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Indicators of variance in the frequency of terrorist attacks across Egyptian governorates

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INDICATORS OF VARIANCE IN THE FREQUENCY OF TERRORIST ATTACKS ACROSS EGYPTIAN GOVERNORATES

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This paper explores different factors associated with the apparent urban concentration of terrorist attacks in Egypt (outside Sinai) since July 2013. The effect of socio-economic variables such as unemployment and poverty on terrorism are assessed in addition to other variables like multitude of targets, logistical considerations, and Islamist support base. Using data collected from local media sources, the results presented in this paper show that support for Islamist parties correlates positively with the number of terrorist attacks. Socio-economic factors like poverty and overall unemployment rate appear to have little explanatory value. The results also suggest that the urban-rural divide in the terrorism literature should not be taken at its face value but rather should be adapted to fit the local context.

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Introduction

It was 2:30 pm on November 28, 2014 when the young man from Shubra took his motorcycle, and drove to the 6th of October Bridge, just above the busy Abdel Moneim Riad Square a few meters from Tahrir Square. The Muslim Brotherhood had called for a day of protest and an uprising of Muslim youth on that day but the 25 year old Mohamed Amer had other plans: he took a plastic bag laden with explosives, and threw it onto the bustling square below. The young worker was apprehended on his motorcycle only seconds after his homemade bomb exploded without causing any injuries to the passersby below. Three other explosions hit Cairo that same day: two also caused no casualties and remained unclaimed, while the other killed 2 security personnel and was claimed by a group affiliated with the Islamic State (IS) (Abdul Hamid: 2014, Yehia & El-Dayasti: 2014, Shehta: 2014).

This kind of attack was hardly an anomaly. Ever since the Muslim Brotherhood's deposal in June 2013, Egypt has witnessed an unprecedented rise in terrorist attacks across the country. While the insurgency in Sinai garners the most media attention, in simple numbers, the 6 urban governorates of the Nile Basin have the highest concentration of attacks, 43%, despite the fact the urban population in these cities represent only 27% of the total population. In terms of present scholarship on terrorism, the concentration of attacks in urban areas is expected. However, it is a new pattern for Egypt. During the wave of terrorism in the 1990s, most attacks were in the rural areas of Upper Egypt where support for Al-Jama'a al Islamiya and Islamic Jihad were higher. In addition, attacks during that period often targeted civilians and tourists. On the other hand, most terrorist attacks outside of Sinai are low scale, unclaimed attacks that cause

few casualties like the attempt by Mohamed Amer to drop a bomb from the 6th of October Bridge.

In this paper, I attempt to explain the reasons behind this apparent shift, and the over-representation of attacks in urban governorates. There are many possible explanations that urban areas would see the highest number of attacks; including urbanization, better logistical sustenance, higher media presence, higher concentration of government targets, more youth unemployment, including more unemployment of educated youth, or that the Muslim Brotherhood which enjoys a high degree of rural support choose to target urban governorates with less Islamist concentrations. To address these questions I collected data on all terrorist attacks that occurred in Egypt from July 2013 till July 2015.[1] These were then supplemented with data on voting patterns, socioeconomic figures, including poverty and unemployment as well as distance from the capital.

Client

My client in this case would be the Tahrir Institute for Middle East Policy (TIMEP) and the Regional Center for Strategic Studies (RCSS). Both entities have committed large efforts in researching terrorism in Egypt. The former has its own security watch documenting cases of terrorism attacks, reporting on terrorist organizations and analyzing the general security situation in Egypt. The latter have also published their own Cairo Index, reviewing and analyzing terrorist attacks post June 2013. Attempting to bridge theory and practice, this paper could prove of great value both for the

[1] Some general trends are publically available on this issue through the Tahrir Institute for Middle East Policy (TIMEP) but the data itself is not available. Therefore, I had to go through with the process of data collection. Details pertaining to this process are available in the Methods section of this paper.

academic literature as well as to those endeavoring to develop practical counter-terrorism policies. This paper will build on the research conducted by both these organizations, and add additional support to their initial conclusions regarding trends and sources of terrorism in Egypt since June 2013.

Background

According to the most recent quarterly report issued by the Tahrir Institute's "Security Watch," Egypt has been facing an intense wave of terrorist attacks since the deposal of Mohammad Morsi in June 2013. Starting with a massive spike in incidents in the Northern Sinai, in July 2013, there were approximately 30 attacks per month in 2013, and 2014, and 90 attacks per month in 2015 (TIMEP, May 2016). For much of the 36-month period, two thirds of all attacks were concentrated in Northern Sinai. However, starting in the fall 2014, there was a marked up-tick in the number of attacks across the canal. During the period from January 2015 through August 2015 attacks reached an average of 3 per day, with nearly three quarters taking place outside of Sinai and across the different governorates of the Nile Basin (TIMEP, February 2016). While the city of Cairo saw the highest number of attacks overall, charts presented by Security watch show some interesting patterns. First, during the months of March, April, May, June and July of 2015, attacks appeared to be concentrated in Faiyoum, a largely rural and economically pressured governorate, which is also a stronghold of the Muslim Brotherhood (TIMEP, May 2016).

The apparent trends suggested by the figures included in the Tahrir Institute's "Security Watch" reports raises some interesting questions with regards to the existing theories of terrorism and for past patterns in Egypt. While the concentration of attacks in the capital city is consistent with terror campaigns carried out in other nationalist conflicts, it is different from the campaign waged by Al-Jama'a Al-Islamiyah in the 1990s. In addition, the apparent concentration of attacks in governorates associated with the Muslim Brotherhood lends support to the government's charge that this group is behind the attacks. As the next section will discuss, while it is probable for attacks to be concentrated in the capital city, the high numbers in locations associated with the Muslim's Brotherhood's support base is surprising.

Literature Review

Earlier geographic dispersion studies have already established urban cities are more likely to be targeted by terrorism than rural ones. Several studies have tried to distill the reasons both from a qualitative and subsequently using quantitative methods. Qualitatively, Crenshaw (1981) has argued that modernization and urbanization are two permissive factors that set the stage for terrorism on the long run rather than being direct precipitants of terrorism. Urban and modern cities have better networks of **transportation** and **communications** that offer mobility and publicity for terrorists. They also have a high number of **accessible targets** and methods.

Grabosky (1979) has mentioned other factors that help explain why terrorism is more likely to occur in urban cities. Similar to Crenshaw, he mentions communication, mobility, and multitude of targets. He also includes audiences, chances of more media

attention, anonymity, easier recruitment, and easier acquisition of logistics and funds. Crucially, he also mentions the concentration of young middle-class intellectuals in cities, who in the end represent the rank and files of terrorist organizations. More recently, Krueger (2008) has also concluded that it is mainly well-educated, middle-class or individuals from high-income families that end up being drawn to terrorism. He then rules out the idea of a causal relation between poverty and terrorism, pointing rather to the suppression of rights, liberties, and the curtailment of non-violent means of protest.

Indeed, the most notorious terrorists are well educated and come from well-to do families. Al-Qaeda's former leader, Osama Bin Laden is a clear example as are the 9/11 perpetrators but there are others such as PFLPs Wadi Haddad and George Habbash. Other less notable cases include those arrested for a failed attack on Glasgow Airport, which included six doctors and medical students and a doctorate holder of design and technology (Hoffman, 2010). In their study, Bergan and Pandey show that out of 79 terrorists responsible for terrorist attacks between 1993 and 2005, 53% had attended a college or received a college degree with engineering and medicine being the most favorite subjects (Bergen and Pandey 2006). Similarly, Gambetta and Hertog (2016) find a 'curious connection' between Islamist radicalism and engineering schools. Ayman Al-Zawahiri, Bin Laden's right hand, is also said to have boasted about the high success they had in recruiting from Cairo's elite faculties; engineering and medicine (Wright, 2006). Another study reviewing 33 of the Muslim Brotherhood's leaders includes 12 with an engineering background and 10 with a medical one (Trager et al., 2012).

Following Crenshaw's example, Ian Ross (1993) divides the causes of terrorism into permissive and precipitant ones. He places the geographical location (i.e. urbanization) and level of modernization under the former and organizational development/split and support under the latter. While organizational splits could reduce the overall effective power of a terrorist group, in other cases it creates more terrorism and more support from the aggrieved population. The current internal rift inside the Muslim Brotherhood did indeed result in a debate over the use of violence with younger members being more inclined to support violent means while older members are concerned with the long term consequences this could mean to the organization. This led to an open confrontation between both sides beginning with an attempt to accommodate the youth and ended with a purge and recontrol by the old guard all the while terrorist attacks were ongoing.

The level of support is also a facilitator of terrorism. It makes it easier to get donations, weapons, and sanctuary to terrorist organizations. While it is intuitive that the level of support directly impacts terrorism, there is one caveat related to target selection. According to De La Calle & Sanchez Cuenca (2006), terrorists are constrained in their attacks by their supporters' ideological preferences. Seeking to sustain this support, terrorists will avoid indiscriminate killings if their support base is sensitive to civilian casualties. This means that terrorists will take measures to avoid attacking or harming their own support base. This also means that while high levels of support could facilitate financing terrorist activities, these incidents seldom cause harm to the support base itself. In Egypt, the Muslim Brotherhood has well rooted support in rural areas more than in urban ones. While these poorer and underserved governorates apparently suffer less

from terrorist attacks they were the main strongholds of the Islamist organization. The Muslim Brotherhood was able to get their highest percentages of vote in rural governorates, especially in Upper Egypt, where they have invested much resources in societal programs over the years.

The infamous greed and grievance debate presented by Collier and Hoeffler (2004) is also of relevance despite its focus on the issue of civil wars. They conclude that opportunity or greed is the indicator of civil wars rather than grievances. The main factor in this sense is the availability of finance. This includes easily lootable resources such as primary commodity exports. The determinants of grievances, according to Collier and Hoeffler, are ethnic religious hatred, political repression, political exclusion, and economic inequality. In their model, inequality does not have an effect on rebellion. Thus they see little proof that rebellion is a protest against low income. In addition to inequality as a grievance, they add that political rights, ethnic polarization, and even religious fractionalization have little effect on rebellion. Only ethnic dominance is seen as a grievance with an adverse effect on rebellion. Despite their different focus (civil war vs. terrorism), this runs in contrast to Krueger's emphasis on the suppression of rights and liberties, a more grievance based approach.

The confusion between civil wars and terrorism is not only because of the grey area between them but also because both concepts partially overlap with the urban-rural divide. No region offers a strike example between such an overlap as does Latin America. The *foco* (focus) theory manifested by Regis Debry on behalf of Che Guevara and his experience in Cuba was more inclined towards a rural form of guerrilla warfare. However, in more urbanized Latin American countries like Argentina, Brazil, Chile and

Uruguay rural *foco* was abandoned and replaced by an urban *foco.* This was largely influenced by a man called Carlos Marighella, the leader of the Ação Libertadora Nacional, a Brazilian terrorist organization operating mainly in Rio de Janeiro and Sao Paolo (UMD, 2010). In 1970, Marighella wrote his influential Minimanual of Urban Guerrilla. While the name of his manual contributes to the confusion between guerrilla warfare and terrorism, ALN operations amounted to nothing less than outright terrorism. This ranged from kidnappings and hijacking to bank robberies. In fact, Marighella himself took pride and honor in being called a terrorist.

While Boot (2013) mentions that rural guerrillas have the ability to stay alive for decades due mainly to the effects of the social services they provide, he goes on to say that "terrorism is the tactic of last resort for those too weak to create guerrilla forces". Looking at this from the contrast between Guevara's rural *foco* and its success in Cuba compared with Marrighella's urban foco and its reliance on terrorist tactics, one can assume why terrorists, who are naturally weaker than guerrillas, are more likely to target urban cities.

Today, one organization that suffers from an internal urban-rural divide in Egypt is none other than the Muslim Brotherhood. The organization is also suffering from raging internal debate over the use of violence and has been directly accused by the government of standing behind the terrorist attacks. Crucially, one of the reasons why the Muslim Brotherhood is still able to sustain itself is its entrenchment in rural areas especially in Upper Egypt.

An Urban Rural Divide in the Muslim Brotherhood

The sudden surge in the number of terrorist attacks after the Muslim Brotherhood's deposal in June 2013 put the Muslim Brotherhood under the spotlight. Coincidentally, while there is an apparent urban-rural difference in terrorist attacks there is also a deep structural urban-rural divide inside the Muslim Brotherhood. The general socio-economic diversity across Egypt meant that the brotherhood itself had to deal with similar internal discrepancies between its members.

On the one hand there was "the wealthier, more cosmopolitan urban Brotherhood bourgeoisie" and on the other were "the group's much more culturally and socially conservative, lower-middle-class and lower-class grass roots based in rural areas and small towns" (El-Sherif, 2014). The urban elite historically controlled the decision making powers inside the organization resisting the promotion of rural middle class members. In his series on political Islam in Egypt, El-Sherif (2014) mentions that despite this "many of these urban businessmen and professionals retained a conservative religious flair, creating internal friction and more complex cleavages beyond a simple rural-urban divide."

Indeed, this was not the only divide to emerge in the Muslim Brotherhood because, in time, these policies led not only to the disgruntlement of rural middle-class citizens but also to the youth who found themselves excluded from the decision making circles. They were also forced to adopt the "listen and obey" motto of the brotherhood imposed naturally by the guidance bureau, the highest authority in the pyramidal structure of the brotherhood. The idea was to enforce organizational discipline among its members but after the 2011 revolution this led to increasing dissatisfaction followed by organizational

splits (Martini et al., 2012). The younger, more tech savvy members, who were naturally more concentrated in urban cities, saw more opportunity to express their independent political views. This obviously clashed with the older ruling elite seeking to control and limit independent thinking.

These differences, rather than being muted, were magnified after June 2013. After an initial attempt to accommodate younger members, the traditional leadership shifted course and vied to regain control. The younger members seeing no cause for optimism in the political situation became more violent-prone. On the other hand, the older members were more rational and risk averse. They saw that dragging the organization into violence would risk the future relevance of the organization which managed to withstand the test of time and endurance since its inception in 1928 (Fahmi, 2015). With two camps forming, the rebellious camp issued a statement acknowledging the existence of internal differences. The statement mentioned that:

> *"some people restricted these differences to the issue of revolutionism vs. peacefulness but in fact it goes beyond that to the management and decision-making process and its reference" (Muntaser, 2015).*

This is indeed a recognition not only that there are internal differences over the use of violence and that some have indeed promulgated using violent means but also that younger members of the organization feel excluded from the decision making process and are not consulted beforehand. Today, the Muslim Brotherhood's leadership knows

the main struggle is not one for power but rather for organizational continuity whose main pillar is public opinion. This longer term vision, in their opinion needs to avoid getting dragged into the use of violence which can be used by the state and lead to adverse domestic consequences for the group all the while increasing international pressure.

The 1990's terrorist attacks committed by Al-Jama'a Al-Islamiya and especially the 1997 attack in Luxor serve as clear historical lessons. The unintended consequences of these attacks rather than leading to public sympathy for the Islamists cause led to public outrage against them and harmed the Muslim Brotherhood despite them not being directly responsible for it.

The urban-rural divide inside the Muslim Brotherhood was clear in the 2012 elections. While urban governorates had the least support for the Muslim Brotherhood's candidate, Mohamed Morsi, rural governorates especially those in Upper Egypt had the highest support for the Islamist candidate. In the first round of the 2012 general elections, Morsi was able to garner most votes in 13 out of the 27 governorates 6 of them in rural Upper Egypt. On the other side, in Cairo, Alexandria and Port Said Morsi was only able to garner 17%, 15%, and 15% of the votes respectively, his lowest in the country.

Conceptual Framework: Terrorism Targeting and Attack Location

The conceptual framework developed mainly attempts to link between the existing literature and the Egyptian context. It assumes terrorism targeting strategy

could be described by an overall strategic choice in targeting. In this case we also assume that terrorists attack in the same governorate where they live. The idea behind it is that the relative cheapness and low impact of most attacks renders the possibility of far travel outside of one's governorate obsolete. Just like the example of the young worker from Shubra who threw a low scale bomb on a bustling Cairo square, one cannot expect a terrorist to travel great distances unless sophisticated planning and weaponry was involved.

Throughout the literature, authors have been trying to figure out the causes of terrorism from an urban and rural dichotomy. However, from a historical Egyptian perspective I will need to look into another context specific distinction. This is based on Egyptian geographic and historic realities. Ever since recorded history, Egypt has been divided by an upper-lower distinction rather than a simple urban-rural one, the latter being only a relatively modern phenomenon. Not only was Egypt known as "the Two Banks, but ancient Egyptians also referred to Upper Egypt as "Deshret" meaning the red land referring to the deserts and Lower Egypt as "Kemet" meaning the black land referring to its fertility. "The whole [ancient Egyptian] environment", according to Wilkinson, "seemed to emphasize that the maintenance of created order relied upon the balance of opposites: the fertile black land and the arid red land, the east as the realm of the living and the west as the realm of the dead, the narrow Nile Valley and the broad delta, and the annual struggle between the chaotic floodwaters and the dry land". Thus, we try to combine the modern urban-rural divide with the historic and context specific upper-lower one.

In Egypt, urban cities have considerably less Islamist support compared to rural ones in Upper and Lower Egypt. Following De La Calle & Sanchez Cuence I do expect to see a negative relation between the level of popular support and terrorist attacks. Terrorists are less likely to attack in rural areas where popular support for their cause is already high. As a result, we should expect fewer attacks in rural areas where Muslim Brotherhood support is higher.

It is also known that urban governorates have a much higher rate of youth unemployment. These governorates also have a higher rate of unemployed people with a university degree. This would conform with Grabosky's (1979) findings of a relation between the number of unemployed youth and the number of terrorist attacks. These youth, including those with university degrees are easily susceptible to recruitment by terrorist groups as they see less opportunity in the job market.

In the Egyptian context, Ian Ross' "support" variable that leads to more donations and more weapons should be excluded, as the data indicates the majority of attacks in Nile basin regions of Egypt are low scale; using devices requiring limited amount of expertise or sophisticated weaponry. While support, funding, and training are crucial in case of large scale attacks, small scale ones rely on very limited funds and expertise. We also witness that Islamist support is higher in Upper Egypt where attacks are relatively less compared to urban centers.

Comparing Grabosky's emphasis on the role of middle-class intellectuals in terrorist organizations with the Egyptian context, we do indeed witness several attacks outside Egyptian universities targeting police. We also know that the Muslim Brotherhood relies

in its recruitment mainly on university students and has a large presence there. Thus, as those students graduate and see little opportunities in the job market we would expect them to be easily susceptible to the use of violence. Hence, I will use the youth unemployment measurements per governorate in the model to test Grabosky's argument.

The distance between the capital and other cities could also determine why there are many attacks in Cairo but less so in border governorates such as the Red Sea, Matrouh or other cities that are far away from the capital such as Luxor and Aswan. Hinkkainen has tried to prove that the distance between the capital city and an urban area is directly related to the probability of attacks against civilians. Here, I will test whether such distance is related to the number of attacks.

Following Crenshaw and Grabosky's discussion, urban cities witness more attacks than rural ones because of the multitude of targets. Thus, where there is a larger amount of legitimate targets I would expect to see more attacks. This would mean that in Egypt, where terrorists see more "legitimate" targets they are more likely to use this opportunity. Therefore, I use the number of police stations throughout Egyptian governorates as a measurement.

The greed and grievance debate presented by Collier and Hoeffler (2004) could also be helpful in distilling the Egyptian context. Their debate revolved mainly around civil wars, however such differentiation could also be helpful in cases of terrorism. While it is known that opportunity in terms of finances or suitable terrain does not apply to the

Egyptian context outside Sinai we will test whether the grievance model could be applicable using poverty and unemployment as a measure.

My hypothesis is that urban governorates that have a higher number of educated unemployed youth as well as a higher number of targets will have higher numbers of attacks and that there will be a significant correlation between higher rates of unemployment, whether male educated or male youth, and higher frequency of attacks. However, to evaluate this hypothesis in light of prevailing theories as discussed above, I will also test for the impact of other variables such as support base, distance from the capital, and poverty. Based on that I hypothesize that:

H1: Urban Governorates are more likely to get attacked than rural governorates

Based on the existing literature, if we differentiate between Egyptian governorates based on an urban-rural distinction we expect to find that urban governorates are more likely to experience terrorist attacks than rural ones.

H2: Urban Governorates are more likely to get attacked than upper, lower and border governorates

Seeing that in the Egyptian context there is not only a simple urban-rural divide but also a geographical distinction, I try to distill whether the traditional geographical approach could prove more significant.

H3a: The further away the governorate is from the capital the less likely that governorate is to experience a terrorist attack

The literature mentions that one of the reasons why urban cities suffer from more terrorism is because logistic are easier to acquire in big urban cities than in rural ones. Thus, the further one gets from the urban center the harder it is to acquire such logistics. We will try to distill whether the distance between the capital Cairo and a specific governorate is related to the number of attacks in this governorate.

H3b: *Attacks are more likely to occur in the governorate with the capital city.*

The literature also mentions that capital cities are more frequently targeted than other locations. The Cairo governorate has the highest number of attacks overall. Therefore, it is reasonable to examine if the status of capital is an independent predictor of an increased number of attacks.

H4: Governorates with higher Islamist support will experience less attacks

Following the literature, public support in a certain city has an inverse relation with the number of terrorism incidents that occur there. The more votes Islamists get in one governorate the less terrorist attacks it should witness. Inversely, governorates with low Morsi votes should have more legitimate targets for terrorism.

H5: Governorates with higher rates of poverty have higher number of attacks

The relationship between poverty and terrorism has proven to get mixed results. Therefore, it is important to test whether governorates with higher rates of poverty also have a higher number of attacks.

H6 (a): Governorates that have higher unemployed males with a university degree will have more attacks.

According to the literature, many terrorists have a good education and come from middle-class and well-to-do families. When they see little prospect in the job market they are more susceptible to joining terrorist organizations. Thus, when there is a high percentage of people with a university degree that are unable to find a job, more attacks should occur.

H6 (b): Governorates that have higher rates of male unemployed youth will have more attacks.

Male unemployed youth are the easiest target for terrorist organizations willing to enlist more people to their organization. Young people represent the ranks and files of most terrorist organizations. Being unemployed and male should only increase the likelihood of having more terrorist attacks.

H7: Governorates that have more police stations will have more attacks

Having more security targets that are considered “legitimate” by terrorists, renders such cities and governorates more likely to experience terrorist attacks. Attacks on police targets represent a large percentage of all the attacks and urban Egyptian governorates do indeed have a larger number of police stations.

The above mentioned hypotheses represent the major theories in the literature regarding the location of terrorist attacks and the drivers of terrorism. These are also accommodated to the Egyptian context. Using the data collected to test the hypotheses

should give us a better understanding on the causes of terrorism in Egypt and why they appear concentrated in urban governorates.

Methods

The method used in this project is hypothesis testing using quantitative tests of significance. The unit of analysis is the governorate. Urban governorates are defined as those who have more urban than rural population[2]. In this section I will present the data collected, how the hypotheses were operationalized, the tests that were used, and finally the results of the tests.

Data

In this paper the unit of analysis is governorate, and the dependent variable is the number of attacks per governorate. Thus, the main dataset is composed of all incidents of terrorist attacks that have occurred in Egypt, excluding Sinai, within the period of June 2013 until July 2015. To complete this dataset, I relied mainly on trusted, local, Arabic news sources such as Al-Masry Al-Youm, Shorouknews, Youm7 or Vetogate. In some cases, I included events mentioned on social media accounts as long as a second reference to the incident could be found in established media sources. Some incidents were also added from the Global Terrorism Database for years 2013 through 2014.

For each incident, information was collected on the location; city and governorate level, the date, the target, the weapon used, the fatalities and injuries. Information was

[2] More detailed discussion on the reasons for such a definition is provided in the Limitations section.

also included for known perpetrators, whether the incident was claimed by any known group, and if it occurred within 14 days of a date of significance.

The next step was to collect the socio-economic data pertaining to each governorate and their voting patterns. To measure the support base, I relied on the percentage of Morsi votes in each governorate according to the 2012 presidential elections. Those were found in several trusted local news websites that reported on the elections. I chose the percentage of Morsi votes because while there is some debate over the Muslim Brotherhood's role in the bombings, there is no doubt that such attacks are at least fueled by some sort of Islamic fundamentalism. In the same time, excluding Abu Al-Fotouh, Morsi was the leading Islamist leaning candidate and directly supported by the Muslim Brotherhood. In addition, I also relied on the legislative election results that took place about 6 months before the presidential elections, which ended up producing an Islamist dominated parliament with the now dissolved Freedom and Justice Party, the official party of the Muslim Brotherhood and the Salafist Nour Party gaining the majority of votes.

Population statistics were drawn from the Central Agency for Public Mobilization and Statistics (CAPMAS) figures (CAPMAS, 2015a). For the unemployment figures, the 2014 Annual Labor Force Survey report also published by CAPMAS (CAPMAS, 2015b) was consulted. Again, using the same source I got the latest numbers and percentages of poverty across governorates (CAPMAS, 2013). In addition, I created indicator variables for the following factors: urban versus rural, capital city, urban governorate, upper Egypt, lower Egypt, and border governorates. To create the urban versus rural variable, I calculated the percentage of population living in cities for each governorate. If

the percentage was above 60% I coded the governorate as urban, below 60% was rural. For the regions, I used the designations urban, upper, lower, and border indicated by CAPMAS. As for the measurement of distance from one specific governorate to the capital Cairo, I used Google Maps. For the number of police stations I used publicly available information from online sources.

Descriptive Statistics: An Apparent Urban Focus

Figure 1 shows how urban Egyptian governorates[3] such as Cairo, Giza[4], Alexandria all rank very high in the number of terrorist attacks. On the other hand, border governorates[5] like Matrouh, Red Sea, or New Valley experience the least number of terrorist attacks. Rural governorates in Upper Egypt[6] also rank relatively lower compared with rural governorates in Lower Egypt[7].

Nevertheless, there are still some questionable figures. Sharqiyah and Beheira, which are Rural Lower governorates[8] have a high amount of terrorist attacks but also high population figures. In fact, they are ranked in 3rd and 5th position both in terms of

[3] Urban governorates include Alexandria, Cairo, Giza, Port Said, Red Sea, Suez, and South Sinai. Cairo and Giza together form Greater Cairo.

[4] Giza has a large rural population. However, for the purpose of this paper we defined urban governorates as ones where more than 50% of its inhabitants live in urban areas. In some cases, it is considered part of Upper Egypt. However, its urban characteristics and close proximity to Cairo makes it different from the rest of Upper Egyptian governorates. Together, Cairo and Giza are sometimes referred to as Greater Cairo.

[5] Border governorates include Matrouh, New Valley, North Sinai, Red Sea, and South Sinai. Both Red Sea and Matrouh are both border governorates and urban governorates. Thus for the purposes of this paper, they will be classified as urban in the urban-rural divide and border in the regional divide.

[6] Upper Egypt extends from Aswan in the south, Luxor, Qena, Sohag, Assiut, Minya, Beni Suef to Fayoum in the North

[7] Lower Egypt is the delta region of the Nile where the river finally flows to the Mediterranean Sea. It includes, Beheira, Dakahlia, Damietta, Gharbia, Ismailia, Kafr al-Sheikh, Menoufiya, Qalyubiyah, and Sharqiyah.

[8] Both governorates have a big urban population. However, for the purposes of this study I have defined a rural governorate as having more than 50% rural population. More discussion on this issue is in the Methods and Limitations sections.

terrorist attacks and population, meaning that the high number of attacks might be simply attributed to higher population.

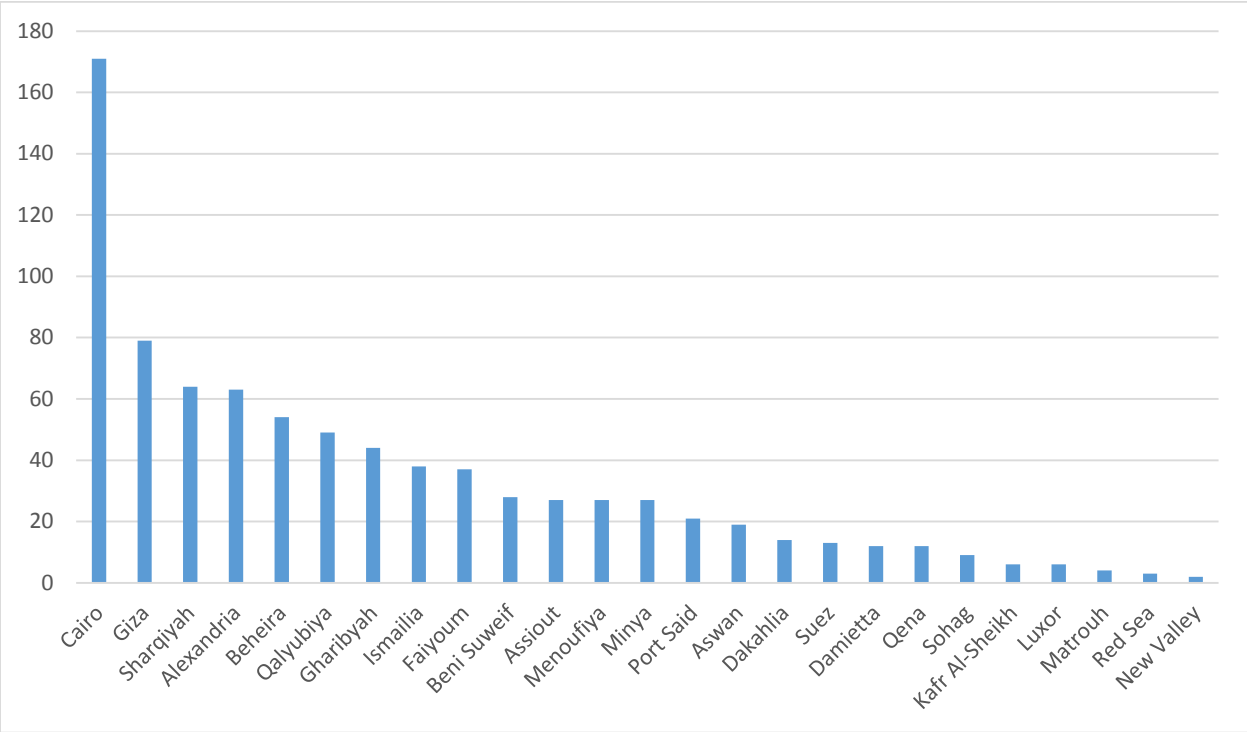

Figure 1 Number of Attacks per Governorate (Excluding Sinai)

In figure 2 we can witness that almost a third of all terrorist attacks in Egypt are directed against police targets. The rate of police targeting is slightly higher in urban governorates than in rural ones. However, attacks on transportation infrastructure (trains, train tracks, buses, etc...) there is a significant difference. While 19% of attacks in rural governorates target transportation only 10% of urban attacks are on transportation. In any case, it seems that apart from attacks against transportation there are only slight differences between both rural and urban attack targets.

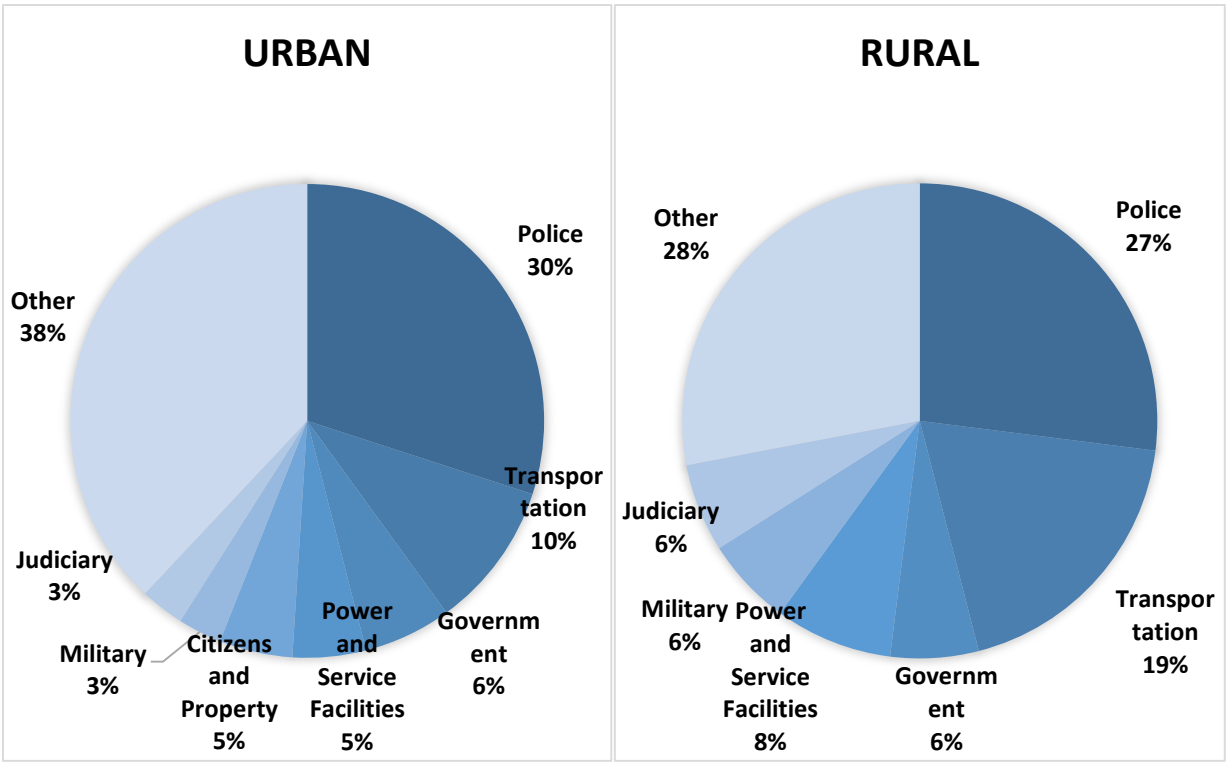

Figure 2 Urban vs. Rural Attack Targets

If we differentiate Egyptian governorates on a regional basis (see Figure 3) we witness a similar percentage of police targeting, 30% in urban and rural upper governorates. However, only 25% of attacks in Rural Lower Egypt target the police. There are also relatively more attacks on transportation in Upper Egypt and more so in Lower Egypt than in urban governorates. This could be because of great distances these railway tracks cross and the difficulty to provide total security along these lines. Power and Service Facilities are also targeted almost twice as much percentagewise both in upper and lower governorates than in urban ones.

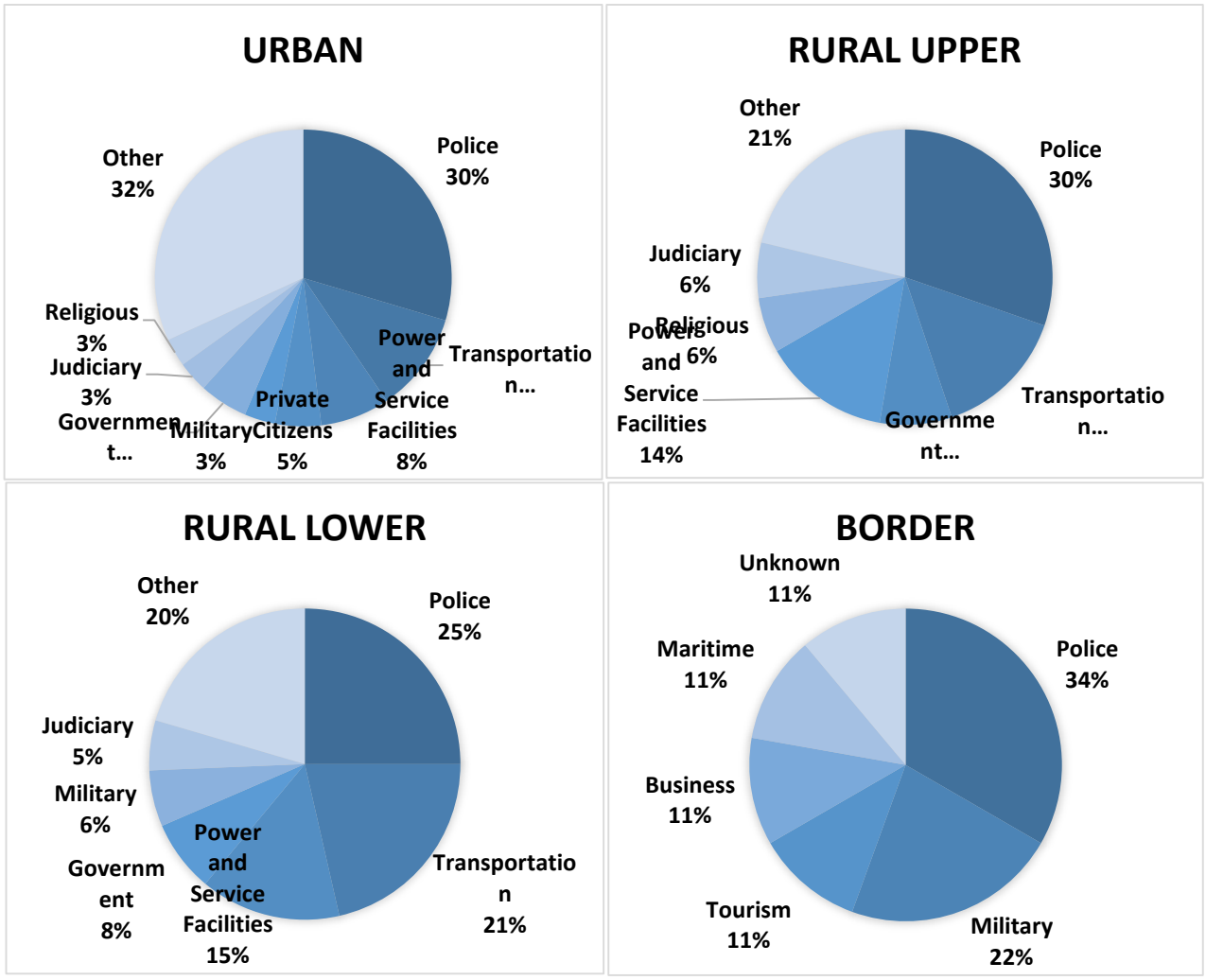

Figure 3 Attack Target per Region

Nevertheless, these figures show that there is some difference between big urban

governorates and other Egyptian governorates in terms of the frequency and distribution of terrorist attacks. However, without further statistical analysis, it is impossible to make any definite statements about the significance of the descriptive statistics or the relationship between attacks and different socio-economic or political factors. Therefore, further investigation is warranted in order to see if the observed trends and patterns conform to the existing literature on terrorism targeting strategy and the drivers and causes of terrorism. The next section discusses the selection of empirical tests needed to test the hypotheses listed above.

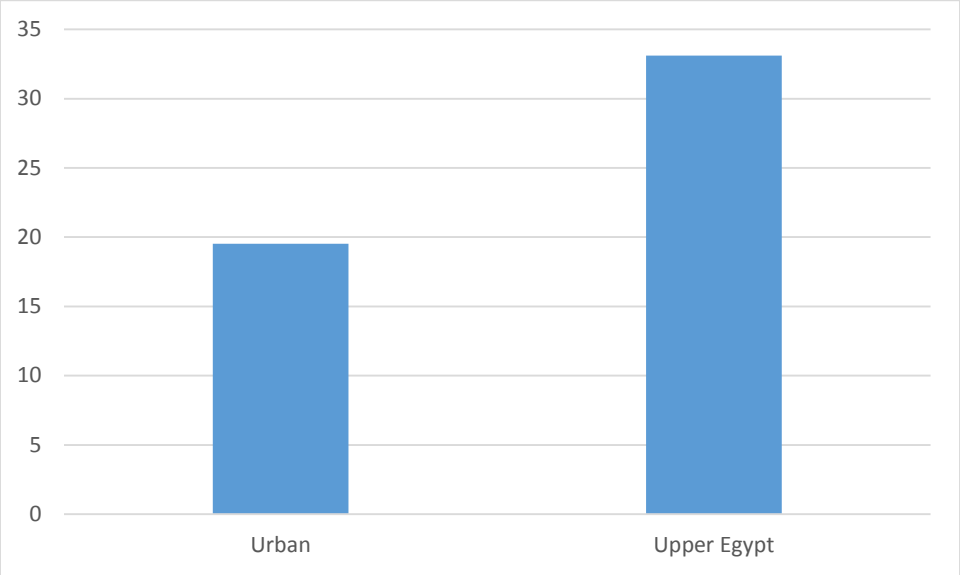

Figure 4 Percentage of Morsi votes in Urban vs. Upper Governorate

Empirical Tests

For the first two hypotheses, the dependent variable is the number of attacks per governorate. To test for the variance in attack location across governorates, the independent variable for hypothesis 1 is the urban-rural distinction while for hypothesis 2 it is the regional one.

Testing the significance of the urban-rural and regional divide in the Nile basin was best approached with nonparametric tests. The choice to go for these tests was because the data is not normally distributed (Bhar 2014).

To test the first hypothesis, I used the Mann-Whitney test because of the small sample size of 25 observations and only two categories; urban and rural. For the second hypothesis, I used the Kruskall-Wallis test, which is an extension of the Mann-Whitney test but is used when the independent variable has more than two categories (Mcdonald, 2008). In this case these are urban, upper, lower, and border governorates.

The independent variables in hypotheses 3-7 are Morsi votes; FJP votes; Nour Party votes; male youth unemployment; male unemployment with a university degree; distance from capital; number of police stations; and poverty. An indicator variable was also created for governorate with capital city in addition to the indicator variable for urban.

Testing Hypotheses 3-7 an OLS regression would have not been efficient since the data is mostly count data (Long, 1997). Moreover, since in this case the standard of error is greater than the mean a negative binomial regression is more appropriate.

Results

First, as indicated in Table 3 population is a significant predictor of an increased number of attacks. However, the urban-rural divide is statistically insignificant per the Mann-Whitney test as shown in Table 1, contrary to hypothesis 1. This is also in

contrast with previous literature which points to an overrepresentation of urban terrorism targeting compared to rural ones.

Ranks

	Urban (1) vs. Rural (0)	N	Mean Rank	Sum of Ranks
attacksbygovernorate attacks by governorate	0	18	12.67	228.00
	1	7	13.86	97.00
	Total	25		

Test Statistics[a]

	attacksbygovernorate attacks by governorate
Mann-Whitney U	57.000
Wilcoxon W	228.000
Z	-.364-
Asymp. Sig. (2-tailed)	.716
Exact Sig. [2*(1-tailed Sig.)]	.745[b]

a. Grouping Variable: Urban1vs.Rural0 Urban (1) vs. Rural (0)

b. Not corrected for ties.

Table 1 Mann Whitney Test Results (Urban-Rural divide)

The difference between urban, rural upper, rural lower, and border governorates is statistically significant as presented in Table 2. Although the Kruskall-Wallis test shows this, on the basis of the negative binomial regression, being an urban governorate does not predict a higher number of attacks when controlling for population. In addition, being the urban governorate with the capital is also not significant when controlling for population. When distance to the capital was introduced into the model, it became significant consistent with hypothesis 3. This relationship remained significant and negative, as indicated in Model 6, when population was added to the model. However, when support base variables and unemployment were added to the model it became insignificant. Again, as shown in Model 1, the percentage of votes for Mohamed Morsi in the first round of the 2012 presidential election was not significant, although the coefficient sign was negative.

Nevertheless, since Mohamed Morsi votes in the 2012 elections might not have been the best representation of Islamist support, I included other indicators. Therefore, as shown in Table 3, I used the percentage of votes for the Freedom and Justice Party, and the Nour Party as indicators of Islamist support. These variables are significant, but the coefficient sign is positive predicting an increase in attack frequency in contradiction to hypothesis 4.

Ranks

	region	N	Mean Rank
attacksbygovernorate attacks by governorate	1	5	18.40
	2	9	15.22
	3	8	11.25
	4	3	2.00
	Total	25	

Test Statistics[a,b]

	attacksbygovernorate attacks by governorate
Chi-Square	10.691
df	3
Asymp. Sig.	.014

a. Kruskal Wallis Test

b. Grouping Variable: region

Table 2 Kruskal Wallis Test Results (Regional Divide)

The next set of models included variables for socio-economic grievances. Poverty, as expected, was not significant. This is compatible with Krueger's (2008) exclusion of poverty as a causal variable of terrorism. In addition, Grabosky's (1979) argument of a relation between youth unemployment and terrorism is also supported. As presented in Model 9, the percentage of males with a university degree was a significant predictor of increased attacks at the 1% level as was the percentage of male youth who are unemployed as shown in Model 8. Overall, unemployment variables

seem to vary depending on the other included variables. When introducing the Capital governorate in Model 10, unemployment ceased to be significant.

The number of police targets was statistically significant at 1% without controlling for population. However, once population was introduced into the model police targets became insignificant meaning that the number of police stations is only a function of population. Of all the variables, the only one that was significant at the 1% level and positive across all models was support for the Muslim Brotherhood's Freedom and Justice Party.

	Population	Urban	Capital	Upper	Distance to Capital	Morsi Votes	FJP Votes	Nour Votes	Poverty	% Unemployed Males with University Degree	% Male Youth Unemployment	% Unemployment (overall)	Police Stations	Constant
Model 1						-0.016 (0.02)								3.967
Model 2	25.329*** (4.52)	0.131 (0.28)												2.22
Model 3							0.13899*** (0.0354)	0.0115 (0.0178)						-1.7
Model 4									-0.0153 (0.0135)					3.92
Model 5					-0.0026*** (0.0005)									4.05
Model 6	20.79 (4.76)				-0.001** (0.0005)									2.73
Model 7												0.024 (0.04)		3.238
Model 8											-0.041* (0.0213)			6.59
Model 9										0.0603*** (0.02)				2.28
Model 10			1.12 (0.98)							0.038 (0.03)				2.653
Model 11	23.898*** (4.63)									0.023 (.016)				1.863
Model 12			1.87** (0.94)	0.776** (0.362)						0.0162 (0.027)				2.69
Model 13							0.12*** (0.028)	0.035** (0.016)		0.0627*** (0.02)				-3.053
Model 14	16.29*** (4.92)		0.86 (0.6)	0.187 (0.258)			0.085*** (0.024)	0.02* (0.012)						-1.04
Model 15	18.537*** (4.73)		0.087 (0.66)	-0.048 (0.26)			0.087*** (0.02)	0.033*** (0.012)		0.039** (0.017)				-2.202
Model 16													0.07*** (0.02)	2.336
Model 17			-1.2 (1.17)										0.095*** (0.03)	2.078
Model 18	24.59*** (8.35)												0.004 (0.03)	2.23
Model 19			-1.66 (1.05)	-0.23 (0.29)			0.111*** (0.02)	0.04*** (0.012)		0.0376** (0.018)			0.089*** (0.025)	-3.515
Model 20	14.01*** (9.43)		-0.51 (1.27)	-0.12 (0.29)			0.093*** (0.023)	0.034*** (0.012)		0.04** (0.017)			0.027 (0.048)	-2.6
Model 21	17.42** (7.41)				0.0003 (0.0006)		0.096*** (0.024)	0.039*** (0.014)		0.043** (0.018)			0.01 (0.024)	-2.98

NOTE: numbers between brackets are standard errors, *** significant at 1%, ** significant at 5%, * significant at 10%

Table 3 What affects the frequency and distribution of attacks across Egyptian governorates

Discussion

According to the abovementioned results there are several issues that stand out. First is the distinction between the governorates based on their type. While there was a visible difference between urban and rural governorates, such a distinction proved to be insignificant. The other distinction combining the urban-rural divide with the Egyptian-specific geographical and historical divide proved its significance. This means that the traditional urban-rural divide presented by the literature should not be taken at its face value. Rather, counter-terrorists as well as counter-insurgents should combine these theories with context specific solutions as they can ill afford to experience firsthand the dangers of not adapting theory to practice. For our case, combining the urban-rural distinction provided by the literature with the context specific one of an upper-lower distinction demonstrates the importance of such adaptation.

Second is the clear correlation between population numbers and terrorist attacks. Governorates with higher population experience more attacks. This explains why it appeared at first that urban governorates experience more attacks than rural ones. Rather, the results show that the main reason for this preconception was because urban governorates have the highest population. Cairo and Giza are the two most populated governorates and the ones most frequently attacked. Sharqiyah and Beheira, rural governorates with high population figures also experience higher frequency of attacks. Meanwhile, border governorates that are sparsely populated have the least amount of attacks. One possible reason is the wider recruitment pool available for terrorist

organizations in more populous areas. Another reason could be the anonymity factor. The latter could be a function of population rather than depending on the type of governorate. Terrorists are more likely to commit terrorism if they believe they are more likely to get away with it no matter in which type of setting they live.

Third, there are also several variables that had varying degrees of significance including distance to capital and police stations. The former, as I mentioned was significant alone at 1% but once controlling for population it became significant only at 5% and after including other variables it ceased to be significant. This means that population still plays some role, especially since the sheer number of attacks happen in the higher populated Nile Delta which is close to the capital compared to Upper Egypt which is less populated and further away. In any case, the significance of distance might not be necessarily because of logistical factors. In fact, logistical factors should matter less in this case since most materials used in the attacks are low scale that require limited sophisticated weaponry that could be found in rural as in urban settings.

On the other side, the number of police stations seemed not to have an effect once controlling for population. This means that governorates with more police targets are attacked more frequently only because there is a higher amount of people living in this certain area and not because the multitude of targets make it more attractive for terrorists.

Fourth is the issue of socio-economic grievances and their relation to terrorism. The results show that not all socio-economic grievances cause terrorism. These results conform in some way to Collier and Hoeffler's assumption of the insignificance of grievance. Poverty, for example, had no relation to terrorism. Just like "war is politics

with other means" (Clausewitz, 1832), terrorism is *politics* with other means not *economics.* Terrorism is the weapon of those who have a political agenda. Those with economic grievances seldom pursue terrorism but rather peaceful means or in extreme cases crime. Since the definition of terrorism, divided as it is, naturally excludes acts of violence that are committed for pure material gains, it should not come as a surprise that poverty does not cause terrorism.

This is not to say that unemployed educated youth do not have socio-economic grievances. But rather that their grievances could succumb to the political arena more easily. Terrorist organizations are thus able to mobilize these grievances in their favor to the use of violence. On the other hand, poor people tend to accept their socio-economic status as a natural fact and seldom blame the underlying political conditions. However, even if they do they rarely act upon it through the use of political violence.

Fifth, and most importantly, is the significant and positive correlation between Muslim Brotherhood support and terrorist attacks. This relation stands in contrast to the literature which mentions that terrorist organizations attack less frequently in places where they have higher levels of support in order not to alienate their own support base. For this case it seems that terrorist organizations have no problem with attacking their own support base as long as they do not lead to direct casualties. This result means that the literature need not focus only on the sheer number or frequency of attacks but rather the kind and lethality of the attacks.

In cases where terrorists are more inclined to target civilians or at least are less casualty sensitive they might indeed prefer to attack in places with low support just like the

Chechen rebels choose to attack Russian civilians but focus on Russian military targets inside Chechenia (Reuter, 2004).

In any case, the avoidance of civilian casualties is a conscious strategic decision. One of the possible reasons behind that is because for them 'terrorism', as Brian Jenkins (1974) defended terrorist's sanity, 'is theater'. Terrorists want a lot of people watching not a lot of people dead (Jenkins, 1975). The avoidance of civilian casualties is among other reasons designed to showcase inability rather than extract maximum damage.

Another puzzle is what precipitated the Muslim Brotherhood's turn to violence. Indeed, one possible reason is the organizational split that occurred in the Brotherhood post June 2013. Following Ian Ross' (2013) argument, the split inside the Muslim Brotherhood acted as a direct precipitant of the organization's turn to terrorism. Several small groups that were formed after 2013 like the Popular Resistance Movement (PRM), promulgated a similar balance between nationalistic and Islamist ideologues to the MB. Their statements and videos suggest it was formed by disaffected brotherhood youth (TIMEP, 2015). Nevertheless, they did not shy away from attacking the Muslim Brotherhood's position and its "recumbence under the guise of peacefulness" (PRM, 2016).

For counter-terrorism policies it is important to mention one caveat regarding organizational splits. On a practical level, orchestrating and motivating organizational splits of radical and terrorist organizations might not necessarily lead to the demise of such groups. Rather such splits might be counter-conducive and lead to more terrorism rather than less.

Another question is why support for the Muslim Brotherhood is more significant than Morsi votes. The 2012 parliamentary elections saw the Muslim Brotherhood get the majority of votes, higher than Morsi votes a few months later. MB voters were not only the organization's members but also those who indirectly support it or sympathize with them and believe they should be finally given some chance. In the subsequent presidential elections, this support decreased and the MB nominee was not able to get the same amount of votes. One possible theory behind the higher significance of MB votes is that terrorism relies on a more loose definition of support base rather than a direct and limited one. In August 2014, PRM issued a statement claiming 19 attacks itself in addition to tens of other attacks that were accredited to other groups not formally part of PRM. This lends more support to the loose definition of support base theory. Formal organizations are able to mobilize direct support in their favor while other loosely affiliated groups or individuals are able to use the anonymity to commit their own attacks.

This could mean that the Muslim Brotherhood was either able to mobilize their traditional support base for terrorist attacks or that individual sympathizers are able to use the relative anonymity this support base provides in their attacks without formal involvement from the organization. There is still a high degree of coherence in the strategy and lethality of the attacks, making the idea of total organizational uninvolvement difficult. Despite appearing random in nature, these attacks follow a largely similar pattern of attack lethality and target selectivity meaning that there are at least some kind of general guidelines that are consistent across governorates.

However, the frequency of their execution relies more on the support base in that governorate and possibly the anonymity this support base provides.

A third puzzle is why MB support is more significant than the different unemployment figures. Youth unemployment could be a good opportunity for terrorist organizations seeking to recruit more people into their ranks but MB support still seems a greater predictor of terrorist attacks. One explanation is that the Muslim Brotherhood's support base is the main tool through which the organization relies in its terrorist activity while youth unemployment is a secondary factor on which they rely.

Keeping this in mind, it is now vital to know how to act upon this information on a practical level. In the subsequent section I provide several recommendations on how to deal with domestic terrorism in Egypt and enhance counter-terrorism efforts.

Limitations

There are still some limitations to the methodology that have to be taken into account when looking at the results and analyzing them. First, I faced the problem of defining an urban and rural governorate and where to draw the line between them. While there are clear examples like Cairo, Port Said, or Suez that have no rural population, all other governorates -including rural governorates- have both an urban and rural population. Therefore, I decided to draw the line at the 50% mark. This means that while terrorist attacks in some cases occur in urban areas of mostly rural governorates, the attack is still considered a rural attack. One solution could have been to change the unit of analysis to a more local level. However, this would have also required more detailed socio-economic data and elections results that are not publicly available.

This caveat means that this definition of urban-rural divide does not necessarily conform to the one presented by literature. Localizing the unit of analysis might have indeed resulted in an over-representation of urban attacks as mentioned by the literature, but this could have compromised the quantitative ability to measure the real causes of terrorism. If a person has the ability to travel outside of his local village to conduct an attack, which he does, then we would not be able to measure the effect of socio-economic or other variables in his own home-area. As mentioned, the low scale nature of the attacks also makes far travel obsolete. Thus, choosing the governorate level as the unit of analysis was the better alternative.

Another limitation was the reliability of socio-economic variables. For the unemployment data, CAPMAS relies on samples that might not be statistically representative of the overall unemployment figures. In any case, in the absence of better data on unemployment, CAPMAS provides the most reliable source on such socio-economic data.

Recommendations

Given the relative overall coherence in the attacks, it is clear that there is some kind of guiding strategy. Despite appearing random in nature, these attacks follow a coherent strategic line. Thus, the first step of a successful counter-strategy is to understand what drives such attacks and what does not. Of vital importance to such a counter-terrorism strategy would be to customize it to Egypt's situation. The difference between urban governorates, rural lower, rural upper, and border governorates has to

be taken into consideration with variations depending on the terrain and other independent variables.

The Egyptian government's plan calls for early detection of terrorist organizations and drying up of their resources. It also vies to focus on the development of border governorates, improve their services and launch investments. While this is an essential step towards tackling the insurgency in Sinai, this vision has to be adapted to the other three types of governorates namely urban, Lower, and Upper Egyptian governorates. Hence, it is important to customize counter-terrorism strategies to the different types of governorates.

Police targets in urban governorates have to be hardened. This could include close camera monitoring designed to deter as a first line of defence and counter-attack in more extreme cases. Rural governorates on the other hand need a more population-centric approach especially in Upper Egypt where Islamist organizations based their popularity on social services. Rather than capture terrorists responsible for attacks on train tracks, for example, it would be easier and more beneficial to increase the efficiency and quality of the railway system. Other government provided services that are possible targets such as power or sewage systems have to be enhanced rather than hardened, the latter being an impossible achievement. With the number of easy 'legitimate' targets decreasing and grievance-related targets enhanced, terrorism operations will be harder to execute and more susceptible to public scrutiny.

The issue of unemployment with special emphasis on youth unemployment has to be securitized. Job creation should be looked upon not only from a socio-economic

viewpoint but from a political one that aims to limit radical organizations' attempts to penetrate and use these grievances for terrorist activity.

Most importantly, any counter-terrorism strategy has to include measures to deal with the Muslim Brotherhood and the support it receives. If terrorist groups are constrained by the preferences of their support base, then a successful strategy has to widen the latter's margin of sensitivity from one narrowly focused on civilian casualties to one sensitive to other kinds of attacks. A ripple effect could occur when the shrinking support base makes the group relatively more radical and violent which in turn leaves the group with less support. This cycle will ultimately lead to the demise of the group which is exactly what worries the older MB traditional leaders.

Further Studies

There are several questions that this paper presents for further research and study, most notably the relation between Islamic extremism and terrorism. The ongoing and rapidly changing events inside the Muslim Brotherhood itself will mean that the broader issue of political Islamism and its relation to political violence and terrorism must receive greater scrutiny. Future studies related to the Muslim Brotherhood should focus on where the organization is entrenched, the reasons behind its support, and most importantly to which extent this support could be mobilized either into politically peaceful activity or terrorist activity. It is also vital to have more investigative research on the internal structure and decision making within the Muslim Brotherhood and to which extent the clash between the younger, more tech savvy members and the old guard has translated on the ground in terms of public support.

On an academic level, organizational splits of terrorist organizations should also be studied further in terms of whether such splits could decrease the overall cohesiveness of the group or if it rather increases the chances of terrorist attacks. This paper has provided a contrast to the existing literature in terms the selectivity of targets. However, the terrorism literature needs more research the relation between the support base and lethality of terrorist attacks as well as selectivity of targets. Another issue to be looked at is the anonymity factor. Does the ability to stay anonymous act as a permissive factor causing terrorism? This would have to include different methodologies than the purely quantitative one used in this paper.

This paper has been an exploration of the dynamics of terrorism in Egypt since 2013. It suggests that there is some relation between Muslim Brotherhood support and terrorist attacks in Egypt and that this is probably related to educated unemployed males. Further research on this matter could yield more precise results.

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