also included extrapolating the classical media theories to the contemporary scenario to substantiate the changed circumstances. C J Vargo, Lei Guo and M A. Amazeen's study (2017) is one in that direction, as they incorporated McCombs and Shaw's 'agenda setting theory' to their work, attributing the fake news as the determiner of 'salience transfer'. They argued that salience given to an issue by the fake news websites would eventually get transferred to the mainstream media, as they would be pressurized by the public demands. They went on to claim that even if a good number of people are aware of the lack of credence of the news being propagated, the mere rise of such items could have an agenda setting effect. CD. Goodwin (2017) in his study explores the relation between the repeated exposure to fake news in social media and its impact on the mindset of the voters. He employed a mixed method study, incorporating both qualitative and quantitative analysis to gather data on susceptibility of people to fake news as well as the rate at which they are exposed to them. It brought to analysis the subjective perceptions and political behavior of the respondents and linked it with their exposure to fake news items and degree of belief they had towards it. The study identified that one's belief in fake news stories is in direct relation with his/her frequency of exposure.

Cyber-bullying and social media shaming are becoming quite infamous these days, as more people employ it as a tactic to counter their opponents with whom they may have ideological or political disagreements. It is being mainly aimed at public personalities to tarnish their image and destroy their credibility. E Mustafaraj and P T Metaxas (2017) attempts to study the tactics of this cyber-warfare, that is generally carried out with the help of numerous fake-ids. They investigate how the fake-ids are utilized to plant fake news among the masses and raise collective reactions. They attempt to derive a conceptual framework from the case studies of cyber-attacks and utilize it to explain the role played by fake news in 2016 US elections. They adopt a technique of real time data collection, whereby the data are collected as and when an online topic starts 'trending' in the social media. However, they also note the inability of such an approach in tracing the origin of the fake news items, particularly in Facebook, as it is constrained by 'privacy settings'.

The compartmentalization of the audience with the onset of online news, which curbs their exposure to contradicting viewpoints, is seen as a condition that further stimulates fake news dissemination. In such a situation, the reaction of a person to any contemporary news item (fake or not) would be in accordance with the filter bubble that he/she occupies. Hunt Allcott and Matthew Gentzkow (2017), through their study are trying to evaluate the claim made by many supporters of each side (Republican and Democrat) post the US Election 2016, regarding the impact fake news have had upon the final result. The partisanship is seen as a form of echo-chamber which may result in getting exposed exclusively to news items of any particular kind. They start with an economic model of news consumption, whereby the news organizations are seen as collecting information about 'true state' of the external world and selling it to the news consumers.

From this perspective, according to the Allcott and Gentzkow, the constant production and dissemination of fake news could be attributed to it being a relatively cheap 'product'. Moreover, the fact that there are many people who enjoy the partisan news is also stated as an additional reason. Further, the lower entry barrier to the arena of online journalism is identified as another factor which promotes fake news dissemination. The established media houses may refrain from doing so, considering the reputational factors. They identified, two major motivational factors behind the production and dissemination of fake news, while one is ideological factor, to create mileage for the party or organisation one believes in, the other is pecuniary factor, by which one could boost up the web traffic by putting up fake sensitive content as 'click-baits' and thereby increase the revenue from advertisements. The fake news producers, according to them, are persons who make contents that are totally detached from the real state of affairs and aims at maximizing benefits in a short span, with no botheration of a 'long term reputation'. They strive through exploiting the inability of those consumers who can't distinguish between real and fake content.

Apart from the fake news that promotes half-truths and lies in the guise of real news, there are formal platforms such as 'The Onion', which present themselves as a satirical approach to current affairs. Unlike other fake news platforms, its main function is critiquing the unethical practices of mainstream news media. They generally do so by replicating the problematic content in an exaggerated sarcastic manner. Such attempts attained widespread popularity that it went on to get credited as a kind of media activism. Dan Berkowitz and David Asa Schwart (2015), made a case study on the fake news website 'The Onion' and their critique of CNN in association with the latter's coverage (and the salience attributed to it) of a popular entertainment show. The methodology involved qualitative textual analysis of the news items. It stressed upon the supposedly growing prominence of bloggers, social media activists, fake news websites etc in maintaining and regulating the social responsibility of the mainstream media.

Objectives

This study is an attempt, in Indian context, to identify the dynamics of fake news dissemination and the specificities associated with its 'spreadability' by categorizing it in accordance with various themes. It also aims to identify age-group related patterns of fake news diffusion by looking upon popularity of various fake news items. Thematic prominence in fake news is also attempted to document across the age groups. The relation, news consumption habits (dominant mode of news consumption, frequency of news consumption, time attributed to it, news format), and social media habits (number of social media

platforms respondents are part of, time spent in it, frequency of online content 'sharing') may have with the fake news exposure are tried to figure out. Further, the influences that demographic variables can have on fake news exposure are also attempted to identify.

Methodology

To attain the aforesaid goals, a quantitative survey is employed which collects data regarding individuals' social media habits and news consumption habits, in addition to their exposure and credulity to various fake news items. Further, the data collected are correlated to draw parallels among them.

The increasing internet penetration coupled with widespread diffusion of communication devices, is assumed to be one of the major driving factors behind the sudden rise in fake news dissemination. Hence, this study concentrates exclusively upon online spaces and fake news items shared there-in. As a potential way to reach out to the target subjects, the survey is done online with the help of 'Google forms'.

The questionnaire was framed to collect data regarding one's basic details, such as age and gender, followed by internet accessibility, devices used, social media habits and news consumption habits. This was followed by a list of 20 fake news items that were categorized as 'political', 'public interest', 'market and economy', 'technology and innovation' and 'medical and health tips'. The questions adjacent to these fake news items sought whether the subjects have come across them, and if 'Yes' their credulity towards it and the platform in which they encountered it.

The fake news items were chosen after scanning through hundreds of them in various fact-checking-websites, such as 'alt-news', 'check4spam', 'smhoaxslayer', etc. Criteria adopted while choosing them were; countrywide significance and salience in social media (which was decided by looking upon the number of posts and comments associated with it). Though the number of fake news items that could be listed under 'politics' and 'public interest' were much larger in number when compared with the rest, only 4 were chosen from each of the five categories.

The link to Google form was kept active for 12 days in total, and was sent to as many people as possible via various means, including emails and social media messages.

Findings

A total of 163 responses were received, of which 120 were in the age group 18 to 35, 35 aged above that and 7 didn't disclose the age details. One entry was not considered, as it disclosed the name of the responder. The data associated with each group were compared to form an analysis of similarities and differences across the group.

Age Group: 35 and Above

Among the 35 respondents within this group, there are 20 males and 15 females and all are either graduates or post-graduates. While there are 24 people from urban background, 10 are from rural background. Smartphone is the most common device utilized while accessing internet (all of the respondents marked themselves as smartphone users), followed by laptop (27), desktop (9) and tablet (9). While 27 of them had constant access to the internet, for 8 of them (of which 5 are females) it was limited only to home. WhatsApp was recorded as the most popular social media in this age group (all of them marked as WhatsApp users), followed by Facebook (23 users) and Twitter (8 users). 14 of the respondents couldn't

identify themselves to be following any sort of pattern in social media usage, while another 14 claimed to be spending an hour or more in social media, 5 as spending 20 to 40 minutes, and 2 as less than 20 minutes daily. Prominence of newspaper as the most sought after medium for news consumption is quite evident in this age group (dominant medium of news consumption for 18 respondents), which is followed by television (6), WhatsApp (4), newswebsites (5) and social media (2).

Though for a significant majority of respondents (22) the reliability of news that they come across in social media depend upon its source and sender, 12 of them consider it to be partly reliable. 24 respondents marked themselves as daily consumers of news, which goes in tandem with most of them being newspaper consumers. While 7 respondents couldn't identify any pattern associated with their online news consumption, 4 marked as spending an hour or more a day, another 4 as spending 20 to 40 minutes and 5 as spending less than 20 minutes daily. Textual format is preferred over the others for news consumption by a larger section within this age group (27), which is the case even when they update themselves on latest news. As far as online news sharing is concerned, 11 people consider themselves to be doing it often while 18 people marked as 'rarely'. 12 respondents have come across 10 or more of the fake news items given in the list and 11 have seen only 5 or less than that. WhatsApp is identified to be the prominent carrier of fake news within this age group, though there are exceptions when it comes to certain specific fake news items which are found as mainly propagated via Facebook/ Twitter.

Mean of fake news exposure is found as 8.1, which indicate an average person having come across nearly 8 items given in the list.

Age Group: 18 to 34

120 of the total respondents are from this age group, which comprises of 63 females and 55 males (2 of them mentioned it as 'other'). 73 of them are from urban background and 45 from rural background. Majority of the respondents are graduates (43), post-graduates (40) and Mphil/PhD holders (16). There are 21 matriculates in the group, who are all below 19 years of age. Most of them have an experience of 3 to 10 years with the internet (65 people), closely followed by the ones with an experience of more than 10 years (49). People with constant access to the internet formed a sizable majority of respondents (106); while respondents who claimed to have access limited within home or workplace/educational institution were 10 and 4 respectively. Nearly all are multiple device users, and smartphone stands first in terms of popularity, followed by Laptop, Desktop and Tablet. The responses indicate the presence of people within this age group in multiple social media platforms, with WhatsApp being the most prominent one (118 users) closely followed by Facebook (109 users), and then by Twitter (30 users). 69 of the respondents are identified to be also part of social media platforms other than these three. Nearly half of the respondents (61) couldn't identify any fixed pattern in their social media usage, while 44 responded as spending an hour or more, and 11 as spending 20 to 40 minutes daily. The reliability of news encountered in social media is dependent upon the source and/or sender of it for 92 of the respondents, while 22 marked it as partly reliable. The majority are dependent upon various online platforms for news consumption, with 33 from social media, 25 from news websites, 19 from news apps and 4 from WhatsApp. Traditional media, newspaper and television, are identified as the dominant platforms of news consumption for 28 and 10 respondents respectively.

While 60 responded as daily consumers of news, 33 couldn't identify any fixed pattern in their consumption, 22 as consuming it more than once a day and 5 as weekly

consumers. The ones who couldn't identify any fixed pattern in the amount of time spent towards news consumption constituted the majority (48), followed by the ones who spend 20 to 40 minutes (33), less than 20 minutes (21) and about an hour daily (17). The prominence of textual format in news consumption is quite established in this age group with 91 respondents marking it to be their preferred format, followed by video (17) and graphical (11). However, when it comes to latest news consumption, though textual format continues its prominence (71), there is a significant rise in video (31) and graphical (16) formats. As far as news sharing habit is concerned, 65 of them marked themselves as doing it only 'rarely', 33 marked as doing it 'often', 9 as 'very often' and 13 as not doing it at all (Nil). 46 of the respondents have come across 10 or more of the fake news items given in the list, whereas 30 have come across only 5 or less than it. 'Facebook/Twitter or other social media' is identified as the prominent carrier of fake news within this age-group, followed by WhatsApp.

An average person in this group would have come across 8 of the news items listed, considering the mean of exposure is identified as 8.1.

Discussion

The huge difference in number of respondents between the two age groups could plausibly hint towards the demographic specificities of social media populace. Though the social media presence cuts across all age groups, the significant majority of respondents (120) of it are constituted by the urban youth who are in the 18 to 35 years age range. The typical explanations that are generally given to such paradoxes are in the light of the relatively open approach of youngsters toward latest technologies. Similarly, here in this case it could be argued that the relative newness of social media platforms resulted in an increased presence of youngsters in it, which is disproportionate to their real population. The dominance of youngsters over new media platforms could be made further evident from the results showing medium of news consumption across the age groups; while newspaper and television forms the majority in the group 35 and above, the combination of various online platforms, such as news websites, news apps, social media and WhatsApp forms the majority among the youngsters. However, in spite of the variance in social media presence and mode of news consumption, the exposure to fake news items remains almost the same across the two groups as is evident from the statistics. Further, the demographic factors such as urban/rural divide and gender are identified to have no impact upon the fake news exposure. Though the number of internet users is higher in urban area, as indicated in the number of respondents, there is not much evidence for variations in social media habits and news consumption habits between them.

The popularity of fake news items are identified to be irrespective of any of the assigned themes, rather are defined by a complex array of factors, such as contemporaneity, relation with popular sentiments, and relation with popular mainstream media stories/reports. They may at times appear with a blend of truth as it would attribute an impression of authenticity. The fake news item on "IPC section 233" is a potential example of this kind. It is mentioned as a newly passed law "which makes it legal for women to kill/injure the person trying to assault her". However, the fact is that neither is IPC section 233 a newly passed law nor is it on legality of women to defend against the assaulters (IPC section on self defense is 100, though it is not a newly framed one either). But still, this is one of the most circulated fake news item within the list and one among the most reliable for the respondents too. A similar example is the fake news item on Snapchat CEO's derogatory remarks on Indians, where he allegedly stated that his app was not for poor countries like

India. Again, this was not a proven incident rather an allegation made against him in a court dispute by an ex-employee; but that didn't stop it from becoming one of the most circulated hoaxes of recent times and sounding credible to a large section of people. The aforementioned fake news items, though are cooked up ones, the contemporaneity of the issues provided it with credulous audience, particularly in online platforms. The rising demands on strict law enforcements against gender based assaults provided the context for the fictitious account on IPC section 233. In the case of Snapchat CEO's allegedly derogatory remarks against Indians, it is the involvement of the nation, a matter of popular sentiment, which set the context for mass dissemination and high credulity. It could be argued that fake news items that serve the purpose of reinforcement of popular sentiments either directly, or in an indirect manner (via the propagation of anger against the alleged assault on the popular sentiment) would attain popularity.

Apart from these, further analysis of the popular fake news items would reveal the prominence of stories that emphasize on 'warning' some imminent danger. Such fake news items are identified as having a stronger potential in going viral. Out of 20 fake news items listed in the survey, 11 could be identified as warnings of some sort or the other. It could be read as the reflection of human priorities towards matters that directly affect them. In other words, when a news (even if a fake one) appears about an imminent threat to the immediate surroundings or everyday lives of humans, chances of him/her believing it is higher in comparison to the other news. This is quite evidently exemplified by the fact that three of the most popular fake news items are warnings. Warning against plastic rice being the most popular one (came across by 123 people), which is followed by warning of imminent note ban (109), which is closely followed by warning against cosmic rays from Mars and apparent danger in using cellphones (104). These items get popular by the exploitation of ignorance and inherent insecurity among the masses.

Based on the responses, factors such as internet exposure, news consumption habits, social media habits and frequency of news-sharing are identified to have no impact at all upon one's fake news exposure. Though variation in fake news exposure is not quite evident across the age groups, there is a considerable change in the platform of reception. While most of the respondents in the age group above 35 years, largely encounters the fake news via WhatsApp, for the respondents in the age group of 18 to 34 years Facebook, Twitter and other social media has more prominence. This points to the insufficiency of the parameters upon which one's social media habits and news consumption habits are documented and the need to have a broader understanding of both, other than the time spent in it and 'shares' done. The network in which one is embedded must be made subject of investigation as it may prove crucial in understanding the pattern of fake news dissemination.

For a large share of the respondents (close to 75 per cent), the reliability of news that they come across in social media depends upon the source and/or sender of it. It could be read as an indication of segmented nature of social media populace, where each may have their own social-circles to identify with, and associated news and information to rely on. It has larger implications upon fake news dissemination as it would force us to consider fake news not as a given thing but rather as something that is carefully forged to pass through various social circles. Study of its dynamics would demand a more nuanced approach which may require going beyond the categorizations merely in accordance with the age group.

Another interesting finding is the inability of a good number of people in identifying their social media usage. This could be read alongside the concept of media getting invisibilized as the technology evolves. That is, one's media habits are largely becoming

indivisible from his/her own subjective formation. Media consumption is no more seen as a slot separate from everyday activities, rather as something deeply embedded in it.

Conclusion

We are witnessing the times where the age old jargons and vocabularies that were closely associated with the discourses on internet and knowledge sharing getting suddenly irrelevant due to its insufficiency in accounting for the changed circumstances. The catch phrases such as 'democratization of knowledge', 'citizen journalism', 'egalitarian public sphere', etc that once used to characterize the potential advantages of the internet, are being omitted off from the contemporary academic literatures. Instead the accounts on 'information overload', 'post-truth culture', etc are enjoying the spotlight of media scholars. This is in symmetry with the sudden developments that reconfigured the webspace and thereby the society at large. The sudden upsurge of user generated content could, arguably, have paved way to the large scale creation and dissemination of fake news. However its impact has proven considerable enough to necessitate administrative interventions from the government, as well as from major social media organizations.

As far as discussions around fake news are concerned, there are two contemporary tendencies which must be considered, that may appear to be mutually contradicting but adds up in a complex way. While on the one hand there is a slackening control of oneself over what he/she may wish to consume, on the other, the growing tendencies of selective exposure and segmentation.

The survey results indicate a common pattern across the age groups when exposure rates are considered, however, it is also evident that for a good majority of respondents the reliability of any information that they come across in social media depends upon the source and/or sender of it. The former case illustrates the peculiar characteristic of fake news dynamics, its potential to go unrestricted by age constraints, which is generally a predictor of news consumption in traditional media. The latter case hints to the possibilities of segregation as each may have his/her own sets of reliable sources and senders.

The findings point to the irrelevance of the categories and themes, which we generally associate with traditional media news consumption, in accounting for the fake news dynamics. The situation necessitates the creation of newer parameters to characterize online communities. Apart from understanding the dynamics of fake news dissemination, such attempts towards theorizing the formation of various online communities could contribute to the study on the flow of information within online spaces.

References

- Agarwal, S. (2017, May 2). Internet users to touch 420 million by June 2017: IAMAI report. Retrieved September 30, 2017, from <http://economictimes.indiatimes.com/tech/internet/420-million-to-access-internet-on-mobile-in-india-by-june-iamai/articleshow/58475622.cms>
- Allcott, H., & Gentzkow, M. (2017). Social Media and Fake News in the 2016. *Journal of Economic Perspectives*, 31(2), 211-236. Retrieved September 30, 2017, from <https://web.stanford.edu/~gentzkow/research/fakenews.pdf>
- Berkowitz, D. & Schwartz, D.A. (2016) Miley, CNN and The Onion, *Journalism Practice*, 10:1, 1-17, DOI: 10.1080/17512786.2015.1006933
- Goodwin, C. (2017, April). Fake News On Social Media: Illusory Truth and the 2016 Presidential Election. Retrieved September 30, 2017, from <https://www.researchgate.net/publication/316418350>

- Mustafaraj, E., & Metaxas, P. (2017, March). The Fake News Spreading Plague: Was it Preventable? Retrieved September 30, 2017, from <https://www.researchgate.net/publication/315489413>
- Rice, R. E., & Brundidge, J. (2009). Political engagement online: Do the information rich get richer and the likeminded more similar? In *Routledge Handbook of Internet Politics* (pp. 144-156). Oxon, UK: Routledge.
- Vargo, C. J., Guo, L., & Amazeen, M. A. (2017, June 15). The agenda-setting power of fake news: A big data analysis of the online media landscape from 2014 to 2016. Retrieved September 30, 2017, from http://journals.sagepub.com/stoken/default_domain/5k3VzHvtmWziQdE2burS/full#articleCitationDownloadContainer
- WhatsApp has 1 billion active users daily. (2017, July 26). Retrieved September 30, 2017, from <http://www.livemint.com/Technology/4IE9RHUGbqxRC24V0RBmEL/1-billion-people-use-WhatsApp-daily.html>

Annexure 1: List of fake news items, audience's credulity towards it, and platforms in which respondents encountered it

Sl No.	Fake news item	No: of people came across it	No. of people who found it reliable		Platforms in which people encountered it		
			Fully reliable	Partly reliable	WhatsApp	Facebook/Twitter or other social media	News websites
1	Majority of Indian mainstream media are owned by foreigners	51	8	38	4	22	14
2	New Law Passed Indian Penal Code (IPC) Section 233 that makes it lawful for women to kill/injure the person trying to assault her.	79	39	35	8	35	25
3	Snapchat CEO Evan Spiegel said App not for poor countries like India and Spain	99	56	29	5	65	25
4	BBC lists Congress among the most corrupt political parties in the world.	52	9	18	5	29	11
5	Tomato Ketchup contains cocaine and nutmeg	34	5	18	13	12	6
6	Reverse ATM pin calls police	84	24	29	31	33	12
7	Malaysian-Airline crash video is a virus. Don't download it.	59	7	24	25	19	4
8	Plastic rice and its brands	123	30	63	45	40	24
9	Reliance Launching Cab Services in Mumbai on 26th Jan 2017	43	10	24	12	16	12
10	Rs. 2000 notes to be banned soon	115	11	60	42	41	24
11	RBI orders permanent closure of 9 banks	45	13	24	13	11	20
12	Double GST for Credit/Debit Card transactions	55	12	24	16	21	13

13	Internet Speed at NASA is 91 GBPS	54	21	25	15	25	14
14	7D park Japan you can touch, feel & smell animals	47	15	23	20	17	6
15	Warning: cosmic rays from Mars to pass close to earth. Turn off cellphones, as it would attract harmful radiation.	104	6	31	73	17	7
16	GIF Images are dangerous. They damages the device battery	32	2	16	24	4	2

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