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IMPACT OF PARTISANSHIP ON MOBILITY IN INDIA DURING COVID-19

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The data and materials for this study can be found at https://osf.io/bdeam/. All errors are sole responsibility of the authors.

Impact of Partisanship on Mobility in India during COVID-19

Abstract

Political ideology reflects the way people conduct themselves in the social world, affecting their decisions and actions, including those pertaining to health care. The current study aimed to understand whether district-level partisanship affects mobility during COVID-19 in India, a pluralistic and multi-party country. The study used secondary data from the 2019 Indian general elections and the COVID-19 Community Mobility Reports (2020, 2021) by Google. Results indicate that during the first COVID-19 wave in India (May-October, 2020), there was a greater change in the amount of time spent at the places of residence in districts based on the partisanship of its representative. Further, during the peak of the second wave (April-June, 2021), partisanship predicted a higher change in mobility to groceries and pharmacies. Gender of the district-level representative also played a role in the relationship between partisanship and mobility during the pandemic.

Keywords: partisanship, mobility, COVID-19, big data, preventive health behaviours

Impact of Partisanship on Mobility in India during COVID-19

1. Introduction

The World Health Organisation in March 2020 declared a world-wide pandemic owing to the outbreak of COVID-19. Since then, in response to the various COVID-19 waves, governments across the world undertook measures like national lockdowns, mobility restrictions, and social distancing to reduce the spread of the virus. The current study aimed to understand whether district-level partisanship and the gender of the representative impact mobility of individuals during COVID-19 in India.

Partisanship and compliance during COVID-19

Differences in political ideologies reflect the way people conduct themselves in the social world– through their cognitive, social, and motivational tendencies and styles (Jost, Federico, & Napier, 2009). A partisan ideological commitment is closely tied to a person's social identity (Huddy, Mason, & Aarøe, 2015), which is also tied to other important identities (for example, one's racial identity, ethnicity, minority group) of the individual (Sanders et al., 2014; White, Laird, & Allen, 2014) as well as their personality (Hetherington & Weiler, 2018). Decades of research conducted in the realm of political science has shown how partisan affiliation is much more than an individual's standing on a spectrum of political ideology (Campbell et al., 1960); it is a reflection of an individual's deeply held values and social groupings (Mason & Wronski 2018). Further, it has a significant influence on how an individual collects, processes, and responds to information (Zaller, 2013; Lenz, 2013; Levendusky, 2013; Bartels & Achen, 2017). People's decisions/actions (Margolis & Sances, 2017), even those pertaining to health care (Baum, 2011; Sances & Clinton, 2019) are all influenced by their political standing. Hence, the amount of control partisanship exercises on policy support is also significant (Pliskin et al., 2014; Rudolph, 2009). Ideological commitments often supersede the

actual beliefs people may hold about specific policies. This was observed especially during the COVID-19 pandemic where partisanship inhibited compliance towards preventive health measures against the virus (like, wearing masks, sanitizing hands, social distancing). In the USA, liberals showed greater concern towards the spread of the virus and showed compliance by decreasing outings compared to conservatives (van Holm et al., 2020). Conservative states also showed a significant delay in implementing social distancing measures and witnessed a significant rise in infected cases compared to liberal states (Rosenfeld, 2020).

During the course of the pandemic, various studies conducted on partisan differences and compliance to COVID-19 preventive measures demonstrate evidence that point to the role of partisanship in compliance with those measures. There are partisan differences seen in response to stay-at-home orders given at the state level (Cornelson & Miloucheva, 2020; Grossman et al., 2020; Painter & Qiu, 2020). There are also differences in risk perceptions and social distancing behaviours across political parties as well as other demographics (Fan et al., 2020). Republican and Democratic areas differed in how frequently they googled COVID-19 related queries and also in mobility patterns (Barrios & Hochberg, 2020). Republicans are also less likely to adhere to non-pharmaceutical interventions (NPI) and perceive the COVID-19 pandemic as a risk (Hsiechen, Espinozo, & Slovic, 2020). In a study conducted by Clinton et al. (2021), partisanship was seen as an important factor in explaining mobility than actual local incidences of COVID-19. Allcott et al. (2020) have demonstrated this very phenomenon using GPS trackers. That is, the authors collected data from SafeGraph, a company that uses GPS location to track daily and weekly visits of people to various points of interest (POIs) which includes hospitals, hotels, restaurants, and other places. The study noted that counties that supported Donald Trump (the Republican candidate) in the 2016 US Presidential elections practiced less social-distancing compared to counties that supported Hillary Clinton (Democratic candidate). Republican counties were less likely to carry out stay-at-

home orders as well (Painter & Qiu, 2021). With the help of daily data on the reported activities of US adults, the study demonstrated that Democrats are 13.1% less likely to be socially mobile than Republicans, who are 27.8% more likely to be socially mobile (Painter & Qiu, 2021). A similar pattern is seen in terms of vaccination rates– Republican counties had lower vaccination rates than Democratic counties (Ye, 2021).

Partisans are known to actively dislike other party's members (Webster & Abramowitz, 2017). The preference that partisans show towards their own party members over others (Iyengar & Westwood, 2015) has been argued to be because of the combination of the increasing rise of ideologically aligned media (Grossmann & Hopkins, 2018) and partisan polarization (Lee, 2015).

Media and partisan preferences

The media plays a massively influential role in priming and emphasising issues and framing them in a particular manner (Iyengar & Kinder, 1987; Miller & Krosnick, 2000). Looking at the number of studies on how media affects public behaviour and attitudes, a substantial portion have been dedicated to understanding how media shapes partisan preferences and political ideologies. Grossman and Hopkins (2018) discuss how ideological media heavily influenced the 2018 elections in the USA. They argue that the past three decades have witnessed an expansion of digital and online media. whichprovides the public with a variety of options to access political information other than the usual traditional print media. Conservative media like Fox News in the US have played a crucial role at both the mass and elite levels as an extended component of the Republican party network in the US whereas, on the left, unified ideological media has played a substantial role in influencing Democratic politics (Grossman & Hopkins, 2018). These media outlets have done their bit in mobilising voters and contributing to ideological polarization, and nationalization of elections in the USA.

Online media creates a sort of echo chamber for people to share their opinions and information that conforms to the group they belong to and also reinforces their held beliefs (Jamieson & Capella, 2008), which could potentially contribute to exacerbating political polarization (Prior, 2013; Guess et al., 2021). Guess and colleagues (2021) point out that although exposure to partisan media content can potentially cause political polarization, it is unclear if this is due to an inadvertent audience or one that is already polarized. Moreover, although the direct effect of online partisan media on polarization is minimal, there could potentially be subtle and cumulative effects of the same. The authors also point out a rather interesting finding. Long-term exposure to content that challenges people's opinions, whether partisan or not, may be discounted and the public's overall trust and confidence in media would potentially decrease. This shows that partisan media could lead to polarisation by not directly influencing the opinions of the public in all cases, but by reducing overall trust in "crucial informational intermediaries that work to sustain agreement on a shared set of facts and norms." (Guess et al., 2021, pp. 6).

Gender and perceptions about candidate's competence

For centuries, leadership has been predominantly a male prerogative. Although women are slowly gaining access to elite positions, compared to their male counterparts, women holding top positions are still rare. However, for women who do hold positions as leaders, does their gender affect how people perceive them in these roles?

Within the political sphere, the question of whether a candidate or leader's gender affects the public's compliance with policies has long been investigated. Studies have shown that men and women candidates are judged differently when it comes to evaluating their competence in specific policy areas. Sapiro (1981) found that female candidates were considered competent in handling issues related to education and health, whereas male candidates were considered competent in areas of farming and the military. Subsequent research studies in this area have shown similar results; when

handling public policies relating to issues of nurturance and compassion (for example, education, help for the poor and the aged, support for the arts, and social security), female candidates were considered superior whereas men were seen competent in handling issues related to finance, international affairs, crime, and national security (Huddy & Terkildsen 1993; Sanbonmatsu, 2002; Dolan, 2014; Holman, Merolla, and Zechmeister 2016).

Implicit bias against women may also play a role in how women candidates are perceived, especially when they hold higher positions. If a woman takes on a leadership role, people are more likely to perceive the candidate negatively than if the candidate were a man. This might be because there seems to exist a prejudice surrounding women leaders that they possess less agency than their male counterparts and that functioning in a leadership role is inconsistent with many people's beliefs about what is considered as "desirable" behaviour from women (Eagly & Karau, 2002). Research has also shown that voters are more likely to become conservative in times of perceived threat and this conservative ideology can potentially lead to doubts about women's competence in "nontraditional roles" such as a leader (Bonanno, 2007).

Prior studies have shown that in times of crisis, voters prefer to have strong and aggressive leaders (Gadarian, 2010). The COVID-19 pandemic has proven to be one of the greatest humanitarian crises the world has witnessed. World leaders have tried their best to mitigate the spread of the virus and loss of life; new outlets have noted the success of various women-led nations in containing the spread of COVID-19 (Henley and de Jong, 2021). In a recent study conducted by Bauer, Kim, and Kweon (2020), Americans were surveyed on their willingness to comply with policy recommendations pertaining to COVID-19 regarding preventive health behaviours (e.g., social distancing, face coverings, and contact tracing) made by female leaders compared to those by male leaders. The authors investigated how policy compliance among the public varied based on the leader's gender and partisanship. The findings demonstrated that a leader's gender had little

influence on policy compliance during the pandemic. With respect to somewhat personally invasive recommendations, like engaging in contact tracing, compliance among respondents saw a weak increase when the recommendations were made by an in-partisan female leader; however, a greater willingness to comply with policies was seen when respondents received recommendations made by an in-partisan male leader than respondents who received no recommendation by the same male leader.

Evidence has shown that voters exhibit gender-motivated biases toward female leaders when they belong to an opposing party (Bauer 2018; Ditonto 2017; Krupnikov and Bauer 2014). Individuals may show resistance in complying with policies recommended by female leaders if they belong to another political party. To understand this within the Indian context, the present study looks to investigate whether citizens in India exhibit gender-motivated biases that influence district-level partisanship and mobility during the pandemic.

The Indian political scenario and COVID-19

India is known for having the largest democracy that functions with a parliamentary system of government. The country is also known for its diverse population, with people of different communities, cultures, and racial outlooks– following different religious practices and social norms– all of which were politically integrated during the British rule (Haokip, 2011). India's parliamentary system of government was adopted in an attempt to represent and accommodate the country's diversity while also understanding the accountability and control that comes from the Parliamentary system which, compared to other systems, is much higher (Shankar & Rodrigues, 2011). With its democracy and multiparty system, India embraces a pluralistic society that continues to influence and shape the socio-political life of its citizens.

Indian politics is largely dominated by an underlying divide between Hindus and Muslims where a person's religious affiliation is slowly becoming central to one's social identity– acting as a

springboard for political mobilization, growth of nationalism, and of political parties that are religiously motivated (Brass 2005). Religious beliefs are often instrumentalized by political parties like the Bharatiya Janata Party (BJP), India's present ruling party, which advocates for the cause of Hindus and prioritizes their interests (Chatterji, Hansen, and Jaffrelot, 2019). Hence, it is likely that partisanship and one's religious identity influence each other (Heath, Verniers, and Kumar 2015; Chhibber and Verma, 2019). Bardianathan and Chauchard (2021) found that religious-nationalist partisanship correlated significantly with the likelihood of believing COVID-19 misinformation in India. Findings showed that partisans who are strong supporters of the BJP were able to correctly identify fewer stories highlighting misinformation about the pandemic than others.

The unprecedented nature of the pandemic brought the need for governments to experiment with their public welfare policies. For a federal nation, this meant that various subnational bodies too experimented with their methods to contain the spread of the virus. However, for a country whose federal system is highly centralised, the state governments of India lack complete fiscal and legislative authority and autonomy to take actions and enact policies. In a recent article published by Kumar, Nataraj, and Kundu (2021), the authors compared the period before and after India underwent a complete lockdown and examined the impact of social-distancing policies at the central and state level on the mobility of citizens in and around the country. The findings of the study showed that India's national lockdown led to a considerable decrease in mobility; however, this was not uniform across states. Before the Central government intervened, state-level policies on citizens' mobility were in place; however, they were highly heterogeneous. Several states failed to reduce mobility despite the enactment of various social-distancing policies. On the other hand, it was seen that states that successfully managed to achieve higher compliance with social distancing policies before the national lockdown was imposed did better in maintaining social distancing, obeying stay-at-home orders, and lessening overall mobility during the same.

The findings of the study by Kumar and colleagues (2021) point to the fact that although centralised policies in unprecedented times are necessary, the effectiveness of those policies largely depends on the individual capacity of the states. However, citizens are likely to perceive government actions through various lenses, including religion, gender of the candidate, caste, and ethnic identity. Moreover, the media has played a rather influential role in propagating these identity-based narratives which, in turn, affects compliance towards policies.

The nexus of social identity, self-categorization, partisan preference

Tajfel (1972) first introduced the concept of social identity and referred to it as "the individual's knowledge that he belongs to certain social groups together with some emotional and value significance to him of his group membership" (Tajfel, 1972, pp. 292). According to Hogg and Terry (2000), this group or intergroup relationship that is established for the purpose of self-conception is generally adopted to serve the purpose of comparison between groups. These intergroup evaluative comparisons are conducted to seek distinctiveness from other groups (Turner, 1975). Our social identity stems from the affiliations and associations we make in different settings to various categories and social groups and the categorization is often based on some shared characteristics, experience, beliefs, values, or attributes. This process of categorization and the feeling of "us" and "them" leads to ingroup favouritism (Turner, 1975) and outgroup discrimination (Billig & Tajfel, 1973). By simply introducing individuals to the notion of a group, the participants in Billig and Tajfel's study (1973) discriminated against members assigned to another group. The mere effect of social categorization on individuals' perceptions and behaviour can explain why partisans prefer their own party members over others.

Studies have extended the social identity theory to the self-categorization theory (Hogg and Terry, 2000), which explains the underlying cognitive process that drives the ascription of one to a group. The authors speak of depersonalization—the process whereby an individual no longer

views oneself as a unique individual but rather, a representation of the relevant group prototype. Given this strong affiliation to the group, individuals are more likely to be persuaded by messages from their in-group than any other group (Turner et al., 1987). In a recent study by Nair and Selvaraj (2021), pandemic responses in the US and India were examined through a cultural and social identity lens. The authors examined the cognitions and attitudes of individuals in response to the pandemic in the two groups–the Republicans and Democrats–and highlighted the differing cognitive appraisals of the pandemic and the subsequent behaviour within members of the two groups. Given the uncertainty brought by the pandemic, it is likely that the unprecedented nature of the current scenario induced a stronger identification and feeling of oneness with the relevant group identities (Democrat or Republican), which could have potentially led to the distortions in processing information regarding the virus (Nair & Selvaraj, 2021). While examining the scenario in India, the authors highlighted differing behavioural responses among the rural and urban population, where migrant workers were forced to trek back to their villages and urban residents had the means to social distance and observe other measures of safety.

The urban and rural population is one such group categorization that differed markedly in their cognitive appraisals and behaviours in response to the pandemic.The focus also needs to be shifted to groups that differ in political identities and affiliations. The social identity and self-categorization theory lend themselves as a cornerstone to understanding partisan preferences and the likelihood of people showing support and trust in their party members and complying with policies and with respect to the COVID-19 pandemic, complying with preventive health measures. Given the magnitude of influence that partisanship, political ideologies, and gender stereotypes exercise on the perceptions and decisions of the people, it is imperative to investigate just how political ideology plays a role in risk perception and the subsequent compliance with preventive health measures to minimize those risks especially in a pluralistic and multi-party society like India.

In order to reduce the transmission of the COVID-19 virus, the government of India had issued social-distancing norms, which includes limiting travel, avoiding gatherings and crowded areas, closure of non-essential businesses and the like, thus reducing the mobility of the citizens in and around the country.

Against this background, the present study aimed to understand whether district-level partisanship in India affects mobility to essential versus non-essential places during COVID-19 and if the gender of the district-level representative influences the relationship between district-level partisanship and mobility during the pandemic. This is indeed of immense significance, especially during the pandemic, as one's degree of compliance with preventive measures has an impact on their health as well as those around them. The study also sheds light upon how the gender of political representatives influences people's partisan behaviour, trust, and compliance with preventive measures.

Specifically, we preregistered the following research questions:

RQ1- Does district-level partisanship in India affect mobility during COVID-19?

RQ2- Does the gender of the district-level representative play a role in the relationship between district-level partisanship and mobility during COVID-19?

Methodology

Publicly available secondary data sets were used in the current study.

Variables and Data Sources

Partisanship

Partisanship was measured in terms of the partisanship of the Lok Sabha member for a given constituency in India. Specifically, members of the Lok Sabha (the "lower" house of India's bicameral parliament) are elected directly. Typically, members hold their seats for five years. We utilized the

dataset representing the 17th General Assembly Elections (2019) from the Lok Dhaba repository (Agrawal et al., 2021).

The dataset includes information about who contested the elections, their gender, their party affiliation, the votes and vote share, their incumbency status, their caste, turnout, etc. For the current study, party affiliation was re-coded into 'BJP' (Bharatiya Janata Party), a right-wing party in India and other parties as 'Non-BJP.'

Mobility

The study uses the COVID-19 Community Mobility Reports (2020 and 2021; Google 2020) for all regions in India. This publicly available dataset indicates the movement trends by region across different categories of places[1] like, retail and recreation (includes places like restaurants, cafes, shopping centres, movie theatres), grocery and pharmacy, parks (national parks, public gardens, public beaches), transit stations (includes public transport hubs like subway, bus, train stations), workplace, and residential. These can be further categorised into essential (groceries and pharmacies) and non-essential (retail and recreation centres, parks, transit stations, and workplace) places of mobility. It shows the changes in visits and length of stay at different places compared to a baseline calculated between 3rd January to 6th February, 2020 (prior to the national lockdown announced in India from 25th March, 2020). The data included depended on user settings, connectivity, and meeting the privacy threshold. The dataset was created using aggregated, anonymized sets of data from users who had turned on their location history setting.

Data Cleaning

[1] The residential category was measured as the change in duration (hours) spent in places of residence. The retail and recreation, grocery and pharmacy, parks, transit stations, and workplace categories were measured as a change in the total number of visitors.

The elections data were filtered for including only the candidates that won the general election in 2019 in each constituency. The community mobility reports included daily movement trends for the following places: retail and recreation, grocery and pharmacy, parks, transit stations, workplace, and residential. Starting from 15th February to 31st December (for the year 2020) the data were initially averaged into monthly mobility trends for each sub-region/district. The same process was used for the year 2021 that included data from 1st January to 21st August.

The two datasets were merged and only the overlapping regions between the two were included in the analysis. After merging, the final dataset included a total of 3553 data points for the year 2020 (February-December) and 2584 data points for the year 2021 (January-August).

Results

RStudio software version 1.4.1717 was used for the analysis (RStudio team, 2021). The monthly data were filtered into 3-month intervals for each district.

Descriptive statistics and Correlations

Descriptive statistics along with zero-order correlations between variables were computed for 3-month intervals in the years 2020 and 2021 (see Table 1 & Table 2; for disaggregated results refer to Appendix A). Categorical variables were dummy coded for the analysis: political party (BJP = 0, non-BJP = 1), incumbency (True = 1, False = 0), and reported gender of the candidate (Male = 1, Female = 0).

For the year 2020, there was a lesser percentage change in total number of visitors to retail and recreational activities (M = -35.37, SD = 24.62), parks (M = -24.8, SD = 35.83), transit stations (M = -26.08, SD = 23.6), and workplaces (M = -15.92, SD = 15.61) and an increase in mobility to groceries and pharmacies (M = 7.68, SD = 30.2) as compared to the baseline. Additionally, there was a higher percentage change in the number of hours spent in places of residence (M = 12.14, SD = 7.5). A similar trend was observed during 2021, there was a lower change in visitors to retail and recreational centres (M = -21.23, SD = 18.54), parks (M = -5.45, SD = 29.25), transit stations (M = -13.23, SD = 22.15), and workplaces (M = -16.45, SD = 14.53) and a greater percentage change in mobility to groceries and pharmacies (M = 24.72, SD = 31.52) as compared to the baseline. Change in the number of hours spent in places of residence (M = 13.98, SD = 6.73) also increased in 2021.

Table 1

Descriptive statistics and correlation matrix for 2020

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.89	-.40**	.17**	-.05**						
5. Retail & recreation	-35.37	24.62	-.04**	0	-0.03	0.01					
6. Grocery & pharmacy	7.68	30.2	-0.01	-0.02	0.03	0	.40**				
7. Parks	-24.8	35.83	.11**	-.13**	-.06**	-.17**	.40**	.20**			
8. Transit stations	-26.08	23.6	0	-.04*	-0.03	.04*	.80**	.47**	.41**		
9. Workplace	-15.92	15.61	0.02	-.05**	-0.02	-.08**	.72**	.59**	.45**	.73**	
10. Residential	12.14	7.5	.09**	0	.06**	0.01	-.80**	-.44**	-.39**	-.70**	-.78**

Note. * p < .05. ** p < .01.

Table 2
Descriptive statistics and correlation matrix for 2021

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.89	-.40**	.17**	-.05*						
5. Retail & recreation	-21.23	18.54	0.02	-0.01	-0.02	-0.04					
6. Grocery & pharmacy	24.72	31.52	.09**	-.05*	.07**	-.04*	.65**				
7. Parks	-5.45	29.25	0.02	-.11**	-.07**	-.14**	.53**	.45**			
8. Transit stations	-13.23	22.15	-0.02	-0.04	-0.02	.07**	.73**	.55**	.40**		
9. Workplace	-16.45	14.53	.04*	-0.03	-0.02	-0.02	.84**	.57**	.47**	.71**	
10. Residential	13.98	6.73	0	0.01	.04*	0	-.71**	-.44**	-.25**	-.61**	-.71**

Note. * p < .05. ** p < .01.

4. Discussion and Concluding Remarks

Regression Analysis

Partisanship and mobility

A simple regression analysis was performed to understand whether partisanship (BJP vs non-BJP) impacts mobility (refer to Table 3 & Table 4). There was a lesser percentage change in mobility to retail and recreation activities as well as parks during May to October, 2020 in districts having a non-BJP as compared to a BJP representative. During that time there was also a higher percentage change in the amount of time spent at the places of residence in districts with a non-BJP representative. Additionally, during November and December (2020), there was a lower percentage change in mobility to retail and recreation, and a higher percentage change in mobility to workplaces in non-BJP represented districts.

The beginning of 2021 showed a greater percentage change in mobility to retail and recreational centres, along with grocery and pharmacies in non-BJP districts. Furthermore, there was a lower percentage change in the time spent in residential areas. During the peak of the second wave (April-June, 2021), there was a greater percentage change in terms of mobility in districts with a non-BJP representative to groceries and pharmacies, and workplaces. Following that, in July and August (2021) as well, there was a higher percentage change in mobility to grocery and pharmacy stores in non-BJP as compared to BJP districts.

Gender of the representative and mobility

Furthermore, gender of the political representative in districts played a role in mobility to essential and non-essential places (refer to Table 5 & Table 6). A significant percentage change in mobility to retail and recreation activities (August-December, 2020), grocery and pharmacy stores (November, 2020- March, 2021; July and August, 2021), parks (August-October, 2020; April-August, 2021), and workplaces (July and August, 2021) was observed when the district representative was a male as compared to a female. Amount of time spent in residential areas during May-October, 2020 and April-August, 2021 also differed based on the gender of the representative.

Table 3

Simple regression analysis for the impact of partisanship on mobility (2020)

Place	**Month**	**b- NonBJP**	**t**	**p**	**R^2**
Retail and	February, March, April	-1.03	-0.49	0.63	0.0002
recreation	May, June, July	-2.29	-2.76	0.01*	0.0078
	August, September, October	-3.75	-3.86	0.00*	0.015

	November, December	-1.99	-2.01	0.04*	0.006
Grocery	February, March, April	0.89	0.68	0.50	0.0005
and	May, June, July	-1.65	-0.74	0.46	0.0005
pharmacy	August, September, October	-1.22	-0.77	0.44	0.0006
	November, December	-0.69	-0.36	0.72	0.0002
Parks	February, March, April	3.68	1.99	0.05	0.0041
	May, June, July	16.33	5.69	0.00*	0.0326
	August, September, October	8.43	4.03	0.00*	0.0165
	November, December	3.54	1.39	0.17	0.0029
Transit	February, March, April	0.38	0.20	0.84	4.01E-05
stations	May, June, July	0.89	0.76	0.45	0.0006
	August, September, October	-0.96	-0.84	0.40	0.0007
	November, December	-1.62	-1.06	0.29	0.0018
Workplace	February, March, April	0.95	0.66	0.51	0.0005
	May, June, July	0.45	0.50	0.62	0.0003
	August, September, October	0.13	0.17	0.17	2.86E-05
	November, December	1.67	2.41	0.02*	0.0090
Residential	February, March, April	1.00	1.34	0.18	0.0019
	May, June, July	2.01	4.84	0.00*	2.37E-02
	August, September, October	1.62	5.32	0.00*	0.0285
	November, December	0.42	1.61	0.11	0.004

Note. * $p < .05$.

Table 4

Simple regression analysis for the impact of partisanship on mobility (2021)

Place	**Month**	**b- NonBJP**	**t**	**p**	**R^2**
Retail and	January, February, March	2.28	3.74	0.00*	0.0143
recreation	April, May, June	0.63	0.47	0.64	0.0002
	July, August	-0.71	-0.67	0.50	0.0007
Grocery and	January, February, March	4.38	2.79	0.01*	0.0081
pharmacy	April, May, June	6.47	2.95	0.00*	0.0089
	July, August	7.83	3.14	0.00*	0.0154
Parks	January, February, March	1.24	0.76	0.45	0.0006
	April, May, June	1.89	0.93	0.36	0.00089
	July, August	0.32	0.13	0.89	2.76E-05
Transit stations	January, February, March	0.64	0.61	0.54	0.00038
	April, May, June	-1.02	-0.71	0.48	0.00052
	July, August	-3.72	-2.41	0.02*	0.00896
Workplace	January, February, March	0.83	1.76	0.08	0.0032
	April, May, June	2.24	2.49	0.01*	0.00636
	July, August	0.45	0.56	0.58	0.00048
Residential	January, February, March	-0.44	-2.01	0.04*	0.00416
	April, May, June	0.17	0.35	0.73	0.00012
	July, August	0.58	1.81	0.07	0.005

Note. * $p < .05$.

Table 5

Simple regression analysis for the impact of gender of the candidate on mobility (2020)

Place	**Month**	**b- Male**	**t**	**p**	**R^2**
Retail and	February, March, April	-2.14	-0.69	0.49	0.0005
recreation	May, June, July	0.37	0.30	0.76	9.57E-05
	August, September, October	-2.88	-2.02	0.04*	0.004
	November, December	-3.33	-2.31	0.02*	0.008
Grocery	February, March, April	0.80	0.41	0.68	0.0002
and	May, June, July	2.29	0.68	0.50	0.0005
pharmacy	August, September, October	2.09	0.88	0.38	0.0008
	November, December	5.77	1.97	0.049*	0.006
Parks	February, March, April	-3.73	-1.36	0.17	0.002
	May, June, July	-7.22	-1.68	0.09	0.003
	August, September, October	-8.05	-2.58	0.01*	0.007
	November, December	-6.80	-1.80	0.07	0.005
Transit	February, March, April	-0.99	-0.36	0.72	0.0001
stations	May, June, July	-2.23	-1.30	0.20	0.002
	August, September, October	-3.05	-1.81	0.07	0.003
	November, December	-2.97	-1.33	0.18	0.003
Workplace	February, March, April	-0.08	-0.04	0.97	1.57E-06
	May, June, July	-1.17	-0.88	0.38	0.0008
	August, September, October	-1.93	-1.67	0.10	0.003
	November, December	-0.00	-0.00	1.00	1.42E-08

Residential	February, March, April	0.92	0.83	0.41	0.0007
	May, June, July	1.93	3.15	0.00*	0.01
	August, September, October	1.62	3.60	0.00*	0.013
	November, December	0.73	1.91	0.06	0.006

Note. * $p < .05$.

Table 6

Simple regression analysis for the impact of gender of the candidate on mobility (2021)

Place	**Month**	**b- Male**	**t**	**p**	**R^2**
Retail and	January, February, March	0.76	0.85	0.40	0.0007
recreation	April, May, June	-2.03	-1.02	0.31	0.001
	July, August	-1.52	-0.97	0.33	0.001
Grocery and	January, February, March	8.59	3.60	0.00*	0.013
pharmacy	April, May, June	3.57	1.08	0.28	0.001
	July, August	9.80	2.58	0.01*	0.01
Parks	January, February, March	-4.17	-1.74	0.08	0.003
	April, May, June	-6.64	-2.20	0.03*	0.005
	July, August	-8.80	-2.51	0.01*	9.70E-03
Transit stations	January, February, March	0.21	0.13	0.89	1.87E-05
	April, May, June	-2.67	-1.27	0.21	0.002
	July, August	-2.56	-1.13	0.26	0.002
Workplace	January, February, March	0.18	0.26	0.79	7.02E-05
	April, May, June	-0.89	-0.67	0.50	0.0005
	July, August	-2.47	-2.11	0.04*	0.007
Residential	January, February, March	-0.01	-0.02	0.98	4.67E-07
	April, May, June	1.39	2.03	0.04*	0.004
	July, August	1.17	2.50	0.01*	0.0096

Note. * $p < .05$.

Partisanship, gender of the representative, and mobility

Linear contrast regressions were computed to understand the interaction between partisanship and the gender of the political leader in a district on the movement to essential vs non-essential places (refer to Table 7 & Table 8). It was noted that from May to July (2020), there was a lesser percentage change in mobility to parks among BJP (M = -34.85) as compared to non-BJP (M = -17.27) partisans when the representative was a female (b = 17.58, t = 2.12, p = 0.03). Furthermore, it was also found that there was a lesser percentage change in mobility to parks during August-October, 2020 for a male (M = -37.02) as compared to a female (M = -29.24) candidate when they belonged to BJP (b = -7.78, t = -2.01, p = 0.04).

In terms of transit stations, a difference in mobility was observed between BJP and non-BJP partisans when the representative was female (August-October, 2020: b = -7.21, t = -2.19, p = 0.03; November-December, 2020: b = -8.90, t = -2.04, p = 0.04) and between male and female candidates when the representative belonged to BJP (May-July, 2020: b = -5,11, t = -2.39, p = 0.02; August-October, 2020: b = -5.55, t = -2.65, p = 0.008; November-December, 2020: b = -5.87, t = -2.12, p = 0.03). From May to October, 2020 and January-March, 2021, mobility to transit stations saw a greater percentage change in the number of visitors with an additional difference between BJP and non-BJP when the representative was a male.

Mobility to groceries and pharmacies saw an additional difference between BJP vs non-BJP governed districts during April-August, 2021 when the candidate was a male. Finally, mobility to workplaces (b = -3.01, t = -2.07, p = 0.04) and number of hours spent in one's residence (b = 1.46, t = -2.51, p = 0.01) were significantly different between male and female candidates belonging to BJP districts during July and August, 2021.

Table 7

Contrast regression analysis (2020)

Place	Month	b- Non-BJP:Male	t	p	R^2
Retail and	February, March, April	-0.07	-0.01	0.99	0.0007
recreation	May, June, July	0.20	0.08	0.94	0.008
	August, September, October	-1.63	-0.55	0.58	0.0195
	November, December	-2.79	-0.93	0.36	0.0156
Grocery and	February, March, April	0.14	0.03	0.97	0.0006
pharmacy	May, June, July	8.34	1.21	0.23	0.003
	August, September, October	6.30	1.28	0.20	0.003
	November, December	5.61	0.93	0.35	0.008
Parks	February, March, April	-1.69	-0.30	0.77	0.006
	May, June, July	-1.36	-0.15	0.88	0.0358
	August, September, October	-1.13	-0.18	0.86	0.0237
	November, December	-6.94	-0.88	0.38	0.009
Transit stations	February, March, April	1.02	0.17	0.86	0.0002
	May, June, July	8.07	2.24	0.03*	0.0076
	August, September, October	7.15	2.03	0.04*	0.008
	November, December	8.33	1.79	0.07	0.009
Workplace	February, March, April	-1.93	0.44	0.66	0.0006
	May, June, July	-1.00	-0.36	0.72	0.001
	August, September, October	-1.44	-0.60	0.55	0.003
	November, December	-1.65	-0.78	0.44	0.0099
Residential	February, March, April	0.92	0.40	0.69	0.003
	May, June, July	1.96	1.55	0.12	0.036

August, September, October	1.09	1.17	0.24	0.24
November, December	0.01	0.02	0.99	0.0095

Note. * p < .05.

Table 8

Contrast regression analysis (2021)

Place	**Month**	**b- Non-BJP:Male**	**t**	**p**	**R^2**
Retail and	January, February, March	1.44	0.77	0.44	0.016
recreation	April, May, June	0.26	0.06	0.95	0.001
	July, August	1.53	0.47	0.64	0.003
Grocery and	January, February, March	9.54	1.96	0.05	0.0258
pharmacy	April, May, June	13.50	1.99	0.047*	0.014
	July, August	19.36	2.51	0.01*	0.036
Parks	January, February, March	-1.45	-0.29	0.77	0.004
	April, May, June	-10.77	-1.71	0.09	0.009
	July, August	-4.36	-0.60	0.55	1.00E-02
Transit	January, February, March	7.36	2.28	0.02*	6.00E-03
stations	April, May, June	4.04	0.92	0.36	0.003
	July, August	4.31	0.91	0.36	0.012
Workplace	January, February, March	0.22	0.15	0.88	3.00E-03
	April, May, June	0.04	0.02	0.99	0.007
	July, August	1.50	0.61	0.54	0.008
Residential	January, February, March	-0.94	-1.42	0.16	6.00E-03
	April, May, June	-0.77	-0.53	0.59	0.005
	July, August	-0.85	-0.87	0.39	0.0157

Note. * $p < .05$.

Discussion

Extensive research has demonstrated how partisanship modulates the public's response and behaviour in the context of the COVID-19 pandemic (Bhanot and Hopkins, 2020; Druckman et al., 2021; Gadarian et al., 2021). Although these studies have largely focused on western societies, there is a general lack of research on nations with a multi-party system like India. In the present study, impact of district-level partisanship on essential and non-essential mobility in India during the pandemic was assessed. Our results provide evidence for the same and extend the findings of studies that present support for the relationship between political ideology and COVID-19 compliant behaviours.

Partisanship and mobility

To contain the spread of the virus, social distancing and other preventive health behaviours were recommended across countries in the world. However, responses to these measures were far from uniform across states in certain countries. A clear political divide in the early reaction to the COVID-19 pandemic was seen in a US study where Republicans were less likely to respond and comply with CDC-recommended behaviours (like wearing masks, maintaining social distance, getting vaccinated, etc.) than Democrats (Gadarian, Goodman, & Pepinsky, 2021). Our results present a similar picture with respect to partisanship and mobility in India. In the first year of the pandemic (2020), public's mobility to essential and non-essential places were influenced by the party representatives present in the particular district. In districts with a non-BJP representative, change in mobility to non-essential areas for retail and recreational purposes between the months of May to December was lesser. Non-BJP governed districts did not witness a significant decline in essential mobility especially during the months where the first wave peaked. The uncertainty during the first year of the pandemic had the public scrambling and stocking up on supplies

(Aljazeera, 2020), which could have led the public to visit grocery shops and pharmacies as well as transit stations.

The results obtained for the year 2020 depict non-BJP governed districts having shown greater compliance with social-distancing policies by reducing non-essential mobility towards areas of retail and recreation and increase in time spent at home. The COVID-19 trajectory in the country witnessed a drastic change starting from mid-June 2020 where mobility restrictions were eased and shopping centres, places of worship, hotels, and restaurants reopened from 8 June 2020. This easing of mobility restrictions resulted in an alarming increase in infections in various states (Choutagunta, Manish, & Rajagopalan, 2021). However, according to our results, non-BJP governed districts seemed to have done better at maintaining lower levels of non-essential mobility for the purpose of retail and recreation during these months and spent more time at home. The states of Chhattisgarh, Kerala, and Uttarakhand were prime examples where an adaptive lockdown approach even after the nationwide easing of restrictions helped maintain lower levels of mobility (Choutagunta, Manish, & Rajagopalan, 2021), two of which (Chhattisgarh and Kerala) are non-BJP governed states.

Social media and WhatsApp groups were fraught with misinformation surrounding the pandemic especially in the initial months where not much about the virus was known. Misinformation about COVID-19 in India is largely circulated through WhatsApp groups and in the study conducted by Badrinathan and Chauchard (2020), high religiosity and support for the BJP correlated significantly with vulnerability to misinformation about COVID-19. This misinformation prevalent in India largely surrounds “miracle cures” such as the reliance on home remedies, ayurvedic medicines, and homeopathy (Badrinathan and Chauchard, 2020). Beliefs in miracle cures can exacerbate the effects of the pandemic if believers ignore scientific facts and measures to contain the spread of the virus such as social distancing (Bridgman et al., 2020). It is

likely that because many alternative remedies have roots in traditional Indian culture, nationalist groups advocate for these methods of treatments; thid was the case in the state of Haryana, a northern state in India, announcing the distribution of herbal medications to COVID-19 patients (Mishra, 2021).

Mobility to groceries and pharmacies was greater in non-BJP governed states during the second year of the pandemic (2021). This was seen even in months where the caseloads in the country were the highest (April and May 2021). During the second wave, the states of Maharashtra, Kerala, Karnataka, Andhra Pradesh, Tamil Nadu, Delhi, Uttar Pradesh, and West Bengal had the highest caseloads (Kar et al., 2021). Of these, six are governed by non-BJP parties, which corroborate the results we obtained. The increasing rate of infections in these states would have contributed to the increase in mobility to essential areas like the pharmacies and groceries, possibly to stock on supplies in the prospect that a nationwide lockdown is imposed. Mobility to transit stations was significantly less in non-BJP governed states during July and August 2021. This could possibly be due to the fact that most public transport is used by students and employees. As the second wave was significantly severe in the country with schools and colleges remaining shut and workplaces functioning with fewer staff, the months following the second wave may have brought with it over-cautiousness with people avoiding public transport.

Gender of the candidate and mobility

The results also demonstrate how the gender of the candidate impacts mobility in the district. Districts where a male representative was present, non-essential mobility to areas of retail and recreation, and parks was significantly lesser between the months of August and December 2020, which is when the first wave peaked and had started to decline in the country. There is a possibility that citizens have gender-motivated biases when it comes to compliance with policies. The COVID-19 pandemic is one of the most gruesome humanitarian and health crises the world

has witnessed. During the first fave, the mystery and uncertainty surrounding the virus had gripped nations across the world. Prior research has shown how people generally prefer strong and aggressive leaders in times of crisis (Gadarian, 2010). The competence of women leaders are often doubted because for a women to hold a position of a leader is "non-traditional" (Bonanno, 2007), which often leads to people perceiving the competence of women representatives negatively because women are not "typically" associated with leadership roles (Eagly & Karau, 2002).

The findings also show significant interactions between partisanship and the gender of the political leader in a district in terms of mobility to parks (May-October, 2020), transit stations (May, 2020- March 2021), groceries and pharmacies (April-August, 2021), and workplaces (July and August, 2021). There is a possibility that either gender or partisanship had a greater influence on the public's mobility. Studies show that partisans actively dislike other party's members (Webster & Abramowitz, 2017) and we see this dislike being present even more so if the other party member is female (Bauer 2017; Ditonto 2017; Krupnikov and Bauer 2014), which could contribute to the resistance in complying with policies recommended by them.

Limitations

Even though our research highlights how partisanship and the gender of the representative impacts mobility in the district, the study was not without limitations. First, the mobility data were collected using Google's Community Mobility Reports (CMR). These reports only reflect the movement of users who possess GPS-enabled smartphones and hence, mobility within rural areas where not many use these types of mobile phones/devices or of people within urban areas who do not own these smartphones cannot be gauged. Second, though the official contact tracing app from the Government of India (ArogyaSetu) required the use of locations to function, many may have apprehensions about data misuse and thus may avoid using maps or having their mobile

phone location history on; therefore, a complete estimate of the public's mobility in the country was not possible. Next, we dichotomized parties as BJP and non-BJP; however, the party system in India is more diverse. Specifically, 29 parties were represented within the dataset. However, BJP representatives constituted a large proportion (62.85%), and the other parties did not have a comparative proportion (e.g., AIUDF, one of the parties with the smallest proportion, had .31% and INC, the party with the second largest proportion had 9.91%); therefore, it was not possible to meaningfully compare between each of the parties.

Conclusion

This study points to the possible link between partisanship and mobility along with the impact of gender-motivated bias towards political representatives on compliance with social-distancing restrictions. However, the relationship between them cannot be described as causal. Our study provides insights on how response to COVID-19 and compliance with policies could potentially be affected by partisanship and how gender of the candidate also influences these responses by the public. We believe that further research on the influence of partisanship and candidate's gender on public mobility and compliance with policies in India can attempt to understand the *why* behind these partisan differences and the perception of women leaders in the country.

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Appendix A

Table A1

Descriptive statistics and correlation matrix for February, March, and April, 2020

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.9	-.40**	.17**	-0.05						
5. Retail & recreation	-31.31	31.75	-0.02	0	-0.02	-0.01					
6. Grocery & pharmacy	-17.17	19.67	0.02	-0.01	0.01	-0.03	.84**				
7. Parks	-15.16	27.8	.06*	-.10**	-0.04	-.09**	.69**	.67**			
8. Transit stations	-27.32	28.74	0.01	-0.02	-0.01	-0.01	.97**	.82**	.69**		
9. Workplace	-19.99	21.68	0.02	-0.04	0	-.08*	.96**	.86**	.72**	.94**	
10. Residential	11.32	11.27	0.04	0.01	0.03	0.02	-.97**	-.84**	-.69**	-.94**	-.96**

Note. * p < .05. ** p < .01.

Table A2

Descriptive statistics and correlation matrix for May, June, and July, 2020

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.9	-.40**	.17**	-0.05						
5. Retail & recreation	-56.64	12.49	-.09**	0	0.01	.06*					
6. Grocery & pharmacy	15.39	33.16	-0.02	-0.03	0.02	-0.01	.66**				
7. Parks	-34.88	43.73	.18**	-.18**	-0.05	-.21**	.19**	.26**			
8. Transit stations	-38.04	17.66	0.02	-.06*	-0.04	0.03	.59**	.55**	.27**		
9. Workplace	-18.52	13.62	0.02	-.09**	-0.03	-.12**	.72**	.72**	.40**	.68**	
10. Residential	14.93	6.32	.15**	0.02	.10**	0.03	-.71**	-.64**	-.29**	-.52**	-.75**

Note. * p < .05. ** p < .01.

Table A3

Descriptive statistics and correlation matrix for August, September, October, 2020

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.9	-.40**	.17**	-0.05						
5. Retail & recreation	-31.38	14.68	-.12**	0.01	-.06*	0.05					
6. Grocery & pharmacy	12.3	23.5	-0.03	-0.02	0.03	0.04	.59**				
7. Parks	-32.91	31.7	.13**	-.16**	-.08**	-.20**	.26**	.21**			
8. Transit stations	-25.16	17.29	-0.03	-.07*	-0.06	.10**	.54**	.45**	.24**		
9. Workplace	-11.56	11.83	0.01	-0.05	-0.05	-0.05	.55**	.47**	.47**	.51**	
10. Residential	11.45	4.64	.17**	0	.11**	-.06*	-.58**	-.46**	-.28**	-.39**	-.50**

Note. * p < .05. ** p < .01.

Table A4

Descriptive statistics and correlation matrix for November and December, 2020

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.9	-.40**	.17**	-0.05						
5. Retail & recreation	-15.55	12.11	-.08*	0.04	-.09*	-0.03					
6. Grocery & pharmacy	26.74	23.45	-0.01	-0.01	.08*	0	.49**				
7. Parks	-12.01	31.3	0.05	-0.07	-0.07	-.20**	.29**	.20**			
8. Transit stations	-7.56	18.67	-0.04	-0.05	-0.05	.08*	.41**	.30**	.29**		
9. Workplace	-12.42	8.52	.09*	-0.07	0	-.11**	.54**	.37**	.54**	.52**	
10. Residential	10.24	3.19	0.06	-0.02	0.08	.09*	-.37**	-.22**	0.06	-.09*	.11**

Note. * p < .05. ** p < .01.

Table A5

Descriptive statistics and correlation matrix for January, February, and March, 2021

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.9	-.40**	.17**	-0.05						
5. Retail & recreation	-16.09	9.21	.12**	-0.06	0.03	-.08*					
6. Grocery & pharmacy	26.57	23.48	.09**	-0.06	.12**	-0.04	.33**				
7. Parks	-3.96	24.4	0.02	-.10**	-0.06	-.16**	.29**	.24**			
8. Transit stations	-5.61	15.85	0.02	-.11**	0	0.06	.31**	.29**	.13**		
9. Workplace	-8.89	7.04	0.06	-0.03	0.01	-0.02	.56**	.32**	.36**	.32**	
10. Residential	9.72	3.27	-.06*	0.05	0	0.05	-.12**	-.09**	.13**	-.11**	.20**

Note. * p < .05. ** p < .01.

Table A6

Descriptive statistics and correlation matrix for April, May, and June, 2021

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.9	-.40**	.17**	-0.05						
5. Retail & recreation	-34.75	20.15	0.01	0.02	-0.03	-.06*					
6. Grocery & pharmacy	11.23	32.96	.09**	-0.02	0.04	-.07*	.74**				
7. Parks	-14.72	30.69	0.03	-.11**	-.07*	-.15**	.59**	.51**			
8. Transit stations	-27.94	21.59	-0.02	0	-0.04	0.04	.80**	.64**	.48**		
9. Workplace	-29.32	13.59	.08*	-0.03	-0.02	-0.06	.84**	.65**	.48**	.72**	
10. Residential	19.46	7.02	0.01	-0.03	.07*	0.02	-.78**	-.57**	-.35**	-.66**	-.75**

Note. * p < .05. ** p < .01.

Table A7

Descriptive statistics and correlation matrix for July, and August, 2021

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Party	0.37	0.48									
2. Incumbency	0.42	0.49	-.21**								
3. Sex	0.88	0.33	0.02	-0.01							
4. Vote share	53.12	7.9	-.40**	.17**	-0.05						
5. Retail & recreation	-8.66	12.93	-0.03	-0.06	-0.04	0.03					
6. Grocery & pharmacy	42.4	30.47	.12**	-.08*	.10*	-0.01	.41**				
7. Parks	6.24	29.15	0.01	-.13**	-.10*	-.12**	.39**	.32**			
8. Transit stations	-2.54	18.99	-.09*	-0.03	-0.04	.16**	.45**	.32**	.24**		
9. Workplace	-8.49	9.82	0.02	-.09*	-.08*	0.05	.69**	.38**	.42**	.44**	
10. Residential	12.12	3.94	0.07	0.05	.10*	-.08*	-.34**	-.09*	0.07	-.20**	-.20**

Note. * p < .05. ** p < .01.