

Terrorism in India as a Determinant of Terrorism in Pakistan

Assad Ullah¹ · Yang Qingxiang¹ · Zahid Ali² · Muhammad Anees³

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Abstract Terrorism in Pakistan springs from many factors such as, poverty, corruption, inequality, sham democracy, and low-level literacy; however, the effect of terrorism in India over terrorism in Pakistan remains unnoticed. This study explores the role of terrorism in India as a determinant of terrorism in Pakistan. This fangled determinant of terrorism in Pakistan forms the premise of our work. The Johansen cointegration analysis technique confirms the long-run relationship among terrorism in India and Pakistan and unemployment in Pakistan. Error correction model (ECM) resulted 55% of convergence annually. Besides, ECM verifies both short and long-run causalities. The VECM Granger and Modified Wald (MWALD) causality tests reveal that terrorism in India and unemployment in Pakistan Granger causes terrorism in Pakistan, but no reverse causality exists. The study concludes that both terrorism in India and unemployment in Pakistan results in terrorism in Pakistan. Coping with terrorism, Pakistan and India must revisit their respective roles; and simultaneously, Pakistan should address the unemployment problem—which facilitates recruitment for the terrorist organizations.

✉ Assad Ullah
assad@hust.edu.cn

Yang Qingxiang
yqx0102@1026.com

Zahid Ali
zahidzady@yahoo.com

Muhammad Anees
Anees@ciit-attock.edu.pk

¹ School of Management, Huazhong University of Science and Technology (HUST), 1037, Luoyu Road, 430074 Wuhan, People's Republic of China

² School of Accounting Zhongnan University of Economics and Law (ZUEL), Wuhan, Hubei, China

³ COMSATS Institute of Information Technology, Attock, Pakistan

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Introduction

Terrorism in the recent past has become an issue of great concern of the contemporary world. Its impact is so much alarming that it overshadowed all other issues, e.g., nuclear proliferation, global warming, environmental pollution, and water depletion. The dawn of the current century coincided with the re-emergence of terrorism. Owing to their ideological and political disposition, different scholars have defined terrorism differently. As such, universally accepted definition of terrorism could not be postulated so far (Ayres 2000; Silke 2004). Enders and Sandler came up with the provisional definition of terrorism. They defined the term terrorism as “the premeditated use or threat of use of extra normal violence or brutality by sub national groups to obtain a political, religious, or ideological objective through intimidation of a large audience, usually not directly involved with the decision making.”¹

After 9/11, the socio-economic and geopolitical situation of the world went through an abrupt and sea change (Michael 2007). Since then, most of the contemporary issues went on back burner and terrorism became a global issue. The terrorist incidents that take place across the globe made virtually every country cognizant of its danger. As such, security measures against terrorism took priority over other issues. Security plans are repeatedly reviewed with the view to making them more stringent in order to protect their citizens from terrorist attacks. Such measures may help freeze terrorist attacks, but it may surface as and when the situation suits them. Need for a comprehensive and effective strategy that should address the root causes of terrorism rather than terrorists cannot be overemphasized.

Terrorism creates uncertainty for investors and make them more risk averse. Moreover, terrorism cast negative impact on the economic growth of a country (Raby 2003). Pakistan, being the major victim of terrorism, is regarded as the most risky territory across the globe (Riedel 2008). Pakistan witnessed more terrorism in the first decade of the current century. Terrorism has impinged on almost every aspect of economy such as soaring inflation, higher unemployment, towering budget deficit, higher military spending, and allocation of funds meant for development projects to non-development projects (Ali 2011). Severe slump has been witnessed in the economic activities, including the surcease of direct foreign investment. Pakistan has suffered the cost of approximately 33% of its real national income because of terrorism (Mehmood 2014). In Pakistan, terrorism and the fight against terrorism consume about 1% of the growth in real GDP per capita yearly (Mehmood 2014). Pakistan is the sixth largest populous country in the world. Its current population growth (over 2 %) is potent to turn Pakistan the world’s fourth largest populous country by 2050.² Because of higher unemployment, terrorist groups find the situation more conducive for recruitment and training in Pakistan.

¹ Ender and Sandler (2002:145)

² Pakistan Statistical Year Book (Federal Bureau of Statistics, Government of Pakistan, Islamabad, 2010).

Pakistan as a Vehicle for Empirical Research

In Pakistan, the menace of terrorism can be traced back to 1980s (Syed et al. 2015; Mehmood 2014). Terrorism in Pakistan mainly sprang from three elements, i.e., the all-out support by Pakistan to the war against terrorism, Pak-India incessantly invigorating long-lasting rivalry over the 70-year-old Kashmir dispute and negligence of social development especially in Tribal Areas and Baluchistan. Pakistan and Afghanistan's relationship has never been genial, despite the fact that the two countries have common culture and religion

Afghanistan was the only country to oppose Pakistan's entrance to the United Nations. Governments on both sides lack mutual confidence and trust. Yet, Pakistan considers Afghanistan as strategic depth. Afghan Taliban took control of Afghanistan in 1996. Pakistan considered this development as a positive step as it would distance India from Afghanistan. In the beginning, relationship between Pakistan and Taliban government was quite warm, but as Al-Qaida carried out the 9/11 attacks against the USA and its subsequent fallout created rift between Afghanistan and Pakistan. Pakistan could not afford to deny the facilitation of US attacks against Taliban. The resultant fall of Taliban government afforded India better opportunity to establish friendly relationship with Northern Alliance. This new development vitiated the long cherished notion of Pakistan that Afghanistan was its "strategic depth." Furthermore, Pakistan came under severe terrorist attacks planned and conducted by Taliban/Al-Qaida. Taliban and some elements of Al-Qaida found the tribal areas and Baluchistan more suiting for carrying out terrorist attacks against Pakistan. India made optimum use of this situation to its full advantage (Fig. 1).

It is pertinent to mention that whenever some terrorist attacks took place in India, fingers were invariably raised towards Pakistan ignoring the probability that the dissident elements in India might have done so.^{3,4,5,6} Correspondingly, when terrorist incidents happened in Pakistan, the authorities would blame India for that. A number of terrorist incidents in Pakistan substantiate the covert role of India. Such incidents provided ample space for the non-state actors to carry out/facilitate terrorist attacks across both sides of the border.

There is ample literature ascribing various factors that boost terrorism in Pakistan. According to Mehrotra (2000), madrasahs (seminaries) serve as nursery for Islamic militancy and promote terrorism in Pakistan. McClure (2009) maintains that Western media is presenting a false picture of the madrasahs and education system of Pakistan. According to Stern (2000), terrorism in Pakistan is related to the culture of jihad. Michael (2007) identifies that socio-economic and political conditions provide for terrorism in Pakistan. Malik et al. (2015) deducted that numerous risk factors are associated with terrorism in Pakistan. They found that questionable integrity of leadership, insufficiency of services (electricity, transportation and sanitation system, fuel and gas), soaring inflation, political uncertainty, discriminatory legal system, rapid growth in population, compromising sovereignty, impulsive approach non-policy making, unemployment, inequitable distribution of national resources, corruption, and national forces wanting in training and capability are the main factors causing terrorism in Pakistan.

³ James Manor, "Collective conflict in India," in *Conflict Studies*, No.212 (June 1988)

⁴ Naxals: Communist guerrilla groups in India

⁵ Prominent BJP leaders including L.K Advani are still facing criminal charges for their alleged involvement in the destruction of Babri Mosque.

⁶ Gujarat violence: Meaning and implications, *Economic and Political Weekly*, May 18 (Ahmed, 2002).

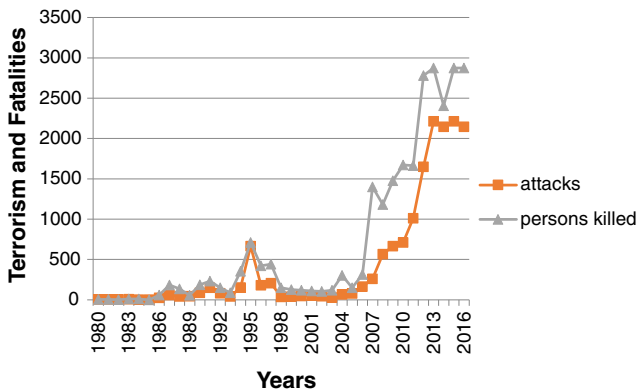


Fig. 1 Terrorism incidents and fatalities in Pakistan (1980–2016). Source: Global terrorism database (2016)

Elaborate research has been carried out by considerable number of well-reputed scholars with a view to bringing forth the factors that ignite terrorism in Pakistan. However, terrorism in India that has direct bearing on terrorism in Pakistan has been overlooked. This effort of the scribe is meant to make up for the omission and support the contention with authentic evidence.^{7,8,9,10}

Theoretical Background

Broadly speaking, the causative factors of terrorism can be related to three main theories: structural, psychological, and rational (Ross 1993). According to structural theory, the main grounds of terrorism in societies can be traced in cultural, environmental, social, political, and economic structures. Psychological theory elucidates the reasons behind why individuals tend to become members of terrorist organizations. The terrorism theory of rational choice explains the motive behind individuals to opt for terrorist activities based on the deliberation of costs and benefits.

This study is based on structural theory of terrorism. Terrorism is a powerful tool for pursuing political/ideological objectives (Orr 2015). According to Orr (2015), there are two types of wars i.e., discriminate and indiscriminate. In discriminate war, military forces and defensive installations are targeted, while in indiscriminate war, civilian targets also come in the loop. The intensity level of discriminate war is high comparing with the intensity level of indiscriminate. Terrorism falls in the category of indiscriminate war (Orr 2015). Indiscriminate war is generally fought both by terrorist group for pursuing their ideological objectives. However, at times states also resort to this type of war with a view to implementing its own agenda (Fall 1998; Palmer 2000). Nowadays, unconventional (indiscriminate) wars are cost effective and safer, whereas the conventional (discriminate) wars are more expensive and risky, making terrorism better choice for belligerent states (Laqueur 1996; O'brien 1996).

⁷ RAW whipping up terrorism in Pakistan: General Raheel (Pakistan observer, May 6, 2015)

⁸ RAW trains MQM workers for unrest in Karachi: SSP Karachi (Express tribune Pakistan, February 22, 2016)

⁹ Rangers nab three RAW trained MQM men (The nation Pakistan, February 25, 2016)

¹⁰ RAW agent Kalboshan Yadaw, arrested in Balochistan (Dawn, March 25, 2016)

The partition of British India led to the creation of two rival independent states (Pakistan and India) and left the unsettled issue of Kashmir to remain as the core apple of discord between the two countries. Such hostility in the outset between the two countries forced them to divert substantial part of their respective GDP towards defense sector. Besides a number of local wars and skirmishes, two major wars were fought between India and Pakistan (1965; 1971). The later resulted into the creation of Bangladesh (then East Pakistan). India conducted nuclear tests in 1974 that prompted Pakistan to follow suit and eventually conducted nuclear tests in 1998. The arm race between the two neighboring countries still persists. India is consistently provoking Pakistan by violating its territorial limits including intrusion into Pakistani waters, cross border firing, and harboring dissident citizens of Pakistan.¹¹ On the other hand, Pakistan is supporting the freedom fighters of Held Kashmir. Both the countries are involved in proxy war against each other through non-state actors. The dissident elements in India belonging to various groups and religions, who feel oppressed and discriminated, sometimes resort to violent actions.¹² Whenever an incident of violence takes place in India, the Government spontaneously blames Pakistan for involvement. Such presumptions and apprehensions founded or otherwise prompt the agencies and non-state actors to reciprocate. It is in fact this unending retaliation that correlate terrorism in India with terrorism in Pakistan. Hypothetically speaking, if there had been complete harmony in the different divide and tiers of the Indian society, its impact on Pak-India relation would have been certainly positive. The contention that terrorism in India impacts terrorism in Pakistan is quite complex and needs to be examined inclusively. The checkered history of India-Pakistan relationship gives prudence to the fact that each country would like to bleed the other. The Indian support of Mukti Bahini¹³ in 1971 and Pakistani support of freedom fighters in Kashmir provide reason to non-state actors of both countries for causing harm to each other.

State of the art

General Causes of Terrorism

Newman (2006) emphasized that background sources are important in understanding the incidents of terrorism and its category. To him, the mere root causes are not sufficient enough to define terrorism. Root causes in combination with underlying factors are useful for analyzing terrorism. The conclusion of Newman (2006) supports the approach adopted in this article as it brings out the hidden factors that abet terrorism.

Rapid economic growth and technological advancement has brought about many changes (Olson 1963). First, the prices of goods and services get increased because of higher demand, while soaring inflation hinders the adjustment of income. Second, to keep pace with rapid changes being brought by economic modernization, individuals in societies need to attain the relevant technical skills. However, there are some segments in the societies who are lagging behind to attain those skills. Both factors aggravate frustration among individuals; hence, they prefer to join terrorist organizations.

¹¹ RAW camps in Baluchistan. The DAWN Karachi (August 31, 2004)

¹² Gujarat violence: Meaning and implications, Economic and Political Weekly, May 18 (Ahmed 2002).

¹³ Guerrilla resistance movement that transformed East Pakistan into Bangladesh in 1971.

Borum (2004) highlights the psychological aspects of an individual joining terrorist groups that facilitates comprehensive understanding of terrorism. He states that identity, unfairness, and esprit de corps entice prospective terrorists to join terrorist groups. He does not agree with the premise that psychopathy leads to terrorism. He considers ideology the most forceful factor behind terrorism as it furnishes terrorists with innate motivation. He further elaborates that culture helps framing ideology. Hofstede (1991) too is of the view that culture plays a profound role in the orientation of an individual. Peterka-Benton and Benton (2014) confirmed Hofstede's cultural dimension to terrorism. They also suggested that for better understanding of terrorism, cultural attitudes should be taken into account. Piazza (2006) linked linguistic and religious factors with terrorism.

Regarding the terrorism literature, the work of Gurr (1970) is considered among the pioneer ones. He argues that inequality and poverty leads to frustration in societies, which results in violence. Other studies which confirmed the direct connection between terrorism and poverty are of Malik and Zaman (2013), Miguel et al. (2004), Berman et al. (2011), and Krieger and Meierrieks (2011). Salvatore (2007) termed inequality and poverty to be crucial factors that cause terrorism particularly in developing countries. Abadie (2006) concluded that poverty and terrorism have no linkage.

Employing panel technique, Akhmat et al. found that in the context of South Asia, GDP per capita and terrorism are inversely related, whereas the economic factors such as unemployment, poverty, inequality, political instability, and inflation are also the agents of terrorism. Thompson (1989) and Green et al. (1998) did not observed a close tie between unemployment and terrorism.

There is lack of consensus among the researchers concerning the relationship between terrorism and economic growth. Abadie and Gardeazabal (2003) and Blomberg et al. (2004) hold the view that terrorism impedes economic growth. On the contrary, some researchers have found significant positive relationship between higher economic growth and terrorism (Fearon and Laitin 2003; Tavares 2004; Ray 2010). Other scholars have also found no significant link between economic growth and terrorism (Krueger and Malečková 2003; Shapiro and Fair 2010).

Different researchers obtained different results from the size of the population vis-a-vis terrorism. Studies which revealed direct link between population and terrorism are of Lai (2007) and Akhmat et al. (2014), whereas Azam and Thelen (2008) maintained that the relationship is insignificant.

The absence of democracy in a country yields frustration, and thus makes an individual vulnerable to the temptation of taking part in subversive activities (Crenshaw 1981; Campos and Gassebner 2013). Wade and Reiter (2007) and Tavares (2004) established no connection between political rights and terrorism. Terrorism does not flourish in countries where people enjoy high level of economic freedom (Choi 2010). Wade and Reiter (2007) confirmed that countries which are non-democratic and economically weak are more vulnerable to terrorism. They further explained that economic factors are more critical than political in the context of terrorism.

There is disagreement in the findings of different researchers about education being a contributing factor of terrorism. Some consider that illiterate people are more vulnerable to be coaxed by terrorist groups comparing the educated. On the other hand, some researchers maintain that terrorist organizations recruit educated individuals owing to their capability to accomplish complex task skillfully. Tavares (2004) confirmed that terrorism is enhanced by higher illiteracy. The notion of positive association between

education and terrorism was confirmed by Krueger and Malečková (2003) and Sageman (2005).

Terrorism Related to Pakistan

Fair (2008) attributed terrorism in Pakistan to the religious schooling system (the madrasahs). She is of the view that some of the religious schools train militants and facilitate radicalism. Shahbaz et al. (2013) observed nexus between economic growth and terrorism in Pakistan for the period 1973–2010. His study corroborated that in the long run, economic growth and terrorism are interlinked. Shahbaz (2013) again posited the linkage of terrorism with inflation and economic growth in Pakistan. He found that soaring inflation and economic growth leads to terrorism. The macro-economic upshots of terrorism in Pakistan were investigated by Malik and Zaman (2013). They unveiled that factors having long-run relationship with terrorism in Pakistan are inflation, poverty, population growth, and political instability. Nonetheless, they did not see long-run relationship among trade openness, income inequality, and unemployment with terrorism. Ismail and Amjad (2014) empirically investigated the determinants of terrorism in Pakistan. They came up with the conclusion that per capita GDP, inflation, and poverty are having significant short-run and long-run connection with terrorism. Akhmat et al. (2014), confirmed their hypothesized variables (population, poverty, political instability, and unemployment) as causative factors of terrorism in South Asia. Syed et al. (2015) investigated “Causes and Incentives for Terrorism in Pakistan.” Their results showed that expenditures on public education, law and order along with ethnic multiplicity, urban population, local military operations, and military aid provided by the USA jointly lead to enhance terrorism in Pakistan.

There are certain indubitable facts that allure India towards clandestine activities against Pakistan. The successive governments in Pakistan have neglected social development in most parts of the country. The federally administered tribal areas (FATA) and the province of Baluchistan are the most affected. It inculcated deep sense of deprivation and frustration in the mind of the people belonging to the mentioned areas. After the withdrawal of the Soviet troops from Afghanistan, the trigger hungry Mujahedeen were abandoned both by Pakistan and the USA without realizing that they might resort to harmful activities given their fighting experience. It is also an irrefutable fact that India and Pakistan do not see eye to eye on many issues including the unresolved issue of held Kashmir. It is this backdrop that suited India to capitalize upon and carryout clandestine activities through the dissident elements readily available.¹⁴

In the literature, various factors contributing to terrorism in Pakistan has been examined extensively. But surprisingly, the literature has overlooked a vital variable, i.e., the nexus between terrorism in India and terrorism in Pakistan. The earlier empirical studies mainly remained focused on domestic institutional, macro-economic, and micro-foundational factors leaving aside the fact that the terrorism in India has a direct impact on the terrorism in Pakistan. Based on structural theory of terrorism, this work is aimed to fill the void and explore the possibility that the terrorism in India is one of the causative factors of terrorism in Pakistan.

¹⁴ Dossier on Indian terrorism in Pakistan handed over to UN (*The News*, January 6, 2017)

Methodology

Secondary time series data has been utilized in this research work for the period 1981–2016. We have used data from 1981 because in Pakistan, the modern terrorism roots can be traced from decade of 1980s (Syed et al. 2015; Mehmood 2014). Global terrorism database has been accessed for the data regarding terrorist incidents in India and Pakistan, while the data for unemployment in Pakistan has been retrieved from economic survey issues and Central Bank of Pakistan. The variables of terrorism in India and terrorism in Pakistan have been converted to logarithmic form, while the variable of unemployment in Pakistan has been taken in the percentage form.

Before the estimation of a regression model, it is necessary to consider the properties of time series, that is, the order of integration or the unit root (Yule, 1926). Spurious regression results will be obtained if the variables used are non-stationary. Standard distribution is not followed by *T*-statistics, *F*-statistics, and *R*-squared, and they will be deemed invalid if non-stationary variables are included in the model (Stock and Watson 1989). In the literature, several econometrics methodologies have been proposed for investigating the long-run co-integration association among the variables. Engle and Granger (1987) and Phillips and Hansen (1990) introduced univariate cointegration technique. Multivariate cointegration technique which is now widely used by researchers was developed by Johansen (1988) and Johansen and Juselius (1990). The technique of Johansen has been given preference over other techniques because of its multivariate characteristic. Furthermore, this technique renders more than one co-integrating relations and also avoids small sample bias.

Model

Based on the aforementioned discussion, the following model has been proposed for empirical specification.

$$PAKTI_t = f(INDTI_t, UNPAK_t)$$

The equation can be written in the general form as

$$\text{Log}PAKTI_t = \beta_0 + \beta_{INDTI} \text{Log}INDTI_t + \beta_{UNPAK} UNPAK_t + U_t \quad (1)$$

where $PAKTI_t$ = incidents of terrorism in Pakistan, $UNPAK_t$ = unemployment in Pakistan, $INDTI_t$ = incidents of terrorism in India, and U_t = residual term.

From econometrics perspective, the data properties have been studied through the assistance of the unit root test. The technique of Johansen and Juselius cointegration analysis and vector error correction model have been employed to analyze the long-run relationship and the dynamics of short-run between terrorism in India, unemployment in Pakistan and terrorism in Pakistan.

While checking the evidence of cointegration, the integration order for each variable should be higher than the level. Cointegration analysis will not be applicable, if variables are found to be level stationary. Unit root test is applied for knowing about the non-stationarity of the variables. Nowadays, for checking the integration order of the series, the most well-known unit root test is augmented Dickey-Fuller (ADF). For making sure about the series, either to be level stationary or first difference stationary, the ADF test is applied with different specifications, i.e., with constant or with constant and trend. For the ADF test, the non-stationarity of the null hypothesis versus the stationarity of the

alternative hypothesis is checked. The equation of ADF for checking the series stationarity is as follows:

$$\Delta Y_t = \Omega + \Psi_t + \varphi Y_{t-1} + \gamma_i \sum_{t=1}^p \Delta Y_{t-1} + u_t \quad (2)$$

where ΔY_t presents the change in Y at time period t . At time period t , Y is the explained variable. Ω is the drift, Ψ is the time trend, and φ and γ are the parameters of Y_{t-1} and ΔY_{t-1} . $H_0: |\varphi| = 0$. By utilizing the t test, the null hypothesis (H_0) will be rejected if φ comes out to negative and statistically significant.

To analyze long-run association among the variables, they need to be co-integrated. In order to check whether long-run association exists among the variables, cointegration test is employed. The most well-known test for cointegration being posited by Johansen and Juselius (1990) is Johansen and Juselius cointegration test. The test renders that in the long run, whether the variables co-move together or not.

Johansen and Juselius proposed two methods for identification co-integrating vectors, i.e., trace test and maximum Eigen value test. As our proposed model is $PAKTI_t = f(\text{INDTI}_t, \text{UNPAK}_t)$, therefore, the maximum possible number of long-term relations are n (two in this case). This study has utilized both of these methods for the identification of co-integrating vectors. For trace statistic,

$$H_0 = \text{rank of matrix } \pi$$

Through trace statistic matrix rank (π) = r_0 is checked against the matrix rank (π) to be more than r_0 and less than 2.

$$H_0 = \text{rank of matrix } \pi = r_0$$

$$H_1 = r_0 < \text{rank of matrix } \leq n$$

where n = maximum possible number of long-term combinations among variables.

The above null hypothesis of no cointegration is rejected when the maximum likelihood ratio test statistics given by

$$MLR(r_0, n) = -N \sum_{i=r_0+1}^n \ln(1-\lambda_i) \quad (3)$$

is higher than its critical value, where MLR is the maximum likelihood ratio, n is the maximum number of combinations in the long term, λ_i is the Eigen value, and N is the number of observations.

Through maximum Eigen value, the null hypothesis of no cointegration is checked against existence of at least one cointegration relation among variables via maximum likelihood function of:

$$LR(r_0, r_1) = -N \ln(1-\lambda_1) \quad (4)$$

Subsequently, the null hypothesis of one cointegration pattern is checked against two cointegration patterns as given by

$$LR(r_1, r_2) = -N \ln(1 - \lambda_2) \quad (5)$$

That is, the maximum possible number of co-integration relationships among variables in this study.

Long-run relationship may be observed among the variables; nonetheless, still disequilibrium may exist in the short run. With a view to spotting such behavior, vector error correction model (VECM) is applied to trace the short-run disequilibrium and the correction rate for the attainment of equilibrium relationship in the long run. The correction of disequilibrium for one period takes place in next period under the mechanism of error correction. By means of short-run partial adjustments, both the short- and long-run behaviors are accommodated via error correction mechanism.

The long-run analysis results guide us to test the causality in two distinct styles. If co-integration does not exist among variables, then the standard test suggested by Granger (1969) is deemed to be appropriate for determining the relationship in the short run. On the contrary, if variables are found to co-move together, then the Granger's test (1969) is miss-specified. For such situation Engel and Granger (1987) proposed the error correction mechanism for the identification of both short and long-term causal relationships. The long-run relationship and causality among the variables are captured via t test significance of the error term in which the long-term information holds, as it is derived from the long-term cointegration equation. Whereas short-run causality is screened via conjoint significance of differenced lagged coefficient of explanatory variables through F -statistics or chi-square statistics. The equations for VECM are as follows:

$$\Delta PAKTI_t = \alpha_1 + \sum_{i=0}^p \beta_1 \Delta INDTI_{t-i} + \sum_{i=0}^p \gamma_1 \Delta UNPAK_{t-i} + \sum_{j=1}^k \psi_1 \Delta PAKTI_{t-j} + \varphi_1 ECT_{t-1} + u_{1t} \quad (6)$$

$$\Delta INDTI_t = \alpha_2 + \sum_{i=0}^p \beta_2 \Delta PAKTI_{t-i} + \sum_{i=0}^p \gamma_2 \Delta UNPAK_{t-i} + \sum_{j=1}^k \psi_2 \Delta INDTI_{t-j} + \varphi_2 ECT_{t-1} + u_{2t} \quad (7)$$

$$\Delta UNPAK_t = \alpha_3 + \sum_{i=0}^p \beta_3 \Delta INDTI_{t-i} + \sum_{i=0}^p \gamma_3 \Delta PAKTI_{t-i} + \sum_{j=1}^k \psi_3 \Delta UNPAK_{t-j} + \varphi_3 ECT_{t-1} + u_{3t} \quad (8)$$

where Δ operator represents the first difference, and ECT stands for error correction term obtained from co-integrating relationship in the long run. Coefficients for ECT_{t-1} , $\varphi_1, \varphi_2, \varphi_3$ exhibit adjustments of $\Delta PAKTI_t$, $\Delta INDTI_t$, and $\Delta UNPAK_t$ towards long-run equilibrium.

Table 1 Test statistics results of unit root (ADF) at different specifications

Variables	Levels		First difference	
	Constant (5% critical value)	Constant and trend (5% critical value)	Constant (5% critical value)	Constant and trend (5% critical value)
PAKTI	– 2.004921 (– 2.948404)	– 2.416202 (– 3.544284)	– 5.752163* (– 2.951125)	– 5.754897* (– 3.548490)
UNPAK	– 1.781534 (– 2.948404)	– 1.995581 (– 3.544284)	– 5.270639* (– 2.951125)	– 5.214538* (– 3.548490)
INDTI	– 3.063069 (– 2.948404)	– 3.015546 (– 3.544284)	– 6.448837* (– 2.951125)	– 6.676985* (– 3.548490)

*Value significance at level of 5%

Results and Discussion

Results of Unit Root Tests

The stationarity of all variables has been assured through application of ADF test. ADF results confirm that at level, variables are non-stationary, but they became stationary in their first difference form. While applying the ADF test, different specifications of the test have been taken into account, i.e., intercept as well as trend and intercept as depicted in Table 1.

Johansen and Juselius Cointegration Test for Vector Identification

After the confirmation that variables are integrated of order one $I(1)$, the next step is the determination of the number of cointegration vectors. Johansen and Juselius cointegration test has been applied for this purpose. Before the application of Johansen's test, two important points should be kept in mind. Firstly, Johansen's test is responsive to lag order (Stock and Watson 1993). Secondly, the accommodation of constants and trends, i.e., the deterministic components are necessary (Johansen 1995; Ahking 2002). Relevant lags order (p) has been specified ahead of cointegration test. Table 2 presents the selection criteria for lag order under vector auto-regression (VAR) system. To check the long-run relationship among the variables, Johansen suggests five models, but Ahking (2002) suggests that for empirical relevance, model 2 to model 4 are more suitable. The current study also entertains model 2 to model 4.

Table 2 VAR selection criteria for lag order

Lags	FPE	AIC	SIC	HQ
0	0.045328	5.419752	5.554431	5.465681
1	0.004128	3.020481	3.559197 ^a	3.204199 ^a
2	0.003913*	2.952291 ^a	3.895043	3.273796

Table 3 Cointegration results for model 2

Rank ^a	Trace statistic	Critical value 5%	Prob.	Eigenvalue	Critical value 5%	Prob.
0	43.79438 ^b	35.19275	0.0047	28.26763 ^b	22.29962	0.0065
1	15.52675	20.26184	0.1977	11.59317	15.89210	0.2109
2	3.933585	9.164546	0.4221	3.933585	9.164546	0.4221

^a Cointegration relationship between variables

^b Hypothesis rejection at level of 5%

Lag Order Selection

FPE final prediction error, *AIC* Akaike information criterion, *SIC* Shwartz information criterion, *HQ* Hannan-Quinn information criterion

^a Selected lag order by criterion

Following the Akaike information criterion (AIC), the selected optimal lag order for the study is 2.

Cointegration Vector Estimation by Model 2 (No Intercept or Trend in CE or Test VAR)

Table 3 depicts the cointegration results obtained for model 2. According to Johansen (1991), when the critical values are less than the values of both the trace statistic and max Eigen statistic values, the null hypothesis will then be rejected and vice versa. In Table 3, the critical values are less than trace statistic and maximum Eigen statistic values; hence, the null hypothesis of zero cointegration vectors, i.e., $r = 0$ is rejected. Again from Table 3, it can be inferred that $r \leq 1$ which has been hypothesized as a null, cannot be rejected because in comparison with both statistics, the critical values are greater. According to both trace statistic and max Eigen value statistic, one cointegration association has been observed among the variables under study, i.e., terrorism in India, unemployment in Pakistan, and terrorism in Pakistan. Hence, the existence of long-run relationship between terrorism in India, unemployment in Pakistan, and terrorism in Pakistan has been ascertained.

Cointegration Vector Estimation by Model 3 (Intercept No Trend in CE and Test VAR)

The results obtained for model 3 have been reported in Table 4. According to the results of both trace statistic and max Eigen value statistic, among the variables, i.e., terrorism in Pakistan, terrorism in India, and unemployment in Pakistan, one vector of cointegration has been noticed. The zero cointegration vector ($r = 0$) posited by null has been rejected and at a level of 5% because the critical values are less than both statistics. On the other hand, $r \leq 1$

Table 4 Cointegration results for model 3

Rank ^a	Trace statistic	Critical value 5%	Prob.	Eigen stat.	Critical value 5%	Prob.
0	41.62147 ^b	29.79707	0.0014	27.35889 ^b	21.13162	0.0058
1	14.26258	15.49471	0.0760	10.70188	14.26460	0.1698
2	3.560705	3.8441466	0.0592	3.560705	3.841466	0.0592

^a Cointegration relationship between variables

^b Hypothesis rejection at level of 5%

Table 5 Cointegration results for model 4

Rank ^a	Trace statistic	Critical value 5%	Prob.	Eigen stat.	Critical value 5%	Prob.
0	53.51099 ^b	42.91525	0.0032	32.79248 ^b	25.82321	0.0051
1	20.71851	25.87211	0.1917	16.87136	19.38704	0.1118
2	3.847150	12.51798	0.7641	3.847150	12.51798	0.7641

^a Cointegration relationship between variables

^b Hypothesis rejection at level of 5%

being posited as a null cannot be rejected because the critical values are greater than both the trace and max Eigen statistics.

Co-Integration Vector Estimation by Model 4 (Intercept and Trend in CE No Intercept in VAR)

In Table 5, at 95% confidence interval, the null hypothesis of zero co-integrating vector is rejected, because the value of trace statistic surpasses the critical value (Johansen 1992), while the null hypothesis of $r \leq 1$ is accepted because the value of trace statistic cannot surpass the critical values. Therefore, one co-integration relationship has been observed among the variables. Likewise, results have been obtained for max Eigen statistic.

Pantula Principle Test

Selecting appropriate model for cointegration test, Johansen (1992) advocated the Pantula principle test. The results of Pantula principle test have been reported in Table 6. For this study, model 2 is the appropriate, because by looking at the values of both the trace statistic and max Eigen value statistic, the no rejection of the null hypothesis can be traced at model 2 for the first time. In model 2, at a significance level of 5%, one cointegration vector has been observed between terrorism in India, unemployment in Pakistan, and terrorism in Pakistan.

Johansen Estimates of Long-run Relationship

After the confirmation of co-integrating vector, Johansen long-run relationship results are presented in Table 7. The coefficients have been normalized for PAKTI.

Table 6 Results of Pantula principle test

r	$n-r$	Model 2	Model 3	Model 4
Trace statistic				
0	3	43.79438 ^a	41.62147 ^a	53.51099 ^a
1	2	15.52675	14.26258	20.71851
2	1	3.933585	3.560705	3.847150
Max Eigen value statistic				
0	3	28.26763 ^a	27.35889 ^a	32.79248 ^a
1	2	11.59317	10.70188	16.87136
2	1	3.933585	3.560705	3.847150

^a Hypothesis rejection at level of 5%

Table 7 Johansen long-run relationship (Normalized estimates)

Dependent variable PAKTI		
Regressors	Coefficients	<i>t</i> -value
INDTI	2.077390	– 11.1419*
UNPAK	0.070257	– 1.03618
C	3.079016	6.55922*

*Values significance at level of 5%

In Table 7, a positive and significant coefficient has been observed for INDTI, which means that in the long run, 1% increase in terrorism in India will lead to 2.7% increase in terrorism in Pakistan. Therefore, it has been confirmed that terrorism in India has a direct bearing on terrorism in Pakistan. Positive and insignificant coefficient has been observed for unemployment in Pakistan.

Result of the Error Correction Model (ECM)

Table 8 displays the results of ECM. The ECM not only confirms the short and long-run causalities among the variables but it also gives testimony for validity of the obtained co-integration relationship (Kremers et al. 1992). It has been determined that the independent variables, i.e., terrorism in India and unemployment in Pakistan yields 55% of disequilibrium in the dependent variable “terrorism in Pakistan,” which will be adjusted yearly. The stability of the model is high as the error correction term is negative and significant. It also lies in the standard range of ECM. The long-run relationship and causality among variables have been confirmed via *t*-test significance of the error term. The error term holds long-term information, as it is derived from the long term cointegration relationship. Short-run causality is confirmed via testing the subset of regressors. All the diagnostics tests depict results to be satisfactory. The independent variables are explaining 56% variations in the dependent variable given by the value of *R*-squared. Furthermore, no sign of serial correlation has been observed as demonstrated by the value of Durbin-Watson.

Short run Causality

Causality among variables in the short run is tested via joint significance of differenced lagged explanatory variables by applying the test of linear restriction also called the Wald test. Table 9 presents the results of Wald test.

Table 8 Error correction model (ECM)

ECM	– 0.55523*
<i>R</i> -squared	0.561775
Adjusted <i>R</i> -squared	0.460646
Durbin-Watson statistic	2.162241
<i>F</i> -statistic	4.883291*

*Values significance at level of 5%

Table 9 Wald test

Null hypothesis	Chi-square	F-statistics
INDTI→PAKTI	15.07519***	7.537596***
UNPAK↔PAKTI	20.10121***	10.05060***

→ does not Granger causes

*Values significance at level of 1%

As the probabilities of both chi-square and *F*-statistics for the two explanatory variables are significant at 95% confidence level, therefore, we can reject the null hypothesis and conclude that short-run causality between terrorism in India and unemployment in Pakistan, and terrorism in Pakistan has been established.

Model Reliability

Satisfactory results have been obtained for the estimated model. Table 10 depicts the results of reliability tests for the model. No signs of autocorrelation and heteroskedasticity were observed. Normal residuals have been obtained, and the model is correctly specified.

Test for Multicollinearity

For the detection of multicollinearity, variance inflation factor test (VIF) has been conducted. Formula for VIF test is given as follows:

$$\text{VIF} = 1/1-R^2$$

The R^2 value estimated for the model is 0.55, so VIF can be obtained by putting values in its formula. 2.27 VIF has been obtained which is less than 5%, hence, indicating that multicollinearity among the regressors is in the tolerable level.

Robustness Check for Short and Long-Run Causalities

Table 11 depicts the robustness check for both the short and long-run causalities among the variables. In the given table, short-run causality results have been determined via VECM Granger's test. The obtained results under VECM Granger's test are akin to the results of Wald test previously being applied, thereby confirming short-run causality among the variables. According to VECM Granger's test results, the null hypothesis, that is, terrorism in India does not cause terrorism in Pakistan, has been rejected at 1% alpha level, and it is concluded that

Table 10 Reliability/Diagnostic check

Problem	Test	F-statistics	P-value
Autocorrelation	LM test	0.3941	0.4548
Heteroskedasticity	Brush-Pagan-Godfrey test	0.1612	0.1675
Residuals normality	Jarque-Bera normality test	2.53 (Jarque-Bera stat)	0.2815

Table 11 Results of VECM Granger causality and modified Wald (MWALD) test

Null hypothesis	Short-run causality (VECM Granger's test) Chi-square value	Long-run causality (MWALD test) Chi-square value
INDTI→PAKTI	15.07519***	7.268483**
PAKTI→INDTI	2.326621	6.256715
UNPAK↔PAKTI	20.10121***	14.27796***
PAKTI→UNPAK	0.435720	0.497914
INDTI→ UNPAK	0.755909	0.693206
UNPAK↔ INDTI	0.845072	2.336162

↔ does not Granger causes

, *Significance at 5 and 1%, respectively

terrorism in India causes terrorism in Pakistan in the short run. The second null hypothesized statement is, terrorism in Pakistan does not cause terrorism in India cannot be rejected, and it is concluded that terrorism in Pakistan does not lead to terrorism in India in the short run. Similarly, the null hypothesized statements, that is, unemployment in Pakistan does not lead to terrorism in Pakistan, is rejected at 1% alpha level, and it is concluded that unemployment causes terrorism in Pakistan in the short run. Conversely, terrorism in Pakistan does not cause unemployment in Pakistan has been ascertained in the short run.

Modified Wald (MWALD) test being developed by Toda and Yamamoto (1995) and Dolado and Lütkepohl (1996) is applied to determine the long-run causality among variables. This test has been widely used to for ascertaining the long-run causality between variables (Lau and Haw 2003; Bhattacharya and Mukherjee 2002a). Maximum integration order (d_{\max}) has been specified for the series in advance before employing the MWALD test. We have employed $d_{\max} = 1$, because in comparison to other orders, it performs better (Dolado and Lütkepohl 1996). AIC is used for the optimal selection of the lag order (k). Augmented VAR model ($k + d_{\max}$) has been used then for the estimation of long-run causality.

According to MWALD test results in Table 9, the hypothesized statement, that is, terrorism in India does not cause terrorism in Pakistan has been rejected at 1% alpha level, and it has been ascertained that terrorism in India causes terrorism in Pakistan in the long run. The results also revealed that terrorism in Pakistan does not cause terrorism in India, as we cannot reject the null hypothesis. Similar results have been obtained for unemployment in Pakistan, that is, in the long run, unemployment in Pakistan leads to terrorism in Pakistan, but no reverse causality exists. In Table 11, no causality has been witnessed between terrorism in India and unemployment in Pakistan for both short-run and long-run as their p values obtained were insignificant.

Hence, unidirectional causal relationship has been determined among terrorism in India, unemployment in Pakistan, and terrorism in Pakistan in the short run as well as in the long run. Put differently, for both short run and long run, a change in terrorism in India and unemployment in Pakistan, leads to a change in terrorism in Pakistan, and a change in terrorism in Pakistan does not lead to a change terrorism in India and unemployment in Pakistan.

Recommendations

The following recommendations are proposed in the light of the findings of the study:

1. The resources spent on undermining each other by India and Pakistan, if diverted to the uplift and development of social sector, will substantially alleviate poverty in both countries and thus deny terrorists easy induction in their rank and file, as people living below the line of poverty are more prone to join terrorist organizations.
2. After Yemen, Pakistan is the second country with highest percentage of youth population in the world. Most of the Pakistani youth is jobless/frustrated and thus tempted to join criminal terrorist activities. Provision of job opportunities particularly in terrorist-inflicted areas will help minimize chances of their joining terrorist organizations.
3. A convincing national counter-terrorism narrative that is fully endorsed by all political/religious parties need to be developed and made known to all and sundry.
4. Individuals/organizations having soft corner or supporting terrorist groups should be identified and warned strictly to follow national counter-terrorism in letter and spirit.
5. A sustained and institutionalized counter-terrorism strategies need to be developed in the light of past failures and successes and executed with professional competence.
6. Terrorists be taken and dealt with as common enemy both by India and Pakistan.

Future Research Areas

This study unearths terrorism in India as determinant of terrorism in Pakistan. The proposition that terrorism in India is affecting terrorism in Pakistan has been confirmed by Johansen cointegration analysis. Further investigation of the nexus between terrorism in India and terrorism in Pakistan needs to continue with a view to bringing home the realization of its devastating impact both on human lives and economy. The nuclear threat that looms large, given the prolonged hostility between the two countries, makes the continuity of the research on the subject imperative. It also needs to be explored that the non-state actors often get out of control and are used by vested interests. It is perceived that both India and Pakistan play proxy war through Afghanistan because of its poor economic and instable political environment. The likely impact of poverty and unemployment in Afghanistan on terrorism in Pakistan needs to be investigated by scholars. The same study may also be extended to the terrorism in Middle East where the situation is puzzled among different international powers.

Conclusion

In Pakistan, the issue of terrorism is quite complex and required an inclusive examination. The study found a new determinant of terrorism in Pakistan, i.e., the terrorism in India. This determinant has been confirmed by Johansen cointegration analysis that validates the long-run relationship between terrorism in India and terrorism in Pakistan. Error correction model (ECM) resulted that yearly 55% of convergence takes place. Under the mechanism of error correction, the short- and long-run causalities between terrorism in India, unemployment in Pakistan, and terrorism in Pakistan have also been confirmed. According to the results of

causality, terrorism in India and unemployment in Pakistan are enhancing terrorism in Pakistan both in the short-run and in the long run. On the other hand, this study did not find that there was any effect of “terrorism in Pakistan” over “terrorism in India.”

Owing to the unsettled dispute of Kashmir, Pakistan, and India remained at dagger drawn throughout their history. Pakistan maintains that at the time of independence, Kashmir was annexed by India against the popular will. This core issue created a situation that was poised for mistrust and ill will. Both the neighboring countries took upon itself to undermine each other. In the aftermath, India provided all out support to Sheikh Mujeeb-ur-Rehman, the popular leader of East Pakistan, who led the six-point movement that resulted in the split of Pakistan into two separate states Pakistan and Bangladesh. So far, four wars have been fought between India and Pakistan. Consequently, Pakistan, for its survival as an independent state, was forced to be a security state rather than a welfare one. Pakistan and India need to ponder that the longstanding rivalry breeds nothing but more hostility. They should cooperate with each other in every matter and come up with a complete package of solution to solve all the disputes among them through dialogs. Peaceful relationship is not only desirable for both nations but also for the harmony of South Asian region.

Lastly, Pakistan needs to solve the issue of unemployment in the country. The unemployment factor is mostly liable for terrorism in Pakistan (Malik et al. 2015). “In Pakistan currently there are two hundred camps of suicide bombers, and each camp consists of close to two hundred kids. The terrorist groups buy one suicide bomber for £30,000. The suicide bombers trade is on boom in Pakistan.”¹⁵ The enemies of Pakistan buy these suicide bombers and then use them against Pakistan. It is worthy to mention here that there are more than 40 lakh unemployed individuals in Pakistan, and most of them are young graduates. After Yemen, Pakistan is the second country with highest percentage of youth population in the world. The number of young graduates is increasing yearly, and the employment opportunities are at minimum. The resultant soaring unemployment in Pakistan worst affected the marginalized population particularly the youth. This situation has created frustration among unemployed individuals, hence allowing the terrorist organizations to manipulate them for financial support. Terrorist organizations take keen interest in recruiting highly educated individuals because of their capability to accomplish complex task skillfully. Financial compulsions and deprivation compel parents to let their children join terrorist bodies with the hope that it will mitigate their financial hardships (Harrison 2006). Sayre (2009) maintains that unemployment and terrorism are interlinked.

To cope with the evil of terrorism, Pakistan needs to address the issue of unemployment. Proper measures should be taken by the government in this regard. Without any delay, the government shall start development projects especially in the areas suffered from terrorism. The mostly suffered province from terrorism in Pakistan is the Khyber Pakhtunkhwa province which has ample natural resources. The government of Pakistan needs to utilize these natural resources. In this way, not only employment opportunities will be created for the people but also they will work for the development of the country. Without taking such measures, it will be hard for the government to tackle unemployment in the country, and terrorism will increase day by day.

¹⁵ Muslim boys in thousands are being kidnapped to be traded as suicide bombers. The Daily Star, London (January 3, 2016)

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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