

**THE EFFECT OF TERRORISM ON EMPLOYMENT AND  
RICE PRODUCTION IN THE PHILIPPINES**

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Major paper presented to the  
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in partial fulfillment of the requirements of the M.A. Degree  
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Ottawa, Ontario

May 2019

## **Abstract**

This paper examines the relationship between terror attacks and economic activity, particularly employment and rice production. I rely on an exhaustive list of terror attacks in the Philippines over the period 2008 to 2017 to identify the economic impacts of terrorism. Using province level data, the estimates provide no evidence that the frequency of terror attacks and number of individuals killed in these attacks affect the employment rate. However, I find that an additional occurrence of a terror attack is associated with a 1 percent decrease in the growth of rice production. The number of fatalities from terror attacks have no significant impact on rice production.

# 1 Introduction

Conflict and terror continue to persist in the Philippines and have been important issues since the late 1960s (LaFree et al. (2013)). The struggles between the democratic government and various insurgent groups continuously impede the potential to prosper and achieve economic growth. In particular, the southern island of Mindanao has been plagued by numerous terror attacks from two main insurgent groups namely the Muslim groups fighting for self-determination and the communist groups fighting for ideology (Chalk (2001)). Early in 2019, a cathedral was bombed by the Islamic State of Iraq and the Levant (ISIL) in Sulu killing at least 20 people. Another major attack was the five-month Marawi siege in May 2017. The Philippine government continues to search for solutions that will help achieve long-lasting peace to promote development across the country.

In provinces, such as Mindanao, it is common for rebel groups to control small pockets of land owned by farmers. This has led to the loss of lives, damaged properties and livelihoods, injuries, and travel warnings that affect the economy (Fabe (2013)). Determining the causal impact of terrorist activities on the economy is challenging to estimate. As such, previous studies on the costs of terrorism in the Philippines mostly focus on the relationship between conflict and economic performance in Mindanao (World Bank (2010);World Bank (2017)).

The existing literature on the economic impact of terrorism contains interesting results. In the seminal work of Abadie and Gardeazabal (2003), the authors find that following a series of terror attacks in the Basque Country, Spain during the late 1960s, GDP per capita decreased by around 10 percentage points relative to the control region.<sup>1</sup> Similarly, Blomberg et al. (2004) find that terrorist attacks have a negative impact on the growth of developing countries. In the United States, it has been shown that successful terror attacks, relative to failed ones, decrease the number of

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<sup>1</sup> Abadie and Gardeazabal (2003) argue that simply comparing the performance of Basque Country with the rest of Spain during the period of terrorism “may not reflect the impact of terrorism, but also other pre-terrorism differences which affected subsequent economic growth”. The authors address this by first creating a “synthetic” Basque Country without terrorism. This synthetic region has similar characteristics of the actual Basque country before the terrorist attacks and is defined as a weighted average of other Spanish regions. They then use the “synthetic” Basque Country as the control group and compare it to the actual Basque Country with terrorism. In my analysis, I could have used the island of Mindanao as the treatment unit since the majority of recorded terror attacks in the Philippines are in provinces located there. However, I decided not to, given the prevalence of terrorism throughout the period studied (see Figure 1). It was thus impossible to find a pre-terror period to do the matching.

jobs and earnings in the targeted areas by 2 percent (Brodeur (2018)).

In this study, I investigate the relationship between terrorism and economic outcomes, in particular employment and rice production, using panel data. I find no evidence that the frequency of terror attacks and number of individuals killed in these attacks affect employment. However, I find that an additional occurrence of a terror attack is associated with a 1 percent decrease in the growth of rice production. The number of fatalities from terror attacks is not significantly related to rice production.

This paper aims to contribute to the literature by providing empirical evidence on the relationship between terrorism and selected economic outcomes in the Philippines. Specifically, I contribute to a small literature investigating the economic consequences of terrorism at the local level. By using an exhaustive list of terror attacks from 2008 to 2017 and provincial data on employment and rice production, I am able to control for time-invariant characteristics at the province level in my model. This local approach is a relatively recent phenomenon (Brodeur (2018)).

The paper proceeds as follows: Section 2 enumerates possible channels through which terrorism impacts the economy. In Section 3, I provide details about the data sets and descriptive statistics. Section 4 discusses the proposed methodology for estimation. Results of the regressions are presented in Section 5. The last section concludes the paper and offer possible areas for further research.

## 2 Conceptual framework

There are various channels through which terrorism can affect the economy. A study by Blomberg et al. (2004) on the macroeconomic consequences of terrorism outlines several possible theoretical channels in which terrorism may impact economic activity.

The first channel is through the immediate negative impact of terrorism on output production and employment following the destruction of inputs such as physical and human capital. In the case of the Sept. 11 attack, Becker and Murphy (2001) estimate a loss of 0.06 percent of total productive assets and 0.2 percent of physical assets in the U.S. economy. In the case of Philippines around 62 percent of the recorded terror incidents from 2008 to 2017 were classified as bombing or armed assault attacks which could possibly have had damaging consequences to roads, infrastructure and the community. In Section 5, I present some evidence of a negative relation between terror attacks and rice production.

However, as pointed out by Kavanagh (2011), the existing research on the relationship between terrorism and macroeconomic variables such as poverty and unemployment show a “complicated set of patterns”. For instance, in the case of Lebanon, Kavanagh finds that highly educated individuals belonging in poor communities have increased likelihood of joining a terrorist group. In the Section 4, I mention that this channel could pose issues of reverse causality in the model.

Another channel in which terrorism may lower output is through the disruption of household plans and business environment (Blomberg et al. (2004)). A terror attack can be seen as an economic shock that increases uncertainty and induces fears, which in turn may affect consumption and investment decisions. There are two possible yet contrasting effects. First, terrorism and conflict may tempt individuals to safe keep their money instead of using it to purchase goods. Alternatively, it could induce others to spend more in the short run due to uncertainties of the future. The empirical evidence on the effects of terrorism on consumption remains ambiguous (Frey et al. (2007)).

Fears about the future and uncertainty caused by terrorism might also have spillover effects such as migration and mass displacement. The damage to physical infrastructure and institutions aggravate both living and working conditions, which may compel individuals and firms to migrate (Dreher et al. (2011)). For instance, Abadie and Dermisi (2008) find that post-9/11 vacancy rates in downtown Chicago grew more for buildings that have a higher perceived terrorist risk. Their findings suggest that changes in perceptions on terrorism can considerably affect the level of economic activity in a specific area.

In addition, heightened security measures following terror incidents result in travel advisories that may possibly harm the tourism industry and decrease tourist arrivals (Enders et al. (1992)).

## **3 Data Sources**

### **3.1 Global Terrorism Database**

This paper makes use of the Global Terrorism Database (2017) which contains information on terror incidents around the globe from 1970 to 2017. The database is a result of the data collection process headed by the National Consortium for the Study of Terrorism and Responses to Terrorism

*START*.<sup>2</sup> The GTD 2017 contains information on the month, year, location (province level), and description of each terror attack as well as the frequency of attacks, number of individuals killed, and number of individuals injured. When a terror attack occurs, it is recorded as one observation in the database. In order to convert this to quarterly data, I generate quarter dummy variables using the variable “month” from the GTD then compute the total number of attacks that occurred in each province for each quarter-year. For this study, the province-quarter-year panel data uses observations from 2008 to 2017 in the Philippines.

A terrorist attack is defined by the GTD (2017) as “the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation”. This means that the database only comprises of incidents that are intentional, entails a certain level of violence or immediate threat of violence, and those whose perpetrators are subnational actors. In addition, GTD includes only those that satisfy at least two of the following criteria: the act is aimed at attaining a political, economic, religious, or social goal; there is evidence of an intention to coerce, intimidate, or convey some other message to a larger audience (or audiences) than the immediate victims; and it must be outside the context of legitimate warfare activities. However, for this analysis, I only include terror attacks that satisfy all three criteria. Recent studies investigating the impact and causes of terrorism use a similar definition (Brodeur (2018)). This definition is coherent with the Philippines’ legal definition of terrorism based on the Human Security Act of 2007. This law defines terrorism as an act that “sows and creates a condition of widespread and extraordinary fear and panic among the populace, in order to coerce the government to give in to an unlawful demand”. Examples of these acts are piracy, rebellion, coup d’etat, kidnapping, hijacking.

Figure 1 plots the total number of terrorist attacks, individuals killed and injured from 2008 to 2017 in the Philippines. Within this period, there were 3,113 fatalities and 5,136 injuries resulting from the 3,334 terror incidents recorded in the GTD.<sup>3</sup> In general, the number of terror attacks

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<sup>2</sup> The GTD codebook contains more detailed information on the data collection methodology and variables. The data is collected from various publicly available sources such as news archives, media articles and existing datasets. The codebook is available at <https://www.start.umd.edu/gtd/>.

<sup>3</sup> The number of injured persons from the GTD database provides a rough estimate of the “confirmed non-fatal injuries to both perpetrators and the victims”. However, this variable suffers largely from measurement error relative to the other two indicators of terrorism. Thus, I only use number of terror attacks and number of deaths as explanatory

was declining from 2008 to 2011 but sharply increased in 2013 with around 500 terror attacks recorded that year. The number of recorded incidents from 2015 to 2017 continue to fall within that range.

Figure 2 shows that most of these attacks, around 68 percent, are located in Mindanao. The province with the highest incidence of terror attacks is Maguindanao (371), followed by North Cotabato (324) and Basilan (212).

### **3.2 Employment rate from labor force surveys**

The labor force survey is conducted quarterly by the Philippine Statistics Authority on a national scope. The survey defines the labor force as consisted by individuals 15 years old and over who contribute to the production of goods and services in the country. Meanwhile, an employed person is one who belongs in the labor force who is reported either to be at work or with a job or business although not at work. Persons at work are those who performed some work, even for an hour during the reference period which is the past week.

The employment rate is the percentage of employed person in the labor force. The survey contains provincial level identification numbers, therefore allowing to generate provincial level estimates of the employment rate for each quarter which is the dependent variable for this study. There are 81 provinces in the Philippines.

### **3.3 Data on rice production**

Another economic outcome used in this paper is rice production. For this study, I use province level data on the volume of rice production measured in metric tons that is collected quarterly by the Philippine Statistics Authority (PSA) using the rice production survey. The variable is defined as the sum of irrigated rice and rainfed rice produced and harvested within the reference period. I transform the raw data from PSA measured in levels, into log values in order to analyse the relationship between terror attacks and the growth of rice production. Province-quarter observations that are equal to zero are not used in the analysis.

In addition to employment outcomes, it is interesting to determine how terrorist activities affect rice production since rice is one of the main agricultural crops produced in the Philippines and is considered as a “must-have food and primary source of nourishment” (Santiaguel (2013)). In fact, rice

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variables in the analysis.

is the second most weighted commodity in the Consumer Price Index (CPI) basket with a 9.6 percent weight.

In terms of rice production, the 2017 crop production statistics from the Food and Agriculture Organization of the United Nations show that Philippines was the eight highest producer of rice in the world, contributing more than 19 million tonnes of rice which is approximately 2.5 percent of world production. In addition, the agriculture sector employed approximately 25 percent of the total number of employed persons that year (Bersales (2017)). However, the crops subsector, which includes rice, only had a 4.7 percent share to total gross domestic product in 2017. Philippines is a net rice importer, exporting 322 tonnes of rice and importing 0.89 million tonnes in 2017 (Philippine Statistics Authority (2018)).

### 3.4 Descriptive statistics

Table 1 presents summary statistics for employment, rice production and terror attacks. The sample includes quarterly data from 2008 to 2017 for 81 provinces. The dataset contains all province-quarter-year observations, even those with no recorded terror attacks, fatalities and injuries. Out of the 3,229 observations, approximately 38 percent are provinces with recorded terror attacks in a given quarter-year period, while the rest experienced no attacks. The average number of deaths and injuries for provinces that were attacked are 2.4 and 3.9, respectively. The province with the greatest number of attacks recorded within the 10-year sample period is Maguindanao with 31 attacks.

Meanwhile, within the same period, the deadliest attack with 58 recorded fatalities happened 18 August 2008 when separatist rebels seized a main highway in Lanao del Norte, raided a nearby town and took some individuals hostage. In terms of injuries, the attack with the highest number of wounded individuals occurred in Lanao del Sur during the third quarter of 2017 as a result of bombings and armed assault by the Maute Group and Islamic State of Iraq and the Levant (ISIL) targeting soldiers of the Philippine military.<sup>4</sup>

The lowest quarterly employment rate recorded in the sample is 80.2 percent, in the province of Lanao del Sur during 2013:1. There are several provinces (42 observations) that recorded full employment in some quar-

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<sup>4</sup> I include the variable on injuries in this section for description purposes. However, this variable is not included in the regressions since it potentially has large measurement errors relative to the other two terrorism variables.

ters.<sup>5</sup> The average employment rate for provinces with recorded terror attacks is 94.8 percent, which does not differ much from the 94.3 percent employment rate of provinces that were not attacked.

There are slightly fewer observations for rice production since there are some provinces that do not produce rice. In particular, the province/city of Metro Manila (in Luzon) and Cotabato (in Mindanao) have no recorded rice production data for all quarter-year periods. In terms of volume, the major island groups namely Luzon, Visayas and Mindanao produce an average of 68, 52 and 42 thousand metric tons annually within the 10-year sample period, respectively.

## 4 Identification strategy

In order to estimate the relation between terrorism on economic variables such as employment and rice production in the Philippines, I use the following:

$$Y_{i,t} = \alpha + \sum_{n=0}^3 \beta_n \text{terror}_{i,t-n} + \gamma_i + \lambda_t + \varepsilon_{i,t} \quad (1)$$

where  $Y_{i,t}$  is an economic outcome in province  $i$  at quarter-year period  $t$ . This study uses the employment rate and log of rice production as measures of economic outcome. The term  $\text{terrorism}_{i,t}$  is a variable representing the number of terror incidents. In another specification, I use the number of deaths from these terror attacks as the explanatory variable. Province fixed effects ( $\gamma_i$ ) and time fixed effects ( $\lambda_t$ ) are included. The coefficient of interest is  $\beta$ .

While results from the model provide estimates of the relationship between terrorism and the chosen economic outcomes, it should only be viewed as evidence of correlation and not a causal effect. In addition, it is also important to consider the possibility of reverse causality and the presence of omitted variable bias in this specification. In terms of reverse causality, it is possible that if a province is poor, work opportunities are limited, and members of the local community are more likely to become disenfranchised and participate in terrorist groups (Kavanagh (2011)).

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<sup>5</sup> There are six provinces that recorded full employment in certain quarters. These observations are found in remote provinces of the country namely Batanes (26 observations), Tawi-tawi (6 observations), Camiguin (3 observations), Sulu (3 observations), Mountain Province (2 observations), and Quirino (2 observations). Batanes in particular is a small province with a population of 17,426 habitants in 2015. The sum population of these six provinces only make up 1.7 percent of the total population of the country in 2015. I acknowledge the possibility of having measurement error in the employment rate variable.

## 5 Results

In this section, I present estimates of equation 1 using the full sample (i.e. including provinces with no recorded terror attacks and fatalities) and the treated subsample which only contains provinces with records of terror attacks and fatalities.

### 5.1 Full sample

Table 3 presents estimates from equation 1 using the number of terror attacks as the regressor and the employment rate as the dependent variable. In columns 1-4, the dependent variable is the employment rate while columns 5-8 use the log of rice production. In the second to fourth rows, I include quarterly lags up to the third lag.<sup>6</sup> Province and time fixed effects are included for all columns. Robust standard errors are clustered at the province level.

In column 1, I find that terror attacks seem to have a negative, albeit not statistically significant, effect on the employment rate. The coefficient suggests that, controlling for province and time fixed effects, on average, an additional terror attack is associated with a 0.02 percentage point decrease in the employment rate. Estimates in columns 2 to 4, which include the lags, also show a negative relationship between the two variables except for the coefficient of the first lag in column 4. Although the sign of the coefficients is as expected, all the estimates are statistically insignificant.

In Table 3, columns 5 to 8, the number of terror attacks appear to have a negative effect on rice production growth. In column 5, the estimate shows that an additional occurrence of a terror attack is associated with a one percent decrease in rice production. This coefficient is statistically significant at the 10 percent level. The estimates for the first and third lags are positive, but are statistically insignificant.

Another indicator for terrorism used in this study is the number of deaths resulting from the terror attacks. Table 4 presents estimates for the full sample. I find no evidence that the number of deaths is related to rice production and unemployment. The sign of coefficients in columns

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<sup>6</sup> There are two planting seasons in the Philippines: dry and wet season. Farmers plant from December to January during the dry season, and from June to July during the wet season (Garcia and Nelson (2013)). Rice is harvested on April to May, and then on October to November. The whole rice production process which involves planting and harvesting takes about five to six months. Since data on rice production is collected quarterly, it takes around one to two months for the PSA to measure the produced rice from the moment the seed was planted.

1-4 are positive and statistically insignificant for the employment rate. In columns 5-8, the signs are as expected, but the magnitude is quite small. All coefficients in this regression table are statistically insignificant.

## 5.2 Treated subsample

In another set of regressions using the same set of variables, I limit my sample to provinces that have at least one recorded terror attack within the 2008-2017 period by dropping all observations from provinces that had not been attacked within the same period.<sup>7</sup> I exclude these provinces to see how employment and rice production is affected as the level of terrorism in attacked provinces worsen.

Table 5 presents the results of the model for the treated subsample. In terms of magnitude, the estimates are pretty close but slightly higher than those in Table 3. There are no changes in the signs of the coefficients. I find no evidence that terrorism has an effect on employment since the estimates in columns 1-4 are statistically insignificant. However, estimates in the first row of columns 5-8, present some evidence that terrorism has a negative and statistically significant effect on rice production for provinces in the treated subsample. For instance, in column 5, an additional incidence of a terror attack is associated with a one percent decrease in rice production and is statistically significant at the 5 percent level.

On the other hand, I find no evidence that the number of fatalities from terror attacks affect employment and rice production. The estimates in Table 6 are all statistically insignificant. Despite limiting the sample to provinces that experienced terror incidents, the estimates in columns 1-3 remain positive while estimates in the first row of columns 5-8 are all negative.

To summarize, the estimates provide no evidence that the frequency of terror attacks and number of individuals killed in these attacks affect the employment rate. However, I find that the frequency of attacks affects rice production while the number of fatalities does not.

## 5.3 Robustness analysis

As a robustness check, I perform the same set of regressions using the GTD definition of a terror attack. Recall that GTD only requires two out of the three criteria enumerated in Section 3. This is different from the

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<sup>7</sup> There are five provinces that had no recorded terror attacks from 2008 to 2017. These are Batanes, Camiguin, Marinduque, Southern Leyte and Cotabato City.

definition I use previously which requires all three criteria to be satisfied. The regression results are presented in Tables 7 to 10.

The re-estimated coefficients of the full sample, with the variable “terror” redefined using the GTD criteria are shown in Tables 7 and 8. The coefficient signs are same as those in Tables 3 and 4, which imply that the direction of the effect of terror attacks and number of deaths on employment and rice production do not change whether different definitions of terror attack are used. However, with the GTD definition of terror attacks, the effect on employment rate becomes statistically significant at the 10 percent level (Table 7, column 1). For instance, on average, an additional terror attack (i.e. a 1 unit increase in terror attack) is associated with a 0.03 percentage point decrease in the employment rate. This is slightly higher than the estimate 0.02 percentage point decrease in employment rate with the other definition of terrorism. In the case of rice production, the magnitude of the effect, which is a 1 percent decrease in growth of rice production, is almost the same whether either definition of a terror attack is used. Similarly, results of Tables 4 and 8 are the same. This implies that changing the definition of an “attack” does not affect the estimated impact of the number of deaths on the economic outcomes.

A similar pattern is seen in the treated subsample regressions. Changing the definition of an attack based on the GTD criteria gives statistically significant and slightly larger estimates of the effect of terror attacks on the employment rate. In particular, the coefficients in Table 9, columns 1 to 4 are larger and statistically significant at the 10 percent level compared to those in Table 5, columns 1 to 4. On the other hand, the estimated impact of terror attacks on rice production are fairly robust as seen in column 5 of both tables 5 and 9 where the coefficients are both negative, statistically significant and of almost similar magnitude. The estimated impact of death from terror attacks on both economic outcomes are also robust as seen when Tables 6 and 10 are compared.

In summary, this exercise shows that changing the definition of an attack can affect the estimated impact of terror attacks on employment but not on rice production. Meanwhile, the estimated impact of casualties from terror attacks on the economic outcomes are fairly robust and do not depend on the definition of “attack” used.

## 6 Conclusion

For almost five decades, the Philippines has long endured the consequences of terrorist activities all over the country. In particular, the southern island of Mindanao has suffered from violent conflict and insecurity. This prolonged state of terrorism might have negative effects on the economy (Fabe (2013)). In this paper, I investigate the impact of terrorism on employment and rice production using provincial level data from 2008 to 2017.

The estimates provide no evidence that the frequency of terror attacks and number of individuals killed in these attacks affect employment. In addition, I find that an additional occurrence of a terror attack is associated with a 1 percent decrease in the growth of rice production. The number of fatalities from terror attacks is not significantly related to rice production. It must be noted that changing the definition of an attack can affect the estimated impact of terror attacks on employment but not on rice production. Meanwhile, the estimated impact of casualties from terror attacks on the economic outcomes are fairly robust and do not depend on the definition of “attack” used. However, these estimates are not sufficient to establish the causal effect of terrorism on the economy.

Further research can be done by extending this study to include alternative measures of the economic performance at the province level such as tourism arrivals, provincial GDP, and population, once data becomes available. These extensions can help provide a better understanding of the channels through which terrorism affect the Philippine economy.

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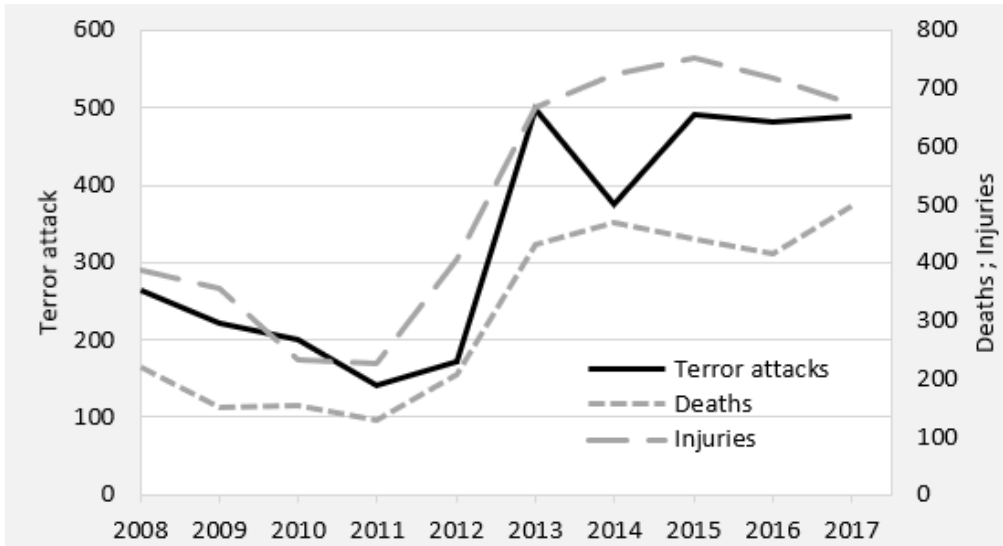


Figure 1: This graph plots the number of province-year observation with at least one terror attack and the number of deaths and injuries resulting from these attacks. For this study, an incident is considered a terror attack if it satisfies all three of the GTD 2017 criteria.

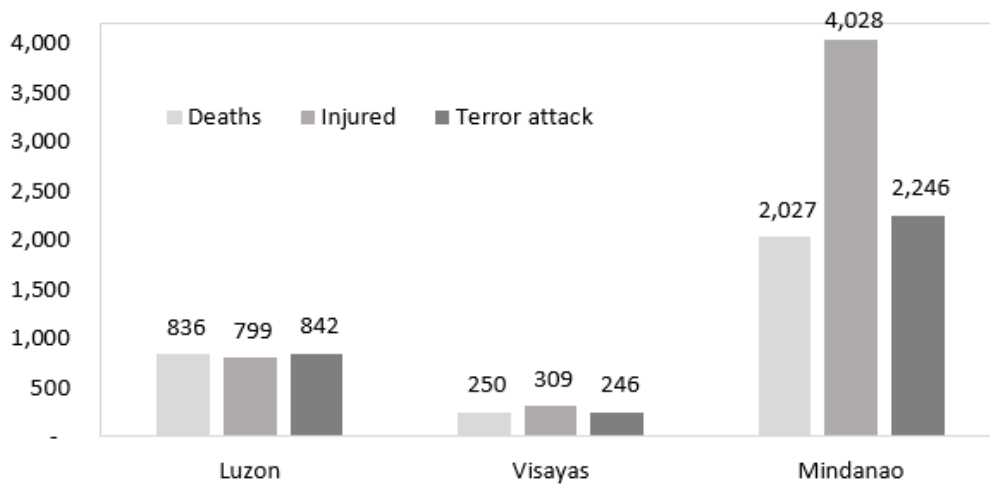


Figure 2: The bar chart shows the total number of terror incidents, and the fatalities and injuries from these attacks for each major island group in the Philippines from 2008 to 2017.

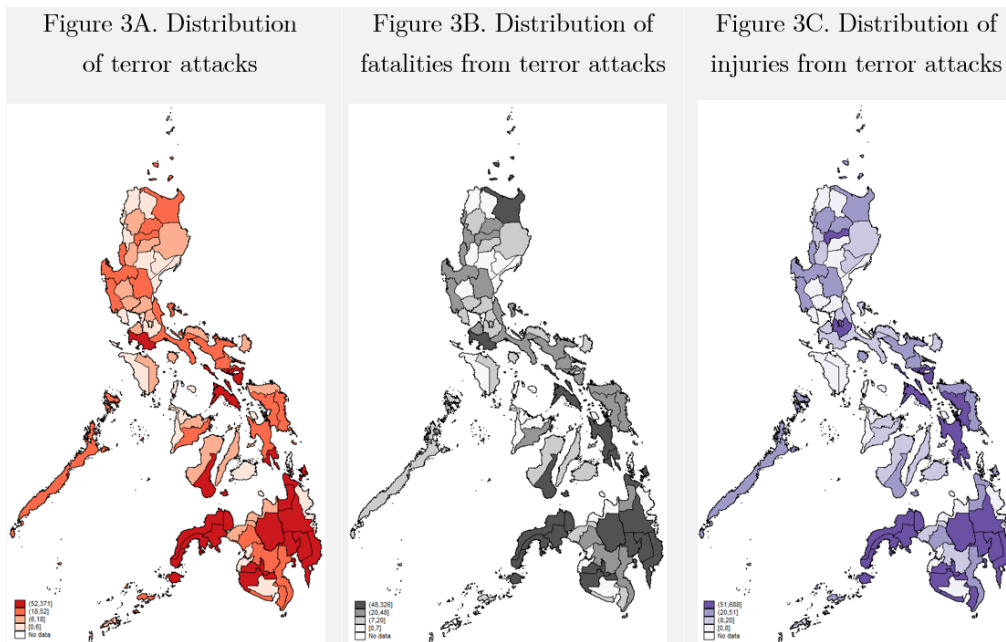


Figure 3: These maps show the distribution of terror attacks, deaths and injuries across the different provinces in the Philippines. The country is an archipelago made up of many islands and is categorized into three major island groups: Luzon in the north, Visayas in the center, and Mindanao in the southern part. The more darker the shade, the higher the frequency of attacks or number of individuals killed/injured. For instance, in the province of Maguindanao at the southernmost part of the country, there were a total of 371 terror attacks recorded within the said period.

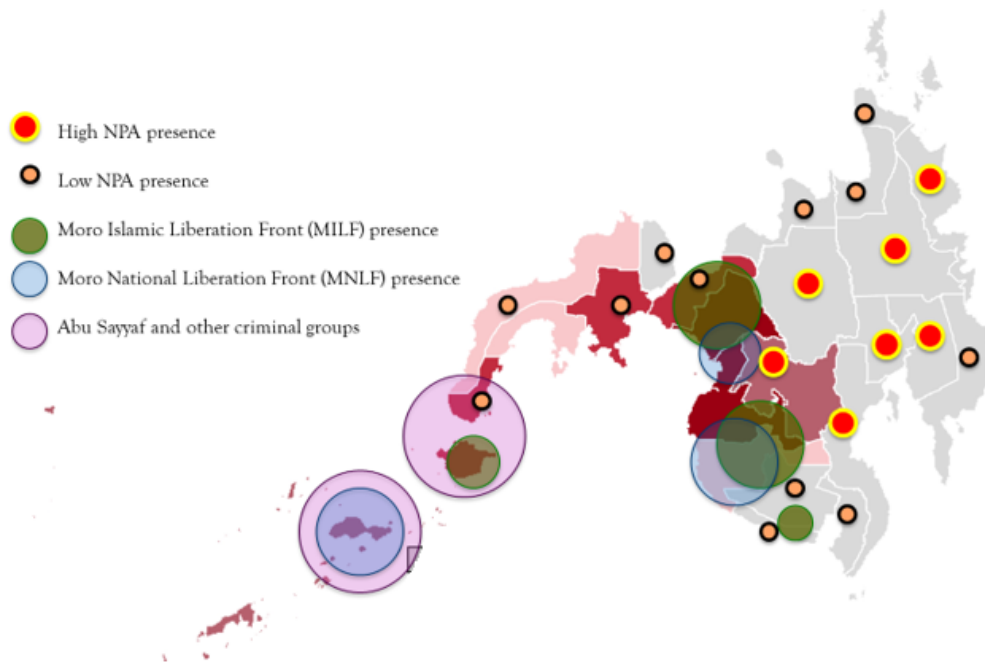


Figure 4: These maps show the dispersion of Muslim and communist groups across Mindanao

Table 1: Descriptive statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
<i><b>Dependent variables</b></i>					
Employment rate	3,229	94.52	2.97	80.2	100
Log of employment rate	3,229	4.55	0.03	4.4	4.6
Rice production	3,064	56786.89	89550.31	2.6	900646
Log of rice production	3,064	10.00	1.67	0.9	14
<i><b>Explanatory variables</b></i>					
Terror attack	3,229	1.03	0.00	0	31
Deaths	3,229	0.96	2.76	0	58
Injured	3,229	1.59	5.89	0	114
<i><b>Identifiers</b></i>					
ID	3,229	2012787	2878	2008101	2017498
Year	3,229	2012	2.88	2008	2017
Quarter	3,229	3	1.12	1	4
Region	3,229	12.36	11.66	1	42
Province	3,229	42.44	24.43	1	98

Notes: There are a total of 3,229 province-quarter-year observations. The variable terror attack is the sum of all terror incidents for each unit of observation that meet all three criteria as classified in GTD.

Table 2: Chronology of terrorist activities in the Philippines

Year	Quarter	Number of terror attacks
2008	1	9
	2	65
	3	118
	4	72
2009	1	68
	2	60
	3	48
	4	45
2010	1	44
	2	73
	3	33
	4	50
2011	1	36
	2	40
	3	25
	4	41
2012	1	38
	2	43
	3	46
	4	45
2013	1	79
	2	168
	3	130
	4	120
2014	1	96
	2	88
	3	97
	4	95
2015	1	120
	2	121
	3	107
	4	143
2016	1	147
	2	175
	3	73
	4	87
2017	1	136
	2	119
	3	121
	4	113

Source: GTD 2017

Table 3: Effect of terror attacks on economic outcomes for the full sample

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Terror	-0.023 (0.018)	-0.017 (0.017)	-0.014 (0.018)	-0.021 (0.018)	-0.011* (0.005)	-0.010* (0.006)	-0.008 (0.006)	-0.010* (0.006)
First lag - terror		-0.011 (0.028)	-0.001 (0.025)	0.002 (0.025)		0.002 (0.007)	0.003 (0.008)	0.003 (0.008)
Second lag - terror			-0.028 (0.020)	-0.026 (0.017)			-0.009 (0.006)	-0.009 (0.007)
Third lag - terror				-0.017 (0.022)			0.007 (0.007)	0.007 (0.007)
Constant	95.332*** (0.197)	94.895*** (0.219)	95.507*** (0.191)	95.927*** (0.196)	9.190*** (0.060)	8.965*** (0.090)	9.069*** (0.082)	9.761*** (0.069)
Observations	3,229	3,142	3,055	2,968	3,064	2,982	2,900	2,816
R-squared	0.639	0.639	0.638	0.637	0.818	0.818	0.820	0.821
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4: Effect of deaths from terror attacks on economic outcomes for the full sample

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Deaths	0.006 (0.014)	0.008 (0.013)	0.009 (0.013)	-0.002 (0.014)	-0.006 (0.004)	-0.006 (0.005)	-0.006 (0.005)	-0.006 (0.007)
First lag - deaths		0.000 (0.012)	0.004 (0.012)	0.005 (0.013)		0.000 (0.005)	0.002 (0.007)	0.002 (0.007)
Second lag - deaths			-0.008 (0.015)	-0.009 (0.016)			-0.014 (0.009)	-0.015 (0.010)
Third lag - deaths				0.002 (0.014)				0.013* (0.007)
Constant	95.346*** (0.197)	94.897*** (0.219)	95.498*** (0.188)	95.920*** (0.195)	9.193*** (0.060)	8.962*** (0.091)	9.070*** (0.082)	9.758*** (0.068)
Observations	3,229	3,142	3,055	2,968	3,064	2,982	2,900	2,816
R-squared	0.639	0.638	0.637	0.636	0.818	0.818	0.820	0.821
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 5: Effect of terror attacks on economic outcomes for the treated subsample

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Terror	-0.026 (0.018)	-0.018 (0.017)	-0.015 (0.017)	-0.023 (0.018)	-0.011** (0.005)	-0.011* (0.006)	-0.008 (0.006)	-0.011* (0.006)
First lag - terror		-0.016 (0.027)	-0.005 (0.025)	-0.002 (0.025)		0.001 (0.007)	0.002 (0.008)	0.001 (0.008)
Second lag - terror			-0.031 (0.019)	-0.028* (0.016)			-0.010 (0.006)	-0.009 (0.007)
Third lag - terror				-0.018 (0.023)				0.006 (0.007)
Constant	95.312*** (0.197)	94.794*** (0.216)	95.430*** (0.200)	95.848*** (0.204)	9.183*** (0.056)	8.959*** (0.092)	9.075*** (0.085)	9.745*** (0.070)
Observations	3,030	2,949	2,868	2,787	2,927	2,849	2,771	2,691
R-squared	0.650	0.649	0.647	0.647	0.775	0.773	0.775	0.776
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 6: Effect of deaths from terror attacks on economic outcomes for the treated subsample

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Deaths	0.004 (0.014)	0.006 (0.013)	0.007 (0.013)	-0.003 (0.014)	-0.007 (0.004)	-0.006 (0.005)	-0.007 (0.006)	-0.006 (0.007)
First lag - deaths		-0.003 (0.012)	0.001 (0.012)	0.003 (0.013)		-0.000 (0.005)	0.002 (0.007)	0.002 (0.007)
Second lag - deaths			-0.009 (0.016)	-0.010 (0.017)			-0.014 (0.009)	-0.015 (0.010)
Third lag - deaths				0.001 (0.014)				0.012* (0.007)
Constant	95.328*** (0.197)	94.799*** (0.216)	95.422*** (0.197)	95.841*** (0.204)	9.187*** (0.056)	8.957*** (0.093)	9.075*** (0.085)	9.741*** (0.070)
Observations	3,030	2,949	2,868	2,787	2,927	2,849	2,771	2,691
R-squared	0.649	0.649	0.647	0.646	0.775	0.773	0.775	0.776
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 7: Effect of terror attacks on economic outcomes - full sample, GTD criteria

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Terror	-0.033* (0.018)	-0.027* (0.016)	-0.023 (0.016)	-0.029* (0.016)	-0.009* (0.005)	-0.008 (0.006)	-0.006 (0.005)	-0.008 (0.005)
First lag - terror		-0.011 (0.022)	-0.001 (0.021)	0.001 (0.021)		0.001 (0.006)	0.002 (0.006)	0.001 (0.006)
Second lag - terror			-0.025 (0.016)	-0.025* (0.014)			-0.008 (0.005)	-0.009 (0.007)
Third lag - terror				-0.004 (0.015)				0.010 (0.006)
Constant	95.321*** (0.197)	94.891*** (0.220)	95.507*** (0.192)	95.925*** (0.196)	9.190*** (0.060)	8.963*** (0.091)	9.067*** (0.082)	9.762*** (0.068)
Observations	3,229	3,142	3,055	2,968	3,064	2,982	2,900	2,816
R-squared	0.639	0.639	0.638	0.637	0.818	0.818	0.820	0.821
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 8: Effect of deaths from terror attacks on economic outcomes - full sample, GTD criteria

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Deaths	0.006	0.008 (0.014)	0.009 (0.013)	-0.002 (0.013)	-0.006 (0.014)	-0.006 (0.004)	-0.006 (0.005)	-0.006 (0.005)
First lag - deaths		0.000 (0.012)	0.004 (0.012)	0.005 (0.013)		0.000 (0.005)	0.002 (0.007)	0.002 (0.007)
Second lag - deaths			-0.008 (0.015)	-0.009 (0.016)			-0.014 (0.009)	-0.015 (0.010)
Third lag - deaths				0.002 (0.014)				0.013* (0.007)
Constant	95.346*** (0.197)	94.897*** (0.219)	95.498*** (0.188)	95.920*** (0.195)	9.193*** (0.060)	8.962*** (0.091)	9.070*** (0.082)	9.758*** (0.068)
Observations	3,229	3,142	3,055	2,968	3,064	2,982	2,900	2,816
R-squared	0.639	0.638	0.637	0.636	0.818	0.818	0.820	0.821
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 9: Effect of terror attacks on economic outcomes - treated subsample, GTD criteria

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Terror	-0.036** (0.018)	-0.028* (0.016)	-0.025 (0.016)	-0.030* (0.015)	-0.010* (0.005)	-0.009 (0.006)	-0.006 (0.005)	-0.008 (0.005)
First lag - terror		-0.016 (0.022)	-0.004 (0.021)	-0.003 (0.020)		-0.000 (0.005)	0.001 (0.006)	0.000 (0.006)
Second lag - terror			-0.027* (0.016)	-0.027* (0.014)			-0.008 (0.005)	-0.009 (0.007)
Third lag - terror				-0.005 (0.016)				0.009 (0.006)
Constant	95.298*** (0.196)	94.788*** (0.217)	95.429*** (0.201)	95.844*** (0.204)	9.182*** (0.056)	8.957*** (0.093)	9.072*** (0.085)	9.745*** (0.070)
Observations	3,030	2,949	2,868	2,787	2,927	2,849	2,771	2,691
R-squared	0.650	0.650	0.648	0.647	0.775	0.773	0.775	0.776
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 10: Effect of deaths from terror attacks on economic outcomes - treated subsample, GTD criteria

	Employment rate			Log of rice production				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Deaths	0.004 (0.014)	0.006 (0.013)	0.007 (0.013)	-0.003 (0.014)	-0.007 (0.004)	-0.006 (0.005)	-0.007 (0.006)	-0.006 (0.007)
First lag - deaths		-0.003 (0.012)	0.001 (0.012)	0.003 (0.013)		-0.000 (0.005)	0.002 (0.007)	0.002 (0.007)
Second lag - deaths			-0.009 (0.016)	-0.010 (0.017)			-0.014 (0.009)	-0.015 (0.010)
Third lag - deaths				0.001 (0.014)				0.012* (0.007)
Constant	95.328*** (0.197)	94.799*** (0.216)	95.422*** (0.197)	95.841*** (0.204)	9.187*** (0.056)	8.957*** (0.093)	9.075*** (0.085)	9.741*** (0.070)
Observations	3,030	2,949	2,868	2,787	2,927	2,849	2,771	2,691
R-squared	0.649	0.649	0.647	0.646	0.775	0.773	0.775	0.776
Province fixed effects	x	x	x	x	x	x	x	x
Time fixed effects	x	x	x	x	x	x	x	x

Robust standard errors in parentheses clustered by province

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1