Brothers in Arms? Covid-19 and Hindu-Muslim conflict in India

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ABSTRACT

Recurrent episodes of Hindu-Muslim violence have plagued India for many years. The Covid-19 pandemic poses new challenges against this backdrop of religious conflict. We explore the performance of various Indian districts in terms of their Covid-19 cases alongside their historical proclivities towards Hindu-Muslim violence. The link between inter-faith cooperation in an area and its subsequent performance in terms of Covid-19 cases is theoretically ambiguous. It may be that areas characterised by low(er) religious antagonism are better able to harness trust within and across communities to jointly battle the spread of the pandemic. Equally, the continual presence of religious violence may induce cooperation within each community and thus check the spread of the virus in riot-prone areas. Combining several district-level datasets, we uncover a robust correlation between various Covid-related outcomes and past conflict measures. Specifically, we find that higher levels of prior Hindu-Muslim conflict is associated with a lower number of Covid-19 infections, deaths and active cases. This pattern is consistent and holds across a wide range of specifications. Our empirical analysis therefore finds strong support for the latter channel.

Keywords: Religious conflict, cooperation, Covid-19, social capital, civic engagement.

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1. INTRODUCTION

Ethnic violence in its multifarious manifestations religious, racial, linguistic etc. is a veritable menace which threatens humanity all over the globe. Such events have only intensified over the last century (see e.g., Miguel, Satyanath and Sergenti (2004)). India is no stranger to ethnic violence by any means. Horrific incidents of religious and caste-based violence have dotted the length and breadth of the nation over several decades, if not centuries. Recurrent episodes of Hindu-Muslim conflict in India (going back to the Partition of the Indian subcontinent in 1947 and earlier) have continued through the second half of the twentieth century, accounting for over 7,000 deaths over 19502000, and many more at the time of Partition. Indeed, 21st century India is just more of the same, and in its pervading sense of menace and repression, possibly much more.

Researchers from various disciplines have approached the issue of Hindu-Muslim violence from different angles. The view espoused by Huntington and others, that it is all about "a clash of civilizations", however disheartening, cannot be wished away in light of the unabashed, untrammelled brutality that has been on display in some of the violent encounters. However, that is surely not the complete explanation. Wilkinson (2004) has explored how the degree of political competition in state-level elections can affect the extent to which (religious, ethnic) minorities become important electorally; that, in turn, can and does influence the attitude of state governments towards riot-containment.

Mitra and Ray (2014) follow the line espoused in Engineer (1984, 1987 and 1994) and others (see e.g., Upadhyaya (1992), Rajgopal (1987), Khan (1992), Bagchi (1990) and Das (2000)) by highlighting an economic component to Hindu-Muslim conflict. They model inter-group conflict driven by economic changes within groups and make the following prediction: if group incomes are low, increasing group incomes raises violence against that group, and lowers violence generated by it. Using data on Hindu-Muslim violence from 1979 to 2000, they show that regional Hindu-Muslim violence rises in response to an increase in the regional average of Muslim incomes. The opposite is true when regional Hindu incomes rise. These empirical findings are of interest in their own right, but one can go further by using their theory as a device for the interpretation of the empirical patterns. In their work, they suggest that Hindu groups have largely been the aggressors in Hindu-Muslim violence in India, or at least in Hindu-Muslim violence driven by instrumental, specifically economic considerations.

Varshney (2003) has underlined the role of civic engagement in a multi-cultural society in influencing the pattern of such inter-group violence. In a related vein, Jha (2013) provides evidence that the degree to which medieval Hindus and Muslims could provide complementary, non-replicable services and a mechanism to share the gains from exchange has resulted in a sustained legacy of ethnic tolerance in some South Asian towns. Specifically, he finds that medieval ports, despite being more ethnically mixed, were five times less prone to Hindu-Muslim riots between 18501950, two centuries after Europeans disrupted Muslim overseas trade dominance, and remained half as prone between 19501995.

The effects of such sectarian violence are not easy to capture the loss of lives and livelihoods are a gross underestimate of the overall deleterious impact on society. The erosion of trust between members of the different communities serves to undermine the social capital in the affected areas this, in turn, depresses both economic activity and the morale of society.

Now consider the coronavirus pandemic and let us examine some of its salient aspects in the Indian context. In India, the pandemics spread and impact have been considerably varied across the different states. To elaborate, the distribution of the disease load has been quite uneven both across states and across rural and urban areas. On 10 May, the eight most-affected Indian states Delhi, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal accounted for 90% of the countrys total disease load, while the eight least-affected states (located predominantly in the north-eastern part of the country) contained 1% of Indias disease load. Moreover, on 10 June, the three metro cities in India namely, Chennai, Delhi, and Mumbai harboured more than 50% of the countrys active disease load (see Jalan and Sen (2020)).

The spread of the infection in society depends upon the extent and nature of human engagement and adherence to protocols (wearing appropriate face coverings, social distancing, regular washing/sanitising of the hands, etc.). Also, for the successful containment of the virus, there has to be trust between private individuals and that between the citizens and the public bodies (see e.g., Heller (2020), Jalan and Sen (2020), Tharoor (2020) on Keralas experience). Without the trust of the citizens on the public authorities, policies like lockdowns (howsoever localised) cannot bear fruit. Relatedly, private individuals have to repose faith in one another as the "externalities" generated by the breach of the safety protocols are quite sizeable, given the highly contagious nature of the virus. Thus, a certain amount of coordinated action predicated by trust is required for the successful combatting of the pandemic. This is more likely to arise organically in areas which have high social capital. Therefore, populations routinely scarred by communal violence are unlikely to evince such coordination.

However, there is another aspect to the dynamic of religious conflict which suggests a contrarian view. Observe that the degree of physical engagement across the different religious communities in communally charged areas is likely to be low. Moreover, the flow of information and the level of cooperation within each religious group is likely to be higher in riot-prone areas; after all the sense of (religious) identification is heightened in such places. Given that residential segregation along religious lines is fairly high (see e.g., Klasnja and Novta (2016)) within cities, towns and villages in most of the country, the heightened cooperation within each community may serve to facilitate measures in curtailing the spread of the virus. This implies that the rate and impact of the infection would be lower in such riot-prone areas.

The preceding discussion clearly suggests that the net effect may well depend upon the relative strengths of these opposing forces. This observation motivates our empirical exercise. We collate data on various Covid-related outcomes specifically, numbers infected, deceased, number of active cases and recovered at the district level and match that to the districts past levels of Hindu-Muslim conflict (between 2014 and 2018, both years inclusive). Using a rich set of control variables, we examine the association between the different Covid-related outcomes and the past conflict measures. We uncover a robust correlation between these two sets of variables. Specifically, we find that higher levels of Hindu-Muslim conflict (2014 2018) is associated with a lower number of Covid-19 infections, deaths and active cases. This pattern is fairly consistent and holds across a wide range of specifications.

We follow Mitra and Ray (2014, 2019) in guiding our choice of control variables. As Mitra and Ray (2014, 2019) document the importance of various economic variables like Muslim and Hindu per-capita expenditures (or their ratio) in predicting the pattern of Hindu-Muslim conflict, we duly

construct such measures and employ them as controls since these economic factors could also have an independent effect on the Covid-related outcomes.

We wish to draw attention to one particular control variable namely, the share of Lok Sabha seats won by the BJP in the district in the 2014 national elections. The idea of measuring BJP presence (details below) is to create an indicator for the pro-Hindutva political forces operating in the region. It should be noted that the BJP is not the sole political player in terms of the ideology and rhetoric relating to the establishment of a "Hindu-rashtra" (roughly translates as "nation of the Hindus"). But as a first pass, focusing on the BJP does seem reasonable. We briefly discuss two recent studies whose findings further justify our approach.

Nellis, Weaver and Rosenzweig (2016) analyse data between 1962 and 2000 to show that the election of Congress legislators in close elections curtailed riot incidents by about 10% over this period. They focus on assembly constituencies that faced close contests and then compare differences in rioting in constituencies where the Congress won to those constituencies where the Congress lost elections to arrive at their findings. They also argue that rioting polarizes voters and harms the electoral prospects of the Congress party in ensuing elections, while it has the opposite effect on the fortunes of its principal rival, the BJP, which gains vote share following such polarization. Iyer and Shrivastava (2018) analyse the effect of Hindu-Muslim riots on state election results. They combine data on geo-coded riots with data on state elections and on demographics and public goods provision for the period 1981 through 2001. To safeguard against the possible endogeneity of riot occurrence to various ambient conditions, they introduce a new instrument which draws upon the random variation in the day of the week that Hindu festivals fall on, as set by a lunar calendar. The probability of a riot increases if a Hindu festival falls on a Friday, the holy day for Muslims. In this manner, they are able to isolate the causal effect of riots on electoral results. They find that riots occurring in the year preceding an election increase the vote share of the BJP by a minimum of 5 percentage points.

In the next section, we discuss the data and the empirical strategy and then present our findings.

2. Empirical Analysis

We begin by describing our various datasets.

2.1. **Data.** We utilise multiple Covid-related outcomes in our analysis. Covid19India.org (C19I) makes available its data for further research and development through api.Covid19india.org. C19I is a volunteer driven and crowdsourced repository that uses a number of publicly available data sources to cleanly archive raw counts of total cases, new cases, mortality, testing patterns and other publicly available data with time and geographic indicators (both state and district). They also report a range of statistics based on the publicly available data such as the case fatality ratio, growth rate, etc. C19I constructs its raw counts from data shared by state press bulletins released by different state governments, official Chief Minister and Health Minister social media handles, Press Bureau of India, Press Trust of India, and ANI reports; they also reflect updates in their data based on official corrections as and when they are documented. The data reported by the Ministry of Health and Family Welfare, Government of India and C19I is broadly similar, particularly for

archival data. C19Is data series provides more recent daily updates countrywide due to its active volunteer network.[2]

We construct four distinct variables using the above dataset: the numbers infected, deceased, active cases and the recovered cases as of 24th October, 2020. All of these are constructed at the district level.

Next, we turn to our conflict data. Like most other studies involving the topic of Hindu-Muslim conflict in India, we turn to the Varshney-Wilkinson dataset on Hindu-Muslim violence. The baseline Varshney-Wilkinson dataset runs from 1950 to 1995. We use an extension of it for our analysis. Specifically, we use data on conflict between 2014 and 2018. The dataset summarises reports from The Times of India, a leading national newspaper, on Hindu-Muslim conflicts in India. This dataset has information on deaths, injuries, and arrests. For every report of Hindu-Muslim violence, the dataset provides the date of incidence of the riot, the name of the city/town/village, the district and state, its duration, the number of people killed, injured and arrested and the reported proximate cause of the riot.

We use three different count measures from the dataset: the number of people killed or injured (casualties), the number of people killed or the number of riot outbreaks over the period. In all cases, we take aggregates over a five-year period (2014 2018) in each district. This is in the spirit of Mitra and Ray (2014, 2019).

The 68th round of the NSSO consumption expenditure survey which covers 101,662 households has been used in the construction of several key variables. The survey was conducted over the period of a year, starting on July 2011 and concluding in June 2012. Based on the data in this survey, we constructed several district level variables. Specifically, we created the average per-capita expenditure at the district level, the population measure, the literacy rate (also, the primary education completion rate), the proportion of the district which is urban. In addition, we created variables which have been shown to be strongly associated with Hindu-Muslim violence namely, the ratio of Muslim-to-Hindu per-capita expenditure, the proportion of Muslims and the degree of religious polarisation.

As mentioned earlier, we also control for the presence of the BJP in the district in some of our regression models. Specifically, we use the share of Lok Sabha seats won by the BJP in the district in the 2014 national elections. Data on the Lok Sabha election outcomes are freely available on the website of the Election Commission of India. The main idea is that BJPs presence in the district may affect Hindu-Muslim conflict (in fact, Mitra and Ray (2019)) present evidence of this) and given that the central government is actually led by the BJP, the tackling of the pandemic in the district. Given that the Lok Sabha is a national body and given that the BJP is a national party with a distinct ideology it makes sense to see how the BJP MPs affect the climate for riots. It is of course possible to use other measures for example, the state assembly shares but then there are two distinct issues which one needs to account for:

(i) the partys ideology/stance/policy could vary from state to state especially given the caste and religious composition of the electorate. In other words, a BJP MP and a BJP MLA could mean different things for riots and the war on the Covid-19, and

[2]More about this repository is available at: https://www.covid19india.org/about.

(ii) state level competition, by itself, can have an independent effect on riots (a la Wilkinson (2004)). So, when using BJPs assembly seat-share, one could be picking up some state-level competition effects. It might be difficult to isolate a pure "BJP effect" from the state level competition effect.

Therefore, keeping these considerations in mind, we proceed with this rather conservative measure of BJP presence, namely, the share of Lok Sabha seats won by the party in the constituencies forming the district.

2.2. **Empirical Specification.** We are interested in the effects of prior levels of Hindu-Muslim violence in a district on various Covid-19 health outcomes in the district. This motivates the baseline OLS specification that we use:

$$\text{Covid}_d = \beta_0 + \beta_1 \text{Conflict}_d + \mathbf{X}_d'\gamma + \text{error}_d$$

where d indexes district and $\mathbf{X}$ is the vector of control variables at the district level.

We utilise different measures for our dependent variables, namely, the Covid-related outcomes. Specifically, we use the numbers infected, deceased, active cases and the recovered cases at the district level as of 24th October, 2020.

Among the important variables on the right-hand side are, of course, the various measures of Hindu-Muslim violence — casualties, killed and outbreak. We will also pay special attention to the ratio of Muslim-to-Hindu per-capita expenditures and the districts share of the BJP in the Lok Sabha: both have the potential to affect Hindu-Muslim violence and the Covid-19 outcomes. Apart from these core variables, population and some measure of Muslim presence are always included as controls in every specification. Muslim "presence" is measured in two ways: we use either the share of Muslim households in the district, or a measure of Hindu-Muslim polarization along the lines proposed by Esteban and Ray (1994) and Montalvo and Reynal-Querol (2005)[3] To be sure, in all the regressions we either control for Muslim percentage or religious polarisation but never both simultaneously. The correlation between these two variables is very high (about 0.93)).[4]

In some of the specifications, we include state dummies as controls. This is to account for any state-specific factors which could influence the pandemic outcomes. One factor which easily springs to mind is the rate of testing. We do not have reliable data on the rate of testing across the various districts. However, given that the state governments directed the core policy of testing in their respective states, one hopes that the state fixed effects would serve to capture this aspect in the regression models. In every regression specification, we cluster the standard errors by state.

2.3. **Results.** We first report the regression results where the outcome is the number of confirmed cases (district-wise) and where the main independent variable of interest is Casualties.

Table 1 contains a collection of such regressions. In column 1, the specification is very parsimonious apart from the population measure of the district, no other control variable is employed.

[3]The degree of religious polarization for a region is defined by $4\sum s_j^2(1-s_j)$ for $j = H, M$ where H denote Hindus and M Muslims and s_j denotes the population share of j in the region.

[4]In some areas, there are other dominant religious groups (like Sikhs in Punjab), so that Muslim percentage and Hindu-Muslim polarization measure different things. But these cases are exceptions rather than the rule.

Confirmed cases	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**
Casualties	-137.166**	-169.052***	-147.878**	-129.025**	-118.090*
	(51.625)	(58.724)	(51.747)	(56.247)	(58.156)
Population (log)	20,461.834***	17,124.557***	17,666.582***	16,890.215***	13,701.651**
	(5,765.677)	(4,562.823)	(4,573.008)	(4,737.012)	(5,009.582)
Literacy		45.578	18.117	13.072	-47.651
		(85.720)	(85.978)	(79.130)	(47.361)
Urbanisation		28,172.584**	28,304.410**	30,770.580***	47,156.375***
		(10,369.395)	(10,023.541)	(9,013.279)	(9,669.368)
Av. Per-capita exp. (log)		7,835.796*	8,043.071*	7,080.506	9,205.624
		(4,050.989)	(4,075.682)	(4,126.182)	(5,422.244)
Muslim/Hindu exp. Ratio			1,313.919	1,384.984	671.702
			(1,045.903)	(1,145.038)	(990.229)
Muslim%			-162.302	-154.226	-84.659
			(109.904)	(109.696)	(78.400)
BJP LS seatshare				-4,056.808	-1,861.770
				(2,973.206)	(1,895.176)
State dummies	N	N	N	N	Y
Observations	457	457	457	457	457
Adjusted R^2	0.251	0.330	0.331	0.334	0.408

Table 1. The Effect of Hindu-Muslim Conflict (Casualties) on Covid-19 Confirmed cases: OLS district-level regressions. *Sources and Notes.* Extension of the Varshney-Wilkinson dataset on religious riots (2014–2018), *National Sample Survey* 68th round, Covid19India.org (C19I) for Covid-19 data and the Election Commission of India for Lok Sabha outcomes data. The dependent variable is the total number of confirmed Covid-19 cases at the district level. Casualties (killed+injured) is the district level aggregate over the 5-year period 2014–2018. Robust standard errors clustered by state in parentheses. *significant at 10% **significant at 5% ***significant at 1%

The coefficient on Casualties in this column is negative and statistically significant. In column 2, we introduce three additional controls: the literacy rate, the extent of urbanisation and the average per-capita expenditure (entered logarithmically). While the literacy rate exhibits no marked correlation with the number of confirmed cases, both the urbanisation and the average per-capita expenditure variables display positive and statistically significant coefficients. This is hardly surprising as most of the Covid-19 cases reported have been largely in urban centres which also tend to be richer than their rural counterparts. The coefficient on Casualties in this column too is negative and statistically significant.

In column 3 of Table 1, we incorporate two more control variables which potentially affect both Hindu-Muslim conflict and Covid-19 outcomes. These are the Muslim-to-Hindu per-capita expenditure ratio and the percentage of Muslim households in the district. Neither of these two variables seem to have any bearing upon the outcome variable. The coefficient on Casualties in this column remains negative and statistically significant. In column 4 of this table, we include the key political variable of our analysis the districts share of the BJP in the Lok Sabha. Mitra and Ray (2019) find this variable to be salient in determining the extent of Hindu-Muslim violence in the recent years. In terms of confirmed cases of Covid-19 however, this measure of BJP presence does not seem to have any statistically significant effect. The coefficient on Casualties in this column too is negative and statistically significant.

In the last column of this table, we add the state fixed effects along with all other variables which have been used in the preceding regressions. The inclusion of the state dummies does not seem to change the basic pattern very much. The coefficient on Casualties in this column remains negative and statistically significant. Moreover, the size of the coefficient does not vary excessively across these different specifications. This is suggestive of a stable pattern between conflict (as captured by Casualties) and Covid-related outcomes (as captured by the number of confirmed cases).

When one uses either Killed or Outbreak as the measure of religious conflict in place of Casualties the results are substantially unaltered. The negative association between the measure of conflict and the number of confirmed cases is exhibited here too. We omit presenting these results in the interest of space.[5]

Next, we use the number of deceased (due to Covid-19) as the dependent variable. Table 2 contains a collection of such regressions. In columns 13, the measure of Hindu-Muslim violence is Casualties. In column 4, we use Killed in place of Casualties whereas Outbreak is used in column 5 as the indicator of Hindu-Muslim violence.

In column 1 of Table 2, the coefficient on Casualties is negative and statistically significant this suggests an increase in Casualties results in a fall in the number of Covid-19 fatalities. The other control variables display the same pattern as with Confirmed cases in Table 1; specifically, the urbanisation variable is positive and statistically significant while the Muslim-to-Hindu per-capita expenditure ratio and the percentage of Muslim households are not so. In column 2, we add the BJP share variable. This leaves the result unaltered; the BJP variable appears to be uncorrelated with Covid-19 fatalities while Hindu-Muslim casualties seems to have a negative relation. In column 3, we incorporate the state dummies. This does not change either the sign or the magnitude (largely) of the coefficient on Casualties it continues to be negative and statistically significant.

[5]These results are available from the authors upon request.

Deceased	**[1]**	**[2]**	**[3]**	**[4]**	**[5]**
Casualties	-2.379**	-2.273**	-2.497*		
	(0.951)	(1.009)	(1.277)		
Killed				-66.765***	
				(21.140)	
Outbreak					-22.100*
					(12.492)
Population (log)	276.191**	271.817**	233.142**	226.170**	235.055**
	(108.391)	(110.630)	(106.580)	(102.705)	(106.826)
Literacy	1.351	1.323	-0.920	-0.644	-0.641
	(1.765)	(1.786)	(0.990)	(0.971)	(0.978)
Urbanisation	738.280***	752.173***	997.516***	975.989***	1,025.378***
	(207.841)	(200.776)	(219.161)	(215.011)	(227.999)
Av. Per-capita exp. (log)	34.953	29.531	96.822	119.605	96.293
	(57.239)	(60.291)	(88.261)	(94.178)	(85.221)
Muslim/Hindu exp. Ratio	28.929	29.330	13.850	12.140	13.112
	(23.288)	(23.902)	(21.700)	(20.946)	(21.919)
Muslim%	-2.675	-2.630	-1.534	-1.520	-1.659
	(1.908)	(1.969)	(1.463)	(1.565)	(1.481)
BJP LS seatshare		-22.853	-49.694	-52.667	-56.235
		(40.869)	(41.108)	(41.682)	(42.572)
State dummies	N	N	Y	Y	Y
Observations	457	457	457	457	457
Adjusted R^2	0.273	0.272	0.383	0.384	0.386

Table 2. The Effect of Hindu-Muslim Conflict (Casualties, Kiiled and Outbreak) on Covid-19 deaths: OLS district-level regressions. *Sources and Notes.* Extension of the Varshney-Wilkinson dataset on religious riots (2014–2018), *National Sample Survey* 68th round, Covid19India.org (C19I) for Covid-19 data and the Election Commission of India for Lok Sabha outcomes data. The dependent variable is the total number of reported Covid-19 deaths at the district level. Casualties (killed+injured) is the district level aggregate over the 5-year period 2014–2018, Killed and Outbreak are defined analogously. Robust standard errors clustered by state in parentheses. *significant at 10% **significant at 5% ***significant at 1%

In column 4, we replicate the regression specification of the one in the preceding column with one single change Killed replaces Casualties. The result is by-and-large the same; the coefficient on Killed is negative and statistically significant much like that on Casualties.[6] In column 5, we utilise Outbreak in place of Casualties or Killed. The rest of the control variables are kept the same (including the use of state dummies). The result mirrors that for the case of Killed or Casualties the coefficient on Outbreak is negative and statistically significant while that on urbanisation is positive and statistically significant.

On the whole, the results in Table 2 affirm the core message from the results in Table 1. There is a consistent pattern between a districts past levels of Hindu-Muslim violence and its record in terms of Covid-19 confirmed cases or fatalities. Our results clearly suggest that a negative association between these two sets of variables.

We also examine the relation between our three indicators of Hindu-Muslim conflict and the number of Covid-19 Active cases. The patterns are essentially the same with one notable exception. The statistical significance of the coefficient on the urbanisation variable is much diminished.[7]

In fact, for all the three measures of Hindu-Muslim conflict, the coefficient on the urbanisation variable is highly statistically significant only when the state dummies are included in the regression specification.

We also have data on the number of recoveries from Covid-19 at the district level. Using this information, we construct a variable which we call "Recovery rate" in the following manner:

Recovery rate = Number of Recoveries/Number of confirmed cases.

We examine the effect of the three indicators of Hindu-Muslim conflict on this variable. Even though we have observed the stable pattern of a negative association between the other Covid-19 outcomes namely, confirmed cases, numbers deceased and active cases there is no compelling reason to expect that conditional on being infected, the recovery rate should be, ceteris paribus, any different in districts prone to violence between Hindus and Muslims from those districts where communal harmony abides. After all, the recovery rate depends almost entirely upon physiological factors of those affected and not upon the communal activities of those around the affected. Hence, one would not expect to observe any relation of this variable with the areas track record on communal violence.

Our regression results confirm the above conjecture. The coefficients on the three indicators of Hindu-Muslim conflict evince no convincing pattern whatsoever in the various specifications. In most of the cases, the coefficients on the conflict indicators are not statistically significant.[8] This is in marked contrast to the pattern observed with the other Covid-19 outcomes, where the negative association leaves us with much food for thought.

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[6]To be sure, the magnitude is much larger for Killed, and the coefficient is significant at the 1% level, but we refrain from speculating on the causes behind this. The core message we wish to emphasise is that both measures (Killed and Casualties) yield qualitatively similar results.

[7]We omit presenting these results in the interest of space. These results are, however, available from the authors upon request.

[8]Even when they are, they are only marginally so and very dependent on the inclusion/exclusion of certain control variables.

3. Concluding Remarks

We have tried to forge a link between the performance of a typical Indian district in terms of the severity of the outbreak of Covid-19 and contrast this with its historical proclivities towards Hindu-Muslim violence. To gain a clear understanding of the theoretical underpinnings of such a potential link, we delved into an examination of (i) the key factors which affect the dynamics of Hindu-Muslim conflict and (ii) those factors which are impacted by the scourge of such communal animosity. In particular, we discussed the idea of social capital being both a determinant of inter-religious battles and also something which is transformed (in myriad ways) by the fires of communal vengeance. As the coronavirus pandemic continues to rage on, our knowledge of the factors that stoke it have steadily increased. In particular, it is difficult to deny that the ambient level of social capital plays a role in curtailing its spread. Thus, the social capital in an area is a crucial factor for both the endurance of communal harmony and the containment of the coronavirus pandemic. Hence, we focus our attention on this critical link.

While Varshney (2003) puts forward the idea of how civic engagement may prevent communal fault-lines from emerging, we additionally consider how the disruption of communal harmony may mould social capital in a certain way. To elaborate, areas with higher social capital and hence characterised by greater civic engagement are likely to experience fewer incidents of Hindu-Muslim violence (a la Varshney (2003)). Given the nature of the coronavirus pandemic, a successful programme of its curtailment requires mutual trust and cooperation across and between various communities and also between the citizenry and the public bodies. Therefore, higher social capital would facilitate the suppression of the coronavirus pandemic. Combining these strands, one could make the argument that lower communal violence is associated with higher social capital and thereby would lead to lower Covid-19 infections, deaths and the like.

However, there is another aspect to this religious conflict and social capital relationship which may be relevant for a country like India where residential segregation along religious lines is fairly pervasive. This relates to the point made above about how the disruption of communal harmony may mould social capital in a particular manner. Areas which experience recurrent incidents of Hindu-Muslim violence tend to enhance cooperation within each religious community this derives from a sense of identification with members of ones community along with a sense of alienation from the other community. Thus, such areas may actually have greater information flows and cooperation within Hindus and separately within Muslims. This may result in more coordinated action by each religious group due to this "fractured" growth of social capital (within each opposing religious community). In addition, other factors may further reinforce this — e.g., in conflict-prone areas one would naturally expect more social distancing and limited social interaction certainly between communities and also within communities (it may not be safe to step out and there may be limited community-spaces for interaction). Thus, the severity of the coronavirus pandemic may actually be lower in (religious) riot-prone areas.

In sum, the logical implications of social capital are ambiguous and in fact yield opposing predictions in terms of the association between an areas history of Hindu-Muslim violence and its current performance in terms of Covid-19 outcomes. This observation makes it incumbent upon one to take up the empirical investigation seriously to evaluate the relative strength of the two opposing forces. In fact, this is precisely what we have done here.

We gathered data on various Covid-related outcomes specifically, numbers infected, deceased, number of active cases and recovered at the district level and then matched that to the districts past levels of Hindu-Muslim conflict (between 2014 and 2018, hence a five-year period predating the outbreak of Covid-19). Using a rich set of control variables, we examined the association between the different Covid-related outcomes and the past conflict measures. Our empirical investigations unearth a robust correlation between these two sets of variables. Specifically, we find that higher levels of Hindu-Muslim conflict (20142018) is associated with a lower number of Covid-19 infections, deaths and active cases. This pattern is fairly consistent and holds across a wide range of specifications.

On the whole, it appears that the second channel the strengthening of social capital within each opposing community as a result of higher incidence of Hindu-Muslim violence seems to win out over the first one. While that may indeed be the case, we only offer a cautious endorsement of this theory. Our reasons for doing so are outlined below.

While our empirical analysis draws upon data for over 450 districts in India spread over 20 major states, we cannot claim that the effects that we uncover are strictly causal. Admittedly, we ensured that the independent variables were sufficiently lagged to rule out any reverse causation issues. Nevertheless, given that Hindu-Muslim conflict does not occur randomly across the various districts in our sample, it is difficult to argue that the rich set of control variables we employ is sufficient to rule out any omitted variables bias concerns. Hence, the patterns while consistent and robust are to be interpreted as correlations and not proof of causation.

Even if one overlooks the correlation-versus-causation issue, there is another conceptual issue to confront. One ought to recognise that the channel of social capital need not be the only one connecting Hindu-Muslim violence to the various Covid-19 outcomes. There could be other factors which are related both to communal violence and the spread of the pandemic and which have not been covered by our set of control variables. While no such obvious confounder springs to mind, one may not rule out this possibility.

In spite of the reservations listed above, our exercise does make a valuable contribution to our understanding of the spread of the pandemic and its relation to Hindu-Muslim violence. This work, to the best of our knowledge, is the first one to formally investigate such a link with detailed microeconomic data. One needs to build on this exploratory empirical exercise to both sharpen the empirical findings and also pinpoint the mechanism(s) behind the empirical relationship. This would not only further our understanding of the dynamics of Hindu-Muslim violence but also help devise appropriate policy measures which can harness the spread of contagious (and pernicious) pandemics like the present one.

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