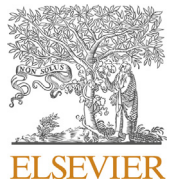
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Clientelism and violence: The politics of informal economy☆



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ABSTRACT

As opposed to acute political violence associated with riots and military coups, the paper addresses the problem of chronic and persistent political violence prevalent in less developed economies. In such economies, a significant part of the population is engaged in the informal sector where property rights are not well-defined and where political protection of rights is necessary for survival. To attract informal sector voters, political parties indulge in violence which signal their strengths to protect ill-defined rights. The paper shows that (a) a larger informal sector leads to more violence; (b) an increase in the relative size of the informal sector increases the winning probability of the worse performing party; (c) both worse performing and better performing parties indulge into same level of violence provided they have the same cost of causing violence. A high correlation between informal employment and political crimes among the Indian states empirically supports our argument.

1. Introduction

It is a well established fact that Less Developed Countries (L.D.C.s) experience more political violence on average than the developed economies. This evidence is plenty from various studies on different themes (Lewis et al., 2019, Peksen and Early, 2020; Ouédraogo (2017a, 2017b) etc.). Related observation correlates large informal sectors within the economy of the L. D.C.s (International Labour Organization, 2018). A natural question emerges: is there any causal link? The question is very important in a political economy context too because in a weakly institutionalized framework like the L. D.C.s most of the population working in informal sectors depend on various kinds of shelter and protection from the political parties.

Typical characteristics of L. D.C.s include high conflict, high inequality and unemployment with large informal sector, weak institutions, etc. High unemployment compels the need for survival, which is one of the primary determinants of informal economy (see Sarkar, 2010, 2018 for additional and illustrious arguments). A large section of the population in these countries do not have access to proper skills, education and job opportunities, and are forced to work in the informal sector for their livelihood. L. D.C.s are also characterized by weak institutions with inadequate legal and property rights, particularly more so for the informal sectors. Hence informal economies in these countries can be characteristically defined as the sector where the rule of law is lacking for its' workers. The economic activities of this sector are mostly unregistered, where the formal laws of tax, labor and environment are flouted. Typical examples include vendors illegally hawking on pavements or streets, unregistered production units neither complying to tax rules nor following to minimum wage laws, small shop-owners and businessmen unprotected from local goons, individual and small farmers dependent on various subsidies etc. On other hand, the limitedly effective legal system is costly and affordable only for the privileged class and hence inaccessible to the poor. This in turn makes the informal sector workers legally unprotected and susceptible to corruption (like extortion), violence etc. In totality, weak institutions is a double edged sword for the informal sector workers who themselves have to engage in semi legal work for earnings and at the same time remain essentially excluded from the legal system of state.

This vulnerability makes protection necessary for the informal sector workers, which creates incentives for the political parties to cash in on their helplessness for the parties' own political and electoral gains. This shelter can be provided by the party who enjoys de facto political

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strength in the locality of a worker's neighbourhood of activity. Mostly, this protection is provided by the ruling party when de facto and de jure powers rest in the same hand. But sometimes, in some areas, the opposition is also found to have enough local strength to provide such shelters to the vulnerable. So the political strength necessary to provide such protection to the informal sector workers is the de facto political power, irrespective of whether that coincides with the de jure power at that time. In return, the parties demand political allegiance from the workers, including their votes, participation in political and organizational activities like attendance in party meetings etc, going up to the extent of extortion for party funds, lending muscle power to lead elections etc, which are common political malpractices in L. D.C.s.

The motivation of our model may be easier to understand with a typical example. Consider an example of a street vendor who hawks on the streets to sell an item to earn his living. In a more likely scenario, street hawking is restricted and maybe a punishable offence like in most crowded public places. But crowded places itself with higher numbers of potential customers make these businesses more profitable. Apparently there's minimal fixed cost or negligible set up cost for the vendor, but the cost of punishment if caught and penalised can be assumed to be sufficiently high. This makes their livelihood a risky business, and turns them vulnerable towards extortion and exploitation by both the policemen and local goons. In the presence of weak law enforcement, these vendors' illegal activities are often protected by local thugs who are affiliated to one of the political parties. These local strongmen enjoy the power to offer protection from the 'street power' of the affiliating political party. Further, each of these vendors provides protection money to these local thugs to carry out his or her illegal activities (e.g., either to protect themselves from the legal forces or to create an entry barrier for their competitors etc.). These thugs, who are backed by their affiliated political party, very often engage in physical violence to establish their territorial control. Since these vendors and thugs are also the voters, clearly for them the de-facto political strength of their affiliated party does matter for utmost consideration. This very practical phenomenon of daily lives provides the rationale for our framework to interlink political clientelism with violence.

The disparate circumstances in which formal and informal voters function lead to a fundamental difference in their voting behaviour. Formal sector voters are employed in formal sector jobs which are above board and do not require any clandestine political support. Therefore, these voters are free to vote according to their true preferences which reflect personal preferences as well as commonly observable relative performance of rival political parties. Informal sector voters, on the other hand, are compelled to vote for that party which provides them political support. Each informal sector voter, however, is free to choose its protector. She will choose that political party as her protector whom she perceives as more powerful. The perception is formed on the basis of her private signals which are partially influenced by the extent of violence undertaken by a political party.

Informal sector voters, on the other hand, have a paralegal economic existence. We broadly define the informal sector as one where the rule of law is lacking. In this sector, unregistered economic activities are undertaken, and formal laws of the land – such as labour, environmental and tax laws – are flouted. Similarly, property rights and other legal rights are not well defined and since the legal system is expensive, it is often unaffordable for informal sector voters. All this, taken together, makes informal sector voters vulnerable and manoeuvrable.

To protect themselves from their vulnerability, informal sector voters seek political support. This support is provided by political parties on a quid pro quo basis. In return for political support to the vulnerable, the party providing the support demands complete allegiance, which among other things, requires voting for the party. Therefore, instead of voting according to their true preferences, the informal sector voters are compelled to vote for the party which provides them protection.

The difference in the political behaviour of formal and informal sector voters stems not from any inherent difference in their preferences, but from the disparate position they are situated in.

This idea also takes inspiration from the central thesis of "political society" by Chatterjee (2004), which had a path breaking contribution in political science to understand the political economy of exclusion and the economic life existing out of illegality in postcolonial societies. This pioneering work categorizes the population as *'political society'*[1] and *'civil society'*[2] along the fissures of those living outside or on the borders of legality, in order to target economic benefits and thereby political control. Following this formulation, we model this inherent class antagonism by categorizing into formal and informal sector employment. In our framework, the formal sector employees may be understood to comprise the 'civil society', whereas the workers in the informal sector comprise the 'political society'. The para-legality of the political economy of L. D.C.s forms the root of this class antagonism and consequently the difference in the voters' behaviour.

The typical scenario of our model pertains to an illustrative example of *political clientelism*.[3] A recent World Development Report (The World Bank, 2017) illustrates the growing acceptance of political clientelism as a viable mode of profitable electoral mobilization with its origin in lack of economic development, weak legal environment and violence (see also Fukuyama, 2011; Mungiu-Pippidi, 2015).[4] A *'natural'* relationship between political clientelism and informal sector has been formally studied by Bardhan and Mookherjee (2017), Bardhan et al. (2006) etc. and its effects on governance by Sarkar (2010, 2018) among others. According to Chatterjee (2004), parties seeking electoral mobilization often face incentives to cultivate and exploit the vulnerability of 'political society' exhibiting a classical feature of political clientelism. As a consequence, strategic temporary arrangements of protection and livelihood are often negotiated with the ruling political dispensation. We argue that presence of large informal sector incentivizes political parties to engage and invest in various forms of extra-constitutional activities; one of them being violence, which is our question of study here. In our model, this objective of political parties investing in force before elections to increase vote shares has been discussed at length by Chaturvedi (2005) in the literature. In our framework, both the incumbent and opposition parties engage in violence to increase vote shares.

Numerous studies and evidence from the economic and political science literature motivate as well as validate the causal mechanism of political clientelism and violence, which is the foundation of our model. An empirical study of electoral violence in gubernatorial elections in Oyo state of Nigeria from 2007 to 2015 by Abebiyi, O. M. (2021) found political clientelism to be a significant factor behind political violence. Latin American countries strongly resemble similar features of political clientelism and violence. Gay R. (2012) discusses at length the politics of clientelism and violence in recent experiences of Brazil. Berenschot (2019) offers accounts from India and Indonesia on how political competition incentivizes politicians to foment religious and ethnic violence.

[1] The "political society" represents the distinctive existence of an entire population subgroup whose economic livelihood and social life survives on borders of illegality — squatters, street traders, fare-dodgers, etc. This diverse section of the population is likely to get mobilized as a niche constituency of the electorate, couching demands in terms of welfare doles. According to Chatterjee (2004), political society lets 'some of the squalor, ugliness and violence of popular life' into politics.

[2] Juxtaposed to the 'political society' stands the 'civil society', which can be imagined as its organized urban counterpart, comprising those who occupy the powerful positions of influence in the social hierarchy. Within 'civil society', public and economic resources are assumed to be available to all. Examples may include business elites, upper and educated middle class etc.

[3] For useful conceptual discussions on clientelism and patronage networks, see Kitschelt and Wilkinson (2007).

[4] A formal literature review of political clientelism was done by Bardhan and Mookherjee (2017) (https://people.bu.edu/dilipm/wkpap/EDIclientsurvMay17Fin.pdf).

He has shown how patronage networks generate both infrastructure and incentives to organize violence, stemming from the everyday functioning of clientelism that generates interdependence between politicians and local followers which facilitates the political organization and violence. This similar reasoning of incentivising violence through clientelism is followed by our paper, with a new focus on the informal sector.

Experiences of South Asian democracies in general, and particularly West Bengal in India form the prime motivation for our study. India being the largest democracy of the world and relatively more successful one among the South Asian democracies, offers to be a suitable case for our typical scenario. In India, the rate of violent crimes is not exceptionally significant in comparison to other states (Government of India, Ministry of Home Affairs, National Crime Records Bureau, 2019). But this politically active state has stood out in terms of political violence between the mainstream parties, in spite of seeing negligible caste, communal or insurgent conflict like some other states.

In Bangladesh, another prominent and relatively young South Asian democracy, elections have been held every five years since 1991 (except between 2007 and 2008), with an alteration of power until 2014. Simultaneously, the democratic experience of Bangladesh has seen spikes in political violence before elections. The use of 'muscle politics', regular disruptions to daily life through strikes, curfews and aggressive politics of the streets still forms a characteristic feature of Bangladeshi politics (Khan, 2015).

Pre-election periods of Bangladesh tend to be excessively violent, with data from 1991 to 2014 showing stark peaks in violence in election years of 1996, 2001, 2006 and 2013 (before the January 2014 elections), with clear post-electoral slumps in violence. As Armed Conflict Location and Event Data Project (A.C.L.E.D., 2018b) finds, the two main political parties of Bangladesh have been at the forefront of such daily political violence. Khan (2015) identifies the reason behind Bangladesh's politically violent democracy as the existence of patron-client networks in its political life. Voters in Bangladesh formulate preferences about candidates based on private distribution of resources (both economic and political), preferring the candidate who is willing to give them the most private gain rather than by comparing policy platforms or ideological positions. Electoral laws in place have no mechanism to regulate this type of patronage voting. This kind of voter behaviour in formulating political preferences with the backdrop of weak legal institutions shapes the structure of this paper's framework.

We propose a one period static framework with two parties competing for elections to win the office. The economy consists of two sectors-formal and informal. The preference and voting behaviour of the formal sector workers are different from the informal sector workers. Their voting decisions are based on the overall performance of the parties. As the informal sector workers are more directly dependent on the parties for protection and livelihood, their voting behaviour is strategic. Based on a noisy signal about the relative political strengths, the informal sector voters prefer to side with the party which seems more likely to come to power. This gives rise to a coordination problem. The noisy signal about the relative political strengths helps to solve the problem of multiplicity of equilibria.

We find that resources spent on violence by both the political parties depend only on the costs and not on performances on development. When costs are the same, both parties invest an equal amount of resources on violence. This implies that a better performing party may engage equally into violence like the inferior performer, making the equilibrium highly violent even when both the parties have performed well. This solves the puzzle of why well-performing incumbents engage in high violence in a democracy.

We find an increase in the size of informal sector employment, clientelistic benefit and the ideological spectrum of the formal sector voters increases political violence, and also increases the winning chances of the poor performer, thereby reducing the chances of the well performing party. A rising competition in the development performance more preferable to the formal sector voters decreases political violence by both the parties, thereby increasing the electoral chances of the better performer in equilibrium.

Elections regulate the allocation of de-jure power in society, but alternative technologies shape the de-facto balance of political forces as well. Even under democracies, powerful political actors face incentives to invest in de-facto power through violence (Acemoglu and Robinson, 2006, 2008). In this paper, we largely follow this stream of theory with a new question-the role of informal sector.

We study the incentives for the political parties to engage in political violence in *this* context, to better understand the relationship between political violence and informal sector. Our model deals with a general form of political violence, which may be targeted or non-targeted. The instrumental role of violence in our model is to send a signal of political strength to convince the voters of their electoral winnability. In our context, political violence can be interchangeably interpreted as electoral violence as it can be targeted to opposition supporters and voters. Typical scenario of our model does not emphasize violence during electoral times *only*, but increase in the pre-election periods form a major chunk of them. To be specific, violence in our context generally does not refer to coup, repression etc. in the sense of Besley and Persson (2011).[5]

While there are several theories behind political violence in backward economies, we offer another plausible explanation in terms of political clientelism resulting from large informal sector in the backwards economies. This paper has taken the informal sector as one prime indicator of economic backwardness and has tried to establish its causality with political violence in the less developed economies. In a democratic set up, we focus on one possible channel through which economic backwardness affects political violence - the informal sector.

It needs to be made clear to the reader's mind from beginning that in no way the authors claim violence as the *only* tool available to the political parties to send the signal of their political strength to the a section of the population. As violence is the question of our study here-a feature chosen from many other factors in reality for reasons argued above, we focus only on it within our limited context, and model all other possible factors summarily captured by a random variable, as is standard in any theoretical analysis. Specifically, violence is just *one* of the possible ways of determining 'street power', which this paper lays emphasis on for studying, with all other factors assumed to be captured by an independent random variable.

Among the vast literature on economic backwardness and conflict, specific study on informal sector and electoral violence is scarce. To the best of our knowledge, offering a theory on this relationship is the most novel contribution of this paper to the economic literature. Also, taking cue from the political theory of Chatterjee (2004), th difference in voting behaviour of formal and informal sector workers in our model, exhibiting their class antagonism, forms the crux of this paper. Relating the formal economic theory of development to this strand of literature in political science is a first such attempt which also potentially contributes to the novelty of this paper's work.

2. Related literature

Large amount of work has been explored in political science and economics literature on the causes and consequences of political violence. Conflict literature in economics is mostly dominated by studies on war, civil war, ethnic riots etc. The literature on political and electoral violence is smaller comparatively. Two themes emerge from the literature relating conflict and electoral politics; one that considers

[5] One important aspect of such violence is the 'negative campaigning' as termed by Skaperdas and Grofman (1995) in the sense that it alienates the general voters. This has been documented through surveys by Garramone (1984) among others, who has termed it as "boomerang effect". We stay away from modeling this aspect in this paper.

violence and electoral politics as strategic substitutes and the other as strategic complements (Dunning, 2011). Our work is nearer to the latter strand of literature, arguing that electoral incentives shape violence (Kasara, 2009).

As discussed in the literature, political and electoral violence can be of different nature and take different forms. Although electoral violence can be both targeted and non-targeted, it is generally understood to be a subset of political violence, and targeted at opposition voters to force them into abstention. Political violence can be non-targeted, intended to create a general ambience of fear, like discouraging voter turnout etc. Ellman and Wantchekon (2000) had termed these as "non-electoral factors". Other forms of non targeted violence like blocking roads, burning tires, picketing, etc. were referred to as "alternative political technologies" by Machado et al. (2011). We don't get into such differentiation here in this paper as both can suite the purpose of signaling political strength.

Rauschenbach et al. (2019) offered a first systematic cross-national analysis of clientelism and voter intimidation in seven African countries and find that voters living in incumbent strongholds are most likely to receive clientelist benefits before elections, whereas those living in opposition strongholds are most vulnerable to violent intimidation. Moncada (2016) in his exploration of the exclusionary political order of Cambodia identifies the use of violence as an extension of political competition in explaining the contemporary politics of urban violence. Laakso (2019), based on empirical studies on Africa, found a consistently positive and statistically significant relationship of political violence with post-election violence. They offered a theory claiming that clientelism increases risk of electoral violence and empirically found the condition of an Incumbent running for the office as a prerequisite for this theory to hold. Our model assumptions in this paper are similar to both their theoretical assumption of clientelism driving electoral violence and the empirical finding that an incumbent party fights aggressively seeking a reelection to the office.

One strand of literature claims that violence is predominantly a tool of the opposition or the politically weak ((Skaperdas and Grofman, Chaturvedi, Wanwchekon, Ellman and Wantchekon, Collier, Wantchekon, Ellman and Wantchekon etc.). However, much of the empirical literature claim that a lot of violence is undertaken by the incumbent, state, and the electorally stronger party too (Strauss and Taylor). A UNDP study (United Nations Development Program, 2013) worldwide had found pre-electorally a whooping 81 percent and post-electorally about 60 percent of violence is indicted by the ruling party. Our paper also attempts to explain this feature of well performing incumbents engaging into higher violence.

There is little or no theoretical economic literature on relationship of political violence with informal economy to the best of our knowledge. Empirical literature relating political violence with informal economy is scarce. In a recent work, Jawadi et al. (2021) using data from France and the UK over the time period 1975Q1 to 2013Q4 and 1983Q1 to 2018Q2, Jawadi et al., (2021) find a robust connection between unemployment and both violent and non-violent crimes. A field survey in Karachi, Pakistan by Brown et al. (2017) found that violence increases the size of informal workforce, increases their harassment and various kinds of abuse and vulnerabilities. On the other hand, an empirical study on Bangladesh (Chowdhury, 2003) provide evidence how informal economy increases political violence and corruption. The present work can be thought of as an immediate extension of Sarkar (2010, 2018), adding the new dimension of political violence.

Our formal model of electoral competition fits into literature of strategic voting using Global Games- (Carlsson and van Damme (1993), Morris and Shin (1998)) Global Games are a type of coordination games used in macroeconomic problems like currency attacks (Calvo, 1988, Obstfeld, 1996,1997, Cole and Kehoe, 2000 etc.) and microeconomic problems like protests and revolution, strategic voting etc. (Mesquita 2003; Shadmehr and Bernhardt, 2011; Edmond, 2013). Taking cue from Sarkar (2018), our present model follows that framework of clientelist politics using global games.

3. Theoretical framework

We consider a static model with a bi-party electoral democracy, where two parties viz. Party A and Party B compete against each other for winning elections. The gain from holding office is normalized to 1. The economy consists of two sectors-formal sector and the informal sector.

Total population in the society are assumed to be all employed, either in the formal or in the informal sector. The size of population working in the formal sector is normalized to 1. The relative size of the population in the informal sector is denoted by n, which can be less than, equal to or greater than 1.

The formal and the informal sector agents take their voting decisions differently, based on different parameters and policies. The over all performance of the parties is important to the formal sector voters. This performance can be economic, for a long term development etc, which matters more to the formal sector voters. Without loss of generality, we assume party B to have performed better than A. Unlike the formal sector voters, informal sector voters only observe the de facto *political strength* as it determines their survival in an informal and semi-legal economy.

Two political parties A and B are purely office seekers, and their objective is to maximize the probability of their electoral victory for the office. The fixed benefit from office is assumed to be unity for both the parties. Electoral victory depends on their performances and political strength. Formal sector voters' support is based the parties' performances and their own personal preferences, where as informal sector voters support on the basis of their political strength. We carry our analysis with respect to party A, assuming party A's performance to be worse than B. The optimal choices of Party B can be derived consequently. The choice variables for the parties A and B are v_A and v_B respectively, which can take any non negative value. They denote the amount of resources spent on physical violence incurred by the respective parties against their political opponents.

We imagine the de facto political strengths as a function of violent *contests* between the parties, along with other exogenous random factors in a simplest additive form.

The objective of the political parties in engaging into electoral violence against each other is to send a signal to the informal sector voters about its political strength. The show of political strength helps in convincing voters about their winnability. Party A's *relative political strength* is defined by

$$P_A = v_A - v_B + \xi \tag{1}$$

where ξ follows a bell-shaped distribution $F(\xi)$ with $E(\xi) = 0$, $V(\xi) = 1$ and $f' < 0$. The variable ξ denotes other non-violent sources of political strength, which are random.

This formulation of political strengths is in accordance with the *Relative Difference Contest-Success Functions*, first proposed by Hirshleifer (1989), which is a very standard assumption in the conflict literature.[6] The cost of incurring violence is given by the function $c_I(.)$ with $c_I' > 0$, $c_I(0) = 0$ and $c_I'' = c'' > 0$ for $I \in \{A, B\}$.

The over-all performance of Party A among the formal sector voters is captured by Γ_A, which can take any real value. Similarly, Γ_B captures Party B's performance. These performances can be interpreted as efforts for development and related economic performance in particular. Without Loss of Generality (W.L.G.), we assume

$$\Gamma_B \geq \Gamma_A \tag{2}$$

[6] For a detailed discussion see Beviá, C.et al., 2015.

A representative formal sector voter votes for Party A if and only if

$$\Gamma_A + \eta \geq \Gamma_B \tag{3}$$

where η denotes the agent's personal preference or dislike for Party A. This random variable captures the relative popularity of the voters for party A that stem from all non-economic dimensions like identity, social issues, any non-economic preferences or idiosyncratic shocks etc. The η follows Uniform Distribution over the domain $[-\frac{\epsilon}{2}, \frac{\epsilon}{2}]$. This follows from the standard probabilistic voting framework.

Hence, the size of formal sector voters supporting Part A is given by

$$\Pi_A = P(\Gamma_A + \eta \geq \Gamma_B) = \frac{1}{2} + \frac{\Gamma_A - \Gamma_B}{\epsilon} \tag{4}$$

Therefore, the size of formal sector voters supporting Party B can be derived as

$$\Pi_B = 1 - \Pi_A \tag{5}$$

In a largely populated society, an informal sector voter observes a noisy signal s about the political strength P_A of Party A. The noise is created by imperfect observations of the de facto political strength P_A by the informal sector workers. The signal s is distributed uniformly over the domain $[P_A - \frac{1}{2}, P_A + \frac{1}{2}]$. An informal sector voter, after observing her signal, infers the expected value of Party A's political strength as

$$E(P_A|s) = \int_{s-\frac{1}{2}}^{s+\frac{1}{2}} P_A dP_A = s \tag{6}$$

She gets a *future private benefit* of $b > 0$ from voting the winner. There is no benefit from voting the loser. There is a *relative current benefit* from supporting Party A which depends on its political strength, and is determined by zP_A. Conceptually, this relative current benefit is proportional to the relative political strength, and the positive constant z is the relative factor of proportion of Party A with respect to B. It represents the capacity of Party A in turning its political strength into delivering exclusive benefits to each individual supporters, net of Party B. Thus, z can be interpreted as party A's capacity to deliver *relative clientelist* benefits with respect to Party B and zP_A as the *net* clientelist benefit of supporting Party A currently, relative to B.

Note that, more the political strength, larger is the current benefit. So for a negative P_A, there can be a current loss from supporting party A.

The sequence of events is as follows:

1. In the beginning, the performance of party A and B, i.e. Γ_A and Γ_B respectively, are chosen by Nature. The formal sector voters take their voting decision based on the party's performance and their own individual preferences.
2. The two parties engage in political violence by choosing v_A and v_B simultaneously.
3. The ξ is realized. Hence its political strength P_A is realized.
4. Informal sector voters observe a noisy signal about the political strength of the parties. They infer the expected political strengths of the parties from their observed signal.
5. Informal sector voters pledge their support for one of the parties and take their voting decisions accordingly.
6. Elections take place. Pay offs are realized. The game ends.

In the next section, we compute the equilibrium of this co-ordination game.

3.1. Equilibrium

First we compute the size of support of the respective parties from the formal sector. A representative informal sector voter knows the voting behaviour of formal and other informal sector voters. She starts with a belief $\tilde{s}$ about other informal sector voters on the political strength of Party A. She believes that if any other informal sector voter like her has received a signal at least as large as $\tilde{s}$, then she will support and vote for Party A.

Then, given her belief-signal $\tilde{s}$, she calculates her best response signal $\hat{s}$ to $\tilde{s}$. In equilibrium, every informal sector voter will have the same best response signal $\hat{s}$ used as a cut-off signal for best response strategy. We denote this symmetric best response threshold signal in equilibrium by s^* such that $s^* = \tilde{s} = \hat{s}$. After obtaining the equilibrium best response threshold signal s^* and the corresponding political strength P_A^*, we can find the winning probability of Party A and Party B correspondingly. Lastly, we calculate the optimal choices of violence v_A^* and v_B^* respectively.

We proceed to solve the equilibrium as follows.

After receiving a signal s and inferring about the true political strength P_A of Party A, the representative informal sector voter believes that the condition for winning of Party A is

$$\Pi_A + nP(s \geq \tilde{s}) \geq \frac{n+1}{2} \tag{7}$$

which reduces to

$$\frac{1}{2} + \frac{\Gamma_A - \Gamma_B}{\epsilon} + n\left(P_A + \frac{1}{2} - \tilde{s}\right) \geq \frac{n+1}{2} \tag{8}$$

Let equality hold for $P_A = \widehat{P_A}$. Hence Party A will be just able to win when

$$\frac{1}{2} + \frac{\Gamma_A - \Gamma_B}{\epsilon} + n\left(\widehat{P_A} + \frac{1}{2} - \tilde{s}\right) = \frac{n+1}{2} \tag{9}$$

Thus, probability of A's electoral victory becomes

$$\pi_A = P(P_A \geq \widehat{P_A}) = \int_{\widehat{P_A}}^{s+\frac{1}{2}} \frac{1}{\left(s+\frac{1}{2}\right) - \left(s-\frac{1}{2}\right)} dP_A = s + \frac{1}{2} - \widehat{P_A} \tag{10}$$

Consequently, probability of B's electoral victory becomes

$$\pi_B = P(P_A < \widehat{P_A}) = \frac{1}{2} - s + \widehat{P_A} \tag{11}$$

Now she will calculate her Best Response $\hat{s}(\tilde{s})$. Her expected benefit from supporting A is

$$b\pi_A + zP_A$$

where as from supporting B is $b\pi_B$, where zP_A is relative benefit of supporting A. She will be just indifferent between supporting A and B when the benefits are equal. Based on her Best-Response signal $\hat{s}$, she calculates her expected benefit from supporting A and B at the margin, which by using 10 and 11 reduces the equality condition to

$$bP(P_A \geq \widehat{P_A}) + z\hat{s} = bP(P_A < \widehat{P_A}) \tag{12}$$

where she estimates P_A by $\hat{s}$ from 6.

In the symmetric equilibrium, every informal sector voter will have the same best response signal s^* such that $s^* = \tilde{s} = \hat{s}$. We solve equilibrium signal s^* and the corresponding political strength P_A^* from the above two equations, as

$$P_A^* = \left(\frac{\Gamma_B - \Gamma_A}{n\epsilon}\right)\left(1 + \frac{2b}{z}\right) \tag{13}$$

The assumption of $\Gamma_B > \Gamma_A$ keeps P_A^* non-negative. This P_A^* is the crucial variable which we will use in our subsequent analysis to solve the optimal choices of the parties. We formalize it in the following Lemma.

Lemma 3.1. *The minimum political strength required for the underperforming Party A to win an election is a non-negative threshold value P_A^*. The relative political strength of party A with respect to party B exceeding P_A^* provides a sufficient condition for A's victory in the elections.*

Hence, using Lemma 1 the objective of Party A becomes maximizing

$$P(P_A \geq P_A^*) - c_A(v_A) \tag{14}$$

and that of B is

$$P(P_A < P_A^*) - c_B(v_B) \tag{15}$$

w.r.t their choice variables v_A and v_B respectively. The F.O.C.s of Party A and B are:

$$f(P_A^* - v_A + v_B) = c_A'(v_A) \tag{16}$$

and

$$f(P_A^* - v_A + v_B) = c_B'(v_B) \tag{17}$$

respectively.

The S.O.C. is satisfied for $-c'' < f' < c''$. To ensure the existence of an *interior* equilibrium, we assume

$$-c'' < f' < 0 \tag{18}$$

These optimal choices of v_A^* and v_B^*, chosen simultaneously by parties A and B, constitute a Nash equilibrium. Thus, in Nash equilibrium, both parties will choose equal amount of violence when they have same costs, irrespective of their popularity among the formal sector voters.

Note that there can be two possible equilibria, because the marginal cost curve can intersect the PDF curve F' either somewhere at $f' > 0$ or somewhere at $f' < 0$. The former case signifies a higher cost of incurring violence than the latter. In our framework, it's reasonable to assume incurring violence is relatively less costlier than ideal. Our entire premise is based on a semi legal environment with weak enforcement of legal institutions. Hence we assume $f' < 0$ around the equilibrium, i.e. the cost of incurring violence by political parties is relatively cheaper to make our case realistic. This automatically rules out the possibility of multiple equilibria. Moreover, any further doubt regarding the uniqueness of equilibrium doesn't arise due to the assumption of strict monotonicity of the cost function.

We present the results in the following section.

3.2. Results

It is straightforward to see from 16 to 17 that the choice of violence by each of the parties depends on their individual costs. If we assume the cost functions to be same for simpler comparability, we find the well performing party B engaging in as much violence as the worse performer A in the equilibrium. Thus, if B has lower costs than A, it may engage more into violence in spite of its better performance and vice versa. We formalize this finding below and discuss its implications.

Proposition 1. *In equilibrium, the choice of violence by the political parties depends only on their individual marginal costs of incurring violence and not on their performances on development. When costs of violence are same for the parties, both inflict equal level of violence in the equilibrium, i.e.* $v_A^* = v_B^*$.

The intuition behind this result comes from the presence of informal sector voters in our model to whom economic performance does not matter. Thus, economic performance alone cannot ensure an electoral victory for the better performer, which drives this result.

The result implies that even if two parties have performed well on development, the equilibrium can be highly violent. The most significant implication of this result is that, it establishes how a competitive electoral democracy with high informal economy may simultaneously witness high political violence *in spite of* high developmental work by the parties. This is relatable to the experiences of many South Asian democracies with high incidence of political violence, even during their years of high economic growth and development.

In experiences from real life, its more likely that bigger political parties have better access to more funds and hence their costs of incurring violence is relatively lower. Thus, another possible implication of this result is that, larger parties, although being more popular, may indulge in higher violence compared to the smaller parties.

Specifically, ruling parties, having control over state instruments can avoid legal consequences of incurring violence with relative ease. They can also have higher access to funds as rents from office in a corrupt state, or they can use the state-power as a threatening tool for extortion and collecting funds. Hence, the Incumbent party is often found to engage more into electoral violence.[7] Therefore, most interestingly, 3.2 solves the puzzle of why well performing *incumbents* still engage into high political violence, in spite of higher chances of electoral victory. We summarize it in the Corollary below:

Corollary 1. *A better performing party may engage equally into violence like the worse performer. Even when both the parties have performed well, the equilibrium can be highly violent.*

For elaborate evidence, West Bengal can be a test case in support of this finding (Banerjee, 2011).

3.2.1. Supporting evidence from Bengal

As per the National Crime Records Bureau (N.C.R.B.) of India data, a total of 29 political party members were killed in the 2018 rural local body (Panchayat) elections, whereas the 2013 Panchayat elections led to the death of 39 people. In 2009 Lok Sabha elections, out of the total 5315 poll-time offences registered in India, 18 per cent were in West Bengal. During the 2014 Lok Sabha elections, of the 16 political workers killed across India in poll-related violence, 44 percent of them were in West Bengal. In a similar manner, data for 2019 also shows that of the 2008 political workers who were injured, 1298 (that is 64 percent) were in West Bengal.

The global non-profit research organization Armed Conflict Location and Event Data Project (A.C.L.E.D., 2018a) gathered evidence of political violence in the rural local body elections of West Bengal of 2018 from newspapers and media reports. Their analysis claims that the political violence seemingly benefited the popular incumbent as opposition candidates failed to put up any candidate in over 34 percent of seats across all districts of the state. During the initial phase of the filing of nomination papers (due on April 9), reported violence and associated fatalities were considerably higher than weeks prior-over 10 times as many events reported and twice as many reported fatalities relative to the week prior. They find that over half of the election-related violence took place in those districts which had the highest proportion of uncontested seats, (viz. Murshidabad, South 24 Parganas, Hooghly, Bankura, Purba Bardhaman, Paschim Bardhaman and Birbhum). Despite such high levels of violence, police intervention was only reported in 4 percent of events, demonstrating a stark underemployment of the state security apparatus by the incumbent in the office of the state administration which conducts these local body elections.

As the incumbent party got popular victory across all the districts of the state (38,118 village bodies (Gram Panchayats) versus 5779 by the first runner up, 8062 local governments (Panchayat Samitis) versus 769 of the highest rival and 793 district bodies (Zilla Parishads) versus 22 of the main opponent)[8] these all indicate towards a popular incumbent party engaging in high political violence in spite of its popularity among the electorate.

But percentage rise in uncontested seats in rural local body elections of Bengal is not a recent phenomenon. Past data over four decades from Bengal's State Election Commission shows an unnatural increase in the number of uncontested seats in local body elections twice-from 0.74 percent in 1983 to 8 percent in 1988, and from 1.36 percent in 1998 to 11 percent in 2003. These past decades were simultaneously experienced by widespread allegations and media reports on political vio-

[7] A detailed discussion of incumbents indulging into violence can be found at Hafner-Burton et al., (2018)..

[8] Source: West Bengal State Election Commission. http://wbsec.gov.in/

lence, especially from rural Bengal. Interestingly, in the entire period of 1977–2011, the ruling party enjoyed uninterrupted rule of office from popular mandate in elections as well as high political violence. Banerjee (2011) has discussed at length the dole politics, party power and political violence in Bengal during this period.

Another distinct feature of violent Bengal politics is that unlike in other states of India where electoral violence is recorded mostly before and on the polling day, in West Bengal more instances of violence are observed in the period after polls are held. All-India National Crime Records Bureau (N.C.R.B.) data shows that across the country 65 percent and 74 percent of violent events were recorded in the pre-election period of 2009 and 2014 Lok Sabha general elections respectively. But for West Bengal alone, the election period offences recorded after voting was over 61 per cent during the 2009 elections and 44.68 per cent for 2014 elections.

After the announcement of results of the recent 2021 West Bengal Legislative Assembly election too, allegations of widespread political violence broke out in West Bengal reportedly causing at least eleven deaths from both the ruling and the opposition parties. The extent and severity of post poll violence can arguably be considered a reasonable indicator of political polarization. These regular periodic features collectively indicate towards a phenomenon of political violence which is impossible without the Incumbent being tacitly or overtly complicit with.

Next, we move on to our main findings on the informal sector. By totally differentiating 16 and 17 and some simple algebra gives

$$\frac{\partial v_A^*}{\partial n} = \frac{\partial v_B^*}{\partial n} = \frac{\partial P_A^*}{\partial n}\frac{f'}{c''} \tag{19}$$

It is easy to check $\frac{\partial P_A^*}{\partial n} < 0$. This, along with 18 implies $\frac{\partial v_A^*}{\partial n} = \frac{\partial v_B^*}{\partial n} > 0$, which brings us to the following proposition:

Proposition 2. *An increase in relative size of informal sector employment n in the economy increases the equilibrium level of violence v_A^* and v_B^* in the polity, without changing the equilibrium condition of $v_A^* = v_B^*$. Thus, with a positive level shift in the equilibrium choices v_A^* and v_B^*, a higher violence by both the parties constitute a more violent equilibrium, resulting from a relative rise of informal employment in the economy.*

This result readily follows from the Envelope Theorem. It formally establishes the relationship between political violence and informal sector, which is the primary finding of our question in this paper. It is the most important finding of this paper, specifically contributing to the growing literature of clientelism, but also to the broad literature of political violence and development. The following results in the rest of the paper take a cue from this result.

3.2.2. Empirical evidence from India

As this result can be understood as one of the chief contributions of this paper, we perform some simple empirical exercises to build evidence in support of this result. Although correlation doesn't imply causality, it vindicates the essence of this paper to some extent, justifying the direction of our argument.

3.2.3. Data

Informal Sector data in India is collected in every round of the labour force surveys of National Statistical Office (NSO), currently called the Periodic Labour Force Survey (PLFS). We use the 'PLFS Annual Report 2019–2020' (National Statistical Office, India, 2021) for statewide data. As per their clear definition of informal sector in the report, we take the percentage variable of 'usually working (ps + ss) persons' in industry-type 'proprietary and partnership' in each state as the measure of its informal sector.

The National Crime Records Bureau (N.C.R.B.) is an Indian government agency responsible for collecting and analysing crime data as defined by the Indian Penal Code (IPC) and Special and Local Laws (SLL).

3.2.4. Correlation

Calculating the **Spearman's Rank Correlation Coefficient** between the percentage of informal sector workers and each of the political crime rate and percentage of political murders gives us the values of **0.6** and **0.56** respectively, which are a quite strong indication of association between informal sector employment and political violence in India. This is a major motivation in support of our main result.

Next, let us denote the equilibrium probability of A and B's electoral victory by π_A^* and π_B^* respectively. Like before, it is easy to check from 19 that $\frac{\partial \pi_A^*}{\partial n} > 0$ and $\frac{\partial \pi_B^*}{\partial n} < 0$. This reaches us to the significance of a large informal economy for the development and quality of governance in a democracy. The result follows:

Proposition 3. *A relative rise in the informal sector employment n increases the chances of electoral victory $P(P_A \geq P_A^*)$ of the poorly performing party A and reduces the electoral chances of the well performing party B in the equilibrium.*

The intuition behind this result lies in the possibility that the party with relatively poorer performance may manage to win an election with the support of large number of informal sector workers. The factor driving this result will be clear from observing the increase in the relative weightage of the informal sector in the parties' re-election function, i.e. their objective functions. As this is a one period model, a rise in the informal sector's relative weight in the objective function is increasing each of the parties' investments in violence simultaneously before anything else, dominating all other potential factors.

This result is significant for studying the implication of a high informal sector on the quality of democracy of a poor country. A growing informal sector may be detrimental for the over all development of economy too, where the party with worse over all and economic performance may find winning an election *easier*, by compensating the performance deficit through violence, attracting support of the large number of informal sector workers.

This result *reinforces* the result of Sarkar (2018) that large informal sector with clientelistic characteristics in less affluent countries has a positive relationship with sub optimal performances of political parties.

Next, we look at the mechanism with which the under-performing party A earns the support of the informal sector workers, which is the relative clientelist benefit z. We find $\frac{\partial P_A^*}{\partial z} < 0$ and a calculation like before gives $\frac{\partial v_A^*}{\partial z} = \frac{\partial v_B^*}{\partial z} > 0$ under our assumption 18. Also. $\frac{\partial \pi_A^*}{\partial z} = -f.\frac{\partial P_A^*}{\partial z} > 0$ and $\frac{\partial \pi_B^*}{\partial z} = f.\frac{\partial P_A^*}{\partial z} < 0$. We present these findings below.

Proposition 4. *A higher capacity of delivering exclusive clientelist benefit z by the inferior performer increases the choices of violence by both the parties in equilibrium. It also increases the winning probability of the low-performing party, decreasing the chances of the better performer.*

When incurring violence is less costly for the better performer, it gains more political strength than the inferior, there by reversing the above.

Thus, greater scope of clientelism leads to higher political violence and lower development in equilibrium.

Similar mechanism like in the previous result is at play here. Increase in the relative weightage of the informal sector is dominating all other factors.

As z is the capacity of A's turning its advantage in political strength over B into clientelist benefit for supporting A, its positive effect on A's winning chances, and consequently negative effect on the rival B's electoral chances are intuitive. But interestingly, it not only raises the choice of violence by A alone. As a result of increasing violence of A, B also raises it's choice of violence in the equilibrium. Thus, clientelism raises the choice of violence by the well-performing party too. In its implication for development, this result is also in similar spirit with

that of Sarkar (2018). But it contributes more by adding the dimension of violence, explaining its relationship with clientelism.

Now, we turn to the relative performance of the parties in the formal sector $\Gamma = \Gamma_B - \Gamma_A$. A higher Γ means less competition between the parties among the informal sector voters and vice versa. The competition can be over economic and other performances, political popularity etc. or all taken together. Like before, we derive $\frac{\partial P_A^*}{\partial \Gamma} > 0$ and therefore, $\frac{\partial v_A^*}{\partial \Gamma} = \frac{\partial v_B^*}{\partial \Gamma} < 0$ and $\frac{\partial \pi_A^*}{\partial \Gamma} < 0$, $\frac{\partial \pi_B^*}{\partial \Gamma} > 0$. The proposition follows.

Proposition 5. *A rising competition in the performances preferred by formal sector voters* ($\Gamma = \Gamma_B - \Gamma_A$) *decreases political violence by both the parties, there by increasing the electoral chances of the better performer in equilibrium.*

There are two possible intuitions to explain this result. When winning chances of the lower-performing party among the formal sector voters Γ_A further declines, it doesn't attempt to compensate for it by gaining support of the informal sector by incurring more violence. This is because, a higher Γ increases P_A^*, there by increasing the cost of engaging into more violence in equilibrium. Consequently, this also lowers the violence of its opponent. Similarly, when performance of the better-performing party B improves more, i. e Γ_B increases, it refrains from indulging into more violence as it doesn't need to, consequently resulting in a peaceful equilibrium.

Lastly, we interpret ϵ to be the ideological spectrum of the formal sector voters, which captures the relative popularity of party A with respect to all non-economic factors like ideology, identity, or any idiosyncratic shock generated by non-economic factors. It is easy to check that $\frac{\partial P_A^*}{\partial \epsilon} < 0$ and hence $\frac{\partial \pi_A^*}{\partial \epsilon} > 0$, $\frac{\partial \pi_B^*}{\partial \epsilon} < 0$. Finally, $\frac{\partial v_A^*}{\partial \epsilon} = \frac{\partial v_B^*}{\partial \epsilon} > 0$. We conclude this section with proposition below:

Proposition 6. *An increase in the ideological spectrum ϵ of the formal sector voters increases the electoral prospects of the under performer and leads to a more violent equilibrium.*

As the ideological spectrum ϵ stems from ideological as well as other exogenous factors or shocks relevant to the formal sector voters only, its expansion increases the uncertainty of the formal sector voters' support for the parties. This is followed by higher political signaling by the parties to the informal sector voters, the instrument for which is violence. As a result, it helps the electoral prospects of the under performing party A. This is intuition of the mechanism drives this result.

4. Adverse effects of violence

A natural extension of our baseline framework is to model the adverse effects of violence on other stakeholders of the economy. Till now, we had assumed only a signaling role of violence, without any negative externalities. The voters' preference did not incorporate distaste for violence, which is unnatural in reality. We now change this assumption to make the model more realistic.

In the model, as violence is an instrument to signal de-facto political strength towards informal sector workers, it plays an *informative role* for the informal sector voters. Their decision to ally with the politically powerful to support own livelihood comes through this violence. We assume that this need for economic survival dominates their distaste towards violence. But the same is not true for the formal sector workers, and they can *afford* to express their hatred for violence through their voting decisions.

Like before, the formal sector voters in our model observe the parties' performances in the economy and polity for choosing the winner. Additionally now, they also observe the relative violence by the parties and do not vote for the party which engages in *sufficiently higher* violence than its rival. Specifically, they also observe the noisy signal s about P_A now and infer the true state of P_A. As P_A is determined by the relative investment on resources on violence with respect to A, a high *enough* P_A implies far greater investment on violent activities by A than B. Their distaste for violence will make them not to support A finding upon a high *enough* P_A, *irrespective* of their performances in the formal sector. We assume that a formal sector worker doesn't vote for A if she infers P_A to be higher than $\overline{v}$. The exogenous threshold value $\overline{v}$ denotes the upper limit of their tolerance for violence inflicted by a party over the other. The citizens working in the formal sector know that violence is the chief instrument of gaining de-facto political strength, and do not tolerate it beyond a limit. For informal sector workers, the earlier argued assumption prevails that their distaste and potential costs from violence is surpassed by the potential benefits of protection of livelihood and economic survival, which is the key assumption of our model. They simply cannot afford to express any distaste for violence, as necessitated by their economic helplessness.

With all prevailing assumptions and sequence of events remaining same like before, we begin to solve the equilibrium exactly like before. We calculate the relative size of formal sector workers voting for party A now as

$$P(s < \overline{v})\Pi_A = \left(\overline{v} - P_A + \frac{1}{2}\right)\left(\frac{1}{2} + \frac{\Gamma_A - \Gamma_B}{\epsilon}\right) \tag{20}$$

These are the voters who will vote for A after *independently* looking at *both* the developmental performances *and* resources spent on violence by the parties.

Thus, adding the prospective vote shares from the formal and informal sector workers, the winning condition for A now becomes

$$\left(\overline{v} - P_A + \frac{1}{2}\right)\left(\frac{1}{2} + \frac{\Gamma_A - \Gamma_B}{\epsilon}\right) + n\left(P_A + \frac{1}{2} - \hat{s}\right) \geq \frac{n+1}{2} \tag{21}$$

where the second term of the L.H.S. gives prospective vote share from the informal sector workers like before.

We assume the equality above to hold for $P_A{}'$ so as

$$\left(\overline{v} - P_A' + \frac{1}{2}\right)\left(\frac{1}{2} + \frac{\Gamma_A - \Gamma_B}{\epsilon}\right) + n\left(P_A' + \frac{1}{2} - \hat{s}\right) = \frac{n+1}{2} \tag{22}$$

Next, in similarity with 3.1, an informal sector worker will calculate her best-response signal s' for voting for A from the cost benefit analysis from

$$bP(P_A \geq P_A') + zs' = bP(P_A < P_A') \tag{23}$$

From the above we can solve the best response signal as

$$s' = \frac{2bP_A'}{2b+z} \tag{24}$$

As in the symmetric equilibrium $\hat{s} = s'$, we here denote the best response threshold signal for any informal sector worker for voting A by s^{**} and the corresponding political strength for A to win the election by $P_A{}^{**}$. Substituting s' from above in 22 we can solve for s^{**} and hence $P_A{}^{**}$ as

$$P_A^{**} = \frac{\frac{\Gamma}{\epsilon}\left(\frac{1}{2} + \overline{v}\right) + \frac{1}{2}\left(\frac{1}{2} - \overline{v}\right)}{\frac{\Gamma}{\epsilon} + \frac{nz}{2b+z} - \frac{1}{2}} \tag{25}$$

where $\Gamma = \Gamma_B - \Gamma_A$ defined earlier. WE formalize this threshold political strength in equilibrium to use it in our subsequent analysis.

Lemma 2. *Under the risk of adverse effect of violence on formal sector voters, the minimum political strength required for the under-performing Party A to win an election is a non-negative threshold value $P_A{}^{**}$. The relative political strength of party A with respect to party B exceeding $P_A{}^{**}$ provides a sufficient condition for A's victory in the elections.*

Now, using Lemma 2 the objective of Party A modifies to maximizing

$$P(P_A \geq P_A^{**}) - c_A(v_A) \tag{26}$$

and that of B is

$$P(P_A < P_A^{**}) - c_B(v_B) \tag{27}$$

w.r.t their choice variables v_A and v_B respectively. We denote their equilibrium choices by v_A^{**} and v_B^{**} respectively. The characteristics of the equilibrium choices are same like that of the previous section.

A number of observations are in order.

We find that the rising effect of informal sector employment on political violence remains same like before. But unlike before, we now find $\frac{\partial P_A^{**}}{\partial \Gamma} > 0$ only for $n > n_0$ and vice versa, where $n_0 = (1 + \frac{\frac{1}{2}-\bar{v}}{\frac{1}{2}+\bar{v}})(\frac{1}{2} + \frac{b}{z})$. Proceeding similarly like in the earlier section, it follows that $\frac{\partial v_A^{**}}{\partial \Gamma} = \frac{\partial v_B^{**}}{\partial \Gamma} < 0$ and $\frac{\partial \pi_A^{**}}{\partial \Gamma} < 0$, $\frac{\partial \pi_B^{**}}{\partial \Gamma} > 0$ for $n > n_0$ and vice versa, with $\pi_A^{**} = P(P_A \geq P_A^{**})$ and $\pi_B^{**} = P(P_A < P_A^{**})$ denoting the winning probabilities of the respective parties.

This implies that when competition between the parties among the formal sector voters gets close, the under-performer then only engages in violence.

Proposition 7. *Under the risk of adverse effect of violence on formal sector voters, when performances of the parties on development are close (Γ falls) and competition for* support *among the formal sector voters increases, political violence increases if only the presence of informal sector is sufficiently high ($n > n_0$). Otherwise, a smaller presence of informal sector ($n < n_0$) decreases violence in the equilibrium. Consequently, a close competition in the formal sector (low Γ) in the presence of a large informal sector ($n > n_0$) increases the winning chances of the lower performing party in equilibrium.*

The intuition behind this result is comprehensible. When competition for support among the formal sector voters increases, the lower performer A takes the risk of indulging into more violence to signal the informal sector voters for compensating its lagging performance on development. A sizable presence of the informal sector makes this risk worthwhile in its cost benefit analysis, as a higher size can compensate for the additional support lost among some formal sector voters for the violence. Hence, the size of informal sector is crucial for the electoral victories of under-performing parties and perpetuation of political violence.

5. Policy suggestion and conclusion

The main policy suggestion of this work points to the direction of reducing the size of informal employment in the unorganized sector as a significant instrument to control political violence and improve the quality of governance enhancing development. Chalking out policies to incentivize the growth and expansion of employment in the formal sector of the economy is the chief policy prescription for the Governments of L. D.C.s for reducing the culture of rampant political violence, apart from other known benefits of formalization of the economy. To successfully achieve it will necessitate the Government to devise policies of arresting political clientelism in the unorganized sector, which is one of the main channels leading to violence.

Some reasonably possible consequences of such policy measures may lead to universal coverage of welfare schemes instead of targeted schemes, less State-dependence and more expansion of the market in service deliveries, etc. Over all, any policy change in this direction has the potential of radically changing the economy with far reaching implications for the polity. But these long term qualitative changes and consequences in policies depend on numerous other factors in reality, as well as on the de-jure executive's political will. To begin with, significant attention of policy makers on this measure of controlling political violence through clientelism is needed to be drawn, especially in the L. D.C.s, to move forward with any such policy in action.

A logical extension in theory will be to examine other dynamics and motives of violence, like deterring the opposition voters, 'targeted' and 'non-targeted' violence etc. A major necessity of this paper is to strengthen the results with further empirical evidence worldwide. Unavailability of such reliable data, especially from L. D.C.s has been a hindrance for the authors to proceed. Any survey based empirical checking is time taking and resource dependent, which itself calls for a separate work of its own. We intend to explore these in our future work.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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