A Comparative Analysis of Terrorism among Muslim and Non-Muslim Countries in the Perspective of Economic Activity

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Abstract

Terrorism is becoming threatening and fear-provoking phenomenon for the present globe. The occurrence of terrorists' activities is carried on without discrimination of Muslim and Non- Muslim countries. Present study investigates the trends and severity of terrorism in both Muslim and Non-Muslim countries. Forty five Muslim and one hundred thirty Non-Muslim countries are considered. Strong economic performance may reduce terrorism. The relationship of Gross Domestic Product (GDP) per capita with terrorism is also calculated. In both types of countries, terrorist activities are evaluated through number of attacks, killings and injured persons. Besides this, the correlation is also applied to examine the association among number of attacks, killings and injured persons. Descriptive statistics evidently shows the huge losses in the form of Number of attacks, Killings and Injured persons. From 1980s to 2015, total terrorist attacks, killed persons and injured persons are 67518, 188775 and 272683 respectively in Muslim countries. In the same way, in Non-Muslims countries, from 1980s to 2015, total terrorist attacks, killed persons and injured persons are 86914, 159386 and 167828 respectively. Number of injuries and killings are comparatively higher in Muslim countries whereas Non-Muslim countries have higher number of attacks. Panel Ordinary Least Square (OLS) technique is used to examine the relationship among these variables and Per Capita GDP. Elevated correlation is found among number of attacks, killings and injured persons. However, the correlation among per capita GDP and the other variables found negative. OLS findings as well show negative relationship among per capita GDP and number of attacks, killings and injured persons. With the increase in per capita GDP, terrorism will be minimized. Improvement in economic activity can reduce terrorism outcomes particularly in developing countries.

Keywords: Terrorism, Trends, Severity, GDP, Muslim and Non-Muslim Countries
JEL: C61, D74, C43, O47

Introduction

The study about the measurement, implications and determinants of terrorism has been a vigorous field of research for social scientists since 1960s. At first, political scientists studied terrorism descriptively and historically due to some data constraints. They focused on definition of terrorism, trends, identification of terrorist groups and their movements.[1] Terrorists are rational actors.[2] Rationality is based on

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[1]Martha Crenshaw, *"The Causes of Terrorism,"* Comparative Politics 13, no. 4 (1981): 379; Paul Wilkinson, Terrorism and the Liberal State (Halsted, 1977), 2; Terrorism Versus Democracy: The Liberal State Response (Routledge, 2006), 5.

[2]*William M. Landes and Richard* A Posner, "Salvors, Finders, Good Samaritans, and Other Rescuers: An Economic Study of Law and Altruism," *The Journal of Legal Studies* 7, no. 1 (1978): 83.

predictability not desirability of terrorists' tactics or goals.[3] Since 9/11 attacks quantitative analysis of terrorism has been increased. Historically, terrorist attacks in Muslim and non-Muslim countries rose from 1968 to the mid-1980s with about 500 incidents per year.[4]

Some researchers measured distributional nature of degree, frequency and severity of different terrorist attacks among different countries and within countries. Most of them evaluated number of attacks and injuries. However, terrorism as a political tool has a long history.[5] In modern era different motivated groups of terrorism have had access to extremely destructive weapons.[6] Access to such weapons has resulted in severe terrorist attacks. The frequency statistics indicate that small and large events both have been observed. On the other hand different social scientists investigated different determinants and causes of terrorism among and within countries. Economic discrimination, religious persecution, nationalist/separatist motives, religious fundamentalism, political ideologies, and other grounds are important explored root cause of terrorism.[7] After 9/11, there is general belief that poverty enhances terrorism; however,[8] exposed little relationship between the lack of market opportunities and terrorism. For a cross-section sample of countries,[9] applied cross sectional regression and found that low income was not associated with more terrorism when civil and political liberties were controlled. [10]Argued for a nonlinear relationship between income and terrorism in which middle income is more conducive to terrorism. Economic activity of an economy due to some institutional arrangements may also a significant determinant of different terrorism variables like number of attacks, injuries, causalities and killings. It may affect differently to different terrorism variables. Economically strong economy may reduce causalities and killings due to quality of health arrangements. Normally, economically strong countries have comparatively good governance which may reduce terrorism. On the other hand, some Muslim and Non-Muslims

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[3]Max Abrahms, "What Terrorists Really Want: Terrorist Motives and Counterterrorism Strategy," *International Security* 32, no. 4 (2008):78; Abraham Kaplan and Boaz Ganor, *The Counter-Terrorism Puzzle: A Guide for Decision Makers* (Routledge, 2017), 11; Andrew H. Kydd and Barbara F. Walter, "The Strategies of Terrorism," *International Security* 31, no. 1 (2006): 49.

[4]Bruce Hoffman, *Inside Terrorism* (New York: Columbia University Press, 2006), 6; Zan Strabac and Ola Listhaug, "Anti-Muslim Prejudice in Europe: A Multilevel Analysis of Survey Data from 30 Countries," *Social Science Research* 37, no. 1 (2008): 268; Adrian Cherney and Kristina Murphy, "Being a 'Suspect Community'in a Post 9/11 World–the Impact of the War on Terror on Muslim Communities in Australia," *Australian & New Zealand Journal of Criminology* 49, no. 4 (2016):480.

[5]Roger D Congleton, "Terrorism, Interest-Group Politics, and Public Policy: Curtailing Criminal Modes of Political Speech," *The Independent Review* 7, no. 1 (2002): 47; Laura Graham, "Civil Protest Is a Crucial Tenet of Any Free Democracy—and in the Us It's Protected by the Constitution's First Amendment. But a Wave of New Anti-Protest Laws May Infringe on This Hard-Won Constitutional Right—One That Could Scarcely Be More Deeply Rooted in the American Political Psyche," in *The Political Elite and Special Interests,* ed., Rachel Bozek (New York: Greenhaven Publishing, 2017): 123-125; Walter Enders and Todd Sandler, "Distribution of Transnational Terrorism among Countries by Income Class and Geography after 9/11," *International Studies Quarterly* 50, no. 2 (2006): 367.

[6]Martin Shubik, "Terrorism, Technology, and the Socioeconomics of Death," *Comparative Strategy* 16, no. 4 (1997): 399; Chia-Yuan Yang, "The Influence of Team Empowerment and Task-Technology Fit in Anti-Terrorism Internal Compliance Program Team Performance," ***成功大學國際經營管理研究所碩士在職專班學位論文*** (2017): 1; Timothy J. List, "What Are We Missing? A Call for Red Teaming within the Domestic Maritime Domain for Anti-Terrorism Programs" (Monterey, California: Naval Postgraduate School, 2015), 4.

[7]Paul Wilkinson, *Terrorism and the Liberal State*; *Terrorism Versus Democracy: The Liberal State Response*, op.cited; Mario Arturo Ruiz Estrada, et al., "The Economic Impact of Terrorism: A New Model and Its Application to Pakistan," *Journal of Policy Modeling* 37, no. 6 (2015):1065.

[8]Alan B. Krueger and Jitka Malečková, "Education, Poverty and Terrorism: Is There a Causal Connection?," *Journal of Economic perspectives* 17, no. 4 (2003): 119; Walter Enders, Gary A Hoover, and Todd Sandler, "The Changing Nonlinear Relationship between Income and Terrorism," *Journal of Conflict Resolution* 60, no. 2 (2016): 195.

[9]Krueger and Malečková, "Poverty and Terrorism," 120.

[10]Enders, Hoover, and Sandler, "Income and Terrorism," 196.

countries have same level of GDP per capita but having different terrorism outcomes. Pakistan and Zambia may be the appropriate comparison regarding this; total number of killings and injuries due to terrorism attacks in Pakistan from 1970 to 2015 are 21597 and 38012 respectively. Whenever, Zambia has only 70 killings and 62 injuries due to terrorism attacks. It depicts that in addition to economic activity there are some other factors which may be held responsible for differences in terrorism outcomes. Religious differences may be one of them to determine terrorism among the different countries of the world. Hence, it is important to make a comparison among Muslim and Non-Muslim countries about the trends and severity of terrorism to observe the differences in terrorism outcomes. Additionally, investigation of the role of economic activity in the determination of terrorism outcomes across the Muslim and Non-Muslim countries is also critical and hardly explored in literature.

Therefore, this study has focused on above mentioned both research questions; Do Muslim and Non-Muslim countries have different terrorism outcomes across the time? Does economic activity have significant contribution to determine terrorism outcomes among Muslim and Non-Muslim countries? By exploring the empirical answers of above mentioned questions this study has contributed significantly in literature. This contribution can be divided in two ways. First, this study compares trends and severity of terrorism in Muslim and Non-Muslim countries. Second, it confirms the role of economic activity in the determination of terrorism activities. For this purpose present study has analyzed frequency and severity of terrorism attacks, injuries and killings in Muslim and non-Muslim countries. Frequency and severity have evaluated by investigating yearly and decade wise attacks, injuries, causalities and killings. Average tendency of terrorism is measured by calculating average number of attacks, average number of injuries, average number of causalities and average number of killings in both Muslim and non-Muslim countries. Degree of terrorism is compared among Muslim and non-Muslim countries by using different proxy variables applying descriptive statistics. Association of Gross Domestic Product (GDP) per capita with different terrorism variables has estimated by applying panel regression among one hundred and twenty five countries.

1. Review of Literature

There are a number of studies regarding the relationship among terrorism and diverse perspectives of different fields of life as terrorism and macro level aspects, terrorism and economic growth, terrorism and democracy. Terrorists' attacks have negative impacts on economic progress[11] but the significance of terrorism for growth can be varying from country to country.[12] Whereas[13] found that growth causes

[11]S. Brock Blomberg, Nzinga H Broussard, and Gregory D Hess, "New Wine in Old Wineskins? Growth, Terrorism and the Resource Curse in Sub-Saharan Africa," *European Journal of Political Economy* 27, no. s1 (2011):s50; Syed Jawad Hussain Shahzad et al., "Relationship between Fdi, Terrorism and Economic Growth in Pakistan: Pre and Post 9/11 Analysis," *Social Indicators Research* 127, no. 1 (2016):179; Seung-Whan Choi, "Economic Growth and Terrorism: Domestic, International, and Suicide," *Oxford Economic Papers* 67, no. 1 (2014):157; Khusrav Gaibulloev and Todd Sandler, "Growth Consequences of Terrorism in Western Europe," *Kyklos* 61, no. 3 (2009): 411; Alberto Abadie and Javier Gardeazabal, "The Economic Costs of Conflict: A Case Study of the Basque Country," *American Economic Review* 93, no. 1 (2003): 113; Shabir Hyder, Naeem Akram, and Ihtsham Ul Haq Padda, "Impact of Terrorism on Economic Development in Pakistan," *Pakistan Business Review* 16, no. 4 (2015): 704.

[12]Maryam Fatima et al., "Terrorism and Its Impact on Economic Growth: Evidence from Pakistan and India," *Middle-East Journal of Scientific Research* 22, no. 7 (2014): 1033.

[13]Thomas Gries, Tim Krieger, and Daniel Meierrieks, "Causal Linkages between Domestic Terrorism and Economic Growth," *Defence and Peace Economics* 22, no. 5 (2011):493.

terrorism. However, it is also found that growth and terrorist activities have no link as.[14] [15]Analyzed that increase in public spending regarding terrorism decrease growth; both views are found positive and negative regarding democracy. One group argued that democracy reduced terrorism as.[16] Whereas,[17] found that democracy has significant rule in terrorist activities. In contrast some policy makers found that terrorist activities also have some adverse consequences for democracy.[18]

Examined the relationship between GDP per capita and terrorism; these attacks are generally occurred in middle-income economies. The terrorist attacks transferred to lower income economies as the uprising of religion based movements and the announcers of nationalists. The techniques of attacks in intercontinental terrorism are different as in regional. Lorenz curve is used to demonstrate the domestic and intercontinental terrorist assaults. In this study, nonlinear smooth transition regressions are used to find out the relation among GDP per capita and terrorist attacks. The findings of nonlinear are more robust. However,[19] formulated a procedure for stopping terrorism; a model is derived that once a terrorist attack is occurred, it follows another immediate attack. As preventive steps are taken by the government agencies quickly and on hand units of terrorist cannot enhance their capacities. Therefore, immediate terrorist attacks are increased. Definite terrorist assaults frequently lead to unexpected raise in positive counteract terrorism appraises. This is suggested to the policy makers to keep in view this phenomenon while preparing long run policies. The authorities should focus on short run measures besides long run policies.[20]

Apprised the divisive subject of whether economic development put forth a diminishing effect over terrorism. This study focuses two sectors of the economy industry and agriculture besides three types of terrorist forms as domestic, transnational and suicide. The study captures 127 countries and the time span is from 1970-2007. Negative Binomial regression approach is used to analyze the effects of economic development on terrorism. As countries achieved higher level of industrial growth are faced lower level of attacks of domestic and transnational attacks whereas faced higher level of suicide attacks. It is evident that growth is not the ultimate solution of terrorism as a number of suicide attacks happened in industrialized nations. However, growth is beneficial in case of terrorist attacks as suicide attacks happened in a few industrialized countries. On the other hand few studies reported the trends of terrorism among the different regions of the world.[21] Analyzed the nature of terrorism and its different components; the diagnostic

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[14]James A Piazza, "Rooted in Poverty?: Terrorism, Poor Economic Development, and Social Cleavages," *Terrorism and political Violence* 18, no. 1 (2006): 159; Fatima et al, Terrorism and Its Impact on Economic Growth,"1033; Krueger and Malečková, "Poverty and Terrorism,"120; Choi, "Economic Growth, Terrorism and Suicide," 157.

[15]Tilman Brück, *The Economic Analysis of Terrorism* (Routledge, 2007), 10; Sanjeev Gupta, et al., "Fiscal Consequences of Armed Conflict and Terrorism in Low-and Middle-Income Countries," *European Journal of Political Economy* 20, no. 2 (2004): 403.

[16]William Eubank and Leonard Weinberg, "Terrorism and Democracy: Perpetrators and Victims," *Terrorism and political violence* 13, no. 1 (2001): 155; Jeffrey Ian Ross, "Structural Causes of Oppositional Political Terrorism: Towards a Causal Model," *Journal of Peace Research* 30, no. 3 (1993): 317; Alex P Schmid, "Terrorism and Democracy," *Terrorism and Political Violence* 4, no. 4 (1992): 14.

[17]Quan Li and Drew Schaub, "Economic Globalization and Transnational Terrorism: A Pooled Time-Series Analysis," *Journal of Conflict Resolution* 48, no. 2 (2004): 230; Scott E Atkinson, Todd Sandler, and John Tschirhart, "Terrorism in a Bargaining Framework," *the Journal of Law and Economics* 30, no. 1 (1987): 1.

[18]Simplice A. Asongu and Jacinta C. Nwachukwu, "The Impact of Terrorism on Governance in African Countries," *World Development* 99 (2017): 253; Peter Chalk, in "The Response to Terrorism as a Threat to Liberal Democracy 1," in *War on Terrorism,* ed. Alan O' Day (Routledge, 2017), 83-98; Enders, Hoover, and Sandler, "Income and Terrorism," 195.

[19]Michael Jensen and Gary LaFree, "Final Report: Empirical Assessment of Domestic Radicalization (Eadr)," *College Park, MD: National Consortium for the Study of Terrorism and Responses to Terrorism* 8 (2016): 2-8.

[20]Choi, "Economic Growth, Terrorism and Suicide," 157.

[21]Todd Sandler, "Terrorism and Counterterrorism: An Overview," *Oxford Economic Papers* 67, no. 1 (2015): 1.

writings are started with the initial study of US sky jacking work in 1978. But after 9/11 attacks, terrorism got significant importance. Writers, philosopher and researchers central focus is on terrorism. No doubt, terrorism activities are increased rapidly since 9/11 attack. This study focuses on major five areas; assaults trends, economic penalties, counter terrorism policies, reasons and the connection between terrorist attacks and moderate democratic countries. Besides this, the nature of attacks at national and International level is also focused in the present study. The network and connections of these terror attacks is examined. Therefore, it is the utmost need to develop counter terrorist organizations. Whereas, terrorism affects foreign capital explored by various researchers like[22] analyzed that terrorism sway the contention of Intercontinental Investors in an incorporated worldwide economy. Terrorists' attacks have a large impact on the allocation of productive capital across countries. Terrorist activities are added in an endogenous growth model. Such activities risk on the inflow of FDI is evaluated. It is found that terrorism have suppressed the net inflow of foreign capital. Robustness is also found with the variables as GDP per capita, country risk indexes and governance. One percent increase in terrorist activities decreases five percent of net inflow of foreign direct investment (FDI). [23]Examined the attempts of terrorism and the consequences due to these attacks; it is tested that there are two main reasons of terrorist attacks one is deprivation and the other is geopolitical. The time span of the study is 1997- 2004. Pooled Ordinary Least Square (OLS) approach is applied. The OLS approach verified the deprivation cause of terrorist attacks in Eurasia. These attacks occurred in low income countries where democracy is not prevailed, low level of literacy and no significant contribution in international trade. Geopolitical element is also found as significant factor of terrorism in Eurasia. Geopolitical factors, like the numeral of embassies, the geographic location, power and food assets, and net immigration are associated with the number of terrorist assaults. [24]Inspected the different ways through which democracy have effects on transnational terrorist activities. Latest theoretical arguments are recognized which are regarded as either accompaniment or cover the present arguments. Democratic effects on international terrorism are evaluated for the period of 1975-1997 and comprising 119 countries. It is found that transnational terrorist activities are minimized in the presence of democracy however, the government's different steps like press independence may induce such activities. The proportional demonstration structure experiences less international terrorist occurrences.

2. Theoretical Framework and Methodology

Terrorism is taken as intercontinental danger of non-state performer to achieve their economic, societal, political and religious targets.[25] Terrorism has many forms as National, International and suicide. Terrorist clusters are considered as coherent creatures. These groups assign their limited resources as manpower and armaments in such a way to take full advantage of their anticipated payoff.[26] The success of terrorist groups depends upon a number of factors as their resources, techniques, and environment and counter terrorists' attacks policy of the countries.[27] There are a number of theoretical considerations regarding terrorism; Economic, Political, Geographical, Left or Right wings, Nationalists and Religious groups are considered as focal points of the researchers and the economists. Since the economic progress move forward, the economy creates more and more jobs for their working class. As growth increases, a

[22]Abadie and Gardeazabal, "The Economic Costs of Conflict," 113.

[23]Ana Bela Santos Bravo and Carlos Manuel Mendes Dias, "An Empirical Analysis of Terrorism: Deprivation, Islamism and Geopolitical Factors," *Defence and Peace Economics* 17, no. 4 (2006): 329.

[24]Quan Li, "Does Democracy Promote or Reduce Transnational Terrorist Incidents?," *Journal of Conflict Resolution* 49, no. 2 (2005): 278.

[25]Gary LaFree and Laura Dugan, "Introducing the Global Terrorism Database," *Terrorism and Political Violence* 19, no. 2 (2007): 181.

[26]Todd Sandler, John T. Tschirhart, and Jon Cauley, "A Theoretical Analysis of Transnational Terrorism," *American Political Science Review* 77, no. 1 (1983): 36; William F. Shughart and F. William, "Terrorism in Rational Choice Perspective," *The Handbook on the Political Economy of War*, eds. Rachel L. Mathers, Christopher Coyne (Cheltenham: Edward Elgar Publishing, 2011): 126-153.

[27]Claude Berrebi and Darius Lakdawalla, "How Does Terrorism Risk Vary across Space and Time? An Analysis Based on the Israeli Experience," *Defence and Peace Economics* 18, no. 2 (2007):113.

number of opportunities expand to deprived populations. The chase of economic benefits becomes the target of working class instead of engaging in dangerous terrorist activities.[28] It is found that terrorists' attacks are mainly destructive to economic growth in less developed economies however not in the developed economies of the world. However, Trade openness can boost terrorist cluster endurance, particularly for international terrorist assaults. Behind the veil of trade these terrorists groups can transfer their weapons and manpower to the targeted country.[29] In the same way, the increased industrial growth arise the income of industrial workers whereas the income of agriculture sector is not increased at the same pace. Thus income inequality generates in societies and this lead to increase terrorism activities.[30] This phenomenon becomes the cause of political instability which enforces terrorism.[31] Found that terrorism and terrorist clusters are likely to take advantage of on growing breach among the rich and the poor through developing the accusation of financial losers. Terrorists need some particular circumstance to do well like locality of a country. Geographical location and conditions of the countries has significant place regarding terrorism. The countries rich with jungles and mountains become attractive places for terrorist groups.[32] Terrorist groups in landlocked countries find it difficult to flourish. Besides this, ethnic groups favor the encouragement of the terrorist activities.[33] Terrorist clusters require ideologies to survive for a long time span. Once nationalists are at their peaks but left the way for leftists in the 1970s.[34] Likewise, in 1990s, religious groups become dominant among terrorist groups.[35] Degree of terrorism may different in Muslim and non-Muslim countries. It is important to quantify and compare trends and the degree of terrorism in Muslim and Non-Muslim countries. General perception is that Muslim countries suffered a lot as compared to non-Muslim. This study investigates the trends and degree of terrorism in both Muslim and non-Muslim countries. On the other hand may economic activity matter to determine degree of terrorism across the regions and countries? This study investigates the relationship of Gross Domestic Product (GDP) per capita with different terrorism variables.

2.1 Terrorism in Muslim and Non-Muslim Countries

This study analyzes trends in terrorism in both Muslim and non-Muslim countries. Terrorism is measured by number of attacks, injuries and killings in both Muslim and non-Muslim countries. To evaluate and to compare degree of terrorism descriptive statistics have applied. Average number of attacks, injuries and killings in different decades for both Muslim and non-Muslim countries have calculated.

2.2 Association among Number of Attacks, Injuries, GDP Per Capita and Killings

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[28]Blomberg, Broussard, and Hess, "Growth, Terrorism and the Resource Curse in Sub-Saharan Africa," s50; Andreas Freytag, et al., "The Origins of Terrorism: Cross-Country Estimates of Socio-Economic Determinants of Terrorism," *European Journal of Political Economy* 27, no. 1 (2011):S5.ibid; Daniel Meierrieks and Thomas Gries, "Causality between Terrorism and Economic Growth," *Journal of Peace Research* 50, no. 1 (2013): 91.

[29]Quan Li, "Does Democracy Promote or Reduce Transnational Terrorist Incidents?, 278.

[30]Tim Krieger and Daniel Meierrieks, "Does Income Inequality Lead to Terrorism? Evidence from the Post-9/11 Era," (2015): 1-2-3; "Does Income Inequality Lead to Terrorism?," (2016); Pinar Derin-Güre and Adem Yavuz Elveren, "Does Income Inequality Derive the Separatist Terrorism in Turkey?," *Defence and Peace Economics* 25, no. 3 (2014): 311.

[31]Estrada et al., "The Economic Impact of Terrorism," 1065; Piazza, Rooted in Poverty? 1033; Shrabani Saha and Ghialy Yap, "The Moderation Effects of Political Instability and Terrorism on Tourism Development: A Cross-Country Panel Analysis," *Journal of Travel Research* 53, no. 4 (2014): 509.; Raul Caruso and Friedrich Schneider, "The Socio-Economic Determinants of Terrorism and Political Violence in Western Europe (1994–2007)," *European Journal of Political Economy* 27, no. 1 (2011): S37.

[32]James D Fearon and David D Laitin, "Ethnicity, Insurgency, and Civil War," *American Political Science Review* 97, no. 1 (2003):75.

[33]Atin Basuchoudhary and William F Shughart, "Human Capital and the Productivity of Suicide Bombers," *Defence and Peace Economics* 21 (2010): 1-2.

[34]Edgar Jones, "The Reception of Broadcast Terrorism: Recruitment and Radicalisation," *International Review of Psychiatry* 29, no. 4 (2017): 320.

[35]Hoffman, *Inside Terrorism, 32*.

To compare the degree of correlation among number of attacks, injuries, GDP per capita and killings in both Muslim and non-Muslim countries partial correlation coefficient is used. Calculated correlation matrix is given in the section of empirical results.

2.3 Econometric Models

Present study has investigated the relationship between number of attacks, injuries, GDP per capita and killings by applying panel regression. Following four regression models have been used;

1. Killings (KIL)= f (Number of attacks (NAT), injuries (INJ), GDP per capita (GPP))

$$KIL_{it} = \alpha + \beta_1 NAT_{it} + \beta_2 ING_{it} + \beta_3 GPP_{it} + e_{it} \ldots\ldots\ldots\ldots (1)$$

2. Killings= f (GDP per capita)

$$KIL_{it} = \alpha + \beta_1 GPP_{it} + e_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

3. Injuries= f (GDP per capita)

$$INJ_{it} = \alpha + \beta_1 GPP_{it} + e_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

4. Number of Attacks= f (GDP per capita)

$$NAT_{it} = \alpha + \beta_1 GPP_{it} + e_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

2.1. Data Collection

Data of all variables related to terrorism (number of attacks, injuries and number of killings) is collected from Global Terrorism Data base (GTD) published by University of Maryland. However, data of GDP per capita is arranged from World Development Indicator (WDI) published by World Bank.

2.2. Data Analysis

Degree of terrorism is measured with number of attacks, number of injuries and killings for both Muslim and non-Muslim countries by applying descriptive statistics like mean, correlation matrix. The relationship among the variables is calculated by applying panel regression. All data is analyzed according to the objectives of this study with the help of E-Views.

3. Empirical Findings and Discussion

Present study investigates the trends of terrorism in Muslim and non-Muslim countries Forty five Muslim and one hundred and thirty countries have selected for this analysis. Degree of terrorism is compared among the Muslim and non-Muslim countries by measuring average number of attacks, average injuries, and average killings in different decades. To find out the answer of this question, Does economic activity is matter for degree of terrorism? Panel regression is applied to observe the degree of relationship of GDP per capita with all terrorism proxy variables. Empirical results and discussion are given below;

3.1. Statistics of Terrorism in Muslim and Non-Muslim Countries

This section of empirical results is related trends and degree of terrorism in both Muslim and non-Muslim countries. Summary statistics of Muslim countries is given in table 1 and of non-Muslim countries is in table 2.

3.1.1. Statistics of Terrorism in Muslim Countries

Table 1 Trend of Terrorism in Different Decades

Sr.	Decade Wise	Total Number of Attacks	Killed Persons	Injured Persons
1	1980s	1180	1587	2341

	Average	9.83	13.23	19.51
2	1990s	2680	7242	13741
	Average	10.85	29.32	55.63
3	2000s	7945	20433	25180
	Average	21.13	52.93	65.23
4	2010s	15104	48513	92478
	Average	39.33	123.13	234.72
5	2011-2015	40602	110977	138958
	Average	213.69	560.49	701.81
6	1980-2015	67518	188775	272683
	Average	50.88	139.42	201.24

Source: Authors' Calculation

It is evident from the table that terrorism causes a huge loses among Muslim countries. All three indicators shows alarming situation in Muslim countries. Number of Attacks, Killed person and injured persons are increased in every decade. From 1980s to 2015, total terrorist attacks, killed persons and injured persons are 67518, 188775 and 272683 respectively.

3.1.2. Statistics of Terrorism in Non-Muslim Countries

Table 2 Trend of Terrorism in Different Decades

Sr.	Decade Wise	Total Number of Attacks	Killed Persons	Injured Persons
1	1980s	642	502	470
	Average	6.83	5.34	5
2	1990s	936	1464	1235
	Average	8.59	13.43	11.33
3	2000s	1392	5508	3914
	Average	8.34	32.4	22.89
4	2010s	318	1521	985
	Average	1.96	9.22	5.96
5	2011-2015	527	3125	1470
	Average	7.03	42.03	19.6
6	1980-2015	86914	159386	167828
	Average	21.99	39.66	41.77

Source: Authors' Calculation

It is obvious from the table that terrorism causes huge losses among Non-Muslim countries. All three indicators shows critical situation in Non-Muslim countries. Number of Attacks, Killed person and injured persons are increased in every decade. From 1980s to 2015, total terrorist attacks, killed persons and injured persons are 86914, 159386 and 167828 respectively.

3.2. Correlation Matrix

Table 3 Correlation Analysis

	INJ	KIL	LOGGPP	NAT
INJ	1.000000	0.840088	-0.039257	0.825656
KIL	0.840088	1.000000	-0.057448	0.837903
LOGGPP	-0.039257	-0.057448	1.000000	-0.044900
NAT	0.825656	0.837903	-0.044900	1.000000

Source: Authors' Calculation

Correlation among number of injured persons, killed persons, GDP per capita and number of attacks variables is estimated. Correlation among injured persons, killed persons and number of attacks is high and positive whereas GDP per capita has negative correlation with all other variables. Negative correlation of GDP per capita with all variables regarding terrorism indicated that economic activity has matter a lot to minimize the terrorism.

3.3. Empirical Estimates of Number of Attacks, Injuries, GDP Per Capita and Killings

In this section relationship among killed persons, injured persons, GDP and number of attacks are evaluated. The results are given in the following table.

Table 4 The Relationship among Number of Attacks, Injuries GDP per capita and Number of Killings

Dependent variable: Number of Killings

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INJ	0.327337	0.008542	(38.3200)	0.0000*
LOGGPP	-3.93528	1.433046	(-2.7461)	0.0061*
NAT	1.33825	0.035945	(37.2302)	0.0000*
C	32.02532	12.20091	(2.6248)	0.0087*

Source: Authors' Calculation (Note) *t* statistics in brackets $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

The analysis is carried out through pooled Ordinary Least Square method. All variables are significant at 1% level of significance. There is positive relationship among all the variables except GDP per capita. It shows that with the increase in GDP per capita killing will decrease.

3.4. **GDP Per Capita and Terrorism**

Present section describes the association between GDP per capita and terrorism. For terrorism number of attacks, injuries, and killings are used as proxy variables. Sub-section 4.4.1 evidence the relationship of GDP per capita with Killings. Association of GDP per capita with injuries is given in sub-section 4.4.2. Sub-section 4.4.3 is related to the relationship between GDP per capita and number of attacks.

3.4.1. *GDP Per Capita and Killings*

In this model relation among killed persons and GDP is evaluated. The results are given in the following table.

Table 5 GDP and Killed Persons

Dependent Variable: Killings

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGPP	-12.09	2.9594	(-4.084)	0.000*
C	170.16	25.151	(6.7656)	0.000*

Source: Authors' Calculation (Note) *t* statistics in brackets * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The analysis is carried out through pooled Ordinary Least Square method. GDP per capita is significant and has negative coefficient sign which shows that with the increase in GDP per capita will minimize the killing rate among both Muslims and non- Muslims countries.

3.4.2. *GDP Per Capita and Injuries*

In this model relation among injured persons and GDP is evaluated. The results are given in the following table.

Table 6 GDP and Injured persons

Dependent Variable: Injured Persons

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGPP	-11.7268	4.212501	(-2.7838)	0.0054*
C	185.6634	35.79701	(5.18656)	0.0000*

Source: Authors' Calculation (Note) *t* statistics in brackets * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The estimation is carried out through pooled OLS. The relation between injured persons and GDP is estimated. GDP per capita is significant and has negative coefficient sign which shows that with the increase in GDP per capita will minimize the injured persons rate among both Muslims and non- Muslims countries.

3.4.3. *GDP Per Capita and Number of Attacks*

In this model relation among number of attacks and GDP is evaluated. The results are given in the following table.

Table 7 GDP and Number of Attacks

Dependent Variable: Number of Attacks

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGPP	-3.1627	1.010497	(-3.1298)	0.0018*
C	57.4213	8.571505	(6.6990)	0.0000*

Source: Author's Calculation (Note) *t* statistics in brackets * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The analysis is conceded through pooled OLS. The relation among number of attacks and GDP is estimated. GDP per capita is significant and has negative coefficient sign which shows that with the increase in GDP per capita will minimize the number of attacks among both Muslims and non- Muslims countries.

4. Concluding Remarks

Terrorism has now become the burning issue of both Muslims and Non-Muslims countries. The brutalities of terrorism are evaluated in this study. It is vivid that terrorism becomes the root cause of bloodshed among 130 Non-Muslims and 45 Muslims countries. Descriptive statistics evidently shows the huge losses in the form of Number of attacks, Killings and Injured persons. From 1980s to 2015, total terrorist attacks, killed persons and injured persons are 67518, 188775 and 272683 respectively in Muslim

Countries. In the same way, in Non-Muslims countries, from 1980s to 2015, total terrorist attacks, killed persons and injured persons are 86914, 159386 and 167828 respectively. Number of injuries and killings are comparatively higher in Muslim countries whereas Non-Muslim countries have higher number of attacks. Which evidence those Non-Muslim countries may have better institutional arrangements to control injuries and killings. Correlation matrix is used for both Muslims and Non-Muslims countries. Correlation along with injured persons, killed persons and number of attacks is elevated and affirmative while GDP per capita has negative correlation with all other variables. Negative correlation of GDP per capita with all variables concerning terrorism specified that economic performance has matter a great deal to decrease the terrorists' activities. Likewise Pooled Ordinary Least Square (OLS) approach is applied to the data of both the Muslims and Non-Muslims countries. The verdicts show that the relation among killed persons, injured persons, GDP and number of attacks is significant. However, GDP per capita has negative coefficient sign which elaborates that with the increase in GDP per capita, the killing ratio will fall. One percent increase in GDP per capita will minimizes the 12.09 percent causalities among both Muslims and Non-Muslims countries. The results are in accordance with the findings of.[36] Besides this, with the increase of GDP per capita, the number of injured persons and number of attacks will diminish 11.72 and 3.16 respectively. Thus both Muslims and Non-Muslims countries focus to reduce the terrorists' attacks. Their governments should try to resolve this issue on top priority basis so that human lives are secured. In accordance with the central finding that GDP per capita has significant role regarding terrorism. Terrorists' seditious activities can be curtailed with the increase of GDP per capita. With the increase in GDP per capita, people become more conscious towards their lives and ultimately they discourage the terrorists' activities.

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