Does Food Insecurity Lead to Terrorism: An Economic Perspective of South Asian Countries

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Abstract: This research work examines the nexus between food insecurity and terrorism in South Asian countries, where both issues remain persistent challenges. Utilizing secondary data from the World Development Indicators (WDI), the Food and Agriculture Organization (FAO), and the Global Terrorism Database (GTD) for the period 2015-2021, we employ a generalized least squares econometric technique to analyze the interplay between food insecurity and terrorism. Our findings show that there is a clear and significant link between food insecurity and the occurrence of terrorism, suggesting that as food insecurity intensifies, the likelihood of terrorist activities escalates. The results also show that there is a link between higher GDP per person and an increase in terrorism, implying that increased economic activity may elevate the visibility and attractiveness of potential targets for terrorist attacks. This counterintuitive finding highlights the necessity for nuanced economic policies that address underlying grievances and inequalities, which may persist despite overall economic growth. Moreover, the study finds that political stability strongly reduces terrorism, emphasizing the critical role of stable political environments in reducing the incentives and opportunities for terrorist activities. Additionally, the inverse relationship between the literacy rate and terrorism suggests that higher literacy levels reduce the likelihood of terrorist incidents in subsequent periods. Based on these findings, this research work suggests policies aimed at addressing food insecurity, fostering political stability, and improving education as essential strategies for mitigating terrorism in the region.

Keywords: Food Insecurity, Terrorism, Panel Data, Generalized Least Square, South Asian Countries
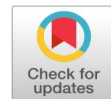
INTRODUCTION

Food security has recently garnered significant attention. As with many social concepts, there is no universally agreed-upon definition of food security. Many scholars use different definitions, but generally, food security means having enough food that is available and accessible. However, a global idea of food security doesn't guarantee that everyone is secure at all levels, as it often describes food security merely in terms of poverty, famine, and hunger (Ojo & Adebayo, 2012). Food insecurity can happen even if there is enough food, if people can't get to it or can't afford it. So, food security means having access to enough affordable and nutritious food to stay healthy (Pinstrup-Anderson, 2009). According to Stamoulis and Zezza (2003), food security means ensuring that every person, at all times, has the physical, social, and economic means to access enough safe and nutritious food that meets their dietary requirements and preferences for maintaining an active and healthy life."

To understand international terrorism, it is necessary first to define terrorism. There isn't a clear, universally applicable definition due to the complex origins of terrorism. Economic factors, such as the exploitation of resources by specific groups within nations, contribute to terrorism (Wissi, 2011). This exploitation exacerbates socio-economic issues like loss of access to healthcare, education, career opportunities, hunger, and poverty (Issa, 2017). Ideological motives based on ignorance and lack of scientific knowledge also play a role (Moore, 2003). In developing countries, domestic terrorism can be influenced by various economic, social, and political factors. Food

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insecurity significantly impacts terrorist activities in these regions. Food insecurity leads to conflict and severe poverty, which leading to despair and upset feelings among people. This situation can be exploited by terrorist groups looking for suspicious and disaffected individuals (Adelaja et al.,2019).Moreover, when the government does not provide enough food, terrorist groups may offer food aid in exchange for trust, creating a dangerous cycle of dependency and radicalization (Khan et al., 2022). Terrorist groups may also target food and agriculture to control local populations. (Adelaja & George, 2019). For example, Boko Haram in Nigeria has been known to attack and destroy farms, markets, and food storage facilities (George & Weatherspoon, 2020). Terrorism is influenced by economic, social, and political factors. Bamidele (2016) observed the actions of Boko Haram and the disturbances in Nigeria's northeastern area, examining the interconnection between violent groups and regional security, and the convergence between economic inequality, political instability, and other social factors. Awodola and Oboshi (2015) investigated how terrorism increase food shortge in Maiduguri, focusing on the impact of groups such s Boko Haram on agriculture, nutrition, and access.

Food insecurity can lead to economic losses, especially in areas where agriculture is the main source of income. Lack of access to adequate food will force people to seek other sources of income, making them vulnerable to recruitment by criminals with promises of financial support (Brinkman & Hendrix, 2011). Political conflict will create an environment conducive to terrorism because the government is weak in law and order and provides opportunities for terrorist groups (Blomberg, Hess, & Weerapana, 2004). Low GDP and economic underdevelopment can also foster terrorism, as poverty and economic disparities create fertile ground for radical ideologies (Abadie, 2009). Higher literacy rates are generally associated with better education and critical thinking skills, which can deter radicalization (Chen & Siems, 2004).

Research has examined the link between food security and conflict and found that food insecurity can be caused by rising food prices (Fjelde, 2015), climate change (Buhaug et al., 2015), poor health and nutrition (Pinstrup Andersen), and conflict. Global food prices have been linked to food crises (Bellemare, 2015) and urban crises (Hendrix and Haggard, 2015). Koren and Bagozzi (2016) found that political violence is more likely to occur in regions where food is plentiful but scarce.

Adelaja et al. (2018) discovered that when there's more food available, terrorism tends to increase. However, when people have better access to food, terrorism tends to decrease. Conflict affects food security by disrupting farming, reducing the number of people who can work, limiting access to land, and weakening the systems that help support food production (Blattman & Miguel, 2010). Households may change their crop and livestock portfolios in response to conflict (Arias, Ibáñez, & Zambrano, 2018). Conflict can also affect economic and physical access to food, with high-intensity conflicts reducing GDP and eroding public finances (Rother et al., 2016). Terrorism in Nigeria, particularly by Boko Haram, has had severe socio-economic impacts, including food insecurity. Boko Haram's activities have led to loss of life, destruction of property, and displacement of people, exacerbating food insecurity in Northern Nigeria. Despite the focus on physical security in literature, the impact of Boko Haram on food security has been less studied.

This study aims to empirically evaluate the impact of food insecurity on terrorism in South Asian countries. Despite the recognition of food insecurity as a significant problem, there is a lack of comprehensive understanding of how it directly influences the rise and persistence of terrorist activities. Previous studies have indicated that food insecurity can exacerbate social grievances, contribute to political unrest, and create fertile ground for extremist ideologies to take root. However, the specific mechanisms through which food insecurity translates into terrorism remain underexplored, particularly in the context of South Asia.

The rest of the manuscript is arranged as, the second section of the paper explains literature review of the study, while the third section explores the methodology of research work. The second last section explains results and discussion, and the last section is related to conclusion and policy recommendations.

LITERATURE REVIEW

Food insecurity remains a critical global issue, particularly in regions plagued by political instability, economic challenges, and environmental stresses. The relationship between food insecurity and violence has attracted the attention of scholars worldwide, with many studies examining how inadequate access to food leads to conflict, and the spread of conflict and violence. This literature review presents keyfindings from a variety of studies to provide a better understanding of this relationship.

Food insecurity refers to the inability to reliably obtain enough food to survive and be healthy, including the availability, access, use, and safety of food. These dimensions are related to health and policy, which will affect the overall food security of people and communities. There is no universally accepted definition of terrorism and it is mostly understood in the context of economic exploitation, economic inequality, and ideology. Kusar et al. (2020) examined the impact of population growth, urbanization, and water use on food insecurity and found that rapid population growth and expansion in urbanization put pressure on food and water resources, leading to violence. Piazza (2006) shows how poverty and food insecurity can create an environment in which terrorist ideologies can thrive and argues that addressing food insecurity is important for counter-terrorism strategies.

Buhaug and Urdal (2013) argue that rapid population growth and resulting food shortages lead to social tensions and conflicts that can be exploited by terrorist groups. Akdede, äetinkaya, and ärgün (2015) underscored how economic hardships and political instability drive individuals toward extremist groups, with food insecurity being a significant exacerbating factor.

Bellemare (2015) and Berazneva & Lee (2013) studied how changes in food prices affect social unrest and found that higher food prices can lead to more social unrest, which may cause terrorism. Food security means having enough food that is available and accessible, but this can vary worldwide. More food can reduce poverty, but people may still be hungry due to economic challenges (Ojo & Adebayo, 2012; Pinstrup-Anderson, 2009). Wissi (2011) and Issa (2017) observed that economic exploitation worsens issues like hunger and poverty, which can lead to terrorism (Ahmad, et al. 2024). Ignorance-based beliefs also contribute (Moore, 2003). Adelaja et al. (2019) talked about how food insecurity creates uncertainty and poverty, which can help extremist groups recruit members. Bamidele (2016) and Awodola & Oboshi (2015) looked at Boko Haram's effect on food security in northeastern Nigeria, showing how terrorism disrupts food production, supply, and access. Craft (2017) studied the risks of agro-terrorism and its potential to disrupt food supply chains, stressing the importance of having plans for preparedness and recovery.Adelaja & George (2019) discussed how extremist groups exploit food insecurity by providing food assistance in exchange for allegiance, creating a cycle of dependency and radicalization. George & Weatherspoon (2020) noted that groups like Boko Haram attack and destroy farms and food storage facilities as part of their campaign.

MATERIAL AND METHODS

The study will evaluate data on food insecurity in order to examine the impact of food insecurity on terrorism in south Asian countries. Econometric methods can be used to investigate the connection between food insecurity and terrorism in the South Asian nation. The model's fundamental purpose will be as follows equation 1.

Table 1: Description of Variables

Variables	Description	Unit	Source of Data
Variables	Description	Unit	Source of Data
Terrorism (TRR)	The illegal use of violence against the government for political reasons	Index:log (1+ incident, deaths, injuries)	Global Terrorism index (2023)
Food insecurity (FIN)	Not having enough food to meet basic needs.	Million peoples	Food and Agriculture Organization (2023)
Political stability(POI)	Political behaviour refers to any action taken by someone in a society that influences who gets to make decisions for that society.	Estimate of governance (ranges from approximately 2.5 (weak) to 2.5 (strong) governance performance)"	World Bank (2023)
GDP per capita (2015 US$)	Represents the total value of all finished goods and services.	constant 2015 U.S. dollars	ăWorld Bank (2023)
(GDP)			
Literacy Rate(LTR)	The literacy rate is a measure of how many people in a certain age group can read and write.	% of people ages 15 and above	.World Bank (2023)

$$\text{TRR}it = \beta 0 + \beta 1 \text{ FIN } it + \beta 2 \text{GDP it} - \beta 3 LTRit - \beta 4 POL + \varepsilon i.......(1)$$

Where in equation 1, TRR dependent variable represent terrorism, FIN independent variable represents the food insecurity, POL, GDP, LTR are control variables which represent Political stability, Gross domestic product, and Literacy rate respectively. Show in table 1. Credible sources such as the World Food Program, (2023) the Global Terrorism Database,(2023) and the United Nations' Food and Agriculture Organization(2023) panel data has been taken for this study for the period (2015-2021) will be used to gather information on food insecurity and terrorism.

RESULTS AND DISCUSSION

The First step is to check the CD test is used to check for cross-sectional dependence in panel data. The null hypothesis of the CD test is that the variables are cross-sectionally independent.

Table 2: CD test

Variable	CD-test	*p*-value	Average joint T	mean ρ	mean abs(ρ)
TRR	-0.896	0.37	7	-0.11	0.57
FIN	3.421	0.001	7	0.41	0.73
GDP	2.408	0.016	7	0.29	0.67
POL	0.481	0.63	7	0.06	0.53
LTR	3.315	0.001	7	0.4	0.4

For variables fin, gdp, and ltr, the *p*-values are close to zero, indicating significant cross-sectional dependence.For variables trr and pol, the p-values are greater than 0.05, indicating no significant cross-sectional dependence.Given the evidence of cross-sectional dependence in some variables, it is important to adjust for this in the model estimation.

The next step is to check unit root tests to ensure stationarity of variables, unit root tests are conducted. Stationarity is crucial for time-series and panel data analysis as it implies constant mean and variance over time. The Levin-Lin-Chu (LLC) test checks for stationarity in panel data. The null hypothesis is that the variable contains a unit root (non-stationary).

Table 3: LLC Test Results

Variable	Unadjusted t	Adjusted t^*	p-value	Conclusion
TRR	-16.0201	-15.2723	0	Stationary
FIN	-4.1198	-3.2666	0.0005	Stationary
GDP	-6.1247	-4.2874	0	Stationary
POL	-9.3729	-6.9267	0	Stationary
LTR	-14.0773	-13.0242	0	Stationary

The LLC test results show that all variables (TRR, FIN GDP, POL, and LTR) are stationary at the level, as indicated by their significant p-values (less than 0.01). This means that we can reject the null hypothesis (Table 3).

The results of the Levin-Lin-Chu (LLC) unit-root tests specify that all the variables in the study are stationary at their levels. Specifically, the terrorism rate (trr) has an unadjusted t statistic of -16.0201 and an adjusted t* of -15.2723 with a p-value of 0.0000, indicating stationarity. Food insecurity (fin) shows an unadjusted t of -4.1198 and an adjusted t* of -3.2666 with a p-value of 0.0005, confirming its stationarity. The gross domestic product (GDP) has an unadjusted t of -6.1247 and an adjusted t* of -4.2874 with a p-value of 0.0000, also indicating stationarity. Political stability (pol) is stationary with an unadjusted t of -9.3729 and an adjusted t* of -6.9267 with a p-value of 0.0000. Lastly, the literacy rate (ltr) shows an unadjusted t of -14.0773 and an adjusted t* of -13.0242 with a p-value of 0.0000, confirming its stationarity. Thus, all variables are deemed stationary and suitable for further econometric analysis without the need for differencing.

After the unit root test next is to check for co-integration between the variables, using Kao, and Westerlund co-integration tests. The null hypothesis indicate variables are not co-integrated. When these tests indicate that the variables are co-integrated, Estimate our model using feasible generalized least squares.

The Westerlund test checks for the absence of co-integration with panel-specific co-integrating vectors.

Table 4: Westerlund test

Statistic	Value	p-value
Variance ratio	3.0582	0.0011

The Kao test checks for cointegration with a common cointegrating vector across panels.

Table 5: Kao test

Statistic	Value	p-value
Modified Dickey-Fuller t	-1.3327	0.0913
Dickey-Fuller t	-5.6218	0
Augmented Dickey-Fuller t	-1.3292	0.0919
Unadjusted modified Dickey-Fuller t	-2.2571	0.012
Unadjusted Dickey-Fuller t	-5.9618	0

The Kao test results and Westerlund test indicate the presence of cointegration among the variables (Table 4 & 5).

Likelihood least squares (FGLS) is a powerful estimation technique that minimizes estimation bias and provides useful estimates in the presence of autocorrelation, heteroskedasticity, and cross-sectional dependence. This is important for our paper because our dataset mat be affected by the cross-sectional dependence. The model can also take into account other important control variables, such as political stability, GDP, and Literacy rate. Suitable econometric techniques, such as Feasible Generalize least squares will be used to estimate the model. It will be assessed how sensitive and resilient the estimation results are to various model specifications. The computed model

coefficients will be analyses to determine the magnitude and direction of the link between food insecurity and terrorism. For instance, a positive coefficient on food insecurity would indicate a positive correlation between terrorism and food insecurity, whereas a negative coefficient would indicate the opposite. Check out how food insecurity affects terrorism as well. There is a complex relationship between literacy rate, GDP, political stability, food insecurity, and terrorism. While there isn't a single, widely accepted theoretical framework that links all of these variables together, researchers and analysts looked at several kinds of links. It's important to remember that dynamics can change depending on the regions and contexts. Food insecurity has a positive impact on Terrorism. GDP has a positive effect with Terrorism. Literacy rate has a negative significant effect on terrorism while Political stability has also a negative effect on terrorism. Two models are estimated: one without control variables (equation (2) below), and second one is that include the control variables (equation (3)).

$$TRR_{it} = \beta 0 + \beta 1 FIN_{it} + \varepsilon i ......(2)$$

$$TRR_{it} = \beta 0 + \beta 1\ FIN_{it} + \beta 2\ GDP_{it} - \beta 3 POL\ it - \beta 4 LTR_{it} + \varepsilon i.........(3)$$

Table 6: Cross-Sectional time-series FGLS

Variable	Coefficient	Std. Err.	z-value	p-value	95% Conf. Interval
FIN	0.0192654	0.003126	6.16	0	0.0131386 - .0253923
Cons	2.145295	0.0558718	38.4	0	2.035789 - 2.254802

The results of the cross-sectional time-series FGLS regression highlight a significant relationship between food insecurity (FIN) and terrorism rates (TRR), which aligns with findings from existing literature. The regression results show a positive and statistically significant coefficient for food insecurity (0.0192654, p < 0.000), indicating that higher levels of food insecurity are associated with increased terrorism activities. This section provides a literature review supporting these findings. Justino (2009) this study highlighted how food insecurity and economic deprivation can drive individuals towards participation in violent activities, including terrorism, as a means of survival or as a response to perceived injustices. Fjelde (2015) explored the conditions under which food insecurity leads to conflict, finding that regions with high levels of food insecurity are more prone to outbreaks of violence, including terrorism, particularly when compounded by weak state institutions.

Table 7: Results of FGLS

Variable	Coefficient	Std. Err.	z-value	p-value	95% Conf. Interval
FIN	0.0175603	0.0025661	6.84	0	0.0125309 - 0.0225897
GDP	0.000393	0.0000699	5.62	0	0.000256 - 0.0005299
POL	-0.7464734	0.0550764	-13.55	0	-0.2158956
LTR	-0.0149142	0.0051515	-2.9	0.004	-0.0201937
_cons	1.760921	0.2938788	5.99	0	1.18493 - 2.336913

The positive and significant result shows that more food insecurity is linked to more terrorist incidents. This finding aligns with existing literature suggesting that food insecurity can exacerbate social tensions and conflict, potentially leading to increased terrorist activities. For example, Brinkman and Hendrix (2011) argue that food insecurity can lead to political instability and violence, creating fertile ground for terrorism. The positive result for GDP per capita means that as a country's GDP per person increases, the number of terrorism incidents also tends to go up. This counter-intuitive result might be due to the fact that higher economic activity can increase the visibility and attractiveness of targets for terrorist groups. According to Piazza (2008), economic development can sometimes coincide with increased grievances and inequalities, leading to higher terrorism. The negative and highly significant coefficient indicates that higher political stability is associated with a reduction in terrorist incidents. This supports the notion that stable political environments reduce the incentives and opportunities for terrorism. Enders and Sandler (2012) emphasize that stable political institutions and effective governance can mitigate the conditions that foster terrorism. The relation between the literacy rate and terrorism is negative which indicates that higher literacy rates are associated with fewer terrorist incidents in the subsequent period. This finding aligns with studies suggesting that higher literacy and education levels can reduce the appeal of extremist ideologies and increase social resilience against terrorism. Krueger and Malečková (2003) found that higher educational

attainment reduces the likelihood of individuals participating in terrorist activities. The impact of economic growth on terrorism in Pakistan is positive and statistically significant at the 1% level, with a 1% increase in economic growth leading to a 4.112% rise in terrorist attacks. This suggests that worsening income distribution and increasing inequality are making poverty and terrorism worse. These findings match those of Caruso and Schneider (2011) but contradict Nasir et al. (2011), who found that higher income per person reduces terrorism in South Asia. Muller and Seligson (1987) suggest that economic growth that does not reach the poor will lead to violence and thus act as a barrier. Shahbaz (2013) found that inflation and economic growth have a significant impact on terrorism in Pakistan. Specifically, higher inflation and faster economic growth will lead to more violent crime, perhaps due to the different economic and social conditions of the economy. Replicate this design. The findings show the relationship between economic factors and terrorism and suggest that economic policies should take these changes into account in order to be effective and reduce terrorism in Pakistan (Khan et al., 2021; Ruiz Estrada et al., 2018; Ruiz Estrada et al. , 2019).

CONCLUSION AND POLICY RECOMMENDATIONS

This study examines the link between food insecurity and violence by focusing on various relevant social and economic factors. We use the Least Squares (FGLS) model to examine how food insecurity, GDP per capita, political stability, and literacy are related to perpetration. Key findings include:

Food Insecurity and Terrorism: There is a strong and significant relationship between food insecurity and terrorism. This means that as food insecurity increases, so does the incidence of terrorism. This supports the idea that food insecurity can increase stress and lead to conflict and violence. Food safety regulations are important for reducing the risk of terrorism.

Gross Domestic Product Per Capita and Terrorism: Surprisingly, there is a positive correlation between Gross Domestic Product Per Capita and terrorism. This suggests that increased human trafficking can make places more vulnerable to terrorist attacks. It highlights the need for economic policies that address inequality and inequality to protect the economy from the risk of violence, even as the economy grows.

Political Stability and Terrorism: This shows how important security is to reducing the likelihood of crime. Good governance and strong political institutions are essential to preventing the conditions that create terrorism and necessitates strengthening security governance as part of the fight against terrorism.

Literacy Rates and Terrorism: There is a negative correlation between literacy and violence, meaning that the higher the literacy rate, the less likely violence is to occur. Education can help reduce the demand for trust and strengthen society's ability to combat crime. This highlights the importance of investing in education as a long-term strategy to combat terrorism.

These findings provide insight into the social and economic factors that influence violence and provide a basis for policy development. The implications are clear: addressing food insecurity, promoting security management, and improving education can reduce the risk of violence. By focusing on these areas, policymakers can create an environment less conducive to terrorism, thereby improving national and international security.

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REFERENCES

Abadie, A. (2009). Terrorism and the world economy. *Oxford Review of Economic Policy, 25*(4), 666-681.

Adebayo, O., Olagunju, K., Kabir, S. K., & Adeyemi, O. (2016). Social crisis, terrorism and food poverty dynamics: Evidence from Northern Nigeria. *International Journal of Economics and Financial Issues, 6*(4), 1865-1872.

Ahmad, N., Khan, A., Haq,ul, I., Khalid, M. H., & Ahmad, S. (2024). The Impact of Terrorism on International Trade: A Panel Study for SAARC Countries. *Bulletin of Business and Economics (BBE), 13*(2), 671-676.

Ahmed, U. I., Ying, L., & Bashir, M. K. (2015). Food insecurity and coping strategies by micro growers in Punjab, Pakistan. Journal of Environmental and Agricultural Sciences, 3, 31-34.

Akdede, S. H., Çetinkaya, U., & Örgün, E. (2015). Political and economic factors influencing terrorism. *Journal of Conflict Resolution*.

Akdede, S. H., ÇETİNKAYA, İ., & ÖRGÜN, O. (2015). The effects of economic and political factors on terrorism: An aggregated panel analysis. *Journal of Academic Studies, 17*(65), 51-69.

Alexander, R. (2022). *Food insecurity and terrorism: What famine means for Somalia*. United States of America. Retrieved from https://shorturl.at/qveiF

Anderson, S. A. (1990). Core indicators of nutritional state for difficult-to-sample populations. *The Journal of Nutrition, 120*, 1555-1598.

Awodola, B., & Oboshi, A. (2015). Terrorism in northern Nigeria: A threat to food security in Maiduguri. *Mediterranean Journal of Social Sciences, 6*(3 S2), 11.

Bamidele, O. (2016). Combating terrorism: Socioeconomic issues, Boko Haram, and insecurity in the north-east region of Nigeria. *Military and Strategic Affairs, 8*(1), 109-131.

Bellemare, M. F. (2015). Rising food prices, food price volatility, and social unrest. *American Journal of Agricultural Economics*.

Berazneva, J., & Lee, D. R. (2013). Explaining the African food riots of 2007–2008: An empirical analysis. *Food Policy*.

Berrebi, C. (2007). Evidence about the link between education, poverty, and terrorism among Palestinians. *Peace Economics, Peace Science and Public Policy, 13*(1), 1-36.

Blomberg, S. B., Hess, G. D., & Weerapana, A. (2004). Economic conditions and terrorism. *European Journal of Political Economy, 20*(2), 463-478.

Brinkman, H. J., & Hendrix, C. S. (2011). Food insecurity and violent conflict: Causes, consequences, and addressing the challenges. *World Development, 39*(9), 1566-1575.

Buhaug, H., & Urdal, H. (2013). An urbanization bomb? Population growth and social disorder in cities. *Global Environmental Change, 23*(1), 1-10.

Caruso, R., & Schneider, F. (2011). The socio-economic determinants of terrorism and political violence in Western Europe (1994–2007). *European Journal of Political Economy, 27*(1), 37-49.

Chen, E., & Siems, M. M. (2004). The effects of terrorism on global capital markets. *European Journal of Political Economy, 20*(2), 349-366.

Craft, L. (2017). *Perceived threats to food security and possible responses following an agro-terrorist attack* (Doctoral dissertation, Walden University).

Estrada, M. A. R., Park, D., Kim, J. S., & Khan, A. (2015). The economic impact of terrorism: a new model and its application to Pakistan. *Journal of Policy Modeling, 37*(6), 1065-1080.

Fearon, J. D., & Laitin, D. D. (2003). Ethnicity, insurgency, and civil war. *American political science review, 97*(1), 75-90.

Fao, I. F. A. D., & Unicef. (2017). WFP and WHO (2018) The state of food security and nutrition in the world 2018. *Building climate resilience for food security and nutrition*.

George, J., Adelaja, A., & Weatherspoon, D. (2020). Armed conflicts and food insecurity: Evidence from Boko Haram's attacks. *American Journal of Agricultural Economics, 102*(1), 114-131.

Hendrix, C. S., & Haggard, S. (2015). Global food prices, regime type, and urban unrest in the developing world. *Journal of Peace Research, 52*(2), 143-157.

IFPRI. (2019). Global food policy report. International Food Policy Research Institute. Retrieved from https://shorturl.at/bc172.

Ishaq, A., Khalid, M., & Ahmad, E. (2018). Food insecurity in Pakistan: A region-wise analysis of trends. *Pakistan Institute of Development Economics (PIDE) Working Papers*, 157, 1-26.

Issa, Z. M. (2017). The terrorist organizations in the Arab states, and the procedures for confronting them. *Afaq Arab Journal, (1)*, 12-34.

Justino, P. (2009). Poverty and violent conflict: A micro-level perspective on the causes and duration of warfare. *Journal of Peace Research, 46*(3), 315-333.

Khan, A., Estrada, M. A. R., & Yusof, Z. (2016). How terrorism affects the economic performance? The case of Pakistan. *Quality & Quantity, 50*, 867-883.

Khan, A., Tahir, M., ul Haq, I., & Loganathan, N. (2021). Impact of Terrorism, Foreign Direct Investment (FDI) and Energy Consumption on the Economic Performance: A Case of South Asian Economies. *JISR management and social sciences & economics, 19*(2), 106-120.

Khan, A., Khan, H. U., & Rauf, A. (2022). An Insight Into Global Terrorist Groups: An Empirical Analysis Of Their Structure And Economic Conditions. *Webology, 19*(3).

Kousar, S., Ahmed, F., Pervaiz, A., & Bojnec, Š. (2021). Food insecurity, population growth, urbanization and water availability: The role of government stability. *Sustainability, 13*(22), 12336.

Martin-Shields, C. P., & Stojetz, W. (2019). Food security and conflict: Empirical challenges and future opportunities for research and policy making on food security and conflict. *World development, 119*, 150-164.

Mabiso, A., Maystadt, J. F., Vandercasteelen, J., & Hirvonen, K. (2014, May). Refugees, food security, and resilience in host communities. In *2020 Conference paper* (pp. 1-41). International Food Policy Research Institute (IFPRI); Washington DC, USA.

Miguel, E., Satyanath, S., & Sergenti, E. (2004). Economic shocks and civil conflict: An instrumental variables approach. *Journal of political Economy, 112*(4), 725-753.

Moore, D. (2003). Survey of financial literacy in Washington State: Knowledge, behavior, attitudes, and experiences. Social and Economic Sciences Research Center, Washington State University. *Washington State University, 10*(2.1), 4729-4722.

Muller, E. N., & Seligson, M. A. (1987). Inequality and insurgency. *American Political Science Review, 81*(2), 425-451.

Nasir, M., Ali, A., & Rehman, F. (2011). Determinants of terrorism: A panel data analysis of selected South Asian countries. i(2), 145-162.

Onuabuchi, N. E., Harcourt, A. E., OVAGA, O. A., & ThankGod, B. A. R. I. K. O. R. (2022). International Terrorism and Food Insecurity in West Africa Sub-Region: The Case of Boko Haram, 2017-2022. *Central Asian Journal of Social Sciences and History, 3*(12), 357-371.

Onuabuchi, N. E., Harcourt, A. E., Ovaga, O. A., & ThankGod, B. A. R. I. K. O. R. (2022). International terrorism and food insecurity in West Africa sub-region: The case of Boko Haram, 2017-2022. *Central Asian Journal of Social Sciences and History, 3*(12), 357-371.

Piazza, J. A. (2006). Rooted in poverty?: Terrorism, poor economic development, and social cleavages. *Terrorism and Political Violence, 18*(1), 159-177.

Pinstrup-Andersen, P. (2009). Food security: definition and measurement. *Food Security, 1*(1), 5-7.

Rudolfsen, I. (2020). Food insecurity and domestic instability: A review of the literature. *Terrorism and Political Violence, 32*(5), 921-948.

Ruiz Estrada, M. A., Khan, A., & Park, D. (2018). The economic cost of the Islamic State on the Syrian and Iraqi economies. *Quality & Quantity, 52*, 1707-1730.

Ruiz Estrada, M. A., Park, D., Tahir, M., & Khan, A. (2018). How does terrorism affect the international trade of Muslims countries?. *Quality & Quantity, 52*, 2255-2268.

Ruiz Estrada, M. A., Park, D., Khan, A., & Tahir, M. (2019). Is terrorism, poverty, and refugees the dark side of globalization?. *Quality & Quantity, 53*, 1823-1835.

Shahbaz, M. (2013). Linkages between inflation, economic growth and terrorism in Pakistan. *Economic modelling, 32*, 496-506.

Shemyakina, O. (2022). War, conflict, and food insecurity. *Annual Review of Resource Economics, 14*, 313-332.

Smith, P. (2014). Climate change, food security, and violent conflict: Examining the links. *International Journal of Environmental Studies*.

Dzigbede, K. D. (2020). A framework for assessing the effectiveness of USAID's food security programme in a developing country. *Development in Practice, 30*(3), 369-382.

Wissi, O. H. (2011). International terrorism and its legal and political manifestations in the light of the provisions of public international law. Retrieved from https://shorturl.at/5lrGS.