

# The Ambiguous Effect of Population Size on the Prevalence of Terrorism

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## Abstract

*Absolute population size has been proposed as one factor that encourages terrorism since large states have more difficulty maintaining security. More populous states suffer from more terrorism because they have more people, but the relationship disappears when per capita measures of terrorism are used. There are some indications that smaller states are more secure, but the evidence is not consistently present.*

**Keywords:** *Causes, Terrorism, Population, Incidents, Statistics*

## Introduction

A large number of factors have been suggested as ones that influence the occurrence of terrorist activities. The idea that countries with larger populations are more susceptible to outbreaks of terrorism has been proposed as one such effect. This idea is based on variations of the view that countries with larger populations are less secure as a consequence of the fact that police and security forces have more difficulty in detecting or arresting terrorists in more populous countries. There have been a number of studies, in fact, that have indeed found a statistical connection between levels of terrorism and population size. Larger countries are more likely to suffer from terrorist incidents than smaller countries. What is also interesting, or even perplexing in many ways, is the failure to consider the more basic proposition that larger states suffer from an increased number of terrorist incidents simply because they are larger. If .0001% of the population of a state will engage in terrorist violence, then – *other things being equal* - a country of 10 million will experience more acts of terrorism than a country of 2 million because larger countries are likely to have a higher number of disgruntled individuals in an absolute sense. Controlling for population in an analysis simply controls for the effects of absolute size, and it is quite possible that the connection is weaker or would even disappear if measures of the level of terrorism that are used are relative to the population base rather than being related to absolute population totals.

## Previous Studies

Numerous studies have suggested that nations with larger populations have been associated with more terrorism. The discussion below only deals with a sampling of the previous work rather than a comprehensive survey of all the previous analyses that have taken population into account as one linkage with higher levels of terrorism. In these studies, consequently, population is usually included as a control variable in studies that look at connections between other variables and terrorism. A number of studies have simply included population size as a variable that would have explanatory power for terrorism levels with little comment. [1] There have been additional studies, moreover, that have specifically suggested that population size will have a significant and positive effect on the amount of terrorism that will occur. [2] A number of additional potential reasons have been put forward to explain the linkage. It has been argued that larger populations could negatively affect state capabilities and affect the degree to which a country could effectively govern its own territory [3]. A related argument is that it will be more difficult for governments to control larger populations. [4] Another possible explanation that has been advanced is that larger populations will lead to increased costs of policing that could place a strain on national resources. [5] Related arguments in other

studies have included the idea that it is more difficult to provide security for the entire population in larger countries. [6]

There have been some exceptions to the use of population as a control for underlying causes of terrorism. It has actually been suggested that contrary to other analyses that larger countries might have less terrorism since greater size would increase the capabilities of the state. [7] One analysis did find that larger countries had less terrorism, contrary to expectations. [8] Two other studies have used population in a different fashion. Meierriks and Gries [9] included population in their analysis to control for the effects of size on the links between terrorism and economic growth rather than as a possible cause of terrorism. Lutz and Lutz [10] used per capita measures of terrorism rather than absolute levels of events to test for linkages between globalization, terrorism, and economic consequences. These approaches suggest that population may not have consistently had the effects that others have suggested. It is also possible that previous results might be responsive to the time period used, the data set, or whether the analyses included international incidents, domestic incidents, or both.

A slightly different argument regarding size has been put forward. For very small states, it would be difficult for terrorists to remain unknown and therefore more difficult for them to operate. It has been suggested, for example, that terrorism was not likely to be present in the internal conflicts in the Greek city-states because the citizen body was relatively small and clandestine violence would be difficult to utilize since terrorists would be unable to maintain the necessary anonymity. [11] Similarly, it has been suggested that crime was largely absent in colonial America because towns were small and any perpetrators would be known; furthermore, community pressure acted as a deterrent. [12] Political crimes such as terrorism would be less likely in smaller communities under similar circumstances.

### ***Analyses***

As a first step, information for the number of incidents, injuries, and fatalities were collected for 1975, 1985, 1995, and 2005 for as many countries and territories as possible from information available in the Global Terrorism Database (GTD) maintained by the University of Maryland. [13] The GTD information is quite detailed. It contains information for the country in which terrorist attacks occurred. It was thus possible to aggregate data on an annual basis at the country level on the number of incidents, the number of fatalities, and the number injured. The number of incidents was a fairly straightforward figure. Many terrorist incidents do not involve any fatalities or injuries, and others such as assaults and assassinations (or assassination attempts) only involve one victim. [14] It is actually only a minority of incidents where there are multiple casualties. The number of injuries reported is less reliable since there are differing definitions of what constitutes an injury and in a minority of cases the number injured is simply listed as unknown. [15] Of course, the attacks with the largest number of fatalities are normally the ones that have the greatest psychological effects. There are a few cases where the number of fatalities noted is listed as unknown but that situation is rare. These entries had to be coded as zero fatalities or injuries respectively even though it was likely in many of these cases that unknown figures reflected a lack of precise numbers rather than the fact that there had been no deaths or injuries.

It was also necessary to collect data on population. The population totals were drawn from the World Bank [16], which differs in many cases from the official figures based on national census figures that are collected and reported in the *UN Statistical Yearbook*. The use of the World Bank population figures had the advantage of a common estimation methodology for all countries and territories rather than different national calculations. The use of the World Bank figures also normalized the calculations of population totals for periods that fell between actual census years. The population totals also permitted the calculation of per capita incidents, casualties, and fatalities for the different countries and territories. Since the lack of terrorist activities in a more populous country would have greater relevance than the absence of incidents or casualties

in a less populous country, each zero entry for incidents fatalities, or injuries was actually coded as 0.01 instead of 0.00 for purposes of additional standardization before the division by the base population figures. This method, which gave slightly greater weight to the absence of activity in the more populous countries, has been used in previous studies of terrorism. [17]

With the information on terrorism and population it was possible to derive correlation coefficients between the terrorism measures and the absolute population figures and then a comparison of population levels and per capita terrorism measures. Absolute population, however, would not be expected to be a perfect predictor of higher terrorism levels. There were differences between countries independent of size. For example, China with a billion plus inhabitants has had much lower levels of terrorism than India with a similarly large population. On average, however, larger countries were expected to have higher levels. The correlation coefficients calculated between absolute population size and terrorism indicated that larger countries frequently did have higher levels of terrorism at a significant level (see Table 1). Although absolute population was often linked to more terrorism, the relationship was not present for 1985, indicating that such linkages were not consistently present. It is possible that there were years or even possibly periods of time when anomalous results will be possible. It is worth noting that the correlations were more consistently present for 1995 and 2005, suggesting that in the later periods when terrorist activities had increased it was possible that either patterns of terrorist activity changed or perhaps that there was better reporting of the violence that did occur.

The coefficients for per capita levels of terrorism with the absolute population were much more consistent. There was no evidence that larger countries suffered from more terrorist activity proportional to their size in any of the years or for any of the measures. This first analysis suggests that previous findings connecting population size to terrorist violence was an artifact of the reliance on size and not an indication that larger countries are actually more prone to such violence.

Table 1: Correlations between Population Size and Terrorism

	Absolute Measures	Per Capita Measures
Incidents, 1975	.141*	-.009
Injuries	.056	-.024
Fatalities	.135*	-.028
<i>n</i> =174		
Incidents, 1985	.018	-.044
Injuries	.024	-.028
Fatalities	-.004	-.028
<i>n</i> =176		
Incidents, 1995	.200**	-.051
Injuries	.140*	-.027
Fatalities	.159*	-.021
<i>n</i> =178		
Incidents 2005	.174**	-.025
Injuries	.152*	-.009
Fatalities	.099+	-.010
<i>n</i> =179		

\*\* $\alpha = .01$  \*  $\alpha = .05$  +  $\alpha = .10$

Notwithstanding the above results, it was possible, as noted, that there was the possibility that terrorism might be more difficult in the smallest countries and territories since their small size might make it easier to detect militants or to capture terrorists once they had launched any attacks. International attacks where terrorists from one country chose to attack their own government or its supporters on foreign soil might be less likely in the smaller states. Not only would such terrorists be easier to detect, but a small country is less likely to be an important foreign supporter or to have targets, such as multinational corporations or government agencies, from the home country that the dissidents would choose to attack. Kurds opposed to being part of Turkey (or Iraq or Iran), for example, would find more potential Turkish targets to attack as a protest against the policies of their government in France or Germany than in Denmark or Ireland. All other things being equal, diaspora communities which might provide important support for violent activities are also more likely to be present in larger states. The one factor that might make smaller countries more inviting as targets for international attacks would be weaker security and counterintelligence agencies.

To consider the possibility those smaller states would be less likely to suffer attacks, the countries and territories were divided into two groups. One group consisted of countries and areas with a population of less than one million and the second group of all the larger countries. T-tests that compared the means of the two groups were derived for each of the four years. The comparison was made for both absolute levels of incidents, injuries, and fatalities and for the per capita measures of these terrorism variables. If population size were indeed a factor in terrorism, then the per capita levels would be significantly higher for the more populous countries.

Not surprisingly, the absolute averages for the small countries and the larger ones were routinely different by large amounts, and the differences in means were significant. The larger countries had much higher average figures for incidents, injuries, and fatalities than did the countries with less than a million people

(see Table 2). Absolute values for the three measures have obviously increased over time, especially for the larger countries, compared to 1975 and 1985. The comparisons for the per capita levels were more interesting. In 1975, there were more per capita incidents and injuries in the smaller countries than in the larger ones, but the differences were not significant ones in this year. In 1985, the per capita numbers were in the expected direction but the differences were not significant except for injuries. In 1995, the results for per capita measures were again mixed. In the case of incidents, there were more per capita activities in the smaller countries and territories but they were not significantly more frequent. Per capita fatalities were high in the larger states, and in this case the differences in the means were significant. In 2005 the results were as expected with incidents and injuries being significantly higher in the larger states. Thus, overall there were some indications that larger countries were somewhat likely to experience more terrorist attacks. This evidence was not consistent, however, and in seven of the twelve cases the null hypothesis of no difference between large and small countries could not be rejected.

Table 2: Difference in Means: Large States and Small States

Measure	Small State		Large State		T-Value
	n	Average	n	Average	
Absolute Values					
Incidents 1975	62	.042	112	6.614	2.618**
Injuries		.026		5.624	2.613**
Fatalities		.010		5.811	2.331*
Incidents 1985	58	.578	118	24.759	3.553***
Injuries		.613		42.506	3.157**
Fatalities		.113		54.701	2.790**
Incidents 1995	53	.405	125	22.946	3.700***
Injuries		.575		110.492	2.129*
Fatalities		.066		43.693	3.585***
Incidents 2005	51	.029	128	12.795	2.752**
Injuries		.010		84.648	2.024*
Fatalities		.147		41.210	1.709*

Per Capita Values					
Incidents 1975	62	.253	112	.208	.479
Injuries		.432		.182	.363
Fatalities		.157		.399	1.776 <sup>+</sup>
Incidents 1985	58	2.004	118	2.670	.470
Injuries		2.526		6.579	1.853 <sup>+</sup>
Fatalities		.367		8.519	.935
Incidents 1995	53	1.824	125	1.220	.618
Injuries		3.212		5.506	.551
Fatalities		.293		2.288	2.657 <sup>**</sup>
Incidents 2005	51	.153	128	.563	2.068 <sup>*</sup>
Injuries		.304		1.565	1.979 <sup>*</sup>
Fatalities		.133		3.125	1.413

<sup>+</sup>  $\alpha = .10$  <sup>\*</sup> $\alpha = .05$  <sup>\*\*</sup>  $\alpha = .01$  <sup>\*\*\*</sup> $\alpha = .001$  Italicized entries are contrary to expected values.

Since small countries adjacent to larger countries could become the sites for terrorist activities spilling over from these neighbors or be chosen by a militant organization as a convenient place to attack people or facilities identified with another country, the above analysis was redone with one group consisting of small island countries of less than a million in population and all other countries. If a small population would make terrorist activity more difficult, insular status should enhance the effect. There would be no chance of a border crossing by land with evil intent and opportunities for escape abroad would be more limited. As it turned out many of the countries with less than a million inhabitants were also island nations, but not all of them were.

The means for absolute levels in 1975 were not in the predicted direction for all three measures in all years and were significant (see Table 3). In 1975, 1985, and 1995 the absolute number of incidents, injuries, and fatalities were quite a bit higher in the larger or non-insular states, and the differences were significant. In 2005, the differences in means remained large, but in the case of incidents the t-value was significant. In general, absolute population size was linked with higher levels of terrorism.

Table 3: Difference in Means: States and Small Island States

Measure	Small Island State		Large State		T-Value
	n	Average	n	Average	
Absolute Values					
Incidents 1975	43	.056	131	5.656	2.599**
Injuries		.033		4.810	2.324*
Fatalities		.010		4.970	2.598**
Incidents 1985	43	.544	132	22.210	3.542***
Injuries		.684		38.045	3.136**
Fatalities		.149		48.901	2.799**
Incidents 1995	43	.427	134	21.421	3.680***
Injuries		.613		103.064	2.125*
Fatalities		.079		40.759	3.473***
Incidents 2005	43	.033	135	12.132	2.747**
Injuries		.010		80.259	2.023*
Fatalities		.010		39.125	1.717 <sup>+</sup>
Per Capita Values					
Incidents 1975	43	.266	131	.227	.382
Injuries		.229		.381	.836
Fatalities		.193		.352	1.317
Incidents 1985	43	2.042	132	2.602	.373
Injuries		2.999		6.014	.726
Fatalities		.467		7.625	1.817 <sup>+</sup>
Incidents 1995	43	2.091	134	1.188	.766

Injuries		6.609		3.052	.700
Fatalities		.467		7.625	2.546*
Incidents 2005	43	.169	135	.538	1.936 <sup>+</sup>
Injuries		.145		2.967	1.967 <sup>+</sup>
Fatalities		.145		1.552	1.689 <sup>+</sup>

<sup>+</sup>  $\alpha = .10$  \* $\alpha = .05$  \*\*  $\alpha = .01$  \*\*\*.  $\alpha = .001$  Italicized entries are contrary to expected values.

The per capita measures displayed a different pattern just as they had for the comparison of the larger and smaller states. In the year 1975 incidents were actually higher in the island territories than in the other larger and non-insular countries but not at a significant level. It is perhaps noteworthy that the higher level was for incidents but not present for casualties which usually are a reflection of more serious attacks. In 1985, however, fatalities were higher in the non-insular states at a marginally significant level, but there were no meaningful differences in either incidents or injuries. The results for 1995 indicated that the number of per capita incidents and injuries were higher for the non-insular countries but not significantly so. Fatalities were much higher in the non-insular countries and territories in this year. In 2005, the averages were higher for the non-insular countries, and all three measures did achieve a minimum level of statistical significance. For these four years, although there were some indications that the larger states had higher per capita levels of terrorism, there was no consistent evidence that the smaller island countries had less terrorism than the larger countries. In fact, the results for differences in means between the small and larger states reflected in Table 2 appeared to distinguish slightly better between the two groups than insular or non-insular status combined with size.

**Conclusions**

The results of the above analyses generally confirmed the obvious conclusion that larger countries suffer from more incidents of terrorism as well as the accompanying casualties because there are more people who might resort to violence. Interestingly enough, there were some cases for the four years chosen where the smaller countries had higher absolute levels for the measures, but they were not significantly larger except for one marginal case. The absolute measures were usually higher for the larger countries and territories and the differences were significant ones. When the per capita levels of incidents, injuries, and fatalities were used, however, there was very little evidence that the differences in means were significant. In the few cases where there were significant differences in means (five cases out of twelve), it was the larger countries that did suffer from higher levels. The limited number of significant results provides only a minimal amount of evidence to suggest that larger states suffer from proportionally more terrorism. The division between the small island states and the other countries and territories yielded similar results. The non-island states had higher absolute values in some cases and significantly so. In terms of the per capita values, the differences between the two groups were normally in the expected direction but in most cases they were not significant.

Overall, it is difficult to find any meaningful evidence or support for the proposition that more populous states are more prone to terrorist violence because their size makes security and police operations more difficult. The conclusion was particularly obvious with the correlations in Table 1. There were, however, at least a few instances that suggest that it might be somewhat more difficult for terrorist organization to operate in smaller countries, and perhaps insular territories (which overlapped to a large extent with small countries). Beyond this possibility, there are no great differences that can be ascribed to size as such. The major effect of

the inclusion of population in analyses would appear to be to increase the explanatory value of the equations that are generated. [18] It also introduces one additional value that makes the evaluation of the impact of control variables versus the explanatory variables included in the particular analysis more difficult. The use of per capita measures, which can be easily generated when there is information on the number of events and casualties and population levels, resolves this issue. The use of per capita measures instead of the inclusion of population as a control variable, moreover, provides for more parsimonious explanations of various aspects of terrorism, which is often methodologically desirable since it makes evaluations of the results easier.

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### Notes

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