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Insurgency and Governance: An Empirical Study of Tripura, India

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Abstract

The insurgency movement or social conflict took place in the Indian state of Tripura for a period of three and half decades, i.e., 1980- 2014. Under this circumstance the paper tries to analyze whether governance plays an active role in conflict management in Tripura or insurgency negatively affected governance. Based on time series data (1983-84 to 2019-20) and using ARDL model the causal relationship between insurgency and governance is analysed which shows that there exist a long run co-integration between insurgency and governance and both the variables affect each other negatively. In the short run insurgency has a negative impact on governance but no causality is found from governance to insurgency. This study sets an example that the practice of good governance is an instrument for resolving and controlling ethnic insurgency in any poly-ethnic societies of India and abroad and restoring ethnic harmony through the implementation of its public policy and makes an original contribution to the literature on conflict studies across the globe.

Keywords: Governance, Insurgency, ARDL Model, Causal relationship, Tripura, India

1. Introduction

Governance is a concept in political discourse that has acquired a considerable emotive force; especially with its derivative positive consequences to national security and economic development (Edeh & Ugwueze, 2014). The World Bank (World Bank, 1994) defines governance as the ability and capacity of a government to exercise its power, formulate and implement policies, and to manage a country's resources for economic and social development. It is our belief that good governance can significantly influence the risk of armed conflict and can assist in preventing or resolving violence (Fielding & Shortland, 2010).

As we begin the 21st century, civil war is the most prevalent form of large-scale violence and is massively destructive to life, society, economy and world politics. The prevention of civil war is therefore a key priority for international attention and the phenomenon is closely related to the strength or weakness of governance structures (Abadie & Gardeazabal , 2008 ; Frey et.al.,2007; Eckstein & Tsiddon , 2004; Drakos & Kutan, 2003) that deny certain groups access to political power and economic opportunity and there is a disagreement that what kind of security policies is most likely to minimize conflict intensity.

Peace can be achieved through the establishment of effective systems of cooperation, coordination, and decision making, more broadly called governance. While governance is broader than government (Cortright et al. 2013; Mathur, 2009), states are nonetheless the major factors in determining the prospects for war and peace. States and societies improve their peace through economic development

and political incentives through the distribution and provision of social as well as welfare services and public goods (Cortright et al. 2013; Collier et al. 2003), although the strategies are different from one place to another . Failures of governance undermine both development and security. As policy towards welfare programs in public health, education, power, sanitation, water, social justice system and social security increases, the risk of conflict declines significantly, develop the peace situation through improving the living standards of citizens and raising the opportunity cost of insurgency (Fitzsimmons, 2013; Taydas & Peksen, 2012; Collier et al. 2003).

According to Henderson & Singer (2000), multifaceted strategy of full democratization, demilitarization, and development is required to reduce the likelihood of civil war in post-colonial states of Africa, Asia, and the Middle East. Sultan and Akhtar (2015) stated that long term policy, educational, political, economic and social reforms should be introduced which empowers and facilities participation of the locals so that the violent activities of both Maoists in India and Taliban in Pakistan may be reduced. In Nigeria and Iraq good governance can sustain development through public goods distribution and social welfare activities and curb insurgencies (Berman et al. 2011). The combination of political repression and military counter-insurgency measures employed by the Egyptian government reduce political violence in Egypt (Fielding & Shortland, 2010). Government policy on age dependency, numbers of police (and security) officers, per capita economic prosperity, educational level and population density have significant impact on crimes and conflicts in Africa (Asongu & Tedika, 2016). The study of Kleinfeld & Majeed (2016) states that the government of Bihar constructed panchayat buildings to serve as one-stop shops for public services. Besides, construction of roads, schools, health clinics, bridges, irrigation canals, even houses, for villagers were given a high priority in Bihar to reduce the violence activities.

which ensured that civil servants would be available to hear grievances and offer solutions and it emphasized the proper implementation of state and central government programs, such as the national employment guarantee scheme etc.

United Nation peacekeeping is positively correlated with democratization processes after civil war and multilateral enforcement operations are usually successful in ending the violence (Doyle & Sambanis, 2000). Addressing transitional security in Nepal requires improving the elements of national power including democracy and governance (Joshi, 2014).

There are also many research studies which established the fact that insurgency have a negative influence on governance. The insurgent groups affected the social, economic, and military aspects of governance in African countries like Nigeria, Chad, and Cameroon (Nicholson, 2016). The frequency of insurgent attacks has resulted in collateral damage on the peace, stability, development and sovereignty of the Nigerian state. It finds also that the federal government has not been decisive enough (Folarin & Oviasogie, 2014). The study of Fitzsimmons (2013) states that in Iraq good governance was a less important contributor to success than addressing ethno-religious cleavages and, especially, simply providing security. Effective governance no longer takes place in the affected areas of the northeast part of Nigeria (Sule et al. 2015). Efforts of the security actors have failed to attain a monopoly on violence in Afghanistan (Lacey, 2015).

In spite of the richness of the uni-directional literature on conflict and governance cited above, their bi-directional relationship between insurgency and governance have not been tested empirically in India and its north eastern parts too. Even short run as well as long-run causality had not yet been tested

between them. The present study intends to capture these dimensions quantitatively with respect to the insurgency movement that took place in the Indian state of Tripura from1980s to early 2000s.

The purpose of this study is to investigate whether there exists a short run as well as long-run relationship and bi-directional causality between governance and insurgency in the state of Tripura. For this, two indices, one each on insurgency and governance, have been constructed based on secondary data sets using Principal Component Analysis. The novelty of our study is that taking thirty-six years (1983-84 to 2019-20) time-series data and using ARDL model; it has tested the co-integration between insurgency and governance and identifies the nature of direction of causality. This study sets an example that the practice of good governance can mitigate insurgency in any conflict prone regions across the world. This study provides the first empirical evidence that linking long run and short run causal relationship between insurgency and governance across the globe. This study might be useful for designing appropriate policy response in other contexts throughout the globe in general and India in particular. Our study enriches the literature of conflict studies in general and the domain of conflict and governance in particular which provides new insights in this domain and adds to our understanding.

2. Background of the Study

Tripura, one of North-eastern states of India, had a border with the neighbouring country Bangladesh and the state of Assam in India. The state is the homeland of six major tribal groups, viz., Tripuris (57% of tribal population), Reangs (14.39%), Jamatias (7.62%),Chakma (5.96%), Halams (4.96%) and Mog (3.12%) (Ghosh, 2003).The current estimated population of Tripura is 42.23 Lakhs— of which 31.8 percent is scheduled tribe (ST) and 68.2 percent is non-tribal Hindu Bengalis.

The partition of India (1947) had changed the geographical landscape of the state and also produced the socio-political problem of consequent immigration of Hindu Bengalis from the neighbouring areas (Mohanta 2004) of the then East Bengal presently known as Bangladesh. The plain land which was predominantly a tribal habitat gradually receded by the ever increasing inflow of the Bengali refugees resulting heavy pressure on the land of the state of Tripura. The waves of those immigrants over three decades (1950s-1980s) gradually caused to economic, political and cultural marginalization of the autochthons, i.e, tribals. Tiny plains became overcrowded and the immigrants started settling along the foot hills and gradually moving up pushing the tribals to the interior of the hills and had outnumbered the tribals who became minority in their own land, while; tribal population in the state was 50.91 per cent in 1941and it is reduced to 28.95 per cent in 1971 and then to 28.45 per in 1981 (Census Report of India 1991).

Besides land alienation, large scale immigration has marginalised the autochthons in the number based electoral democracy. As the political power is dominated by the immigrants, the state power slipped from the tribal monarchy to peoples' representatives, majority of who were *non-tribals* (20 out of 60 seats were reserved for Schedule Tribes in the House of Legislative Assembly in Tripura under Delimitation of Parliamentary and Assembly Constituencies *order, 1976, of Election Commission of India)*.

Again, looking at the past cultural and religious historical aspects of Tripura, it is found that Bengali language has found a place of honour in the royal court of Tripura. Till the integration of Tripura with the Independent India, Bengali had functioned as the official language of Tripura. The Kings also supported Bengali culture and religion since pre-partition of the state and it was made a state language. The rationale behind this adoption of Bengali as the 'state language' might be the fact that the

conversational language of the tribals in Tripura was *Kokborok* in most cases, which didn't have a script (*lipi*) and adopted the Bengali one, as it was the only feasible option for the rulers and the nobility. As a result, the tribal people of Tripura started to speak in Bengali instead of their mother tongue Kok-borok. They seemed to be engaged in other Bengali culture pursuits like literature, dance, music, rites and rituals etc. So, gradually their native *Kok-borok* language being marginalized and gradually dominated by Bengali.

Consequently these demographic, political, cultural and religious power by the non-tribals in the state had created a tremendous frustration in the minds of the tribal youths who sought to redress this situation by way of waging war against the state machinery as well as non-tribal population. So, to protect the interest of the tribals and to deliver them the autonomy in administering the tribal areas in the state, a bill was initiated in the Tripura Legislative Assembly on March 25, 1979, to set-up Tripura Tribal Areas Autonomous District Council (TTAADC) under the *Sixth Schedule* of the Constitution of India. But the problem was not solved, inter-ethnic clashes broke out in different parts of the state and signalled the beginning of insurgency in Tripura in the early 1980's (Bhattacharjee, 1990; Paul,2009). For long 34 years of its existence (1980-2014), this insurgency cost loss of many lives, inflicted injuries and the state witnessed a kidnapping of numerous people (Banik and Das, 2019). Based on this Tripura experience, the present study intends to empirically examine the complex causal relationship between insurgency and governance so that its policy implications might shed some light on conflict resolution elsewhere.

3. Model Specification and Method

3.1. Variables

Both the concepts—insurgency and governance— have qualitative characteristics, cannot be quantified with a single indicating variable. As insurgency is considered as militant political movement, its intensity may be measured in terms of killing, injuries, kidnapping of people including the events of encounters. Following the studies of Simmons (2004), Holmes (2006), Kalivas et al. (2007) and Meierrieks et al. (2013), four indicating variables have been used in order to measure insurgency. These are: Injuries, Killing, Kidnapping and Encounters.

Following the studies of Kim and Conceicao (2010), Kennedy (2010), Mundle et al. (2012) and Coastalli et al. (2014), twelve variables relating to the strength of the network of public utilities have been used to capture the performance of governance. Good governance defuses internal conflict as well as insurgency problem (Young & Findlay, 2011; Malik, 2009; Vatikiotis, 2006; Acharya, 2006; Herbst, 2004). Good governance in a democratic country like India deliver public goods utility services and basic infrastructure, which may improve the livelihood and socio-economic status of the people leading to peace and security. Good governance mainly addresses issues of infrastructure services, social services and maintenance of law and order (Mundle et al. 2012). In line with the studies of Malik, 2009; Simmons, 2004; Lall, 1999 infrastructure services include household electricity connection, number of bank branches, road length per100 sq.k.m. Further, different tourist spots constructed or developed by the state government is also included under infrastructure services because tourism not only contributes towards economic activities but also generates more employment, revenues and play a significant role in development, foster cultural exchange between foreigners and citizens, and promote education and peace. Social services comprise health and education. To explain health service the proxy variables like infant mortality rate (Kim & Conceicao, 2010), crude birth rate, and crude death rate, number of health centre are included in the study (Mundle et al. 2012; Kennedy, 2010; Parayil, 1996). To describe

education services, the variables like number of schools, and enrolment of students at school level are chosen (Kim and Conceicao, 2010; Kennedy, 2010; Mundle et al. 2012; Coastalli et al. 2014). Under Law and order the indicating variables like number of police station and number of police personnel (Kennedy, 2010) are taken into consideration in this study.

Therefore at a glance, four indicating variables have been chosen for constructing index for insurgency variable and twelve variables for building of governance index as shown in table 2. Principal Component Analysis (PCA) is used for constructing indices of insurgency and governance. After computing the loadings of each indicating variables following the standard practice of PCA, the annual index values of each of the two variables—insurgency and governance— for 37 years are constructed for the period 1983-84 to 2020-21, as the study used annual secondary data of all the indicating variables spanning over the said time period. These indices of insurgency and governance are then used for estimating our model.

The data related to insurgency are collected from Department of CID, Government of Tripura, India and Global Terrorism Database. The information regarding governance indicators are gathered from various State Government Departments like Department of Economics & Statistics, Electricity Department, Tourism Department, Health Department, Public Works Department, Transport Department, Police Department and Education Department. All variables are transformed in to natural logarithms values.

3.2. The Model

The study hypothesized that the insurgency is influenced by governance and governance, in turn, is influenced by insurgency. Here an attempt has been made to specify the base structural equation model for investigating the hypotheses:

$$insy_t = \theta_0 + \theta_1 govn_t + t + \mu_t \quad (1)$$

$$govn_t = \partial_0 + \partial_1 insy_t + t + \omega_t \quad (2)$$

Here the log values of both the variables – insurgency (insy) and governance (govn) – are taken to analyse the expected percentage change in dependent variable due to one percent change in independent variable, following the studies of Shahbaz (2013) and Debnath & Das (2017). μ_t and ω_t are the error terms. It is *a priori* that the coefficient value of governance (θ_1) and that of insurgency (∂_1) are negative. *t* represents time trend.

4. Empirical Analysis

4.1. Index Result Analysis

First, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity are adopted for testing sample adequacy and reliability in connection with index construction. As the values of KMO test for both the indicators of insurgency and governance are greater than 0.6, it indicates that the samplings are adequate in both the cases.

TABLE 1: KMO and Bartlett's Test

KMO and Bartlett's Test		Insurgency	Governance
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.765	0.873
Bartlett's Test of Sphericity	Chi-Square ($\chi 2$)	108.12	825.321
	Df	6	66
	Sig.	0.000	0.000

Source: Banik & Das, 2019

Second, the results of the Bartlett's Test of Sphericity show that the indicators under each variable of insurgency and governance are correlated with each other since the Chi-Squares ($\chi 2$) values of both the variables are significant at one percent level. Hence the data are suitable for constructing separate index for each of them.

Third, while finding correlation matrix of indicative variables of governance for construction of governance index, it has been observed that each of the three indicative variables viz. infant mortality rate, crude birth rate, and crude death rate are uncorrelated with the rest of the indicative variables of governance. Therefore, these three have been omitted and the remaining nine variables are used for index calculation.

Fourth, indices of insurgency and governance have been constructed by assigning loadings (table 2) to each indicators using PCA. Higher loading means higher weight. Injuries have the highest loading (0.302) among the indicating variables of insurgency. In governance, the number of police station have the highest loading (0.140) and number of police personnel (0.054) have the lowest.

TABLE 2: Loadings of insurgency and Governance indicators

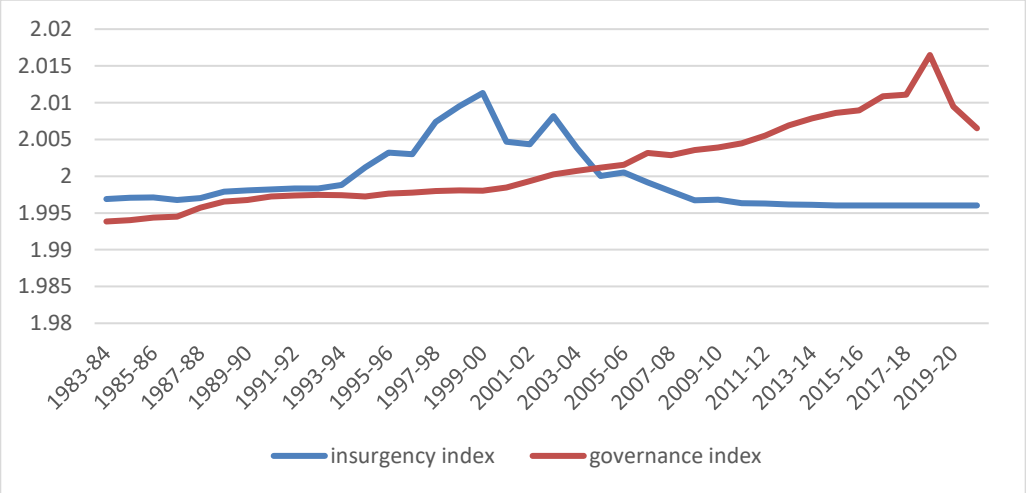
SL No.	Index	Variables	Loadings
1.	Insurgency Index	Injuries	0.302
		Killing	0.295
		Kidnapping	0.276
		Encounters	0.248
2.	Governance Index	Number of Police Stations	0.140
		Number of Schools	0.139
		Household Electricity Connections	0.138
		Number of Tourist Spots	0.136
		Number of Health Centers	0.135
		Road Length per 100 sq.km	0.131
		Number of Commercial Bank Branches	0.118
		Students Enrolment at school level	0.115
		Number of Police Personnel	0.054

Source: Authors' calculation

Fifthly, a graphical exposition of the time series index values of the two variables—insurgency and governance—is presented in figure 1. It exhibits that insurgency goes up since 1987-88 and had reached at its climax in the year 1999-00 and then gradually declined till completely petered out in 2013-14.

Contrastingly, governance started to accelerate since 1995-96 and the activities of the state government had steadily increased since 2003-04. It reached to its climax in 2017-18. Although it had downsized after 2018, might be due to COVID-19. But still now insurgent activities is nil.

Figure 1: Trends of Insurgency and Governance



4.2. Unit Root Test

To understand both the long run and short run relationship between insurgency and governance, Augmented Dickey-Fuller (ADF) unit root test of these two indices is undertaken in order to verify the stationarity of the variables. In time-series data, if the data under analysis are non-stationary, the results of regression analysis obtained in a traditional manner would not be reliable, Autoregressive Distributed Lag Model (ARDL) may be used after checking the order of integration through unit root test. Here, the null hypothesis is that the variables are not stationary against the alternative hypothesis that the variables are stationary. The results of the unit root test are presented in table 3.

TABLE 3: ADF Unit Root Test on Insurgency and Governance

Variables	Level	1st Difference
Governance	1.87	-4.54***
Insurgency	-2.11	-5.17*

Source: Authors' calculation.

Note: * and *** denote the rejection of null hypothesis of unit root at 10 % and 1% level respectively.

The ADF results show that governance and insurgency are stationary both at 1st difference level as the probability value of t-statistic of both the variables are significant. Hence, the order of integration is *I*(1) and the assumption of non-stationary state is rejected and hence the ARDL model can be applied.

4.3. Testing for Long Run Co-integration

The ARDL unrestricted error-correction model (UECM) is expressed using equations 3 and 4 to analyse the causality between insurgency and governance:

$$\Delta insy_t = \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta insy_{t-i} + \sum_{i=0}^{q} \alpha_{2i} \Delta govn_{t-i} + \beta_1 insy_{t-1} + \beta_2 govn_{t-1} + \vartheta_t \quad (3)$$

$$\Delta govn_t = \gamma_0 + \sum_{i=1}^{p} \gamma_{1i} \Delta govn_{t-i} + \sum_{i=0}^{q} \gamma_{2i} \Delta insy_{t-i} + \delta_1 govn_{t-1} + \delta_2 insy_{t-1} + \mu_t \quad (4)$$

where, Δ is the difference operator, p and q are lag length chosen; α_0 and γ_0 are constant; $\vartheta_t$and μ_t are disturbance terms; α_{1i}, α_{2i}, γ_{1i} and γ_{2i} are short run coefficients, and β_1,β_2, δ_1 and δ_2 are long run coefficients.

Equation-3 explains that insurgency at period t depends on lags of the dependent variable (i.e., insurgency) and both the current and lags of governance as independent variables. Similarly, equation-4 shows that governance at period t depends on lags of the governance and both the current and lags of insurgency as independent variables.

Akaike Information Criteria (AIC) is employed to determine and select the optimum lag length (*p, q*) in time series analysis that affects the cointegration analysis. Unlike Schwarz Bayesian Criterion (SBC) and Hannan Quinn Information Criterion (HQIC), AIC is superior (Ismail & Amjad, 2014; Debnath &Das, 2017). The optimum lag length is determined with a total of lag length (*k*) and the maximum order of integration (*d-max*) of the variables, i.e., (*k*+*d-max*). Table 3 already indicates that governance and insurgency both are stationary at 1st difference level. In equation 3, seven and six lag periods are selected for insurgency and governance variables respectively. Hence the optimum lag length (*p*) for insurgency is 8 and that of governance (*q*) is 7. So the equation 3 can be estimated with (8, 7) optimum lag length. In equation 4, two and seven lag periods are selected for governance and insurgency variables respectively. Hence the optimum lag length (*p*) for governance is 3 and that of insurgency (*q*) is 8. Therefore the equation 4 can be estimated with (3, 8) optimum lag length.

Given these equations, bound test based on Wald-Test (*F-statistic*) is used to examine the presence of co-integration or long run relationship between insurgency and governance. For equation 3, the null hypothesis is that the variables are not integrated to each other, i.e., $H_0: \beta_1 = \beta_2 = 0$; while the alternative hypothesis is that they are co-integrated, i.e., $H_1: \beta_1 \neq \beta_2 \neq 0$. Similarly, for equation 4, the null hypothesis is $H_0: \delta_1 = \delta_2 = 0$ and the alternative hypothesis is $H_1: \delta_1 \neq \delta_2 \neq 0$.

The calculated and critical values of *F-statistics* are given in table 4.

TABLE 4: Bound Tests for the existence of long run relationship

Dependent Variables	**Calculated *F-statistic***	**5% Critical Value**		**Conclusion**
		I(0)	***I(1)***	
Insurgency	9.14	4.94	5.73	Co-integration
Governance	8.43	6.56	7.3	Co-integration

Source: Authors' calculation

The calculated F-statistic for equation 3 is 9.14, which is more than upper bound critical value (5.73). The calculated F-statistic value is significant at 5 percent level. So the null hypothesis $(H_0: \beta_1 = \beta_2 = 0)$ gets rejected confirming that there is long run co-integration between insurgency and governance. It means that in the long run, governance will affect insurgency.

Similarly, the calculated F-statistic (8.43) is greater than the upper bound value In case of equation 4 also and the value is significant at 5 percent level. Thus, the alternative hypothesis of co-integration $(H_1: \delta_1 \neq \delta_2 \neq 0)$ is accepted. Hence, a long run co-integration is found to run from insurgency to governance. It means that in the long run, insurgency will affect governance.

Thus, the null hypothesis of non-co-integration is rejected in both the cases, indicating presence of long run bi-directional relationship between the variables.

4.4. Nature of Long Run Co-integration

Although there exists bi-directional relationship between the variables in the long run but not clear the nature of the relationship, i.e., whether the relationship is positive or negative. So, to identify the exact nature of their long run co-integration, equation 3 and equation 4 are estimated using ARDL model, which is not possible using OLS method. The results are shown in table 5.

TABLE 5: Long Run Coefficients estimating results

Variables ARDL (*p,q*)	**Model 1** Insurgency ARDL(8,7)	**Model 2** Governance ARDL(3,8)
Constant	2.47** (2.91)	2.62*** (44.58)
Trend	NA	0.001*** (25.23)
Insurgency	-	-0.31*** (-10.70)
Governance	-0.23** (3.19)	-

Source: Authors' calculation

Note: *, **, *** significant at 10, 5 and 1 per cent level respectively. Student's t-tests are in parenthesis.

It is evident in the first model (table 5) that the coefficient of governance is negative and statistically significant at 5 percent level, i.e., in the long run governance negatively affects insurgency.

In the second model (table 5) we find that the coefficient of insurgency is negative and statistically significant at 1 percent level. This indicates that incidence of insurgency also negatively affects governance in the long run. Therefore it is found that both the variables in the long-run affect each other negatively.

This negative impact of incidence of insurgency in Tripura on governance occurs through a number of ways. The violent conflict distorts economic policies of the government, disrupted civic life and communications, led to the closure of many educational and financial institutions, threatening the authority of the state, effect institutional environment, disrupt the road network, business activities, law and order, create political crisis and various governance issues like peace and security.

The mechanisms, through which governance affects insurgency negatively in the long-run, are many. The state took the problem of insurgency in a strategic and resolute manner by formulating multi-dimensional strategies including developmental programmes, civic action programmes of the security forces and political process. The government reached out to the rural as well as tribal people with the delivery of basic services such as health care, rural connectivity, drinking water supply, employment generation and income accretion. Socio-economic advancement and change in the quality of life were ushered in. The gains from development were perceptible to the people in general and the tribal community in particular resulting active community participation in the development process and in the fight against insurgency. The militants are compelled to return to the mainstream and consequentially retreat from insurgency. Besides, the security forces spread all over the insurgency-bound pockets came up with civic action programmes, offered support and basic services. The activities include health care,

medical aid and drinking water supply. The provision of study and sports to the students, repairing school building, construction of community centres, vocational training in computer learning, tailoring and so on and close interaction with the local people, were ensured. The security forces thus presented a human face, a pro-citizen, people- friendly, development- oriented face of the state and earned the trust, admiration and gratitude of the people. This brought community participation in the moves against insurgency. The political process including strengthening of micro- democratic institutions such as autonomous district councils, *gram panchayats* and village councils were initiated by the then State Government. The institutions were actively and vibrantly functional as local governance modules. The government had opened the window for the insurgents to lay down arms and join mainstream offering rehabilitation packages and several development works, which yielded positive impact to the people of the state through the expansion of market, connectivity due to extension of road network, connectivity and sources of income generation. The state government had quickly implemented some development projects like Sarva Shiksha Abhiyan (SSA) for better educational attainment, National Rural Health Mission (NRHM) for providing access to health services to the rural people and for the employment of rural people the state administration had implemented centrally rural development project like Mahatma Gandhi National Rural Employment Guaranty Act (MGNREGA). These heterogeneous governance activities brought all the communities, notably the rural peoples in particular, into development stream, bringing about substantial empowerment, a sense of fulfilment and reduction of violence activities.

4.6. Testing for Short Run Co-integration

To analyse the short run co-integration between insurgency and governance, ARDL equation 4 and 5 are modified to the Auto Regressive Distributed Lag- restricted error correction (ARDL-REC) in equation 5 and 6:

$$\Delta insy_t = \alpha_0 + \sum_{i=1}^{p} \alpha_{1i} \Delta insy_{t-i} + \sum_{i=0}^{q} \alpha_{2i} \Delta govn_{t-i} + \pi ECT_{t-1} + \tau_t \quad (5)$$

$$\Delta govn_t = \gamma_0 + \sum_{i=1}^{p} \gamma_{1i} \Delta govn_{t-i} + \sum_{i=0}^{q} \gamma_{2i} \Delta insy_{t-i} + \rho ECT_{t-1} + \varphi_t \quad (6)$$

where, π and ρ represents coefficient of error correction term (ECT) which measures the speed of adjustment to reach the long-run equilibrium steady-state position. ECT is the residual of υ_t and μ_t in equations 4 and 5.

To determine the short-run cointegration from governance to insurgency, the null hypothesis (H_0: $\alpha_1 = \alpha_2 = 0$) for non-cointegration is tested against H_1: $\alpha_1 \neq \alpha_2 \neq 0$ for cointegration in equation 5 and similarly to analyse cointegration from insurgency to governance in the short-run, the null hypothesis H_0: $\gamma_1 = \gamma_2 = 0$ for non-cointegration is tested against H_1: $\gamma_1 \neq \gamma_2 \neq 0$ for co-integration in equation 6. The short-run coefficient estimates obtained from the ECM version of the ARDL models is presented in table 6.

In table 6, all parametric diagnostic tests (*p-values* of $\chi 2$, J-B and B-G) are insignificant. It signifies that the residuals are assumed to be constant variance; the error terms are normally distributed and there is no autocorrelation problem. Hence the following inferences can be drawn:

First, to understand the short run dynamics, we conducted Wald test on both the models. In the first model the Wald test result shows that the *F-statistic* value (1.78) is not significant, hence the null hypothesis is accepted. It implies that there is no short-run causality running from governance to insurgency.

On the other hand, the coefficient value of Δ governance (-1.814) is negative but not significant. So it confirms that there is no short run causality running from governance to insurgency. The reason for non-causality from governance to insurgency in the short run is that the governance activities do not executed instantly in the short run and it is obvious that the result does not reach to the society. It takes time to execute.

TABLE 6: Short Run ARDL results

Variables	**Model 1**	**Model 2**
	Δ*Insy* ARDL (8,7)	Δ*Govn* ARDL (3,8)
Constant	1.58* (0.09)	1.87*** (0.00)
Trend	-	0.0003*** (0.00)
Δ*Insy*	-0.124*** [6.57] ***	-0.097*** [26.17] ***
Δ*Govn*	-1.814 [1.78]	0.567*** [25.35] ***
ECT_{t-1}	-0.64*** (0.01)	-0.71*** (0.00)
$Adj.R^2$	0.85	0.99
Diagnostic test statistics		
χ2(heteroscadasticity)	0.67	0.72
J-B (Normality)	0.66	0.02
B-G (serial correlation)	1.84	0.86

Source: Authors' calculation

Note: Figures within round bracket ( ) are calculated *Prob. value*; figures within angle bracket [ ] are calculated Wald test statistics (*F*- value). *,**,***Significant at 10, 5 and 1 percent level, respectively.

Second, in the second model the Wald test result shows that the F-*statistic* (26.17) is significant at 1 per cent level, so the null hypothesis gets rejected and implies that there is short run causality from insurgency to governance. As the coefficient of Δ Insurgency (-0.097) is significant at 1 per cent level, insurgency is likely to have a negative impact on governance in the short run also.

Third, in the second model as coefficient values of 3 consecutive lag periods' governance are positive and significant at 1 per cent level, there exists a short-run positive relationship between present period of governance and its lags for three years. It may be noted that while effects of insurgency on governance are instant, the same for governance measures manifest with a lag till three years. Therefore, control of insurgency is one of pre requisite conditions for governance to speed up.

Fourth, in the second model the coefficient value of ECT ($\boldsymbol{\rho}$) is negative and significant at one percent level. It means that the annual disequilibrium correction of the system occurs at an adjustment speed of 71 percent to reach at long run equilibrium steady state position.

Fifth, Adjusted R^2 exhibits that our 2nd model is robust and the explanatory variables of insurgency explain 99 per cent of variation in current governance. In the 1st model governance does not influence insurgency in the short run, so it is not needed to report about the adjusted R^2.

These short run and long run relationship between insurgency and governance are presented in a simplified manner in table 7.

TABLE 7: Insurgency and Governance: Causality Result

Causality Type	Conclusion	Relationship	Direction of Causation
Short Run Causality			
H_0 : Change in insurgency does not affect Governance	Reject H_0	Relationship exists	Negative
H_0 :Change in Governance does not affect insurgency	Accept H_0	No Relationship	No-cointegration
Long Run Causality			
H_0: Change in insurgency does not affect Governance	Reject H_0	Relationship exists	Negative
H_0: Change in Governance does not affect insurgency	Reject H_0	Relationship exists	Negative

Source: Compiled from Tables 4, 5 and 6

5. Conclusion

In an effort to understand the relationship between insurgency and governance, the present study finds that there exists bidirectional causality between insurgency and governance in the long run and the nature of their relationship is negative. Besides, in the short run there exists a short run unidirectional causality running from insurgency to governance i.e. insurgency negatively impacts governance in the short run which is consistent with the result of long run. No causality is found from governance to insurgency in the short run, i.e., governance have no impact on insurgency in the short run.

Once insurgency sets in, it requires not much time to create hazard, conflict, destruction of lives and properties. The negative impact of the insurgency on governance works through a number of channels like destruction of buildings, disruption of businesses, increase in relative deprivation, reduction in government revenue, a mind of terror among the employees, fear of foreign investors to live and do business, political instability or transformations in the political-economic environment , disruptions to social services and increased food insecurity in an already resource poor area, disturbing economic well-being of the state, influencing protests and strikes, ethnic polarization, etc.

But governance fails to bring the people from those miserable situations and to create peace in a short span of time. It takes time for any government in a democratic set up to implement counterinsurgency strategy. But governance plays an important role in curving the social conflict which we can notice in the literature on conflict and governance (Sultan & Akhtar , 2015; Edeh & Ugwueze, 2014; Costali et al. 2014; Ismail & Amjad, 2014; Meierrieks & Gries, 2013; Collier, 2003).

In Tripura, the government could bring insurgency under control through different multidimensional strategies like securitization of development activities, cultural accommodation in terms of recognition of tribal language (*Kokborak),* introducing federal accommodation in terms of creation of Tribal Area Autonomous District Council (TTAADC) under the sixth schedule of the Indian constitution, separate plan and programme for the insurgents to return and resettle, constructing border fencing between India and Bangladesh, etc. In an effort to encourage self-reliance and sustainable growth, the government of Tripura is captivating plans for launching 'Vocal for Local' initiative as part of the Aspirational Blocks Programme of the state. The initiatives will boost-up local economies, promote employment opportunities and grassroots entrepreneurship, which could undermine violence activities in one side and human development in other side.

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