

Voting with the Stars: Analyzing Partisan Engagement between Celebrities and Politicians in India

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Celebrity influencers are increasingly central to political discourse as they engage in, and get engaged with, on matters of electoral importance. In this paper, using Twitter data from 1432 sportspersons and entertainers and their engagement with the 1000 of the most followed ruling party and opposition politicians from India, we propose a new method to measure partisanship of celebrities along different modes of engagement. Our examination of polarization, through topical and retweet analyses, shows patterns related to both party incumbency and the level of internal organization. We find that the ruling BJP has been more effective than the opposition, the INC, in organized outreach to celebrities, by eschewing explicit party-based partisanship, and instead employing non-partisan narrative techniques, such as maintaining nationalism as the central theme in tweets. We find that while entertainers are equally engaged by both the ruling and opposition parties, sportspersons, who often enjoy a nationalist appeal by virtue of representing the country, tend to have a much more partisan relationship with the incumbent party.

CCS Concepts: • **Human-centered computing** → Empirical studies in collaborative and social computing.

Additional Key Words and Phrases: Celebrities, Politics, Partisanship, Twitter-Engagement, India

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1 INTRODUCTION

Politicians have historically engaged popular public figures around the world, especially when it comes to campaigning for elections or promoting their own political brands. The involvement of celebrities in mainstream electoral campaigns has been subject of much discussion [96]. In the age of social media, celebrities and other public figures who wield sizable influence online also become increasingly important to the outreach efforts of politicians trying to push forth an agenda [63].

Social media studies are central to the current charter of CSCW. While a great deal of research on social media and politics is focused on the West, including much recent work on the US elections,

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we hope to bring the case of Indian politics on social media to the discussion through this work. The electoral system, and use of social media in it, is possibly the largest in the world in terms of sheer scale and diversity. The celebrity and star system in India, is likewise a vast and rich system, spearheaded by an extremely influential cinema industry. While we propose that this study present us ways of thinking about celebrity and politics elsewhere, we argue that the importance of the interactions we see here for the Indian political system makes it an essential case study. Given that CSCW is currently the natural leader in social media studies, highlighting cases from around the world is central to expanding our understanding of media developments from around the world, and in turn, getting those studies the kinds of exposure that studies of Western social media cases get. Our work addresses this gap by focusing on a large-scale study of celebrities and the extent to which they engage publicly, online, with political actors in India, over a time period encompassing events of varying levels of social, political, or professional importance.

India's current Prime Minister, Narendra Modi is the most followed Indian public figure on multiple social media channels, and has been known to aggressively engage celebrities in various ways - both as champions in government schemes, but also through consistent social interactions in casual online and offline encounters [68]. Modi, who was never strictly a "celebrity" from show business or sports, is a case of a "celebrity politician" much in the vein of Barack Obama, in that he has massive following, and the power to use his "celebrityhood" to move opinions on certain issues [96], which he has successfully done in rallying support around yoga [55], the Clean India campaign [86], and even the highly disruptive demonetization move to ban currency notes [74].

Celebrities from cinema and sports have also historically played an important role in endorsing politicians or turning to politics themselves [57, 77]. This has been central to campaign politics throughout India, where celebrities, particularly from the entertainment industry, have had a much more significant role in public mobilization through very well-organized film stars' fan clubs, which in recent years have increasingly moved online. Film stars have massive fan bases in various states, which have in the past helped create buzz around candidates or parties, and in some cases been directly involved in mobilizing the vote. In the states of Andhra Pradesh, Telangana, and Tamil Nadu, fan clubs have been weaponized and turned into political organizations. [22, 35, 48]. In Tamil Nadu, for instance, for practically five decades, every single elected head of government has been from the film industry [87].

Hindi-language entertainers, particularly from the Mumbai film industry, popularly referred to Bollywood, appeal largely to Hindi speaking parts of the country which are in Western and North India. Celebrities from this industry have also been in politics, but there is not the same intensity of organized fan activity. [79] Bengali cinema has also emerged recently as a major contributor to politics, with parties in the last decade increasing the number of film stars with no prior political experience, being fielded as parliamentary election candidates. [44]

There are also important celebrities outside of entertainment. Cricketers, are by far the most significant in terms of net following, and have pan-Indian appeal. Sportspersons in Olympic sports like shooting and boxing, or sports in which Indians have traditionally performed well internationally, such as badminton and tennis, have emerged as significant public figures. Spiritual gurus, such as people who lead congregations of various denominations, are also very significant public figures in India, and are often called upon for their commentary on a range of subjects, including those outside of their immediate areas of expertise.

Unlike in the United States and the United Kingdom, where public figures, especially in entertainment, tend to affiliate with liberal politics [89, 97], Indian entertainers tend to have a complicated relationship with politics. Every election season sees some number of public figures sign up to support political campaigns, and while a few have made long careers in politics, many are one-time legislators who make a mark for being awkward, incompetent, or absent in office [24]. Nationwide

socio-political debates and movements have also witnessed entertainers taking stances that may not always align with liberal ideals and politics.

A significant number of Indian celebrities eschew politics entirely, given as they have fans from across the political spectrum and taking a political person can have adverse impacts to their popularity or endorsements [11, 32]. Some film stars, especially in the south, enter politics more aggressively as high-profile political candidates for existing parties or launch their own political outfits, of which there have been several examples particularly from the South Indian states of Tamil Nadu and Andhra Pradesh [109]. As part of a social elite, celebrities intersect at engagements with politicians - particularly those from urban constituencies or those with national stature at parties, award functions, public service events or sporting events [49].

Sportspersons' engagement with politicians is different from that of entertainers in that they are less likely to be from urban elite backgrounds than entertainers, and do not have the same public recognition unless they are cricketers [94]. They do however hold greater importance in the nationalist narrative, since a majority of sportspersons in India till fairly recently played for amateur national leagues rather than as professional club players, thus they tend to hold the distinction of having "played for the nation."

In this study, we consider these types of celebrities and attempt to understand their relationship to politics in India, by examining their *Twitter engagement* behavior with mainstream politicians and vice versa. We consider Twitter *mentions* (ME), *replies* (RE), *quote-tweets* (QT) and *retweets* (RT) as metrics to measure user engagement. While Twitter *mentions* and *replies* represent a direct communication, the *retweets* and *quote-tweets* could indicate a wide range of functions such as an user's interest in broadcasting or publicly validating a message [16, 52]. Since these metrics often differ in their functions and in the sentiment they carry, past works have used one or a combination of them while measuring an engagement or an interaction in a Twitter message [17, 20, 27, 36, 40, 80, 81, 88, 99]. In this paper, we measure politicians and celebrities engagement along all these four modes of engagement independently to understand their online relationship with each other. In summary, we make the following three contributions in this work:

- First, through a new method, we examine the role of entrenched and ruling political parties with respect to celebrities to understand if there is a difference in the *strength of politician-celebrity Twitter engagement* between the parties in power and the opposition. We break down this relationship and discuss how the vocation, gender and popularity of celebrities impact their engagement with politicians and vice versa.
- Second, we study the discourse in engagement tweets of politicians and celebrities through topic modeling techniques to understand their online political positioning and find out the motivating factors for their engagement.
- Finally, we analyze the retweets politicians receive on Twitter for their engagement with celebrities to understand if they get public validation and benefit from engaging so. Similarly, we seek to answer the question of risk to the celebrity in taking political positions by studying the popularity of individual celebrities, their corresponding willingness to engage with politicians, and the public reception of their engagement.

2 RELATED WORK

Celebrities and Media. Celebrity is a performative practice that entails the individual constantly engaging with the outside world [54]. A free and functioning mainstream media is a key mediator between celebrities and the public. The persona represented through the individual celebrity, offers us a window into the cultural economies that construct what counts as worthy of public attention [53]. Marshall proposes a media nexus - that celebrities are constructed as newsworthy

and that their status is reinforced by the media. In turn, celebrity reportage has become normalized, such that a range of media from tabloids to, in the current day, social media, thrive on celebrity discussion - many such sources are often peoples' primary source of the news, further highlighting the importance of celebrities to the public discourse [53]. In the social media age, the offline star can be their own paparazzi, using Twitter and Facebook to report details of their lives as they carefully construct their own popularity and persona online [76]. This extends beyond mainstream celebrities to internet celebrities that build fame simply out of being online [1]. Every individual celebrity crafts, and is crafted by their own circle of appeal, which come together to create their own sphere of social and economic influence [92].

Celebrity Endorsement & Engagement. Studies have shown that sizeable sections of citizens believe that celebrities are genuinely moved by what they endorse, rather than by the considerations such as fees, goodwill that they gain from an endorsement [9]. Previous scholarly work has examined the role of celebrities vis-a-vis what they endorse [28], and has shown that celebrities are valuable as endorsers because they are perceived as believable and likeable [90]. More importantly, there is evidence that celebrity endorsements needn't always be *explicit* to be impactful: audience interpretations of stars' communications and imagery also have persuasive potential in political contexts [51].

Endorsement, however, has two-way implications – research shows that both the star and the endorsed product can both be impacted by the position taken. For instance, Kamins and Gupta [41] found that the match-up between a celebrity endorser and an endorsed brand impacts a celebrity's believability and attractiveness. This is important in the political context, because unlike with a consumer product, the affiliative closeness of a political endorsement and the celebrity would suggest the star's 'expertise' in offering advocacy for something typically outside of area that drives their fandom [105].

Another relevant aspect is that endorsement requires some action on the part of the endorser, which could be an explicit act such as a public statement, or an implicit action such as a photograph taken together with the endorsee. However, on social media, we have a new category - of *engagements*, where a politician engages publicly with a celebrity by tweeting to them, while the celebrity may or may not engage back. This engagement may leave open the question of whether the politician has an actual relationship with the said celebrity, but the affordances of social media are such that a politician can by extension reach the followers of that celebrity, or relevant interest group. While this definition of engagement does not equate to that of endorsement, it makes for an appropriate framework in analyzing the politician-celebrity relationship within this context. Indian celebrities have a history of not being explicit when it comes to political endorsements, most evidently for fear of dividing their large fandom [32]. Engaging via retweets and mentions still has signaling value, even if the viewer is unclear on the existence of any official endorsing relationship. We will see later in this paper, that this method of engagement has been used by politicians to reap several benefits.

Political Context. Over the past decade, celebrities have been found to impact political participation in various electoral settings [18, 30], and while there are broad cultural differences in how seriously a celebrity endorsement gets taken, the right celebrity can significantly influence public opinions on what is being endorsed [21]. Baum and Jamison [13] proposed the 'Oprah Effect' in that celebrities bring political information to citizens who may otherwise refrain from electoral participation. Research in the Philippines has also shown that voters motivated by celebrity tend to be less educated and watch less news [25].

The practice of celebrity in the public not only impacts non-partisan issues such as electoral participation, but is also deeply tied with the creation of celebrity politicians themselves. A strand of

recent work has specifically interrogated celebrity influence on political style in a mediatised realm, particularly given the rise of populist politics in various parts of the world [64, 98]. A number of social media-savvy politicians in various parts of the world including Canada's Justin Trudeau [50], Indonesia's Joko Widodo [65], The Philippines' Rodrigo Duterte [75], Venezuela's Hugo Chavez [6] or the US' Barack Obama [43] and Donald Trump [47] have all been celebrity politicians - not only by way of their personal characteristics that make them newsworthy, but also because of the interest and intent of celebrity figures to be seen as affiliated with them. Indeed, Narendra Modi's popularity has been closely intertwined with his own status as a celebrity politician in a consistent give-and-take relationship with sports-persons and entertainers [73].

Social Media and Indian Politics. It is no surprise then that political parties should actively seek to leverage the impact of celebrity - whether it is exercised on part of their own politicians, or by other public figures. Much recent work surrounding the BJP's political messaging has examined aspects of their social media presence that relate to influencer culture in India. Narendra Modi's own public relations machinery used this extensively, starting in the early 2010s, when his image was still one of a Hindu hardliner who was banned from entering the United States and rendered a pariah in global diplomatic circles, driven by his reputation for his handling of the Gujarat riots. The use of television, and of strategic placement with various film stars including Bollywood actors Amitabh Bachchan and Ajay Devgn as allies, was part of the process of mainstreaming Modi [70, 107]. Besides the use of stars, careful insertion of popular culture into speeches and public engagements were part of the process of presenting him as an affable and relatable leader [82], a line of positive-themed messaging that extended to the aspirational message on which the party's 2014 general election campaign was based [42].

While opposition parties lagged in their engagement with social media, the BJP forged ahead using a battalion of political outreach techniques, often writing the playbook for other nation-states and political leaders to learn from [19, 34]. Modi and the BJP's use of influencers was curated to also include cricketers, businesspersons and musicians, from various parts of the country, to present him as a leader with widespread purchase among thought leaders in various domains [66, 93]. This celebrity engagement extended past campaigning into his first term, where he extensively engaged influencers as ambassadors for state programs [86], expanding into what was soon referred to as his signature selfie-style outreach [10, 67, 84]. The engagement of several massively popular film stars, including Akshay Kumar and Anupam Kher as mainstays in Modi's outreach was seen alongside the social media trolling of artists and stars who did not toe the line, setting up Bollywood as a focal battleground for cultural nationalism [56, 58].

However, there is little quantitative work that highlights the patterns in how Indian political parties differentially leverage celebrity engagement over longer periods of time, and how celebrities express their partisanship in this process. The Indian scenario is of distinct interest because in liberal democracies such as the United States, celebrities tend to be liberal-progressive and have little impediment to openly voicing their endorsements in public [89]. However, the same may not be true - either in ideological terms, or in ability to openly express opinions without consequences, for various other parts of the world. In India, while there is some work on celebrities and consumer product endorsement [2], including work that specifically places that celebrity relationship with endorsements in a Global South context [31], the work on celebrity engagements in politics are generally restricted to the participation of entertainers in campaigns [78]. Further, little has been done on the entertainers in active endorsement, despite their significant involvement in recent elections [73], and historically, particularly in south India [15]. Our work aims to bridge these research gaps by interrogating the different modes of celebrity-politician interaction on Twitter including, but also beyond, political endorsements. We study and contrast the diverse patterns

of endorsements and engagement that Indian political parties exhibit in their interactions with different types of celebrities. These interactions are temporally situated not only in the context of short-term election campaigns or government policy roll-outs, but even nationwide socio-political movements, and they all come together to paint a more detailed picture of celebrity-politician engagements, and the purposes they serve.

3 DATA AND BACKGROUND

Politicians Dataset. We refer to a database of Indian politicians on Twitter created using a Machine Learning classification pipeline called NivaDuck [5], that iteratively identifies unseen political accounts from features such as tweets, profile description texts and friends network of a seed set of politicians. For our study, we analyze the tweets of 1000 most followed political accounts from each of the two largest political parties of India - the ruling Bharatiya Janata Party (BJP) and its main opposition, the Indian National Congress (INC). The political accounts we consider include the Twitter accounts of individuals who are either

- (1) Elected members or candidates representing a party at the national parliament or state legislatures or local governing bodies in cities and villages (or)
- (2) Un-elected members officially affiliated with the party such as party secretaries, spokespersons, media managers, members of youth and women wings, and booth agents.

We refer our data of 2000 accounts as politicians P and an individual politician as p in the rest of the paper. Further, we refer to the ruling BJP politicians as R and the opposition INC politicians as O to study the difference in politician-celebrity engagement between the ruling and opposition parties. These top followed politicians, though very diverse in their portfolios, are the faces of their party when it comes to political campaigning, and hence behave in comparable ways. Accordingly, we consider the tweets posted in the months of March 2019 to November 2020 in particular. A host of events of regional and national importance have occurred over the course of this period, including but not limited to: the multi-phased General elections of India, the Delhi riots that occurred after the passage of the controversial Citizenship Amendment Law 2019, the outbreak of the COVID-19 pandemic, multiple military clashes at India's border with China, nation-wide farmers' protests against proposed agricultural reforms, etc. Our analyses examine the direct or indirect online outreach of politicians with celebrities in the context of several such events.

Celebrities Dataset. A celebrity is defined as someone “known to the public (ie, actor, sports figure, entertainer, etc.) for his or her achievements in areas other than that of the product class endorsed” [29]. Friedman’s definition includes the notion of endorsement, which highlights the public nature of a celebrity’s being, and their ability to influence the adoption of products and services beyond their area of expertise. The celebrities in our list include actors, creative artists including musicians and writers, sportspersons, businesspersons, socialites, spiritual gurus etc. We classify all performing artists as entertainers, athletes as sportspersons, and everyone else in a bucket of “others”. For the purposes of this analysis, we only examine entertainers and sportspersons because the bucket of “others” represents a broad set of vocations with varying levels of engagement with the general public. Entertainers and athletes are extremely influential in Indian daily life [45, 59, 61, 62] - with a massive film and television industry, entertainers are widely recognized and followed [7, 83, 95], while athletes are in the public imaginary due to their nationalistic or regionalistic association as representing the nation in sport [46, 61]. These two categories of celebrities have also nearly monopolized offline and online platforms for product endorsements, awareness campaigns, and more recently for advertising government schemes [39, 108].

In the absence of an off-the-shelf list of Indian celebrities on Twitter, we resort to our own sampling methodology to identify celebrities. We start by constructing a seed set of celebrities that is representative, highly precise (i.e. low false positives,) and can point us to new celebrities through their connections. In order to collect this seed set, we mine 197 Twitter lists that purport to contain various kinds of celebrities of diverse following (eg. entertainers, athletes, entrepreneurs, journalists etc.), from verified accounts of Indian political parties, media houses, government departments etc. These lists contain 6151 unique users in aggregate, and we manually filter these accounts to retain 650 entertainers and sportspersons, which constitutes our seed set. This seed set includes 385 entertainers and 265 sportspersons, whose friends network we now utilize to expand our dataset. While it may be possible to have excluded regionally popular entertainers and athletes in our seed set because they were not included in any of the initial set of Twitter lists, we believe that snowballing through the friends network of seed set can help remedy this issue.

We mine a total of 59,698 friend accounts for these 650 celebrities, and after filtering out any accounts with less than 50,000 followers, we are left with 11,877 Twitter accounts. We chose a relatively high threshold of 50,000 to reduce false positives and ensure that the resulting names are popular and have a celebrity appeal. We leave exploring the relation of this threshold with final celebrities data to future work. We then manually curate the resulting list to only retain 815 (7% of 11,877) accounts of entertainers or sportspersons. We add this set to our initial seed set, which gives us a net total of 1465 Twitter accounts. Out of these 1465 accounts, 33 accounts are either inactive, suspended, or become affiliated with some political party at some point during our time period of analysis, and hence we remove them from the data. This procedure gives us a final set of 1432 diverse Indian celebrity accounts on Twitter, (1178 entertainers, and 254 sportspersons) whose followers counts range from 344 to 44,747,893 (median: 242,324). We further manually annotate the gender of these celebrities based on their self-declared information available either on Twitter or on other publicly available news sources. We find 931 male and 501 female celebrities. We refer to our celebrity sample set as C and an individual celebrity as c .

We use NivaDuck and Twitter public API to extract all the tweets of celebrities C that engaged with any of the politicians in P . We consider Twitter *mentions* (ME), *replies* (RE), *quote-tweets* (QT) and *retweets* (RT) as the *modes* of engagement. Similarly, we extract all tweets by celebrities C that were engaged (mentioned, quote-tweeted, retweeted, or replied) by politicians P . Celebrities engaged with politicians in 23,270 number of tweets, and 57,876 of their tweets were engaged by politicians between the months of March 2019 and November 2020.

4 METHODOLOGY

4.1 Measuring Partisan Engagement

We first define how celebrities and politicians engage with each other using two metrics — $E_{c \rightarrow Pol}^{mode}$ and $E_{Pol \rightarrow c}^{mode}$, where Pol is either R or O , and $mode$ could be one of $\{RT, QT, ME, RE\}$. $E_{c \rightarrow Pol}^{mode}$ denotes how a celebrity, c , is engaging with politicians and $E_{Pol \rightarrow c}^{mode}$ denotes how c is engaged by the politicians. We use these two metrics to assign scores of engagement to each celebrity. We measure the engagements independently along different modes since they differ in their functions and in the sentiment they carry. We then define the partisanship in a celebrity's engagement with politicians P (denoted by $PE_{c \rightarrow P}^{mode}$) as simply the difference between their engagement with ruling R (i.e., $E_{c \rightarrow Pol}^{mode}$ when $Pol = R$) and opposition O (i.e., $E_{c \rightarrow Pol}^{mode}$ when $Pol = O$):

$$PE_{c \rightarrow P}^{mode} = E_{c \rightarrow R}^{mode} - E_{c \rightarrow O}^{mode} \quad (1)$$

Similarly, we define how a celebrity is engaged partisanly by politicians (denoted by $PE_{P \rightarrow c}^{mode}$) as the difference between the engagement by ruling R (i.e., $E_{Pol \rightarrow c}^{mode}$ when $Pol = R$) and opposition O (i.e., $E_{Pol \rightarrow c}^{mode}$ when $Pol = O$):

$$PE_{P \rightarrow c}^{mode} = E_{R \rightarrow c}^{mode} - E_{O \rightarrow c}^{mode} \quad (2)$$

Defining Engagement. We define both $E_{c \rightarrow Pol}^{mode}$ and $E_{Pol \rightarrow c}^{mode}$ symmetrically and the difference lies in the considered direction of engagement. For explanation purposes, we delineate $E_{c \rightarrow Pol}^{mode}$ here and it is straightforward to extend the definition to $E_{Pol \rightarrow c}^{mode}$. We define $E_{c \rightarrow Pol}^{mode}$ as a function of the total engaged tweets and the total engaged individuals as follows:

$$E_{c \rightarrow Pol}^{mode} = \frac{N_{c \rightarrow Pol}^{mode}}{N_{c \rightarrow P}^{mode}} * \log(N_{c \rightarrow Pol}^{mode} * (I_{c \rightarrow Pol}^{mode})^{w1}) \quad (3)$$

Pol and $mode$ take values from $\{R, O\}$ and $\{RT, QT, ME, RE\}$ respectively. $N_{c \rightarrow Pol}^{mode}$ denotes a celebrity's total engaged tweets with either ruling (when $Pol = R$) or opposition (when $Pol = O$) along a $mode$ of engagement. $N_{c \rightarrow P}^{mode}$ denotes the total engaged tweets with all politicians, P . $I_{c \rightarrow Pol}^{mode}$ denotes the total individuals (i.e., politicians of either R or O) a celebrity c engages with in $N_{c \rightarrow Pol}^{mode}$ tweets. $w1$ is a weighing factor.

Our definition captures the tension between the relative and absolute engagements. The first term in the product in definition 3, $\frac{N_{c \rightarrow Pol}^{mode}}{N_{c \rightarrow P}^{mode}}$, is the proportion of a celebrity's engagement with either R or O . Since our end goal is to measure partisanship, we include this relative engagement component to distinguish celebrities who engage more with either one of the two parties.

The second term, $\log(N_{c \rightarrow Pol}^{mode} * (I_{c \rightarrow Pol}^{mode})^{w1})$, indicates the absolute engagement. Since total engaged tweets and total engaged individuals capture two facets of interaction, we include a product of these two counts in the definition. We take the logarithm of this term so as to consider both relative and absolute engagements in comparative scale. The weighing factor $w1$ is to vary the importance of total engaged tweets compared to total engaged individuals. We consider both of them equally important in this paper (hence set $w1 = 1$) and leave further exploration of influence of $w1$ to future work.

Similarly, $E_{Pol \rightarrow c}^{mode}$ in definition 4 below represents how a celebrity is engaged by politicians. $N_{Pol \rightarrow c}^{mode}$ denotes the total tweets by either ruling (when $Pol = R$) or opposition (when $Pol = O$) politicians engaging with a celebrity c . $N_{P \rightarrow c}^{mode}$ denotes the total engaging tweets by all politicians, P . $I_{Pol \rightarrow c}^{mode}$ denotes the total individuals (i.e., politicians of either R or O) who engage with the celebrity c in $N_{Pol \rightarrow c}^{mode}$ tweets. $w2$ is a weighing factor similar to $w1$. Table 1 provides a summary of all the notations and metrics used in the paper.

$$E_{Pol \rightarrow c}^{mode} = \frac{N_{Pol \rightarrow c}^{mode}}{N_{P \rightarrow c}^{mode}} * \log(N_{Pol \rightarrow c}^{mode} * (I_{Pol \rightarrow c}^{mode})^{w2}) \quad (4)$$

Significance in partisanship. Using the above definitions, we compute the engagement scores for each celebrity and find that 827 (58% of the original 1432) celebrities have some engagement with politicians and 907 (63% of 1432) celebrities are engaged by at least one politician. We then compute the partisan engagement scores, $PE_{c \rightarrow P}^{mode}$ and $PE_{P \rightarrow c}^{mode}$, of celebrities by their vocation (entertainment and sports) and gender (male and female). We use Welch's one-sample t-test to determine if the mean partisan score of each group of celebrities is significantly different from zero. If they are significant, it implies that particular group is partisan in their engagement with politicians, on

Engagement direction	Notation/metric	Description
celebrity to politician	$N_{c \rightarrow P}^{mode}$	a celebrity's total tweets that engaged with all politicians
	$N_{c \rightarrow Pol}^{mode}$	a celebrity's total tweets that engaged with politicians of either R or O
	$j_{c \rightarrow Pol}^{mode}$	total politicians of either R or O who are engaged by a celebrity
	$E_{c \rightarrow Pol}^{mode}$	our definition of a celebrity's engagement with politicians
	$PE_{c \rightarrow P}^{mode}$	our definition of a celebrity's partisanship in engagement
	w_1	weighing factor between a celebrity's total engaged tweets and total engaged politicians
politician to celebrity	$N_{P \rightarrow c}^{mode}$	a celebrity's total tweets that are engaged by all politicians
	$N_{Pol \rightarrow c}^{mode}$	a celebrity's total tweets that are engaged by politicians of either R or O
	$j_{Pol \rightarrow c}^{mode}$	total politicians of either R or O who engaged with a celebrity
	$E_{Pol \rightarrow c}^{mode}$	our definition of a celebrity's engagement by politicians
	$PE_{P \rightarrow c}^{mode}$	our definition of how a celebrity is partisanly engaged by politicians
	w_2	a weighing factor between total tweets and total politicians that engaged with a celebrity

Pol : variable to denote either R or O , $mode$: variable to denote one of $\{RT, QT, ME, RE\}$

Table 1. Notations and metrics used throughout the paper to denote engagement between celebrities and politicians.

average. We use *Cohen's d score* to estimate the effect size of the differences. Further, we determine the relationship of celebrities' partisan engagement with their popularity by running multiple independent correlation analyses between their followers count and their absolute partisanship along an engagement mode. We carry out this analysis for celebrities of different vocation and gender.

4.2 Discourse Analysis of Engagement

We use bitemporal topic modeling (BTM) [110] to uncover the topics in the tweets as it typically is efficient for short texts. We consider each tweet as a document and carry out standard preprocessing techniques such as weighing frequent bigrams appropriately, removing stop words/urls/special characters and lemmatizing. Due to India's multilingual mode of interaction both offline and online [72], our tweet corpus consists of tweets of multiple Indian languages in addition to those in English. Figure 1 shows the distribution of languages for different *modes* of engagement and for subset of our tweet corpus on which bitemporal models are built. It can be observed that while our corpus predominantly consists of tweets in the English language, the distribution of tweets over other languages is not negligible. To accommodate for these, we use Google's Cloud Translation API¹ and translate the non-English tweets to English. This approach is however limited by the fact that the API often errs in delivering the correct semantical and contextual translations.

We build four independent language models to account for different direction of engagements between politicians and celebrities. Due to the low sample and tweet corpus sizes of athletes and female celebrities (which are limiting for language models), we consider only the consolidated set of celebrities and not the subsets partitioned by their vocation and gender. In particular, we build four language models – one from each BJP and INC to celebrities, and the remaining two from celebrities to BJP and INC. Figure 1 shows the distribution of input tweets to each of the

¹<https://cloud.google.com/translate>

four models by language and engagement *mode*. To choose the optimal number of topics for each model, we iterated over a range of 3 to 15 topics and chose the ones with highest C_V coherence score [85]. While a high C_V coherence score indicates a higher likelihood of words with similar contexts being present in the same topics, the topics still need to be interpreted manually as they are latent variables. In order to do this, we pick the most relevant terms within each topic for each model where the *relevance* is measured by their normalised posterior probabilities for each topic. We then manually inspect the most relevant keywords of and a random sample of tweets for each topic, and use our domain knowledge about the Indian political landscape to interpret the themes in these topics. Here each tweet is assigned to a topic based on the one having the highest posterior probability.

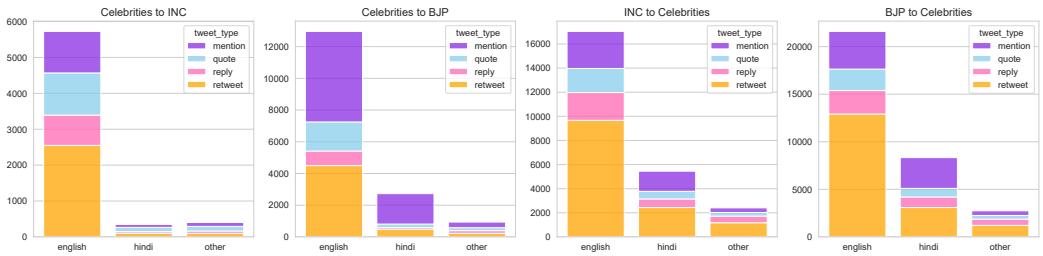


Fig. 1. Distribution of input tweets to each of the four topic models by language and *mode* of engagement. The first two figures from left correspond to engagement tweets from celebrities to INC and BJP respectively. Similarly, the next two figures respectively correspond to engagement tweets from INC and BJP to celebrities.

4.3 Public Reception of Celebrity-Politician Engagement

Our Engagement definitions when $mode = RT$, $E_{c \rightarrow Pol}^{RT}$ or $E_{Pol \rightarrow c}^{RT}$, respectively denote how much a celebrity retweets politicians' tweets and how much the celebrity's tweets are retweeted by the politicians. Retweets often carry a positive connotation and so in the above metrics, they indicate the level of validation for a politician's or a celebrity's message. Similarly, the overall retweets received by anyone on Twitter is highly indicative of the public validation of the message that their Tweet carries. Hence, we refer to the total number of times an engagement tweet between celebrities and politicians gets retweeted to determine the public reception of their engagement. A politician (or a celebrity) would engage with multiple celebrities (or politicians), so we use the median of retweets received for all such engagement tweets to indicate the average validation. In particular, to compare the public reception against a baseline, we use the ratio of median retweets a politician or a celebrity receives for their engagement tweets (with celebrities and politicians respectively) to the median retweets they receive for tweets without any such engagement. We refer to the public reception of a politician's engagement with a celebrity as $RT_{p \rightarrow c}$ and the public reception of a celebrity's engagement with a politician as $RT_{c \rightarrow p}$.

We model the relationship of the above ratios with the politician's political party `pol_party` and the celebrity's log followers count `celebrity_followers` using a linear mixed model in R [12]. The effect of these two variables and their two-way interaction on $RT_{p \rightarrow c}$ or $RT_{c \rightarrow p}$ would enable us to compare how the response for engagement varies between *R* and *O* and between celebrities of different following levels. We use a mixed model over a standard linear model since the response to engagement by a politician depends on the characteristics of their individual self and on that of the celebrity with whom they are engaging. In other words, $RT_{p \rightarrow c}$ or $RT_{c \rightarrow p}$ is interdependent with both the politician (`politician_handle`) and the celebrity (`celebrity_handle`), and hence

the variation in either of these two variables affects the outcome. So, while we include variables `pol_party`, `celebrity_followers`, and their interaction for fixed effects, we include intercepts for `politician_handle` and `celebrity_handle` to model them as random effects. `pol_party` is a binary variable and `celebrity_followers` is in logarithmic scale to handle the skewness. Model rt-pc below shows this relationship.

Further, we model this relationship for entertainers and athletes separately due different sample sizes and to observe distinct characteristics of their interaction with politicians. We could not include gender as a control variable since the required information for politicians in our data was not straightforward to collect – only a few self-declare their gender and there is no data about the rest. Information other than what is presented on Twitter is not available anywhere publicly for many down the party hierarchy, such as district secretaries or election booth agents. Hence, we leave the methodology to identify gender of these politicians and the inclusion of gender as a control to future work.

$$\begin{aligned} \text{RT}_{P \rightarrow c} \quad \text{or} \quad \text{RT}_{c \rightarrow P} = & \beta_0 + \beta_1(\text{pol_party}) \\ & + \beta_2(\text{celebrity_followers}) \\ & + \beta_3(\text{pol_party} * \text{celebrity_followers}) \\ & + \beta_4(1|\text{politician_handle}) \\ & + \beta_5(1|\text{celebrity_handle}) \\ & + \epsilon \end{aligned} \quad (\text{Model rt-pc})$$

5 ANALYSIS OF THE FINDINGS

Our findings consist of three components. First, we compute the ruling-opposition partisanship in the engagements between celebrities and politicians. We study this relationship for celebrities of different vocation, gender, and popularity. Second, we examine the discourse in their engagement tweets through topic models to understand the motivating factors for their engagement. Finally, we analyze the overall response, in terms of retweets, that celebrities and politicians receive when engaging with each other to determine the public reception of their interaction.

5.1 Partisanship in Different Modes of Engagement

We first compute the engagement scores for each celebrity based on the definitions defined in the previous section, and subsequently compute their partisan engagement scores, $PE_{c \rightarrow P}^{mode}$ and $PE_{P \rightarrow c}^{mode}$. These metrics capture the tension between relative and absolute engagements, and takes into account the counts of both engaged tweets and engaged individuals. For illustration, we explain this property using few cases of celebrities (see Table 2) for whom $PE_{c \rightarrow P}^{ME} > 0$ – that is, these celebrities partisanly engage with ruling BJP by *mentions*. It is straightforward to extend this interpretation for other values of $E_{P \rightarrow c}^{mode}$ and $PE_{P \rightarrow c}^{mode}$.

The celebrity in the first row of table 2, *KasthuriShankar*, is a South Indian actress who ranks within top-25 of all celebrities in terms of absolute engagement with the BJP ($\log(N_{c \rightarrow R}^{ME} * (I_{c \rightarrow R}^{ME})^{w1})$). However, she also engages significantly with INC celebrities and hence her relative engagement with BJP, $\frac{N_{c \rightarrow R}^{ME}}{N_{c \rightarrow P}^{ME}}$, is not very high. Consequently, her overall engagement score, $E_{c \rightarrow R}^{ME}$, also drops down (less than at least 60 other celebrities) though her absolute engagement with BJP is relatively high within top-25. On the other hand, while *TandonRaveena* (second row in table 2) mentions BJP politicians 94% of the times in her engagement tweets (hence high relative engagement), she is also ranked less than at least 60 other celebrities since her absolute engagement is relatively less. The

last two rows in table 2 correspond to those who rank among the top-10 engaging celebrities with BJP. It can be observed that while both these celebrities have almost similar overall engagement scores on $E_{c \rightarrow R}^{ME}$, *vishesh_9* engages in more tweets (higher $N_{c \rightarrow R}^{ME}$) but *RealVinduSingh* engages with more individuals (higher $I_{c \rightarrow R}^{ME}$).

Celebrity	$N_{c \rightarrow R}^{ME}$	$N_{c \rightarrow O}^{ME}$	$I_{c \rightarrow R}^{ME}$	$I_{c \rightarrow O}^{ME}$	$E_{c \rightarrow R}^{ME}$	$E_{c \rightarrow O}^{ME}$	$PE_{c \rightarrow P}^{ME}$
<i>KasthuriShankar</i>	171	72	24	12	5.8546	2.0034	3.8512
<i>TandonRaveena</i>	51	3	16	3	6.3319	0.1221	6.2098
<i>vishesh_9</i>	441	0	16	0	8.8616	0	8.8616
<i>RealVinduSingh</i>	198	1	40	1	8.9320	0	8.9320

Table 2. Interpretation of Engagement definitions using celebrities with $PE_{c \rightarrow P}^{ME} > 0$ as an example. The first column has the Twitter screen names of the celebrities. The second and third columns indicate their total tweets that have mentions of BJP and Non-BJP politicians respectively. Similarly, the fourth and fifth columns indicate the total mentioned BJP and Non-BJP politicians. The next two columns correspond to their engagements with BJP and Non-BJP and the last column shows their partisanship scores.

5.1.1 Engaging with Politicians. We plot the distribution of partisan scores, $PE_{c \rightarrow P}^{mode}$, for entertainers and athletes separately in Figure 2. We further plot the values for male and female celebrities separately in each group. It can be observed that the distribution of most of the samples, when the sample size is sufficient, is approximately Gaussian, indicating that the frequency of celebrities with extreme partisan values in each group is relatively smaller. However, there are only 44 female athletes in our sample, so their distribution looks squashed down compared to others.

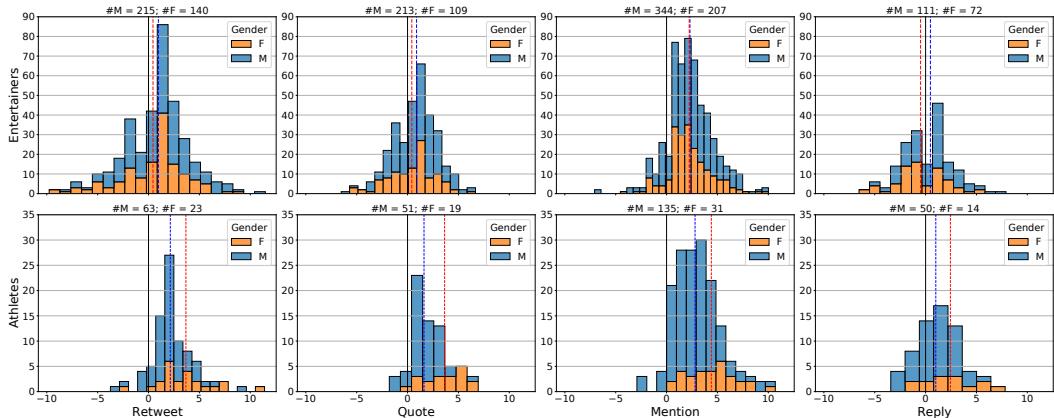


Fig. 2. Distributions of celebrities' engagement with politicians. The x-axis indicates the partisan scores, $PE_{c \rightarrow P}^{mode}$, for different modes of engagement along the columns. The first and second rows plot the data of entertainers and athletes respectively. The solid black vertical line indicates the line of no partisanship where $PE_{c \rightarrow P}^{mode} = 0$. In each group, the dashed blue and red lines correspond to the mean $PE_{c \rightarrow P}^{mode}$ of male and female celebrities respectively.

It can be observed from table 3 that while male entertainers have a significant average partisanship with BJP in retweet, quote-tweets, and mentions, female entertainers are partisan only with

Vocation	$PE_{c \rightarrow P}^{RT}$		$PE_{c \rightarrow P}^{QT}$		$PE_{c \rightarrow P}^{ME}$		$PE_{c \rightarrow P}^{RE}$	
	Male	Female	Male	Female	Male	Female	Male	Female
entertainer	0.97*** (0.312)	0.44 (-0.137)	0.89*** (0.424)	0.42 (-0.183)	2.3*** (0.979)	2.22*** (1.05)	0.47 (0.203)	-0.49 (-0.199)
athletes	2.14*** (1.08)	3.68*** (1.29)	1.62*** (1.12)	3.64*** (1.79)	2.8*** (1.31)	4.4*** (1.91)	1.0*** (0.520)	2.44*** (0.927)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 3. Statistics of difference of mean $PE_{c \rightarrow P}^{mode}$ from zero. Each value in a cell indicates the mean and the values in the parenthesis indicate Cohen's d value. The significance in means is computed using Welch's t-test.

mentions. However, the mean partisanship scores of male entertainers are not very different from zero for retweets (Cohen's $d = 0.312$) and quote-tweets (Cohen's $d = 0.424$), which can also be seen from the plots where the distributions of entertainers' $PE_{c \rightarrow P}^{RT}$ (mean = 0.97) and $PE_{c \rightarrow P}^{QT}$ (mean = 0.83) are quite centered around zero. On the other hand, entertainers, on average, significantly engage more with BJP than with INC by mentioning them – the mean $PE_{c \rightarrow P}^{ME}$ for male and female entertainers are 2.3 (Cohen's $d = 0.98$) and 2.2 (Cohen's $d = 1.05$) respectively. In summary, while mentions is the most preferred mode of engagement by all entertainers, replies to politicians tweets makes the least preferred mode of interaction.

For athletes, we find that most of them engage more with BJP than with INC and every mean $PE_{c \rightarrow P}^{mode}$ scores are significantly greater than zero. In particular, female athletes engage heavily with BJP in all four modes of engagement – their mean scores on $PE_{c \rightarrow P}^{RT}$, $PE_{c \rightarrow P}^{QT}$, $PE_{c \rightarrow P}^{ME}$, $PE_{c \rightarrow P}^{RE}$ are 3.8, 3.64, 4.4, and 2.44 respectively. Further, while more than 90% of athletes retweet and quote-tweet BJP politicians' tweets more, all female athletes in particular mention BJP politicians much more than INC (Cohen's $d = 1.91$). Similar to the observation made with entertainers, the effect sizes of the difference of the mean $PE_{c \rightarrow P}^{mode}$ scores from zero show that the athletes too, on average, engage more strongly with BJP through mentions than through any other mode.

However, it should be noted that Twitter mentions could be used for a range of functions from supporting, attacking, or making sarcastic comments, so what we refer to as 'partisanship in engagement' is simply the relative difference between strength of engagement with different political parties. We discuss the topics of engagement in subsequent sections of the findings that throw more light on the discourse.

Relation with popularity of celebrities. While we observe above that the relative engagement differ by vocation and gender in different modes of engagement, another crucial variable that is at play is a celebrity's followers count. In democracies like the United States, celebrities are known to be direct and forthright about their political engagement [89]. In India, however, notable celebrities like Kangana Ranaut, who have taken strong political stances on issues such as patriotism, have become prone to controversy and backlash [103, 104]. We ran multiple independent correlation analyses for celebrities of different vocation and gender between their absolute partisanship in an engagement mode and their followers count.

While most of the correlation was insignificant, we find two important relation. First, among entertainers who engage more with INC (compared to BJP) by quoting their tweets, higher the entertainers' followers count, the less is their strength of partisan engagement. In other words, highly followed entertainers quote INC politicians' tweets to a lesser extent than the entertainers

having a lower popularity by following ($r = -0.21, p < 0.05$). Similarly, the strength of partisanship of male entertainers who engage with BJP more by replying to their tweets, decreases with their followers count ($r = -0.26, p < 0.05$). Since both quote tweets and replies could be invoked for messages with either positive and negative connotations, it is unclear if highly followed entertainers prefer to avoid the risk in taking political positions or prefer not to engage for some other reasons. We seek to determine this relation in the next section where we analyze the topical discourse in engagements.

5.1.2 Getting Engaged by Politicians. Figure 3 shows the distribution of partisan scores, $PE_{P \rightarrow c}^{mode}$, of celebrities of different vocation and gender. The scores here denote the degree to which celebrities are engaged by BJP and INC. Similar to figure 2, most of the distributions are approximately Gaussian and the distribution of female athletes are squashed down due to low sample size.

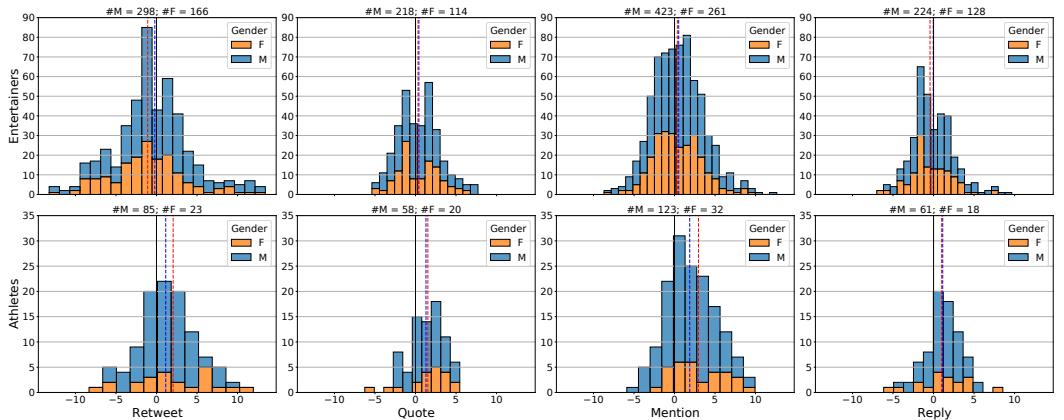


Fig. 3. Distributions of politicians' engagement with celebrities. The x-axis indicates the partisan scores, $PE_{P \rightarrow c}^{mode}$, for different modes of engagement along the columns. The first and second rows plot the data of entertainers and athletes respectively. The solid black vertical line indicates the line of no partisanship where $PE_{P \rightarrow c}^{mode} = 0$. In each group, the dashed blue and red lines correspond to the mean $PE_{P \rightarrow c}$ of male and female celebrities respectively.

	$PE_{P \rightarrow c}^{RT}$		$PE_{P \rightarrow c}^{QT}$		$PE_{P \rightarrow c}^{ME}$		$PE_{P \rightarrow c}^{RE}$	
Vocation	Male	Female	Male	Female	Male	Female	Male	Female
entertainer	-0.21 (-0.045)	-1.08*** (-0.239)	0.42** (0.163)	0.31* (0.126)	0.51*** (0.161)	0.35*** (0.119)	-0.04 (-0.157)	-0.43* (-0.174)
athletes	1.14*** (0.377)	2.06* (0.410)	1.29*** (0.646)	1.53* (0.534)	1.87*** (0.629)	2.95*** (0.924)	1.13*** (0.566)	1.0 (0.293)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 4. Statistics of difference of mean $PE_{P \rightarrow c}^{mode}$ from zero. Each value in a cell indicates the mean and the values in the parenthesis indicate Cohen's d value. The significance in means is computed using Welch's t-test.

Table 4 shows that, on average, while both male and female entertainers are engaged significantly by BJP through quote tweets and mentions, INC retweets (mean $PE_{P \rightarrow c}^{RT} = -1.08$) and replies (mean

$PE_{P \rightarrow c}^{RE} = -0.43$) to the female entertainers significantly more than BJP. While this may be indicative of the preferred mode of engagement by politicians of different parties, the mean partisanship scores are not very far away from line of no partisanship in figure 3; the Cohen's d scores also show that the effect sizes of the differences are very low. One minor exception to this observation is perhaps where female entertainers are retweeted more by INC – the effect size here is moderate (Cohen's $d = -0.239$). Since retweets often carry a positive sentiment, this observation raises question on the motivating factors for INC politicians to retweet female entertainers, which we try to address in the subsequent sections.

In the case of athletes, we observe that both male and female athletes are engaged significantly more by BJP than by INC through all modes of engagement (except where female entertainers are not partisan replied). Especially, female athletes are retweeted and mentioned heavily by BJP – their mean scores on $PE_{c \rightarrow P}^{RT}$ and $PE_{c \rightarrow P}^{ME}$ are 2.06 and 2.95 respectively. This observation echoes well with what was observed in the case of female athletes' engagement with BJP. That is, similar to how athletes engage more with BJP (section 5.1.1), we observe that they are also engaged more by BJP politicians compared to INC in all modes of engagement.

Relation with popularity of celebrities. Past works [15, 26, 60, 73, 91, 106] on politicians-celebrities interactions have shown that politicians increasingly get more benefits as they engage with celebrities with a large fan base. They show that politicians feel the need to shoot out to these stars given their symbolic value and who enjoy fan following from across political spectrum. So we ran similar set of correlation analyses as we did in the previous section to find the relationship of politicians engagement with celebrities of different followers base.

Similar to what was observed in the case celebrities' engagement with politicians, most of the correlation between partisanship and followers count insignificant except two. First, we find that BJP's magnitude of mentioning male entertainers in their tweets increases with the latter's followers count while we don't find any such pattern with INC ($r = 0.15, p-value < 0.01$). While we observed in table 4 that male entertainers are engaged significantly more by BJP, the current observation indicates that they in particular mention male entertainers of high following more. While this indicates that BJP might be benefiting from engaging with highly followed celebrities, we discuss the discourse and study the public reception of their engagement in subsequent sections to better validate these arguments.

On the other hand, we observe that INC's strength of replying to the tweets of female entertainers decreases with the latter's followers count ($r = -0.1, p-value < 0.01$). Incidentally, we also observed in Table 3 that the mean partisanship in replying, $PE_{c \rightarrow P}^{RE}$, for female entertainers is -0.49 (Cohen's $d = -0.199$). Though the average is not statistically significant, it indicates that there are a considerable number of female entertainers of high following who reply more to INC politicians. While we suspect that this could perhaps be due to the attacking tweets of top-followed female entertainers on INC politicians to which the latter might have avoided replying back, we seek to find out this in subsequent analysis.

5.2 Discourse in Engagement: Greetings, Call to Actions, and Criticisms

As discussed in section 4.2, we build four BTM language models for the celebrities-politicians engagement. For all the models, except that corresponding to the engagement from celebrities to INC, we find that six topic clusters have the highest coherence scores. Though the coherence scores for nine topics were highest in modeling the engagements from celebrities to INC, we choose to use six topic (only differing by 6.3 from the highest for celebrities to INC) clusters for all the models for the rest of the paper for explanations purposes. We leave the exploration of interpretation with different number of clusters to future work.

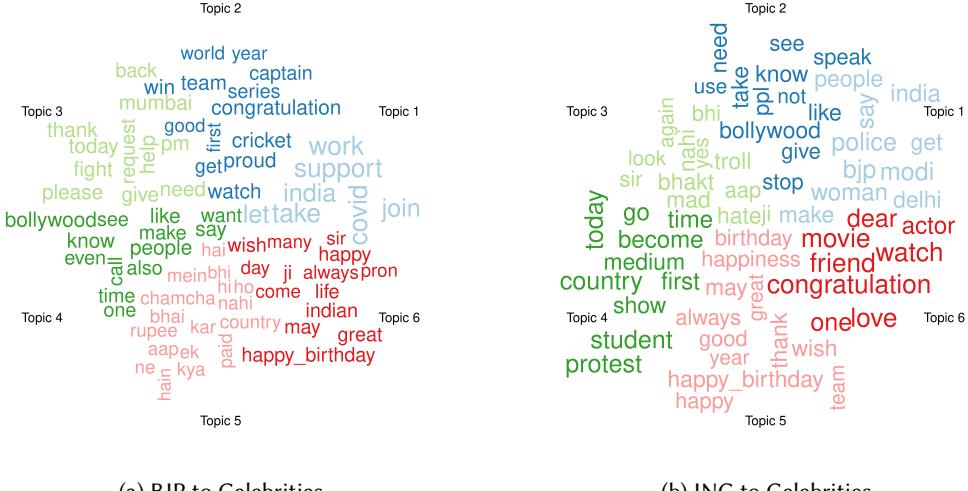


Fig. 4. Word Clouds weighted by *relevance* scores of each topic for models corresponding to engagement tweets from politicians to celebrities. The topics are numbered counter-clockwise starting from light-blue colored region. The color codes for the topics are - light-blue : topic-1, dark-blue : topic-2, light-green : topic-3, dark-green : topic-4, light-red : topic-5, and dark-red : topic-6.

5.2.1 Politicians Engaging with celebrities. We first extract the most relevant keywords for each topic for models corresponding to BJP and INC politicians' engagement with celebrities. Figure 4 shows the word clouds of the topics. The topics are numbered counter-clockwise starting from light-blue colored region. In BJP's engagement with the celebrities, it can be observed that the topics numbered 2, 3, and 6 are associated with greetings related themes: birthday wishes, thank you messages, and congratulatory notes for winning sports tournaments. Tweet (1) is an example of such message where politician *Pitambar Acharya* (the state spokesperson of BJP Bihar) mentions the celebrity *Virat Kohli* (the Indian male cricket captain) for winning a tournament against West Indies. In particular, we find that while 90% of BJP's engagement tweets with athletes belong to this style of messaging, it is 68% of tweets with entertainers. Similarly, the topics numbered 5 and 6 of INC politicians' engagement tweets revolve around congratulatory messages and birthday wishes. However, only 53% of tweets from INC to athletes are greetings type in contrast to the high percentage in the case of BJP.

*"Hearty congratulations to Team India for successive Series Victory against West Indies.
#BarabatiODI @imV Kohl" - @AcharyaPitamba1 -(1)*

The tweets of BJP politicians belonging to topics numbered 1, 4 and 5 are targeted mostly to the entertainers around two themes: (a) call to action to support COVID-19-related Twitter campaigns, and (b) controversies about the death of Bollywood actor Sushant Singh Rajput [8] and the allegations of paid tweeting by certain left leaning celebrities. For instance, Tweet 2 shows how the Prime Minister calls the Bollywood celebrities to support the country's struggle against the pandemic. On the other hand, in contrast to how BJP engages with celebrities, the INC politicians tweet about a range of topics that are criticising the celebrities — the topics 2 and 4 revolve around events like the 2020 Delhi riots [33] and the CAA-NRC protests, and involves attacking the

celebrities' silence on these issues. Tweet 3 is one example where INC politicians mention famous entertainers in the film industry to criticize their silence on issues pressing the nation.

"Every effort counts, every contribution matters. I thank leading film personalities @MadhuriDixit, @bhumipednekar, @ayushmannk, @aliaa08, @karanjohar for supporting PM-CARES. By being proactive and taking right precautions we have to overcome COVID-19."
- @narendramodi -(2)

"When whole nation from hill to sea are protesting against this CAA imposed wrongly by @BJP4India led Central Government then we have observed that big shot Bollywood actors like @SrBachchan , @iamsrk , Ranbir Kapoor etc are silent.They are neither protesting nor commenting....???" - @ArijitmINC -(3)

In summary, we observe that more than 80% of tweets of BJP with celebrities consist of greetings related contents while less 65% of the tweets of INC are greetings related. Figure 5 summarizes the topical characteristics of the politicians' engagement tweets in terms of those that are greetings-related. We refer to this categorization based on greetings just to highlight the sheer volume of such messages that BJP propagates to celebrities on Twitter. We observed in previous section (5.1.2) that BJP engages with athletes significantly more than the extent to which INC does. Now, we know that they majorly send out wishes and congratulations in these messages. We will see in the next section (5.3.1) on studying the public validation of engagement tweets that the BJP in fact capitalizes on such messages. We note that BJP's approach to celebrity outreach is presented as not explicitly partisan, but instead involves call to action to events of nationalistic or societal importance. This is mostly observed in their engagements with entertainers. Further, this observation aligns with the observation in section 5.1.2 where we found specifically that BJP mentions male entertainers of high following more. They also weave a nationalistic narrative while wishing the athletes on their birthdays. While INC politicians too carry out this strategy, the mere strength and coordination of BJP in such directed communication occludes the opposition's efforts.

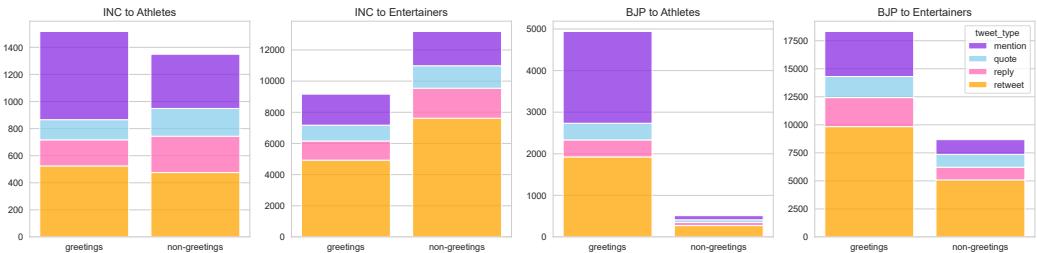


Fig. 5. Characterization of politicians' engagement tweets with celebrities into greetings and non-greetings. The y-axis in all figures denote the total number of tweets. The first two figures from left corresponds to INC's engagement with athletes and entertainers, whereas the next two corresponds to BJP's. Each bar is further stacked as per the *mode of engagement*.

5.2.2 Celebrities Engaging with Politicians. Figure 6 shows the word clouds of the topics for models corresponding to celebrities engagement with BJP and INC politicians. We observe that some of the topics in celebrities' engagement tweets are greetings but not to the extent of what was observed in politicians' engagement. In celebrities' engagement with BJP, only the topic numbered 4 is predominantly about congratulatory notes, thank you messages, and birthday wishes. Similarly, in their engagement with INC, the topics 1 and 4 revolve around greetings style messages. In particular, we observe that athletes engagement with politicians of both parties are mostly greetings (>60%).

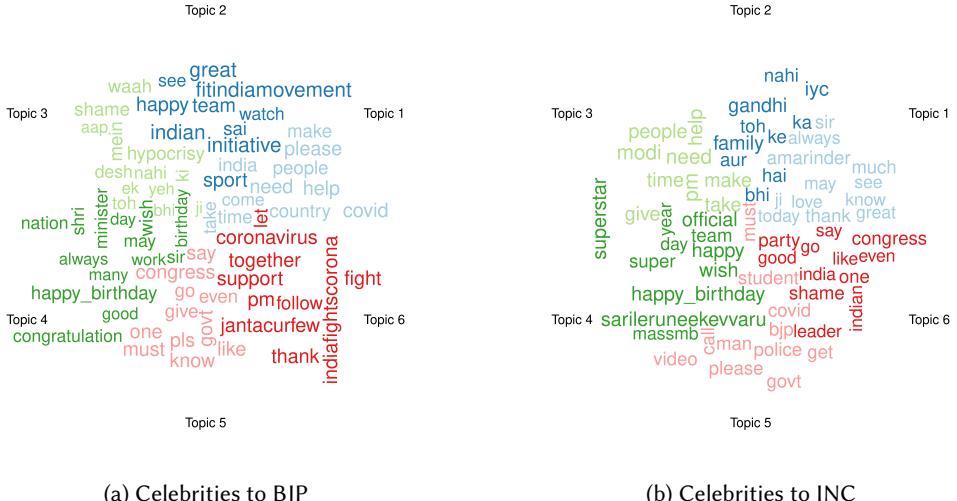


Fig. 6. Word Clouds weighted by *relevance* scores of each topic for models corresponding to engagement tweets from celebrities to politicians. The topics are numbered counter-clockwise starting from light-blue colored region. The color codes for the topics are - light-blue : topic-1, dark-blue : topic-2, light-green : topic-3, dark-green : topic-4, light-red : topic-5, and dark-red : topic-6.

On the other hand, the non-greetings-type tweets of celebrities to BJP carries a range of sentiments. The topics number 1, 2 and 6 in Figure 6 are centered around the hashtags initiatives of the ruling party on Twitter. Several hashtags such as #jantacurfew and #9baje9minute [14] was created by the BJP government to raise support in their initiatives against the pandemic – the first hashtag calls for following the nation-wide curfew and the second hashtag is where the Prime Minister asked every citizen to switch off all lights at their residences to express solidarity with the nation. In all these tweets, the BJP is invoking the support of celebrities who in fact express it by retweeting and mentioning the politicians' tweets. Similarly, the topic 2 revolves calls for the celebrities to join the BJP-created online fitness movements using hashtags such as #FitIndiaMovement. Many celebrities, especially athletes responded to the politicians, as shown in Tweet 4. Some of these campaigns like the one in Tweet 5 were also heavily criticised for their copy-pasta nature[4].

"I welcome you all to come and participate in the #FitIndiaMovement #FreedomRun and make this initiative a success. Because only a fit citizen can make fit country. Jai Hind, Jai #Run4India @PMOIndia @KirenRijiju @narendramodi" - @BajrangPunia -(4)

"I thank @narendramodi for his initiative to honour and empower women this Diwali. Acknowledgement motivates us to work harder and make India proud. #bharatkilaxmi." - @NSaina -(5)

There were also a significant amount of tweets belonging to topic 3 and 5 where the celebrities expressed their criticisms against the ruling BJP and the opposition INC respectively. While tweets belonging to topic 3 calls out various ineffective government policies and inaction of BJP politicians, tweets in topic 5 talk against the opposition parties. For instance, tweets like 6 attacked the ruling party over their inaction against environmental hazards. On the other hand, tweet 7 is an example of how BJP-supporting celebrities pass scathing attacks against opposition on the farmers protest against the farm acts that were passed by the Parliament of India in September 2020. Similar to the

above observations, celebrities' engagement with INC in figure 6 also show that while some of the celebrities attacked the INC, others supported INC and raised voices against the ruling party. For instance, the tweet 8 attacks BJP on their handling of government's COVID relief funds.

"Dear @PrakashJavdekar @drharshvardhan @narendramodi @rajnathsingh What's your govt doing? Farmers in Punjab, Haryana burning stubble, your reps in Delhi promoting crackers. North India is choking on smog, but you're quiet? Are you inhaling another type of smoke!" - @VishalDadlani -(6)

"One of the leaders of #UrbanNaxals is back to work. The presence of #MedhaPatkar in d #FarmersProtests certifies the seriousness of this cause. It's a major ploy to destabilise the country for which they r paid. They don't realise that d country is now ruled by @narendramodi" - @ashokepandit -(7)

"PMCARES funds are perhaps to help industrialists in distress only. Not to help migrant labours with train/bus fares when they have just lost livelihood . But maybe we shall shower flowers while they make their way on foot." - @IamOnir -(8)

Figure 7 summarizes the topical characteristics of the celebrities' engagement tweets in terms of those that are greetings and non-greetings. We observed in section 5.1.1 that athletes engaged by mentions more with BJP than with INC. Further, the distribution plot of engagement tweets in figure 7 shows that athletes mention BJP politicians more in greetings-type tweets. It can be inferred from these observations that most of the athletes' engagement with BJP by mentions is about showing their support to initiatives such as "Fit India Movement" started by high profile politicians such as the Prime Minister.

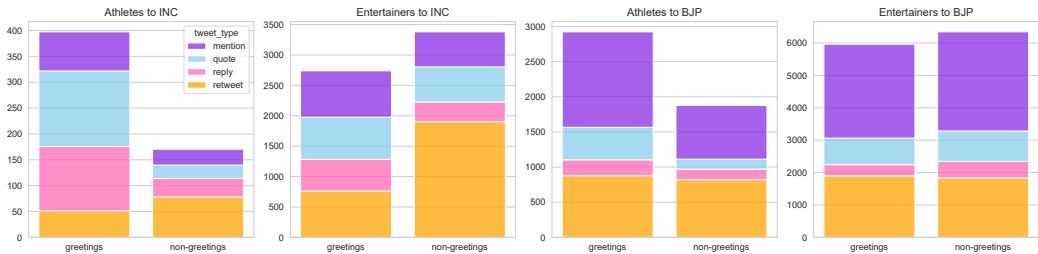


Fig. 7. Characterization of celebrities' engagement tweets with politicians into greetings and non-greetings. The y-axis in all figures denote the total number of tweets. The first two figures from left corresponds to celebrities' engagement with INC and, whereas the next two corresponds to the engagement with BJP. Each bar is further stacked as per the *mode* of engagement.

5.3 Public Reception: Risks or Benefits?

We refer to the ratios, $RT_{p \rightarrow c}$ and $RT_{c \rightarrow p}$ (section 4.3), to examine respectively the reception of a politician's engagement with celebrities and a celebrity's engagement with the politicians. These ratios compare the overall retweets received by anyone on Twitter for engagement tweets to the overall retweets received for non-engagement tweets. We use linear mixed models in Model rt-pc to determine the relationships of these two ratios with politicians of different parties and celebrities of different vocation and followers level. Table 5 and 6 show the results for athletes and entertainers respectively. For BJP politicians, the coefficient β_2 indicates the influence of celebrities' followers count on the outcome whereas for INC politicians, the sum of β_2 and β_3 indicates the influence of followers count. The coefficient β_3 indicates the difference in the rates of change in outcomes for one unit change in the followers counts, between BJP and INC.

Independent Variables	Dependent variable $RT_{p \rightarrow c}$: athletes	Dependent variable $RT_{c \rightarrow p}$: athletes
pol_party.INC (β_1)	0.699* (0.277)	0.711 (0.737)
athlete_followers (β_2)	0.120*** (0.019)	-0.184*** (0.043)
pol_party.INC * athlete_followers (β_3)	-0.061*** (0.018)	-0.076 (0.056)
constant	-1.883*** (0.267)	1.919*** (0.553)
N	4582	1283

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 5. Mixed-effects random models results for athletes. The dependent variables in second and third columns are $RT_{p \rightarrow c}$ and $RT_{c \rightarrow p}$ respectively, for athletes. For each variable in the first column, the estimate is provided with the standard error in parenthesis.

Independent Variables	Dependent variable $RT_{p \rightarrow c}$: entertainers	Dependent variable $RT_{c \rightarrow p}$: entertainers
pol_party.INC (β_1)	-0.201 (0.249)	3.000*** (0.518)
entertainers_followers (β_2)	0.156*** (0.021)	0.038 (0.033)
pol_party.INC * entertainers_followers (β_3)	0.003 (0.016)	-0.236*** (0.038)
constant	-2.035*** (0.298)	-0.599 (0.443)
N	9122	3706

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 6. Mixed-effects random models results for entertainers. The dependent variables in second and third columns are $RT_{p \rightarrow c}$ and $RT_{c \rightarrow p}$ respectively, for entertainers. For each variable, the estimate is provided with the standard error in parenthesis.

5.3.1 Is there an advantage in engaging with celebrities?

Engaging with athletes. To determine if politicians' engagement with athletes gets validation from the public, we refer to the coefficients of the second column in Table 5 where the dependent variable is $RT_{p \rightarrow c}$. A positive value for β_2 (0.12) implies that BJP politicians' retweet ratio $RT_{p \rightarrow c}$ increases with the followers count of athletes they engage with. This shows that BJP politicians receive more retweets, on average, when they engage with athletes of high following. Further, the coefficient β_3 is negative and significant, showing that rate of increase in $RT_{p \rightarrow c}$ with athletes' followers count is smaller for INC compared to BJP. However, the sum of β_2 and β_3 is positive ($0.120 - 0.061 = 0.059$), showing that INC politicians too receive more retweet, on average, when they engage with athletes of high following.

In summary, while politicians from both parties enjoy a high retweet of their message when they engage with athletes of high following, BJP's rate of increase in the retweets received with athletes' followers count is significantly greater than INC's rate of increase. We observed in section 5.1.2 that BJP engages with athletes significantly more than the INC. Combining this with the current observation, it suggests that BJP is very effective in reaching out to athletes, especially to those with high followers base. However, though INC politicians receive higher retweet for their engagement tweets with athletes, they are not reaching out to athletes to the same extent as BJP. It is important to note that our results are insufficient to make causal claims but they highlight strong correlation between public validation and celebrity engagement by politicians.

Engaging with entertainers. Table 6 shows the results of regression similar to Table 5 but for entertainers. We refer to the second column to examine the relationship of independent variables with $RT_{p \rightarrow c}$. The significance of coefficient β_2 indicates that the BJP politicians receive more when engaging with entertainers of increasing followers count, on average. However, the insignificance of other coefficients implies that though INC politicians too get more retweets on average when

they engage with entertainers of high following, there is no significant difference in the rates of increase in $RT_{p \rightarrow c}$ with entertainers' followers count between BJP and INC.

Thus, combining with the previous findings corresponding to athletes, we note that BJP gets more retweets on average when they engage with any celebrity of relatively higher followers. We also found in 5.1.2 that BJP mentions male entertainers of high following more in their tweets compared to INC. The current analysis, we believe, helps to unpack at least one motivating factors for this engagement behaviour – BJP politicians get positive validation from the public when they engage with athletes and entertainers, especially of high followers. In other words, on average, they get more retweets when they engage with celebrities than when they do not. On the other hand, while INC politicians too receive higher retweets on average when engaging with entertainers, we observed that in section 5.1.2 they are not significantly engaging with entertainers except through retweets, that too with only female entertainers.

5.3.2 Is there a risk in engaging with politicians?

Athletes' engagement. We refer to the results of the second regression (third column in Table 5) to understand athletes' engagement with politicians. The coefficient β_2 (-0.184) is negative and significant, indicating that the median retweet count of athletes engaging with BJP drops down with increase in their followers count. In other words, high followed athletes receive lesser retweets, on average, when they engage with BJP. Similar inference holds for athletes engaging with INC too since the coefficient β_3 is insignificant. This also indicates that there is no significant difference in the rate of decrease between the two parties. While we observed in section 5.1.1 that athletes engage heavily with BJP across all modes of engagement, the topic analysis in previous section showed that the athletes mostly engage with BJP in times of representing the nation. A major portion of these tweets however amount to trivial 'greetings' messages which for highly followed athletes wouldn't have received as many retweets as their other contents.

Entertainers' engagement. We then refer to the results of second regression (third column in Table 6) to understand the motivating factors behind the entertainers' engagement with politicians. The coefficient β_2 (0.038) is not significant implying that the median retweet counts of a entertainers, who engages more with BJP, do not vary as their followers count increase. On the other hand, the coefficient β_3 (-0.236) is significant and negative, meaning the median retweet count of entertainers engaging more with INC drops down with their followers count. In other words, this result shows that entertainers with high following lose in their retweet counts when they engage more with INC, while there is no effect when they engage with BJP. Incidentally, we also observed in section 5.1.1 that highly followed entertainers quote-tweet INC politicians significantly less compared to entertainers with relatively less following.

This is an interesting and important finding, and underlines why engaging with the incumbent is more 'valuable' than engaging with the opposition in this case. However, this is also a finding that needs deeper, nuanced examination to analyze what may be the drivers of disadvantage in this engagement - particularly whether this is specific to this party, or whether there is a general incumbent advantage. A-list celebrities (who are in the upper end of followers count) typically do not want to risk losing their following by taking political stance. However, Bollywood actor Akshay Kumar used his celebrity status to shed positive light on the BJP, with little to no effect on his following. This comes with much nuance, as the BJP is also the current party in power and therefore may be a preferable option when choosing a political endorsement. Kumar did a much publicized interview with Prime Minister Modi of the BJP, which went viral on social media and also featured on television. Yet Kumar went out of his way to repeatedly refer to the interview as 'apolitical' which presents the discussion in a positive light, and also offers plausible deniability of any political bias by the celebrity.

6 DISCUSSION

Our results highlight some of the important differences between A-list celebrities and less popular celebrities, both in terms of how politicians engage them as well as how they engage back with politicians. The conservative approach of celebrities in engaging back with politicians can be a related to various factors ranging from diversity of celebrities' following, or the financial terms on which celebrities offer endorsements. Aligning oneself with a specific political party can alienate valuable constituents of one's fanbase. This is further supported by our finding that while politicians' get more retweeted when they engage a celebrity, the converse is not true for celebrities – in fact, there was a negative effect, particularly for A-list celebrities, when they engaged with the center-left opposition party, the INC.

Leadership in Engagement. Our results also show an overwhelming advantage enjoyed by the ruling BJP in engaging celebrities. Our analysis of Narendra Modi's tweets show the importance of incumbency here – while engaging an opposition party member can be seen as a pure political statement, engaging with someone in power, particularly holding cabinet rank, can be understood in terms of involvement in governance than pure politics. Here, Narendra Modi's leadership is crucial. As fan following goes, he outscores every major entertainer or sportsperson in India in terms of aggregate social media following and has traditionally engaged publicly with more celebrities and at greater frequency than any major Indian politician in the past [69]. Narendra Modi engaged celebrities both in his 2014 campaign and in his 2019 campaign to 'bring out the vote' which is a non-partisan cause. But more importantly, he continued to engage celebrities through his tenure, even during non-campaign periods on various administrative schemes relating to the environment, gender issues and development, and took casual pictures with stars [71]. These efforts eased celebrities into political engagement without those being explicitly seen as such.

Indeed, we see that the Prime Minister's nudges to celebrities have been important – every single celebrity with more than 10 million followers has at some point been tweeted to by the prime minister during the election season, and not a single one of these tweets were requests for political support. All but three have tweeted back to him. In all, in the election season alone, Modi tweeted to 79 of the celebrities. And because Modi consistently engaged celebrities as an incumbent, a typical engagement presents itself as one with the head of government, rather than with a politician. These cultivated relationships then make for easy engagement during a campaign. In comparison, his rival, Rahul Gandhi, tweeted at just one of the celebrities with million+ followers during the election, who did not tweet back at him.

Organized Engagement. While Modi's leadership as the key mover of celebrities for his party is important, the organization of the party itself around engagements is equally important. The data show that across the BJP, engagements with celebrities, particularly A-listers, is significant, the more popular the celebrity, the more likely that BJP politicians will engage with them, whereas with the INC, the pattern is exactly the opposite. While this may appear as a missed opportunity, it may also be that the party does not expect celebrities to reciprocate engagement due to their perceived alignment with the other party.

This again is reflected by the data – an overwhelming majority of the celebrities in our sample have two-way exchanges with the BJP, even if they do not explicitly align themselves with the party. Gestural interactions, such as asking a celebrity to be involved in a street cleaning initiative or to bring out the vote are easy ways of making gentle overtures that do not involve any explicitly political commitment, and indeed allow a celebrity to gain positive public relations by participating in socially desirable causes.

Efficient Non-Partisan Engagement. The engagement of athletes requires some attention. Again, here BJP holds the key because of the prime minister's past engagements with the sportspersons

through good luck wishes prior to, or regards following a sporting event. Nationalism is a particularly central theme of the BJP campaign, and support for athletes aligns well thematically, since most athletes tweeted to represent the country. Most major performances by athletes at international events are rewarded by congratulatory tweets from the ruling party. Further, the word clouds also indicate that the politicians in power reach out to sports stars before and after major games. In particular, the leader of the party, Narendra Modi, has greeted, encouraged, and congratulated cricketers repeatedly throughout his term as Prime Minister [37]. He has even once compared athletes to soldiers protecting India's borders, claiming that "players are the real heroes" [100]. Indeed, the celebrity of the stars and their success has served in some cases to reinforce exclusionary nationalism [23]. In these interactions, politicians embody a persona that reinforces the apolitical, nationalistic identity that is represented through sports [101].

What the BJP has succeeded in doing is presenting the spectre of harmonious support from a social elite. It has done this by making it easy for celebrities to gently signal alignment, but in doing so, has also made it difficult for them to signal support for the opposition. The Indian case shows how social media has made celebrity engagement in elections, a central part of political signaling. Only a handful of the top 50 most followed Indian celebrities were able to steer clear of referring to any politician through the election season – and part of this related to how their hands were forced by key politicians, including the prime minister, tweeting at them.

Social media can play a uniquely important role with certain forms of signaling that would be difficult or impossible in a media environment that is mediated through a free and professional press. Casual exchanges between a politician and a celebrity may not be newsworthy in a traditional media environment, but are not only documented, but consumed, liked, and circulated through social media. Politicians have the means of creating hundreds of pseudo-events, riding on appropriately termed hashtags, at regular intervals, and by simply adding the Twitter handle of another public person, the event finds its own community. It is here also that we propose the scholarship is blindsided. The majority of work in celebrity and politics does not carefully look at the role of incumbency, especially if there are strong demotivators from aligning with the opposition. Modi's engagement with stars and its intersection with themes of nationalism and national harmony presents a cause for re-examining the ways celebrities can engage with politicians in the presence of a hegemonic discourse overlaid on an economic environment that already punishes stars for professing unpopular opinions. Free will is often taken as a given, but the deterrents to it need to be carefully considered in work going ahead.

The trends we see here portend the suggestion that the social elite is aligned with the agenda of a single political party, if only through not appearing to be openly opposed to it. That this party has also been able to capture a massive majority in parliament raises the possibility of harmful consequences for dissent, especially if important public actors like celebrities do not appear as potential allies against its discourse.

7 LIMITATIONS AND FUTURE RESEARCH

Celebrities play an important part in both the politics of the public sphere, and specifically, the discourse around professional politicians. In this work, we explored how politically interactive celebrities in India are by demonstrating a means to analyze interaction between celebrities and politicians. Our study shows that celebrity engagement adds value to the online outreach of political actors. In the Indian case, the scale and concentration of celebrity engagement with an incumbent party underlines ways in which the social media sphere can appear to speak in harmony for one side. This has important consequences for the future of democratic elections, both for the content and style of campaigns. However, we acknowledge a few limitations in our data sampling and methodology, and note areas of further improvement.

Limitations in data. One of the major limitations of our politicians dataset is discounting those from parties other than the two major national-level parties — BJP and INC. India's political landscape is complex involving interactions between multiple parties both at the national and regional levels. In particular, the time period we have chosen also overlaps with the state legislative elections of Delhi and Bihar and these elections involved politicians' invoking and interaction with celebrities and vice versa. In particular, the sudden death of Hindi national and television actor Sushant Singh Rajput became a hot political issue in the discourse of Bihar state elections [3]. Another example of such regional influence is the case of Tamil film actor Rajinikanth whose much anticipated political entry got pulled back later by himself citing health reasons [38]. Though our analyses would capture the engagement of Tamil Nadu state BJP politicians, who tried to capitalize on the actor's mass appeal, it would miss many other political interactions between celebrities and regional Tamil Nadu politicians [102].

An important reason that hindered us from analyzing politicians from more parties is because of the challenges in curating an equal amount of celebrities. Currently, we have proportionate politicians and celebrities sample size. It is important to note that, in the absence of any off-the-shelf list of Indian celebrities on Twitter, it is a challenging time-consuming task, involving a lot of manual verification, to curate a good sample of Indian celebrities. Though we provided rigorous foundations on the methodology of curating celebrities, the scaling up of the method beyond a few thousands is extremely difficult. Hence, while it is relatively simpler to expand the politicians sample using NivaDuck pipeline [5] (NivaDuck itself has some limitations on capturing many regional political accounts), it is hard to do so for celebrities. Hence, in order to avoid statistical issues due to unequal sample sizes between politicians and celebrities, we restricted ourselves the politicians from BJP and INC only.

Limitations in Methodology. We also see some methodological challenges with our approach. First, we observe a few limitations in applying our work to different contexts. India is unique in its celebrity culture, particularly the existence of individual thriving film industries in various states, which may not be the case for many other countries for similar comparison. Also, the history of film stars in politics, particularly in the state of Tamil Nadu, further complicates the possibility of an easy comparison. Hence it is not easy to transfer the learnings to other contexts, especially outside India. Further, our definitions of engagements is framed for studying the partisanship between two parties only which may be limiting in contexts where multi-party partisanship is predominant.

In trying to operationalize public reception of celebrity politician engagements, we use retweets received by anyone on Twitter as a proxy for value being added to a politician's outreach. Retweets themselves may be an inadequate measure of popularity, but for the purposes of our work, since a retweet is a direct measure of message propagation, we feel it is a reasonable measure of value added to the political campaign. However, future work can look closer at other measures such as likes and the sentiment in comments.

Further, our definition of engagement is sound for the purposes of measuring levels of interaction, and our use of politician followbacks of celebrities is a good indicator of affinity. However, despite finding a strong positive correlation in two-way engagements between celebrities and politicians, we cannot make any causal assumptions as to why either side is interacting with the other. It would be interesting to see if celebrities engage with politicians because politicians retweet or mention them first, or vice-versa. To this end, there is need for more future work to determine the context and sentiment of these engagements.

Finally, while we clubbed different topics of engagement broadly into greetings and non-greetings, we recognize that the latter bucket is heterogeneous and carry diverse sentiments. While we used this categorization to emphasize the sheer magnitude of greetings messages that BJP sends out to

celebrities, which has proven to be a good strategy in getting public validation, it is important to look deeper into this bucket and unpack other themes of engagement.

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